ISSN- 2394-5125 VOL 8, ISSUE 02, 2021

EXPECTANT MOTHERS' KNOWLEDGE OF CONGENITAL AND ADVENTITIOUS HEARING LOSS IN SELECTED HOSPITALS IN CALABAR METROPOLIS

Ntino, M. O[1]. Aderibgbe, S. A[2]. James, D. D[3]. Abang, V. Z.[4] Agana, C. O.[5]
[1,2,3,4,5]Department of Special Education, Faculty of Education, University of Calabar, Calabar
ongbonya@gmail.com +2347060507551 deribgbesamson2015@gmail.com +2348133032737

ABSTRACT: This study assessed expectant mothers' knowledge of congenital and adventitious hearing loss in selected Hospitals in Calabar metropolis. To guide the study, four (4) research questions were posed and transformed to hypothesis. The study adopted a survey research design. The sampling techniques used were purposive and accidental sampling technique. A total of one hundred and ninety eight (198) expectant mothers were used for the study. The instrument for data collection was questionnaire. The instruments were validated by (3) medical experts in the department of Ear-Nose and Throat (ENT) and two (2) measurements, and evaluation experts. The reliability of the instrument was determined Cronbach alpha reliability technique, with reliability indices ranging from 0.75-0.82. Data collected were analyzed using mean, standard deviation and Chi-square for answering the research questions while population t-test analysis was used to test the hypotheses. The findings revealed that the expectant mothers' knowledge on congenital causes of hearing loss is significantly low. The findings also revealed that the knowledge level of most expectant mothers on adventitious hearing loss is also low. It was concluded that there is need for adequate knowledge for expectant mothers as regards to congenital and adventitious causes of hearing loss. The study then recommended, among others, that awareness campaign against congenital and adventitious hearing loss should be included into the programmes for expectant mothers during antenatal in all hospitals and primary health care centres.

Keywords: Expectant mothers', knowledge of congenital and adventitious, hearing loss

Introduction

The ear is among the most critical five sense organs, which must work properly for an individual to function well. If any of the parts of the ear is affected or damaged, it may result in hearing loss. Hearing problem is the third most common disease after hypertension and arthritis (Ogah, 2014). If an individual's hearing is affected, it may constitute a great challenge to the persons' living because in human development, hearing is a very important factor in social and academic life. Hearing helps an individual to communicate and interact with his/her environment. On the contrary, hearing loss may hinder a person's social and emotional growth, leading to low self-esteem, aggressiveness, labelling, stigmatisation and stereotyping.

According to World Health Organization (WHO) (2016) report, about 360 million people (about five percent) of the total populace live with hearing misfortune which is viewed as crippling; and of these insights, almost 32 million are kids. By far most of these people live on the planet's low wage and center wage nations. For kids, in certainty hearing is extremely significant to learning talked dialect, accomplishing more noteworthy accomplishments scholastically, and taking part in socially beneficial exercises. In any case, hearing misfortune represents a boundary to training and social combination. Because of this, kids with hearing misfortune can profit incredibly on the off chance that they are recognized right on time throughout everyday life and offered fitting mediations.

Hearing loss can be either congenital or adventitious and is the most complex sensory deficit in human population. Congenital hearing loss is a hearing loss that occurs before birth and happens when the baby is still in the womb. Mostly it is associated with genetic factors or drugs related. It can also occur when expectant mothers are infected diseases for example, with rubella.

We (2003) argued that hearing loss is an aetiologically wide-ranging quality that have numerous known hereditary and ecological causes. As indicated by her, at any rate, half of the considerable number of instances of significant intrinsic deafness can be accounted for by genetic factors. More than 120 independent genes for deafness have been identified and these have provided new bits of knowledge into pathophysiology of hearing. We (2003) affirmed that a substantial number of qualities can plainly cause deafness. She noticed that latent changes at a solitary locus or Connexin 26, represent the greater part of

every single hereditary case of hearing loss. Most genetic deafness cases are as a result of mutations at a single locus. Since majority of hearing-impaired kids have parents who hears, genetic factor can help provide empowering knowledge as to the aetiology of hearing loss and also allow deaf couples to know if their offspring will inherit hearing problem before they are conceived.

Supporting, We (2003) and The American Academy of Otolaryngology (2016) also noted that acquired hereditary imperfections assume an imperative part in intrinsic hearing misfortune and this according to the academy contributes to about 60% of hearing loss occurring in new borns. Hence, expectant mothers need to be equipped with knowledge that genes are liken to a road map, in the human beings, they help in combination of proteins which are the establishment for everything in the human body; our eyes, hair, ears, lung, hearts, kidney, liver etcetera. All children inherit half of their parent's gene, hence a defective gene from any of the parents can result in a health disorder such as hearing loss. One gene (connexion 26) is assessed to be in charge of half of all the passive instances of hearing misfortune. There are more than 400 known hereditary reasons for hearing misfortune however association 26 alone is said to be in charge of in regards to 1/3 of the considerable number of reasons for hereditary hearing misfortune. However, the American Academy of Otolaryngology (2016) listed four ways hearing misfortune can be acquired and these include: autosomal overwhelming legacy; autosomal latent legacy; x-connected legacy; and mitochondrial legacy.

