An Introduction to the Teacher's Voice in a Biopsychosocial Perspective

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Vocal Health

The voice is a key tool for professional voice users. Voice disorders may cause a significant communication handicap for voice professionals [1]. Voice problems are frequently observed in teachers, due to the high demands of their vocal performance [2]. In this light, professional voice disorders are a relevant occupational safety and health issue [3, 4]. An adequate voice is the result of individual possibilities in interaction with the environment with its specific demands and possibilities. The teaching conditions may affect voice, whereas individual-bound factors may increase the susceptibility to voice problems. Many factors interact in a dynamic way in the pathogenesis of voice problems in teachers. The WHO considers health as a multidimensional concept which encompasses physical, mental and social states of being. The WHO presented a classification of health and health-related domains in the International Classification of Functioning, Disability and Health (ICF) [5]. The notions of 'health' and 'disability' are put in a new light by the acknowledgment that every human being can experience a decrement in health and thereby experience some degree of disability. The WHO recognizes the experience of disability as a universal human experience. Furthermore, the WHO shifted the focus from cause to impact. In this way, all health conditions are compared using a common

metric – the ruler of health and disability. The WHO continues: ICF takes into account the social aspects of disability and does not see disability only as a 'medical' or 'biological' dysfunction. By including contextual factors, in which environmental factors are listed, ICF allows to record the impact of the environment on the person's functioning. In this light, health can be considered as a condition of total physical, mental and social well-being and not only the absence of disease. Health implies function, that can be considered in three domains: impairment, disability and handicap. Impairment means restriction of function (lesion, physiological disorder). Impairment may result in restriction of activity, called disability. Disability may lead to a handicap by restriction of participation in the social context. This indicates that vocal health should be taken as a specific multifactorial issue.

Factors That Influence Vocal Health

The factors that influence vocal health include voice loading, physical factors, environmental factors, psychoemotional factors, and personality.

Voice loading is an important risk factor for developing voice problems [6–13]. Vocal discomfort and fatigue, and dysphonia can be caused by physical factors such as

increased muscular tension [14–17]. The breathing pattern can be negatively influenced by false body posture, that may result in reduced voice capacity [18]. Mechanical load by intensive voice use and mucosal problems such as upper airway infections and allergy may negatively affect the condition of the mucosa and enhance voice problems [19, 20]. A classroom environment with dust, vapors, dryness, humidity and variations of temperature is a voice-straining factor, leading to increased vocal load [21–23]. Additionally, mucosal problems can be caused by allergies and hypersensitivity [24], and exposure to children who frequently develop upper respiratory infections [19]. Classrooms with poor acoustics and background noise cause teachers to raise their voice and consequently, voice load is increased [11, 25]. Moreover, speech intelligibility is negatively affected [13]. Apart from physical effort, professional voice also requires great mental effort and psychoemotional factors are thought to be a considerable risk for developing and persisting voice problems [19, 20, 26–32]. Personality plays a role in handling the demands of a professional voice and has been related to voice and other disorders [6, 26–28, 33–36]. In addition, many professional voice users are very ambitious, driven, and self-demanding perfectionists [10, 30]. This raises the question whether these persons have a specific personality and if there are specific occupational stress and specific occupational demands.

The various factors that have an impact on vocal health may exert a different influence on the voice and may influence each other. Voicing with adverse psychoemotional factors can increase vocal load [26]. Psychosocial factors such as emotions and stress can increase muscle tension, that may lead to voice problems [27, 33]. A psychological reaction to an organic problem may cause a voice problem that exceeds the organic impairment [37]. Stress was reported to contribute to somatic problems and has been associated with increased laryngeal muscle tension [28, 31].

Social Security with Regard to Vocal Health

In various countries, professional voice disorders are not accepted as an occupational disease, while it is shown that voice problems in professional voice users are a relevant issue [3, 4, 38]. Voice problems of teachers often become chronic [19]. Inability to continue the job may occur if the voice problem is severe and the professional voice user cannot do his job properly or communicate ef-

fectively [29, 34, 39]. This leads to decreased social security. Social security is the objective of occupational safety and health programs [40]. However, it may be stated that the impact of professional voice disorders is undervalued and occupational safety and health of teachers is not a serious item in various countries [4, 41]. The relationship between voice problems and risk factors must be clear, in order to develop adequate occupational safety and health in voice professions [3, 4]. The impact of a voice problem on an individual's well-being depends on how the problem is appraised [42, 43]. Therefore, it is relevant to assess the degree of handicap and the risk factors for voice problems in subjects with voice complaints and those with a voice handicap [6].

Vocal Health in a Biopsychosocial Perspective

In medical practice, voice problems are usually approached from a biomedical point of view. This implies a focus merely on the organic and physiological aspects of the problem. In this way, disease, disability and handicap are not distinguished. This hinders adequate diagnosis, treatment and prevention. Therefore, vocal health should be approached in a multidimensional way. Engel [44–46] presented the biopsychosocial model as an extension of the biomedical model. In this biopsychosocial perspective, physical, mental and social factors determine vocal health in a continuously interactive way. It links organic and psychological factors in a social context. For example, on the one hand, coping strategies are linked to personality and on the other hand, they play an important role in adaption to the situation. Adequate coping strategies influence therapy outcome and consequently the quality of life of the individual [31]. It should be stressed that the approach of establishing an adequate coping style should be individually tuned. A tailored, unique profile of the individual with his voice problem should be created.

The Aim of the Pertinent Special Issue on the Teacher's Voice in a Biopsychosocial Perspective

In this special issue on the teacher's voice in a biopsychosocial perspective several recent research and expert opinions are presented. In the first article, Bermúdez de Alvear et al. report on their investigations into the impact of teachers' voice disorders on their psychosocial work conditions. The impact of voice disorders on teach-

ers' job relations and occupational health is described. In the second article, Gassull et al. link stress and voice problems in their study on the influence of the reactivity to stress in teachers with voice problems. The biopsychosocial impact of the voice in relation to coping strategies in teachers is assessed by Van Wijck-Warnaar et al. in the third article. In the fourth article, Meulenbroek et al. report on their investigations into the effect of trainee periods in relation to voice handicap, coping style and psychosomatic well-being in female student teachers. These

are three main domains in vocal health. In the fifth article, Niebudek-Bogusz et al. connect subjective rating of voice handicap with objective voice parameters. The last three articles focus on treatment. Ziegler et al. reviewed the literature on the behavioral treatment of voice disorders in teachers. In an expert opinion, Van Opstal presents a systematic holistic integrative process of self-control for voicing with optimal coping effects in teachers. Principles and concepts of cognitive-behavioral sciences are applied.

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