

Variation of the acoustic parameter harmonic-to-noise ratio in relation to different background noise levels [Variación del parámetro acústico harmonic-to-noise ratio en relación con distintos niveles de ruido de fondo]

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Introduction and objectives: Acoustic analysis is a tool widely used by professionals related to the study of voice that gives us information from a recording. It has been identified that in investigations carried out today that involve acoustic analysis, the recording process takes place in rooms with different levels of background noise. The objective of this study is to establish whether the acoustic parameter harmonic-to-noise ratio (HNR) varies in relation to the different background noise levels of the premises where the recording is made and recommend a maximum level of background noise. Methods: Through the Praat programme, the average value of the acoustic parameter HNR of 43 subjects was obtained, inside the audiometric booth of the Universidad Autónoma de Chile, whose background noise level is 28.1 dB(A) and it was compared with the HNR average values obtained with higher background noise levels. Results: The HNR average values decreased from 19.8 to 14.0 dB(A) as the background noise level of the premises increased from 28.1 to 57.8 dB(A). The t-test for dependent samples was performed, with which the HNR average values obtained were compared with the baseline background noise level (28.1 dB[A]). Significant differences were found with the baseline background noise level when the room noise level was higher than 47.7 dB(A). Conclusions: The background noise of the premises where the voice recording for the acoustic analysis is performed, influences the value of the acoustic parameter HNR, which decreases as the background noise of the premises increases. It is recommended that the background noise level should not exceed 43.8 dB(A). © 2020 Sociedad Española de

Otorrinolaringología y Cirugía de Cabeza y Cuello

Acoustic analysis

Background noise

Harmonic-to-noise ratio

Praat

Voice

acoustic analysis

acoustics

adult

article

Chile

clinical article

controlled study

female

human

human experiment

male

noise

voice