Hardman, Drew and Egan (2005) noted that more than 200 types of deafness are traceable to hereditary or genetic factors. One of such genetic factor is Otosclerosis, which is one of the commonest diseases that affects the sense of hearing, is believed to be hereditary, and it manifests early in adulthood (Hardman, Drew & Egan, 2005). Adults with Otoscleriosis can pass this disease from one generation to the other, and the disease (Otoscleriosis) can stay for several generations without manifestation. The presence of Otoscleriosis in any individual destroys the marsupial bone in the center ear; it additionally causes the development of web-like bone that joins to the stapes making it unable to function properly. Out of all cases of Otoscleriosis, about 15 per cent results in hearing loss and the rate is twice for female than males (Hardman, Drew & Egan, 2005). People with this disease often suffer from tinnitus (piercing throbbing or ringing sounds), which is related with the illness of the internal ear.

Accessing the impact of genetic factors on hearing loss, Heward (2006) argued that some of all intrinsic hearing misfortune is caused by hereditary components. He arranged hereditary hearing misfortune into autosomal overwhelming, autosomal latent, and X-connected (identified with sex chromosome). Autosomal predominant hearing misfortune is the case in which one of the parent carries a dominant gene that causes hearing loss and that parent also has a hearing misfortune and the quality is passed to the unborn tyke. For this situation, there is a fifty-fifty (50/50) chances of the child being born with a hearing loss. The chances is higher if both parents or both grand-parents on one side of the family have the autosomal dominant gene or have hearing problem due to the presence of the gene.

Autosomal recessive hearing loss is the case in which both parent have ordinary hearing yet conveying the passive quality for hearing misfortune. For this situation, there is a 25 for each penny likelihood of their youngster having hearing misfortune. According to Heward (2006), about 80-90 per cent of genetic hearing loss is caused by autosomal recessive hearing loss. X-linked hearing loss: This kind of hearing loss is rare. It is a situation in which the passive quality for hearing misfortune is in the mother which she carries on the sex chromosome and is passed to the male child and not the female. Moores in Heward (2006) concluded that though 90 per cent of deaf children have hearing parents, about 30 per cent of these children have relatives with hearing loss. Supporting Heward's (2006) argument that half of all congenital hearing loss is genetic related, Gargiulo (2009) wrote that half of all congenital deafness is the result of genetic factors. He also identified three (3) types of genetic hearing loss – autosomal dominant inheritance, autosomal recessive inheritance, and the X-linked inheritance.

In the study of Willame, Blanchard-Rohner, Combescure, Irion, Prosfay-Barbe & Martinez (2015) in which 314 mothers were sampled, it was discovered that only 39 percent of the sampled size had knowledge of cytomegalovirus (CMV) which is a noteworthy reason for hearing debilitation in new borns. Again, their study rhevealed that few expectant mothers receive processed data about CMV preventive measures amid pregnancy. Those that are aware of CMV prevention are either highly educated (minimum of university degree) or are working in a health care or with children. Among expectant mothers that are aware of CMV, only half of them had information on how to prevent it during pregnancy and often physicians are the major source. As to its impacts on hearing loss, many of the expectant mothers (67.2%) are not aware that CMV can affect the hearing of the unborn baby while only 25.2% know that hearing loss in new born can be caused by CMV during pregnancy.

In another study of 60 women in rural community in South India by Narayansamy, Ramkuma and Nagarajan (2014) revealed that some are aware that the causes of hearing loss can be hereditary while many associate hearing loss to superstitions and maternal nutrition during pregnancy. There is little or no awareness about the impact of maternal infections and iodine deficiency.

Pre-natal disease or infection has also been identified by researchers as a major cause of congenital hearing loss. These diseases or infections occur before birth or around the time of birth. For example, in the mid-1960s, German Measles (Rubella) outbreak was a leading cause of some infants born with hearing loss (Gargiulo, 2009). Today however, the development of rubella vaccines has helped to reduce the incidence of the disease. Apart from rubella, some common prenatal disease such as cytomegalovirus (CMV), hepatitis B virus, and syphilis may result in hearing loss of an unborn child. CMV infection is identified among others as the leading viral cause of sensorineural hearing loss in children (Picard, 2004; Stach in Gargiulo, 2009). CMV is a viral disease/infection, it is spread through close contact with an infected person, it can also be contacted through blood transfusion. Also, an infected mother can also infect her new born child. The disease is characterised by jaundice, microcephaly, haemolytic anaemia, mental retardation, hepatosplenomegaly, and hearing loss (Hardman, Drew & Egan, 2005).

Maternal Rh-factor and ototoxic drug during pregnancy also have negative hearing implication for an unborn child. Although, Rh-factor no longer constitute a threat to subsequent children after the first child of an incompatible maternal Rh factor, since the introduction of an anti-Rh gamma globulin (RhoGAM) in 1968, but in a situation where the mother is well treated after the first childbirth, incompatible Rh factor can still cause hearing impairment in children.

