

ABSTRACT

This statistical study was aimed to take a perspective over the factors which are significantly responsible for hearing impairment and directional hearing impairment then to model them to estimate the chance of hearing impairment and directional hearing impairment in the presence or absence of the risk factor's. For the fulfillment of the objectives, case-control study was designed in two hospitals of Lahore. A sample of total 250 subjects comprising 68 cases and 182 controls aged 12-85 years old with mean age of 37.32(17.69) were selected of which 144 were male and 106 were female. Data over 51 risk factors was collected from the subjects using predevised questionnaire and air conductive and bone conductive hearing impairment in both left and right ear of each subject was tested on pure tone audiometer (PTA) by the audiologists. A group of 51 risk factors were categorized into five subgroups named as, socio-demographic, onset symptomatic, clinical, noise and genetic risk factors. Percentages and count on each risk factor was used as descriptive analysis of hearing impairment status and directional hearing impairment (DHI). For the purpose of bivariate analysis of hearing impairment status and directional hearing impairment, Pearson's Chi-Square test and deviance were used. To test the main effects and the interaction effects of risk factors over hearing impairment status and directional hearing impairment, Multiple Logistic Regression Analysis was used over all risk factors simultaneously, socio-demographic, symptomatic, clinical, noise and genetic risk factors. Odds ratios of hearing impairment and directional hearing impairment for each risk factor were calculated. Finally It was found that marital status, qualification, profession, age, tinnitus, difficulty on phone, ask to repeat, ear fullness, ear bleeding, ear injury, diabetes, hypertension, typhoid, job environment, machine noise, occupational noise exposure, music noise, music noise exposure, music listening, music noise exposure, deaf relative, no of deaf relative and closeness of deaf relative are the significant risk factors of hearing impairment and directional hearing impairment.