

Gender and geographic differences in the prevalence of childhood hearing impairment: Analysis of data from the national disability registry of Taiwan, 2004-2010.

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ABSTRACT

Background: Childhood hearing impairment (CHI) is a major developmental disability, but data at the national level are limited. In Taiwan, the government maintains a registry of certified cases receiving disability benefits, which provides a rare opportunity for studying CHI at the national level.

Aims: Using the registry, we conducted a study to estimate the prevalence of CHI by age, gender, and geographic area and to assess changes over time between 2004 and 2010.

Methods: We obtained data on CHI cases under 17 years old. According to the criteria for receiving the benefits, a case should have a measured, unaided, pure-tone hearing impairment at frequencies of 0.5, 1 and 2 kHz in the better ear averaging 55 decibels or more and be confirmed as having CHI by an accredited otolaryngologist. In malingering or difficult-to-test cases, auditory brainstem response is used to evaluate the function of the auditory nerve.

Results: From 2004 to 2010, registered cases decreased from 4075 to 3533, but changes in prevalence were small, ranging from 7.62 to 7.91 per 10000, without a significant time trend. The prevalence increased over the years in the age groups < 3 years, 3-5 years, and 6-11 years ($p < 0.05$), from 2.26/10000 to 3.99/10000 in the < 3 years group in particular, but decreased in the 12-14 years and 15-17 years groups (p

< 0.05). The prevalence increased constantly with age each year ($p < 0.05$ in all years).

Boys had higher prevalence than girls in each year, and the prevalence rate ratio ranged from 1.07 to 1.11 ($p < 0.05$ in all years) without a significant time trend. Rural areas had higher prevalence than urban areas in each year, and the prevalence rate ratio ranged from 1.01 to 1.09, also without a significant time trend.

Conclusions: In Taiwan, the prevalence of CHI was higher in boys and in rural areas.

The prevalence in the < 3 years group had increased while the overall prevalence under 17 years old had little changes, indicating a trend of early diagnosis.