Hardman, Drew & Egan (2005) uphold that if expectant mothers are armed with the knowledge that Ototoxic drug during pregnancy also have harmful effects on the sense of hearing of an unborn child. Other diseases associated with congenital hearing loss include: maternal chicken pox, anoxia and birth trauma. Again, atresia – a condition that results when the external auditory carnal is either malformed or completely absent at birth, is also a major cause of congenital conductive hearing loss. With the knowledge this may go a long way at reducing the high rate of incidence of hearing loss in Calabar metropolis in particular and Nigeria as a whole

Pereboom, Mannien, Spelten, Schellevis and Hutton (2013) in their study where 1,663 respondents participated, came out with the result that most of the respondents have limited knowledge of maternal infections. Also, awareness of infectious maternal diseases is associated to level of education as those with infections/diseases on their unborn babies. Also, the risk behaviour of expectant mothers was frequently connected with their level of familiarity with preventive practices of irresistible ailments. The examination unmistakably demonstrates that human services experts are essential in circling data about preventable irresistible maladies among pregnant women, as most of the women who are aware or have knowledge about prenatal diseases said they received awareness from their health care providers. Other sources include: magazines, internet, books and journals. The study further revealed that level of awareness of the impact of prenatal diseases/infection among expectant mothers is non-existent or very low among women of younger age, less formal education, single, first pregnancy, had an unplanned pregnancy (Ogunmodede, Scheffel, Jones & Lynfield, 2005; Jones, Ogunmodede, Scheffel, Kirkland, Lopez, Schulkin & Lynfield, 2003)

Pereboom, Mannien, Spelten, Schellevis and Hutton (2013) argued however that being aware or having knowledge of prenatal diseases/infections does not necessary imply that expectant mothers will engage in inhibitory conduct amid pregnancy and on the other hand, an absence of learning or mindfulness does not generally connect with participating in dangerous conduct. Congenital hearing loss has many causes, among which are hereditary components. These are in charge of about 40% of youth hearing misfortune. This hearing misfortune is substantially more incessant in kids conceived of a consanguineous marriage (Upadhya and Datar, 2014); henceforth, potential moms ought to have known about this. Hereditary components cause almost 40% of youth hearing misfortune. It has been demonstrated that hearing misfortune is considerably more regular in youngsters conceived of consanguineous relational unions or those unions between two people who are firmly related. Inborn abnormalities of the ear and the hearing nerve, which might be the consequence of hereditary components or natural impacts, can be related with hearing misfortune (Tomblin, Oleson, Ambrose, Walker & Moeller, 2014).

In spite of the fact that there are numerous reasons why innate hearing misfortune may happen, hereditary qualities is the most well-known (Elloy & Marshall, 2012). The creator included that it represents over portion of all instances of hearing misfortune in newborn children. Saying that hearing

misfortune is "hereditary" implies that there is an adjustment in a quality. Hearing misfortune from hereditary imperfections can be available during childbirth or grow later on throughout everyday life.

According to Christy (2010), most hereditary hearing misfortune can be depicted as autosomal recesse or autosomal predominant, connected to X-chromosome or to mitochondrial legacy designs. In autosomal latent hearing misfortune, the two guardians convey the passive quality and pass it along to the youngster. Relational unions between cousins, particularly first cousins, which happen in specific groups, support this sort of hereditarily acquired clutters. Autosomal predominant hearing misfortune happens when an anomalous quality from one parent can cause hearing misfortune despite the fact that the coordinating quality from the other parent is typical. Other hereditarily acquired disorders, for example, Down disorder, Usher disorder, Treacher Collins disorder, Crouzon disorder, Alport disorder and Waardenburg disorder incorporate hearing misfortune as a component of the disorder (Piotrowska & Skarzynski, 2012).

Conditions at the season of birth can likewise prompt inborn hearing misfortune. Rashness, low birthweight, absence of oxygen at the season of (birth asphyxia2), neonatal jaundice, inherent deformities of the ear and the sound-related nerve (McPherson, 2014). Kids might be conceived with inherent hearing misfortune in light of the fact that the mother had a contamination amid pregnancy, for instance, with rubella or cytomegalovirus. Hence, expectant mothers should be aware of this, to limit its consequence on their unborn babies. Similarly, Vasileiou, Giannopoulos, Klonaris, Vlasis, Marinos and Koutsonasios (2009) stated that medications, for example, those utilized as a part of the treatment of neonatal contaminations, jungle fever, sedate safe tuberculosis and diseases and exposure to loud noise either a single blast during pregnancy can prompt lasting hearing misfortune (ototoxic medicines). .

Hearing loss could also be adventitious (acquired). One of the normal reasons for extrinsic hearing misfortune is post-natal contamination, for example, measles, mumps, flu, typhoid fever, and red fever (Hardman, Drew and Egan, 2005). Meningitis is likewise distinguished as a reason for extreme hearing misfortune in children. Another post-natal disease that affects hearing is otitis media – inflammation of the middle ear. It is triggered by serious cool, which spread from the Eustachian tube to the centre of the ear. Heward (2006) noted that almost all children (about 90 per cent) experience otitis media at least once. It reoccurs in $^{1}/_{3}$ of children under five-years. If left untreated, it can lead to build-up of fluid and a ruptured eardrum, which causes permanent conductive hearing loss. However, this disease can be treated with antibiotics or by placing tubes in the ear (Gargiulo, 2009).

