ACOUSTIC ANALYSIS OF TEACHERS' VOICE THROUGHOUT A WEEK:
- EFFECTS OF VOCAL LOADING AND REST -

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INTRODUCTION

Teachers have particularly high vocal demand. There is a significant prevalence of voice problems in this population because of their occupational vocal loading. Previous studies observed the voice across a working day (Jonsdottir, Laukkanen, & Vilkman 2002; Laukkanen, Ilomaki, Leppanen, & Vilkman, 2008) or a working week (Kostyk & Rochet, 1996; Rantalai, Vilkman & Bloigu 2002) of teachers. They showed an increase of the fundamental frequency (FO) and the sound pressure level (SPL), and a decrease of the jitter % and shimmer % due to vocal loading.

THIS STUDY

examines the voice evolution during a complete week, including the weekend. The aim is to determine the evolution of several vocal acoustic parameters after 5 teaching days (vocal loading) and after the weekend (vocal rest)

METHOD

Subjects 48 kindergarten and primary school teachers (38 females; 10 males) between 22 and 64 who were evaluated at 3 different times

1st Monday AM  
Friday PM  
2nd Monday AM

Vocal Load  
working week : 29% of teaching/5days

Vocal Rest  
weekend

Tasks  
On the sustained vowel [a], we evaluated

FO A  
SPL A  
Jitter %  
Shimmer %  
Noise-to-Harmonics Ratio (NHR)

On a reading text, we evaluated

FO T  
SPL T

RESULTS

F0 A : No Significant effect of Time
FO T : F(2,94) = 4,0565, p < .05
Contrasts method: 1st Monday = 2nd Monday < Friday

SPL A : Time effect : F(2,94) = 6,2952, p < .05
Contrasts method: 1st Monday < Friday = 2nd Monday

SPL T : No Significant effect of Time

Jitter % :
Time effect : F(2,94) = 4,0556, p < .05
Contrasts method: 1st Monday = 2nd Monday > Friday

Shimmer % : No Significant effect of Time

NHR : No Significant effect of Time

Discussion

The vocal load of a working week in teachers induces:
- a rise of FO T and SPL A
- a decrease of Jitter %
In accordance with previous studies

The weekend vocal rest allows:
- a decrease of FO T
- a rise of Jitter %

REFERENCES


Annual Meeting of the Belgian Association for Psychological Sciences (Brussels, 28th May 2010)