

Ear abnormalities among children with fetal alcohol spectrum disorder: a systematic review and meta-analysis

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Introduction and Aims: Ear abnormalities have been reported in children with prenatal alcohol exposure (PAE) and fetal alcohol spectrum disorder (FASD), but their type and prevalence are not systematically described. We aimed to systematically review and conduct meta-analysis on studies that report the type and prevalence of functional and structural ear abnormalities among children with PAE and/or FASD.

Methods: MEDLINE, PubMed, Embase, Web of Science, PsycINFO, ERIC, CINAHL, and Maternity and Infant Care were searched from 1806 through March 2021. Reference lists of relevant articles were manually searched. Studies reporting on functional and/or structural ear abnormalities among children (less than 18 years) with PAE and/or FASD were eligible. Data extraction and quality assessment were performed by one reviewer and independently checked by another. Random-effects meta-analysis was conducted.

Key Findings: A total of 31 studies met inclusion criteria and 25 were included in the meta-analyses, representing a total of 843 children with PAE and 1653 children with FASD. Functional ear abnormalities with the highest pooled prevalence were chronic serous otitis media (88.5%, 95% CI 70.4-99.3%), abnormal auditory processing (71.6%, 95% CI 49.4-89.7%), and unspecified conductive hearing loss (68.0%, 95% CI 51.9-82.2%). Structural ear abnormalities with the highest pooled prevalence were microtia (42.9%, 95% CI 26.8-59.7%), railroad track ear (16.8%, 95% CI 8.1-27.7%), and misplaced ear (12.3%, 95% CI 7.6-17.9%).

Discussion and Conclusions: Our findings highlight the importance of examining the ears during assessment for FASD, and the need for public health messaging regarding the harms of PAE.

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