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Review Article

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INCIDENCE OF HEARING IMPAIRMENT AMONG CHILDRENPRESENTED WITH SPEECH-LANGUAGE DELAY

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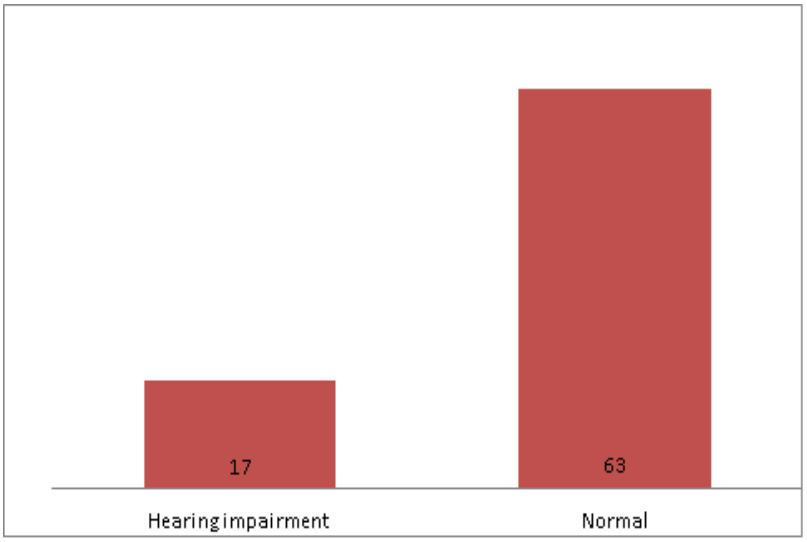
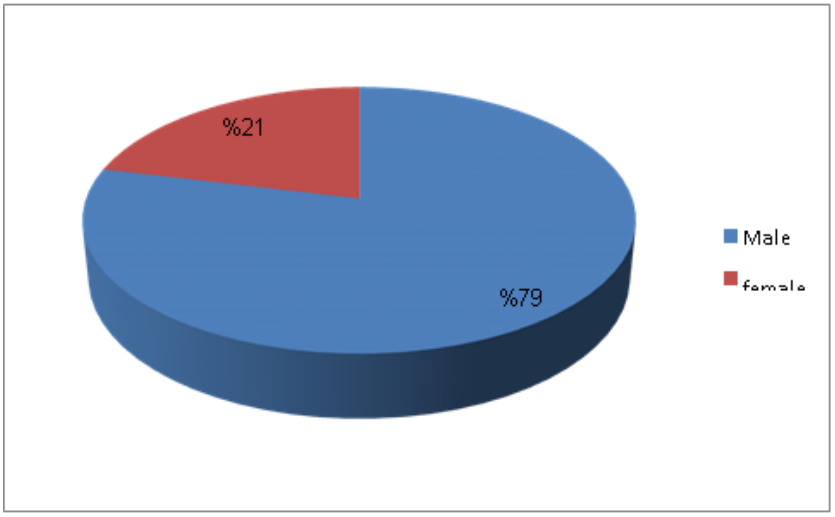
ABSTRACT

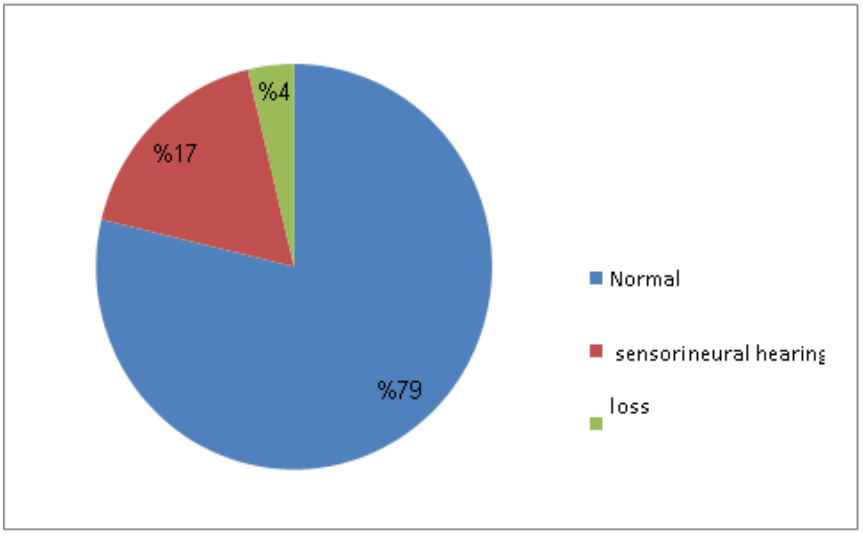
Aim of study: The purpose of this study was to assess the percentage of hearing-impaired children in a group of phenotypically healthy children presenting with speech-language delay. This will help in the early diagnosis of hearing loss, allowing proper management to be instituted asearly as possible. **Methods:** The study was conducted by evaluating 80 children in Misurata medical center with delayed speech with a mean age of two and half years up to 15 years. The guardians of these children were requested to answer a questionnaire. History of the child's morbidity pattern and the risk factors for speech delay were recorded. The child's developmental milestones were assessed and dysmorphic babies were excluded from our study. All children in our study underwent a thorough audiological examination consisting of clinical examination and auditory brainstem responses (ABRs) testing. **Results:** In our study, we found 17 patients (21.25 %) of all patients with delayed speech havehearing impairment. According to our findings, the children were classified into 3 groups; those with normalhearing levels (group I, 63 children, 78.75%), sensorineural hearing loss (group II, 14 children, 17.5.9%) and conductive hearing loss (group III, 3 children, 3.75% of those with sesorineural hearing loos, 12 patients was bilateral and two unilateral of those with conductive hearing loss, two patients was unilateral and one bilateral. In group II, 10 children suffered from profound hearing loss in both ears, 2 from severe, 1 had profound hearing loss in one ear and 1 severe No child had mild sensorineural hearing loss.) % All patients with hearing impairment are males (100 %). The children with profound hearing loss in at least one ear had total language impairment using no word at all (10 cases), or a maximum of two words (6 cases). When hearing loss was moderate to severe, then the speech vocabulary was confined to several words (more than two words-6 cases). Only two children suffering from conductive hearing loss both presented with complete lack of speech of those hearing impairment (17 children , sensorineural and conductive), 7 children theirfamily had concern that their child had hearing problem, the others 10 no. **Conclusion:** A great number of healthy pre-school children with speech delay were found to have normal hearing. In this case, the otolaryngologist should be aware of the possible underlying clinical entities, especially of psychiatric nature. The children with profound sensorineural hearing loss exhibited more severe speech delay than those with moderate to severe. Regardless of etiology, the early identification and intervention contribute to positive outcome in this critical period of childhood for language development. The results of this study highlight the importance of establishing and adopting low-cost procedures such as screenings to identify children at risk of developing language and/orhearing disorders in early childhood. Intact hearing in the first few years of life is vital to language and speech development. Hearing loss at an early stage of development may lead to profound speech delay. Hearing loss may be conductive or sensorineural. Conductive loss is commonly caused by otits media with effusion, malformations of the middle ear structures and atresia of the external auditory canal. Sensorineural hearing loss may result from intrauterine infection, Kernicterus, ototoxic drugs, bacterial meningitis, hypoxia and intracranial hemorrhage.