Contributing also to adventitious hearing loss are environmental factors. Heward (2006) maintains that expectant mothers should be made aware that repeated exposure to loud noise has been recognised as one of the major cause of hearing loss in both children and adults. The predominantly recognized word related ailment and second most much of the time self-announced word related damage is clamour prompted hearing misfortune. Hardman, Drew & Egan (2005) also identified environmental factors such as explosions, physical abuse of the cranial area, accidents, loud noise, etc, as major causes of acquired hearing loss. Of all the environmental factors responsible for adventitious hearing loss, loud noise is highly recognised as the major cause of hearing problems. The advent of headphones has also exposed many especially the adolescents to damaging noise levels. With the knowledge of the causes of hearing loss among the expectant mothers and the general population, incidence of hearing loss will be reduced to barest minimum (Hardman, Drew & Egan, 2005).

When asked who to approach when a child develops post-natal hearing ailment, many mothers answered that a paediatrician should be consulted. This showed that many expectant mothers don't know that ear, nose, throat (ENT) specialist are experts for treatment of hearing problem. The substance of Audiologists and their part in ear and human services were not known to the women. Also, many expectant mothers are not aware that practices like pouring breast milk or other liquid such as neem garlic oil into the ear could result in hearing problem. Other studies by Revathy, Selvarajan & Ninan (2014) and Olusanya, Luxon & Wirz (2006) also revealed a high rate of low awareness among mothers about pre and post-natal factors of hearing loss in developing countries such as Nigeria and South Africa.

Zaidman-Zait (2008) opined that noise, that is presentation to uproarious sounds, including from individual sound frameworks, for delayed periods can prompt extrinsic hearing misfortune. Indeed, even short, high power sounds, for example, firecrackers and shooting, may cause changeless hearing misfortune. The loud apparatus in a neonatal emergency unit additionally add to hearing misfortune and that mothers should be aware of this.

Similarly, Mason and Mason (2007) asserted that drugs and different chemicals can likewise cause hearing misfortune. A few medications can influence the hatchling, while others are unsafe after birth.

Some of these include: Ototoxic drugs (for example, aminoglycoside antibiotics, diuretics,cisplatin). They added that adventitious hearing misfortune can be caused by viral, bacterial or parasitic contaminations. Center ear contaminations are essential reasons for hearing debilitation for some youngsters on the planet. Hence, mothers should have such knowledge to prevent it

Untreated infections during childhood can also cause adventitious hearing loss. Stevenson, McCann, Watkin, Worsfold and Kennedy (2010) asserted that the trouble of access to social insurance offices and different factors, for example, poor individual cleanliness and congestion cause numerous kids in low-and center salary nations like Nigeria to wind up noticeably hard of hearing or almost deaf after diseases, for example, meningitis, measles, viral encephalitis, chicken pox, flu, mumps or other viral contaminations.

Fellinger, Holzinger and Pollard (2012) enumerated the following factors that can lead to adventitious hearing loss and added that mothers should be aware of them. They include:

(i) Head damage, acoustic injury, ear and mind tumors can actuate a lasting sensori-neural hearing disability. The sound-related nerve is then not ready to exchange signs to the mind.

(ii) Aging contributes generously to harm and disintegration of the fringe and focal sound-related framework. Age related loss of tryout is called presbyacusis. In people, inward and external hair cells exhibit in the cochlea of the internal ear can't self reconstitute, in this way lost or harm to these phones is irreversible and causes perpetual hearing disability. Neural misfortune and strial misfortune may likewise be factors. Recurrence misfortune is dynamic from high to low.

(iii) Exposure to drawn out or over the top commotion introduction to elevated amounts of clamor is the most widely recognized reason for hearing misfortune in youngsters. Introduction to extreme span and power of clamor causes dynamic loss of external and internal hair cells with harm and possible passing of the organ of Corti, ischemia of the inward ear, and expanded metabolic action prompting exorbitant responsive oxygen species (ROS) age and lipid peroxidation. Presentation to abnormal state of commotion, for example, amid noisy shows or utilization of earphones add to hearing misfortune. This kind of hearing misfortune can be either transient (called brief limit move) or lasting (called perpetual edge move). With the last mentioned, the piece of the cochlea where hair cell demise happens at first is identified with the commotion recurrence that causes it, halfway because of direct mechanical harm. The over-incitement of hair cells likewise causes inordinate age of free radicals, which may proceed for quite a while after the underlying injury.

(iv) Certain prescriptions are viewed as ototoxic as they may cause harm of hair cells in the internal ear. There are more than 200 known ototoxic solutions (remedy and over-the-counter) available today. These incorporate drugs used to treat genuine contaminations, tumor and coronary illness. Hearing misfortune caused by these medications is frequently measurement subordinate and with a few medications can in some cases be switched when the medication treatment is ceased (for instance, circle diuretics, quinine, salicylates). Now and then, notwithstanding, the harm is lasting.

