

INVESTIGATING THE ROLE OF SALIVARY CORTISOL ON VOCAL SYMPTOMS

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The objective in the present study was to investigate whether participants who showed higher salivary cortisol levels more often reported occurring vocal symptoms. Of interest was also to investigate if such possible associations were different for men and women. Psychological stress and elevated cortisol levels due to life stress influence well-being and have a connection to a variety of health issues. It has been shown that stress may be one of the risk factors for vocal symptoms. A functioning voice is an essential part of well-being and a dysphonic voice influences quality of life. Based on research results regarding stress and voice we hypothesized that the occurrence of vocal symptoms and cortisol levels would have a positive association.

The participants ($N = 170$; men $n = 49$, women $n = 121$) consisted of a population-based sample of Finnish twins born between 1965 and 1989. The participants submitted saliva samples for hormone analysis and completed a web-questionnaire including questions regarding the occurrence of six vocal symptoms during the past 12 months. These vocal symptoms were; *Voice becomes strained or tired*, *Voice becomes hoarse or low in pitch*, *Voice breaks while talking*, *Difficulty in being heard*, *Throat clearing or coughing while talking* and *Sensation of muscle tension or a lump in the throat*. The participants reported how often these vocal symptoms had occurred by (*daily, weekly, less frequent or never*). The vocal symptoms were analyzed separately as well as a composite variable. The association between level of cortisol and occurrence of vocal symptoms was analyzed using the Generalized Estimated Equations (GEE) method. This method takes into account the dependent structure of family data.

A composite variable of the vocal symptoms showed a significant positive association with salivary cortisol levels. Three of the six vocal symptoms were significantly associated with the level of cortisol when analyzed separately. Participants who reported more often occurring vocal symptoms showed higher cortisol levels. The results showed no gender difference regarding the effect of salivary cortisol on vocal symptoms.

There was a positive association between the occurrence of vocal symptoms and salivary cortisol levels. Participants with higher cortisol levels reported more often occurring vocal symptoms. This could have a connection to the influence of stress on the occurrence of vocal symptoms since stress is a known risk factor of vocal symptoms and salivary cortisol can be seen as a biomarker for stress.