

School-age children's ear health and hearing loss in northern Saskatchewan

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Objectives: To explore rates of poor aural health and hearing loss in rural Saskatchewan communities, and to identify any associated demographic factors.

Background: Canadian physicians and hearing professionals are concerned high prevalence of ear infections and hearing loss in Indigenous and rural Canadians. As Saskatchewan hearing screening programs are in their infancy, and because pre-kindergarten screening programs are generally absent, there is the risk of missing hearing loss before children enter school. Hearing loss of any degree increases children's struggle to succeed in the classroom.

Methods: During the summer of 2019, the researchers gained permission to see children in grades 3 and 4 in elementary schools in Meadow Lake and Île-à-la-Crosse, Saskatchewan. A sample of 136 students completed otoscopy and hearing testing using clinically validated, iPad-based SHOEBOX Audiometers. Demographic data for each student was provided by the parents/guardians.

Results: Rates of initial hearing loss detection ranged from 17-30%, substantially higher than the 8.1% found in the general Canadian population of this age. Indigenous ethnicity was a significant predictor for abnormal hearing results. Abnormal otoscopy also predicted hearing abnormality, but this was overshadowed when ethnicity was included. The location of the participant was not a significant predictor for abnormal results, but at this time only rural participants took part. The researchers are hoping to obtain a sample from Saskatoon in September 2019.

Conclusions: Indigenous ethnicity and abnormal otoscopy were predictors for abnormal hearing results, as detected using portable SHOEBOX devices. Further sampling from urban settings is needed to determine significance of rural-urban differences. The high rate of hearing abnormality has important implications for acoustic, academic, and academic challenges of student, as well as the resources needed to better screen and intervene for aural problems in northern Saskatchewan.