In line with this, Olusanya, Neumann and Saunders (2014) stated that ototoxic meds known to cause changeless harm incorporate all generally utilized aminoglycoside anti-infection agents, for example, gentamicin (family history may expand vulnerability), streptomycin, amikacin, kanamycin and neomycin. They all influence the vestibular framework (organ of adjust) and additionally the cochlea in spite of the fact that streptomycin greaterly affects the previous and neomycin acts mostly on the last mentioned.

In addition, Seidman and Standring (2010) opined that medicines known to cause brief harm incorporate salicylate torment relievers (headache medicine, utilized for torment alleviation and to treat heart conditions), macrolide anti-infection agents, for example, erythromycin, quinine (to treat jungle fever), and circle diuretics – furosemide, bumetanide or ethacrynic corrosive (used to treat certain heart and kidney conditions). A solitary measurement of the last gathering which independent from anyone else would just motivation totally reversible hearing misfortune, in mix with an aminoglycoside may cause fast, significant perpetual misfortune. Hence, mothers should be aware of this, to prevent hearing loss

In conclusion, hearing screening programmes for newborn children and youthful kids can distinguish hearing misfortune at exceptionally youthful ages. For youngsters with inborn hearing misfortune, this condition can be identified inside the initial couple of days after birth.

Statement of the problem

Ear is one of the most critical sense organs in human body, therefore its knowledge should be at the fingertips of all, especially expectant mothers. Expectant mothers ought to know how to take care of the ear and prevent any factor that would cause hearing loss in their children. However, to the best of the

researcher's knowledge this had not been the case in the study area, as knowledge of expectant mothers in preventing hearing loss in their unborn babies had only been emphasized in the hospitals, when they participate in pre-natal services. Hence, the rate of children having hearing loss in the state has been on the increase recently. This is evidenced in the growing number of students with hearing loss being enrolled in special education programme in tertiary institutions in the state. These persons with hearing loss have exhibited negative behavioural characteristics, they have been observed to have low self-esteem, and they feel stereotyped and stigmatised sometimes. The consequence of this is being burnt by the state; as ideas, talents and potentials of this group of persons may not be adequately harnessed thereby not being able to contribute meaningfully to the growth of the state. It is on this premises that the study decided to examine expectant mothers' knowledge of congenital causes and adventitious causes of hearing loss in selected hospitals in Calabar Metropolis, Cross River State.

Purpose of the study

The purpose of this is to assess expectant mothers' knowledge of congenital causes and adventitious causes of hearing loss in selected hospitals in Calabar Metropolis, Cross River State.

Research questions

This study is conducted to seek answers to the following questions:

(i) What is the expectant mothers' knowledge level of congenital cause of hearing loss?

(ii) How much is the expectant mothers' knowledge of adventitious causes of hearing loss?

Methodology

The research design adopted in the study is a descriptive survey. This design is adopted because it allows the description of variables under investigation. Four (4) hospitals in Calabar Metropolis were selected, (two (2) hospitals each from Calabar Municipal and Calabar South) that participated in the study, and census sampling technique is used to select 212 registered expectant mothers. Data was collected using a validated questionnaire titled. Knowledge of Congenital and Adventitious Hearing Loss Questionnaire"(KCAHLQ). To determine the validity of the instrument, the instrument was subjected to the three (3) medical experts in the department of Ear-Nose and Throat (ENT), two (2) measurements, and evaluation experts. These experts checked the instrument for content coverage, relevance and clarity. Demographic items in section A of the questionnaire was coded accordingly while Section B used a two (2) point rating scale of Yes or No. Yes was assigned 2 points while No had 1 point for all the items that are in the positive sense and the reversed order for all items that are in the negative sense. Data collected was analysed using descriptive statistics and it was subjected to percentage and presented in tables according to research questions while the hypothesis were tested using population t-test analysis with respect to the data collected on the variables in the study at .05 level of significance.

Results and Findings

The results of the data analysis are presented in order of the research questions.

Research question 1: What is the expectant mothers' knowledge level of congenital cause hearing loss?

The result of the analysis of the respondents in accordance to research question one is show in Table 1. The response of all the expectant mothers in the study with regards to the items that assessed their knowledge on the causes of the congenital hearing loss showed that most of them have no knowledge. Most of them are not aware that excessive intake of alcohol (63.6%), exposure to radiation (65.2%), diseases infection (63.1%), hereditary (57.1%), hidden hearing problem (53.0%) and accidents during pregnancy (59.1%).

