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Due to the high prevalence of voice disorders among teachers, there is a growing interest in monitoring voice during lessons. However, the reliability of the results is still to be deepened, especially in the case of repeated monitorings. The present study thus investigates the speech Sound Pressure Levels (SPL) variability under repeatability conditions aiming to provide preliminary normative data for the results assessment.

In a semi-anechoic chamber, 17 subjects read twice and subsequently two phonetically-balanced passages, which were simultaneously recorded with a sound level meter, a headworn microphone and a portable vocal analyzer. Each speech sample was characterized through the distribution of SPL occurrences and several descriptive statistics of SPL distribution were calculated. For each subject, statistical differences between the two SPL distributions related to each passage were investigated using the Mann-Whitney U-test. For each group of subjects using the same device, the Wilcoxon signed-rank test was applied to the paired lists of descriptive statistics related to each passage.

For mean, mode and equivalent SPL, the within-speaker and the within-group variability were assessed for each device. For all the devices and SPL parameters, the within-speaker variability was not higher than 2 dB while the within-group variability reached 5.3 dB.

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