KEYWORDS: Prevalence, Risk factors, Speech and Language delay.

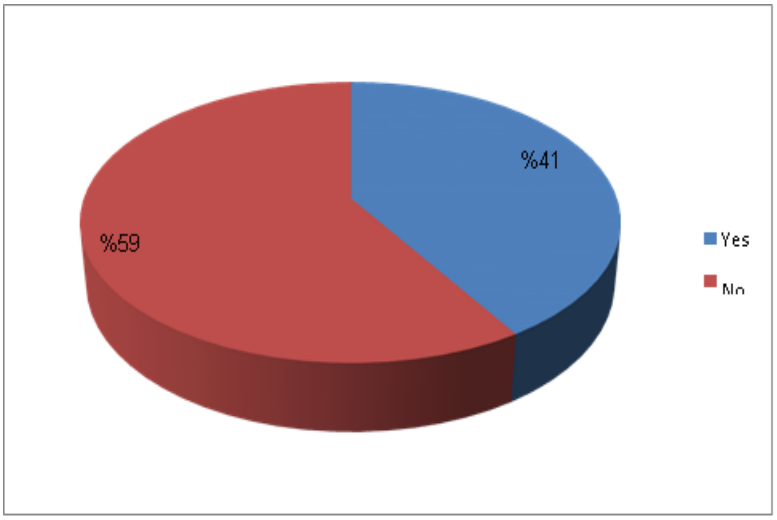




	Total	Bilateral	Unilateral
Sensorineural hearing loss	21	22	2
Conductive hearing loss	3	2	2



Family conceren about hearing impairment of those children with hearing loss.



DISCUSSION

Background: Developmental delay is diagnosed when a child does not attain normal developmental milestones at the expected age. Speech is the sound produced, while language is a measure of comprehension.The acquisition of intelligible speech and language is a useful marker for the child's overall development and intellect. Speech delay is defined as when the child's conversational speech sample is either more incoherent than would be expected for age or is marked by speech sound error patterns not appropriate for age.

Evidence implies that untreated speech and language delay can persist in 40%–60% of the children and these children are at a higher risk of social, emotional, behavioral, and cognitive problems in adulthood. Prevalence of speech delay has been difficult to estimate because traditionally there is a belief that speech delay may run in families and it is not a cause of alarm. Often a "wait-and-watch" policy leads to late diagnosis and intervention for speech delay. Primary care clinicians and family physicians are the first point of contact for children with speech and language delay. It thus becomes their responsibility to identify obvious. Speech and Language delay and address parental concerns.

Hearing loss is a well-documented etiology of speech delay. However, the causes of speech–language delay are compound and represent an intricate relationship between the biological development and social environment in which the child learns to speak.

In our study, we found 21.25 % all patient with delayed speech have hearing impairment. We found also that all patients with hearing impairment are males, which may needs further researches and investigations for detection of x-linked gen mutations as a cause of hearing impairment. Other studies have shown a higher incidence of speech–language delayin males and attributed it to the slower maturation of the central nervous system among boys and also by the influence of testosterone which stops cell death and makes proper connections difficult.

A number of medical factors related to language delay were assessed – hearing loss, persistent otitis media, seizure disorder, birth asphyxia, low birth weight, preterm birth, and physical (Oro-pharyngeal) deformity. Birth asphyxia, seizure disorder, and physical (Oro-pharyngeal) deformity were found to be statistically significant risk factors. The association between birth asphyxia and language delay has been well documented by other studies. Effect of epilepsy on speech–language has been reported by Mehta B et al. The hypoxic insult to the brain during a seizure could prove detrimental in various areas of development and can manifest as speech and language delay.

A positive family history of speech-reading disorders (Stuttering, unclear speech, late speaking, poor vocabulary, dyslexia) with the affected member being a first-degree relativehas been known to be associated with speech and language delay.

In our study we found that 59 % of patients with hearing loss, their parents have no concern about hearing impairment of their children, which means that hearing assessment should be applied to children with speech delay regardless to parents concern about their child hearing state.

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