Voice Impact of a Prolonged Reading Task at Two Intensity Levels: Subjective Self-Ratings

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1 Questions

How does the subjective self-ratings of voice vary with the duration of vocal load?
How does the subjective self-ratings of voice vary with two different intensity levels of vocal load?

2 Methods

Subjects: 50 normophonic♀ (25.4 years)
VLS examination excluding pathologies

Loading task: 2-hour reading task
Test: reading at low intensity level (between 60 and 65 dB)
Retest: reading at high intensity level (between 70 and 75 dB)

3 Protocol

For each reading session, serial sets of subjective self-ratings are carried out:

| T0 (Before) | T1 (After 30 min) | T2 (After 1 h) | T3 (After 1 h 30) | T4 (After 2 h) |

Data analyzed using a 100-mm horizontal visual analog scale:
Voice Quality
Phonation Effort
Vocal Fatigue
Laryngeal Discomfort

Statistics:
Repeate ANOVA (Duration x Intensity) where the subjects are used as their own controls
Simple ANOVA is used to analyze if there are significant differences between the 4 rating scores, at each time

4 Results

Voice Quality:
Duration effect (F=55.66, p<.0001)
No Intensity level effect
Interaction effect (F=4.88, p<.001)

Phonation Effort:
Duration effect (F=98.56, p<.0001)
No Intensity level effect
No interaction effect

Vocal Fatigue:
Duration effect (F=130.55, p<.0001)
No Intensity level effect
No interaction effect

Laryngeal Discomfort:
Duration effect (F=93.19, p<.0001)
No Intensity level effect
No interaction effect

Simple ANOVA
No significant difference between the 4 ratings, except at T0 for the low intensity level (F=4.95, p=0.002):
Voice Quality ≠ Phonation Effort (p=.0012)
Voice Quality ≠ Vocal Fatigue (p=.032)

5 Conclusions

Effects of the duration:
Subjects’ self-ratings significantly worsen throughout the reading tasks.

No effect of the intensity level:
Subjects do not report more complaints in the high intensity session than in the low intensity one.

No differences between the 4 self-ratings, except at T0 for the low intensity session.
That may suggest that one rating would suffice in the future for studying the impact of vocal loading.

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