

CORRELATION BETWEEN PARAMETERS DESCRIBING VOICE AND TEMPOROMANDIBULAR DISORDERS WITH PATHOLOGICAL ACTIVITY OF EXTRINSIC LARYNGEAL MUSCLES IN TEACHERS.

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Aim. The aim of this study was to find out the probably relationship between existence of temporomandibular disorders (TMD) symptoms and clinically detected voice emission abnormalities in occupationally active teachers.

Sources and methods. Twenty eight women with TMD symptoms (pain and acoustic symptoms in temporomandibular joint, mouth opening limitation, masseter muscle tenderness and trigger points existence) were examined once. Voice handicap index (VHI) and voice emission characteristics (fonation time, fundamental frequency, jitter, shimmer, noise to harmonic ratio) were determined. Surface electromyography (sEMG) recordings from supra- and infrahyoid muscles were performed in the same subjects during text reading, at rest and during maximal contraction. Videostroboscopy in all cases was performed.

Results. Positive correlations between existence of temporomandibular disorders symptoms and poor VHI score as well as voice emission disturbances were found ($r_s=0.72$, $P=0.03$; $r_s=0.78$, $P=0.02$). Increased muscle tension of extrinsic laryngeal muscles during sEMG recordings at rest correlated negatively with motor units activity during maximal contraction ($r_s=-0.75$, $P=0.001$). Changes in voice emission parameters correlated positively ($r_s=0.84$, $P=0.02$) with abnormal sEMG recordings at rest.

Conclusions. Results of this study may confirm the hypothesis about the influence of TMD on voice emission abnormalities in occupationally active teachers. Pathological activity of extrinsic laryngeal muscles especially at rest may have been the far effect of TMD influence. Clinical relevance of this study may include introducing the relaxation procedures towards masseter, supra- and infrahyoid muscles additionally to the conservative phoniatic treatment to improve the voice emission in teachers.