ISSN- 2394-5125 VOL 8, ISSUE 02, 2021

TABLE 1

Analysis of the expectant mothers' knowledge on congenital causes of hearing loss

S/N	ITEM	YES N	YES %	NO N	NO %	X^2
1.	Do you know that taking alcohol during pregnancy can cause hearing problem?	72	36.4	126	63.6	*46.09
2.	Are you aware that exposure to radiation such as x-ray, chemotherapies, lead to hearing loss?	69	34.8	129	65.2	*52.19
3.	Are you aware that infection during pregnancy can cause hearing loss?	73	36.9	125	63.1	*44.14
4.	Are you aware that deaf grand parents can transfer hearing disorder to their grand children	85	42.9	113	57.1	*24.04
5.	Do you agree that a hidden hearing disorder in any of the parent can lead to hearing loss	93	47.0	105	53.0	*14.01
6.	Can accident during pregnancy cause hearing loss?	81	40.9	117	59.1	*30.07

Again, at the expected values of 118.8 for Yes response and 79.2 for No response the chi-square values indicated that the knowledge level of most the expectant mother on each of the item is low. This is indicated by the asterisk* on the chi-square values.

Hypothesis 1: The expectant mothers' knowledge on congenital cause of hearing loss is not significantly low

Table 2 presents the population t-test analysis of the data collected with respect to this hypothesis. The hypothesis was tested at .05 level and an hypothetical mean of 6 was used. The result shows that at df = 197, calculated mean = 9.61, and t = 22.21, the p-value <.05. This implies that stated null hypothesis that the expectant mothers' knowledge on congenital cause of hearing loss is not significantly low is rejected and hence the alternative hypothesis that the expectant mothers' knowledge on congenital cause of hearing loss is significantly low is upheld.

TABLE 2

Population t-test of the expectant mothers' knowledge level of the congenital cause of hearing loss

Test Variable	N	Mean	Std. Dev.	Std. Error Mean	T	Df	p-value
Expectant Mothers' knowledge level of causes of congenital hearing loss	198	9.61	2.28	.16	22.29	197	.000

Research question 2: How much is the expectant mothers' knowledge of adventitious causes of hearing loss?

The result of the analysis of the respondents in accordance to research question two is presented in Table 3. The response of all the expectant mothers in the study with regards to the items that assessed their knowledge on the adventitious causes of hearing loss showed that most of them have no knowledge. Most of them are not aware that slapping (65.2%), accidents (62.6%), German measles, chicken pox etc (61.6%), ear wax accumulation in the ear (68.2%), loud noise (64.1%) and picking the ear with sharp object (66.2%).

TABLE 3

Analysis of the expectant mothers' knowledge on Adventitious causes of hearing loss

	YES	NO

S/N	ITEM	N	%	N	%	X^2
1.	Are you aware that slapping on the ear can cause hearing loss?	69	34.8	129	65.2	*52.19
2.	Do you agree that accident can cause hearing loss?	74	37.4	124	62.6	*42.36
3.	Do you know that German measles, chicken pox, can cause hearing loss	76	38.4	122	61.6	*48.08
4.	Are you aware that ear wax or foreign object in the ear can cause hearing loss?	63	31.8	135	68.2	*38.55
5.	Do you know that constant exposure to loud nose can cause hearing loss	71	35.9	127	64.1	*65.53
6.	Are you aware that picking the ear with sharp object can cause hearing loss?	67	33.8	131	66.2	*56.47

*Significantly low at Expected Yes =118.8 and Expected No =79.2

Moreso, at the expected values of 118.8 for Yes response and 79.2 for No response the chi-square values indicated that the knowledge level of most the expectant mother on each of the item on the respondents' knowledge of adventitious causes of hearing loss is low. This is indicated by the asterisk * on the chi-square values.

Hypothesis 2: The expectant mothers' knowledge level of adventitious cause of hearing loss is not significantly low

Table 4 presents the population t-test analysis of the data collected with respect to this hypothesis. The hypothesis was tested at .05 level and an hypothetical mean of 6 was used. The result shows that at df = 197, calculated mean = 9.88, and t = 22.29, the p-value <.05. This implies that stated null hypothesis that the expectant mothers' knowledge level on adventitious cause of hearing loss is not significantly low is rejected and hence the alternative hypothesis that the expectant mothers' knowledge on adventitious cause of hearing loss is significantly low is upheld.

TABLE 4

Population t-test of the expectant mothers' knowledge level of the adventitious cause of hearing loss

Test Variable	N	Mean	Std. Dev.	Std. Error Mean	t	Df	p-value
Expectant Mothers' knowledge level of the adventitious cause of hearing loss	198	9.88	2.29	.16	22.29	197	.000

Discussion of findings

The expectant mothers' knowledge on congenital cause of hearing loss is significantly low.

The results from the research question and the hypothesis indicates that the knowledge level of most expectant mothers on each of the item is low. In this result, the response of all the expectant mothers in the study with regards to the items that assessed their knowledge on the causes of the congenital hearing loss showed that most of them have no knowledge.

