- **Name of the study:** Digit in Noise test as a hearing screening test for individuals with Intellectual Disability
- **Year:** 2023
- **Type of research:** research
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Abstract

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Decreased hearing among a population with a developmental intellectual disability is more common compared to the typical population. Despite this, this population is not sufficiently located and consequently not rehabilitated. The Digit in Noise test is a screening test that assesses speech perception in noise. Among the advantages of the test are that it is short, requires minimal linguistic knowledge, allows for transfer by a familiar person in the everyday environment, and is performed on accessible technological devices (cell phone, tablet, laptop).

The goals of the study were to evaluate the suitability of the three-digit test against a background of noise in different versions (3 or 2 digits, with or without feedback) for a population with a developmental intellectual disability and to examine whether there is a relationship between the test results and personal characteristics (cognitive and verbal abilities, age). 31 participants with mild-moderate intellectual disability aged 21-40 and 20 participants from the typical population at similar ages participated in the study. Participants with intellectual developmental disabilities were filtered by a digit recall task and only those who remembered at least two digits participated in the study. The participants performed a hearing screening test with an audiometer and a test "Perception of a trio of digits against a background of noise", in its different versions randomly. In addition, cognitive and verbal tests were administered. Also, a photograph

of the external ear was taken to assess the capabilities and characteristics of the participants.

main findings:

Participants with intellectual developmental disabilities had a more positive threshold (less good) than the control group, and two digits had a more negative threshold (better) than three digits. However, an interaction of number of digits and group showed that the improvement in threshold in the two-digit version was only in the results of the participants with intellectual disability and not in the control group. No feedback effect was found in both groups. A relationship was found between noise literature features and expressive vocabulary and age so that better (negative) features were associated with younger age and a higher score in vocabulary. The conclusion is that the "perception of a trio of digits against a background of noise" test can be suitable as a hearing screening test for a population with a developmental intellectual disability, with an adjustment that includes the use of two digits in the test (and no feedback).

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Keywords

Developmental intellectual disability, hearing screening, literature test against a background of noise, research.

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