

OTOACOUSTIC EMISSION SUPPRESSION AND SPEECH PERCEPTION IN NOISE EXPOSED TEENAGERS

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ABSTRACT

Introduction: Noise exposure has been associated with hidden hearing loss (HHL), a condition whereby there is functional deficit in hearing without deterioration of hearing sensitivity. Hidden hearing loss has been studied in college students and veterans, with the effect of noise exposure evident in the noise-exposed group. With younger individuals getting more exposed to noisy lifestyle, it needs to be explored if HHL is also present in this population.

Method: This study evaluates OAE suppression and speech recognition ability in noise of 8 teenagers age 13-17 years old with five subjects non-exposed group from secondary school located around Kuala Lumpur and three subject of noise-exposed group were recruited from the previous study.

Result: This is a preliminary study exploring HHL in only a small group of young individuals, but results showed that the noise exposed group had generally lower MOCB suppression with mean suppression of -1 dB (\pm 4.1) compared to non-exposed group with mean suppression of +1 dB (\pm 5.3) in the non noise-exposed group. The speech recognition in noise ability is also poorer in the noise-exposed group with threshold of -5.5 dBSNR (2.13) compared to non-exposed group with threshold -6.7 dBSNR (1.44).

Conclusion: The findings of this study suggest that younger individuals may be at risk to have HHL, possibly with long term negative impact on their quality of life. However, more in depth study on larger population is needed to confirm these findings.

Keywords: Hidden Hearing Loss, Cochlea Synaptopathy, Teenagers, Noise Exposure, Speech Recognition In Noise, OAE suppression

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