In agreement with the findings of this study Hardman, Drew and Egan (2005) noted that more than 200 types of deafness are related to hereditary or genetic factors of which parents are not aware of. Heward (2006) also argued that half of all congenital hearing loss is caused by genetic factors. The findings of this study is not a surprise because, nowadays parents still attribute the causes of hearing loss to witchcrafts, superstitious believes among others which is an attribute of low knowledge of the causes of hearing loss. The finding is also supported by Upadhya & Datar (2014), they asserted that congenital hearing loss has many causes, among which are hereditary components. These are in charge of almost 40% of youth hearing misfortune. This hearing misfortune is significantly more incessant in kids conceived of a consanguineous marriage; thus, potential moms ought to have know about this. Hereditary variables cause almost 40% of youth hearing misfortune. It has been demonstrated that hearing misfortune is considerably more continuous in kids conceived of consanguineous relational unions or those unions between two people who are firmly related.

Again, Tomblin , Oleson , Ambrose, Walker & Moeller (2014), supports the finding, they stated that inborn mutations of the ear and the hearing nerve, which might be the aftereffect of hereditary elements or ecological impacts, can be related with hearing misfortune. Conditions at the season of birth can likewise prompt intrinsic hearing misfortune. Rashness, low birthweight, absence of oxygen at the season of (birth asphyxia2), neonatal jaundice, inborn abnormalities of the ear and the sound-related nerve (McPherson, 2014). Kids might be conceived with inborn hearing misfortune on the grounds that the mother had a disease amid pregnancy, for instance, with rubella or cytomegalovirus. Hence, expectant mothers should be aware of this, to limit its consequence on their unborn babies. In line with the finding of the study, Vasileiou, Giannopoulos, Klonaris, Vlasis, Marinos and Koutsonasios (2009) stated that drugs, for example, those utilized as a part of the treatment of neonatal diseases, intestinal sickness, tranquilize safe tuberculosis and tumors and presentation to uproarious commotion either a solitary impact amid pregnancy can prompt lasting hearing misfortune (ototoxic drugs).

The expectant mothers' knowledge level of adventitious cause of hearing loss is significantly low

From research question 2 and hypothesis 2; the response of all the expectant mothers in the study with regards to the items that assessed their knowledge on the adventitious causes of hearing loss showed that most of them do not have this knowledge. Indicating that the knowledge level of most expectant mother on each of the item on the respondents' knowledge of adventitious causes of hearing loss is low, the hypothesis then is rejected stating an alternate hypothesis that expectant mothers' knowledge level of adventitious cause of hearing loss is significantly low. Hearing loss could also be adventitious (acquired). One of the regular reasons for extrinsic hearing misfortune is post-natal disease, for example, measles, mumps, flu, typhoid fever, and red fever (Hardman, Drew & Egan, 2005). It is line with this finding of Heward (2006) who noted that almost all children (about 90 per cent) experience otitis media. It is based on lack of knowledge of expectant mothers on these common diseases that a high percentage of children as noted by Heward become deaf.

The finding is supported by Zaidman-Zait (2008), he opined that noise, that is presentation to noisy sounds, including from individual sound frameworks, for delayed periods can prompt unusual hearing misfortune. Indeed, even short, high force sounds, for example, firecrackers and shooting, may cause perpetual hearing misfortune, which most expectant mothers are unaware of. The loud apparatus in a neonatal emergency unit additionally add to hearing misfortune and that mothers should be aware of this. In line with the finding, Mason and Mason (2007) asserted that medicines and different chemicals can likewise cause hearing misfortune. A few medications can influence the hatchling, while others are destructive after birth. It includes: Ototoxic drugs (for example, aminoglycoside antibiotics, diuretics,cisplatin). They added that adventitious hearing misfortune can be caused by viral, bacterial or parasitic contaminations. Center ear contaminations are vital reasons for hearing debilitation for some youngsters on the planet. Hence, mothers should have such knowledge to prevent it

Another cause of adventitious hearing loss is that expectant mothers have low knowledge of untreated infections during childhood. Stevenson, McCann, Watkin, Worsfold and Kennedy (2010) asserted that the hindrance of access to social insurance offices and different factors, for example, poor individual cleanliness and congestion cause numerous kids in low-and centre wage nations like Nigeria to end up noticeably hard of hearing or nearly deaf after diseases, for example, meningitis, measles, viral encephalitis, chicken pox, flu, mumps or other viral contaminations.

Conclusion

Based on the findings of this work, there is need for adequate knowledge for expectant mothers as regards to congenital and adventitious causes of hearing loss. Therefore, health workers and relevance agencies involved in antenatal and child care programmes should improve on their awareness campaign against hearing loss. Of all the items indicating the causes of hearing loss before birth (congenital) and after birth (adventitious) no expectant mother attest to having knowledge on the causes.

Recommendations

In view of the discoveries of the investigation, the accompanying proposals were made for consideration by the appropriate authorities and agencies:

1. ENT specialists should create awareness campaign against congenital hearing loss should be included into the programme for expectant mothers during antenatal in all hospitals and primary health care centres.

2. Awareness campaign against the causes of adventitious hearing loss should be taken to communities through town criers, age grade meetings, women organisations, churches or mosques among others.

References

American Academy of Otolaryngology (2016). Conductive hearing loss: Causes and treatments. www.entnet.org/content/conductive_hearing_loss_ causes_and_treatments Retrieved 25th March 2017

Christy, A. (2010). Frequency and timing of antenatal care in Kenya explaining the variations between women of different communities. Social Science Medical Journal, 1(1), 11-15

Elloy, M. D. & Marshall, A. H. (2012). The management of hearing loss in children. Paediatrics and Child Health, 2(1), 13-18.

