Abstract

Objectives: To characterize the objective voice parameters among school workers, and to identify associated factors of three objective voice parameters, namely fundamental frequency, sound pressure level and maximum phonation time. Materials and methods: We conducted a cross-sectional study among 116 Colombian teachers and 20 Colombian non-teachers. After signing the informed consent form, participants filled out a questionnaire. Then, a voice sample was recorded and evaluated perceptually by a speech therapist and by objective voice analysis with praat software. Short-term environmental measurements of sound level, temperature, humidity, and reverberation time were conducted during visits at the workplaces, such as classrooms and offices. Linear regression analysis was used to determine associations between individual and work-related factors and objective voice parameters. Results: Compared with men, women had higher fundamental frequency (201 Hz for teachers and 209 for non-teachers vs. 120 Hz for teachers and 127 for non-teachers) and sound pressure level (82 dB vs. 80 dB), and shorter maximum phonation time (around 14 seconds vs. around 16 seconds). Female teachers younger than 50 years of age evidenced a significant tendency to speak with lower fundamental frequency and shorter mpt compared with female teachers older than 50 years of age. Female teachers had significantly higher fundamental frequency (66 Hz), higher sound pressure level (2 dB) and shorter phonation time (2 seconds) than male teachers. Conclusion: Female teachers younger than 50 years of age had significantly lower F0 and shorter mpt compared with those older than 50 years of age. The multivariate analysis showed that gender was a much more important determinant of variations in F0, spl and mpt than age and teaching occupation. Objectively measured temperature also contributed to the changes on spl among school workers.

Keywords

Voice complaints, Objective voice analysis.