Fellinger, J., Holzinger, D. & Pollard, R. (2012). Mental health of deaf people. Lancet, 379(9820), 1037-1044.

Gargiulo, R. M. (2009). Special education in contemporary society: An introduction to exceptionality (3rd ed.). Canada: Sage Publication, Inc.

Hardman, L. H., Drew, C. J. & Egan, M. W. (2005). Human exceptionality: School, community and family (8th ed.). Boston: Pearson Education, Inc.

Heward, W. L. (2006). Exceptional children: An introduction to special education (8th ed.). New Jersey: Pearson Prentice Hall.

Jones, J. L., Ogunmodede, F., Scheftel, J., Kirkland, E., Lopez, A., Schulkin, J. & Lynfield, R. (2003). Toxoplasmosis-related knowledge and practices among pregnant women in the United States. Infectious Diseases Obstet Gynecol, 11(3), 139-145.

Mason, A. & Mason, M. (2007). Psychologic impact of deafness on the child and adolescent. Primary Care, 34(2), 17-26

McPherson, B. (2014). Hearing assistive technologies in developing countries: Background, achievements and challenges. Disability & Rehabilitation: Assistive Technology, 9(5), 360-364.

Narayansamy, M., Ramkumar, V. & Nagarajan, R. (2014). Knowledge and beliefs about ear and hearing health among mother s of young children in rural community in South India. DCIDJ, 25(4), 119-135.

Ogah, S. A. (2014). The prevalence of sensorineural hearing loss (SNHL) in the elderly, Lokoja, Nigeria. A five-year review. Journal of Dental and Medical Sciences, 13(9), 66-68.

Ogunmodede, F., Jones, J. L., Scheftel, J., J. & Lynfield, R. (2005). Toxoplasmosis prevention knowledge among pregnant women in Minnesota. Minn Medicine, 88(2), 32-34.

Olusanya, B. O., Luxon, L. M. & Wirz, S. L. (2006). Maternal views on infant hearing loss in a developing country. Journal of Paediatrics Otorhinolaryngology, 70(4), 619-623.

Olusanya, B. O., Neumann, K. J. & Saunders, J. E. (2014). The global burden of disabling hearing impairment: A call to action. Bulletin of the World Health Organization, 92(5), 367-73.

Pereboom, M. T. R., Mannien, J., Spelten, E. R., Schellevis, F. G. & Hutton, E. (2013). Observational study to assess pregnant women's knowledge and behaviour to prevent taxoplasmosis, listeriosis and cytomegalovirus. http://bmcpregnancychildbirth. biomedcentral.com/articles/10.1186/1471-2393-13-98. Retrieved 25th March 2017

Picard, R. (2004). Listerosis prevention knowledge among pregnant women in the USA. Infectious Diseases Obstetrics Gynecology, 13(1), 11-15.

Piotrowska, A. & Skarzynski, H. (2012). Screening for pre-school and school-age hearing problems: European Consensus Statement. International Journal of Pediatric Otorhinolaryngology, 76, 120-121.

Revathy, R., Selvarajan, H. G. Rajendran, A. & Ninan, B. (2014). Grandmothers' perspectives on hearing loss in children and newborn hearing screening. Indian Journal of Otology, 20(1), 20-23.

Seidman, M. D. & Standring, R. T. (2010). Noise and quality of life. Int J Environ Res Public Health, 7(10), 1-8.

Tomblin, J. B., Oleson, J. J., Ambrose, S. E., Walker, E. & Moeller, M. P. (2014). The influence of hearing aids on the speech and language development of children with hearing loss. JAMA Otolaryngology--Head & Neck Surgery, 140(5), 403-409.

Upadhya, I. & Datar, J. (2014). Treatment options in otitis media with effusion. Indian J Otolaryngol Head Neck Surg, 66(Suppl 1), 1-7.

Vasileiou, I., Giannopoulos, A., Klonaris, C., Vlasis, K., Marinos, S., Koutsonasios, I. (2009). The potential role of primary care in the management of common ear, nose or throat disorders presenting to the emergency department in Greece. Quality in Primary Care, 17(2), 145-148.

We, N. (2003). Genetics of deafness. Ment Retard Dev. Disabil. Res. Rev. 9(2), 109-19.

Williame, A., Blanchard-Rohner, G., Combescure, C., Irion, O., Prosfay-Barbe, K. & Martinez de Tejada, B. (2015). Awareness of cytomegalovirus infection among pregnant women in Geneva, Switzerland: A cross-sectional study. International Journal of Environmental Research and Public Health, 12, 15285-15297.

World Health Organisation (2016). Communication and the hearing impaired child. www.who.org. communication-and-the-hearing-impaired-child Retrieved 25th March 2017

Zaidman-Zait, A. (2008). Everyday problems and stress faced by parents of children with cochlear implants. Rehabilitation Psychology, 53(2), 139-152.