**AWARENESS OF THE GENERAL POPULATION ABOUT VOCAL VOICE HYGIENE**

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Dear reviewer,

Thank you for pointing out the errors.

In accordance with the remarks of the reviewer, I corrected the paper.

With respect

Violeta Bilinac

**Reply to reviewer's first comment**

In accordance with the remarks of the reviewer, I corrected the indicated errors.

Vocal hygiene (VH) includes taking care of the voice, and it starts with noticing the factors that affect the voice, namely those whose influence is negative (smoking, talking or singing loudly, etc.), and those whose influence is positive (regular sleep rhythm, healthy diet , good mental and psycho-physical condition, etc.). Vocal hygiene is a process that is adopted through education and practice, and it needs to be constantly practiced in everyday life. In this way, preventive action is taken to preserve the voice, and it is also achieved in obtaining an optimal and relaxing voice, which is also important for people who are not vocal professionals. The best way to prevent voice disorders is to properly implement vocal hygiene. It involves recognizing improper vocal behavior and its negative impact on the phonation apparatus, removing symptoms or correcting forms of behavior so that they have as little negative impact on the voice as possible, and correcting working conditions that make normal phonation difficult and cause voice strain. If we follow the rules of vocal hygiene, we will reduce the risk of voice disorders that are common among all people, especially those who use their voice professionally, such as teachers, singers, etc. Due to the high phonatory requirements, vocal education and vocal hygiene are extremely important to the population of vocal professionals and represent a basic prerequisite for vocal health and efficiency, i.e. at the same time they ensure a long and successful career. Vocal education should be an integral part of the education of a vocal professional, where a developed awareness of one's own voice, knowledge of the basics of anatomy and physiology of the vocal apparatus, vocal hygiene and vocal techniques are a prerequisite for a long and successful professional activity. It is not necessary to emphasize how much fewer patients with voice disorders would be in the conditions of conducting vocal education, and within the framework of nonformal education for calls that include a certain vocal activity. There is almost no literature in the field of vocal education, let alone workshops, seminars and other forms of informal education. If there are any, then they are most often of a closed type, therefore, inaccessible to the general public.

**Reply to another reviewer's comment**

In accordance with the remarks of the reviewer, I corrected the indicated errors.

The research used a questionnaire on vocal hygiene taken from the project "Indicator of the quality of life related to the voice", which was standardized at the Center for Voice Health at the University of Michigan. There is an agreement for use of this questionnaire for scientific purposes. The questionnaire consists of 33 questions about voice disorders. The respondent had the task of circling one of the three offered answers (correct, I don't know, incorrect). Respondents also filled in general information about themselves (gender, age, education, smoking status). In this survey, out of a potential 33 points on the questionnaire, the minimum number of points was 9, while the respondent with the maximum number had 29 points. For the analysis of the obtained results, the method of non-experimental research based on a sample survey of respondents was applied. Respondents who achieved a higher score on the questionnaire showed that they had better information about vocal hygiene. Descriptive statistics measures were used to determine the structure of the sample - arithmetic mean, standard deviation, standard deviation error, frequencies and percentages. To examine the significance of differences, the t-test for independent samples and one-factor analysis of variance - ANOVA were used. The results are shown below.

Control variables are: gender, age, education, and smoking status. The dependent variables are the answers given by the respondents to the questions in the questionnaire.

**Answer to the reviewer's third and fourth comments**

In accordance with the remarks of the reviewer, I corrected the indicated error and deleted the sentence, there was not a single respondent aged 50-60.

**Response to reviewer's fifth comment**

In accordance with the remark of the reviewer, I corrected the error during the typing of the paper. p<.05 - p>05

**Reply to reviewer's sixth comment**

In accordance with the remark of the reviewer, I deleted the sentence that there was not a single respondent belonging to the age range of 50-60 years**.**

**Answer to the reviewer's seventh, eighth, ninth comment**

In accordance with the remark of the reviewer, I expanded the discussion and corrected the indicated errors.

Vocal hygiene refers to taking care of the voice, it implies adequate behaviors that protect our voice. Adults, especially vocal professionals must consciously follow the guidelines of vocal hygiene, but when it comes to children, parents and other adults in their environment must be a good role model or example of how to use their voice healthily. Education and timely awareness about voice hygiene by the speech therapist-vocal therapist and other members of the medical team is the first step in the prevention and treatment of voice disorders. The goal of our research was to determine the level of awareness of the general population about voice disorders. It was determined to what extent respondents were informed about voice disorders by looking at the differences in information among different groups of respondents. Based on the presented results and the application of appropriate statistical methods, the hypotheses were either accepted or rejected. The results of the research were based on a questionnaire filled out by 80 respondents from the general population, 62.5% were women, while the rest were men. The first hypothesis in this paper assumes that there are no statistically significant differences between men and women in the level of information about voice disorders. Based on the application of the t-test for independent samples, no statistically significant differences (p>05) were obtained between male and female subjects on the variable of awareness of voice disorders.

Based on this, we can conclude that both genders are equally informed about voice disorders. The second hypothesis assumes that respondents of different ages are equally informed about voice quality. Based on the application of one-factor analysis of variance (ANOVA), no statistically significant differences (p>05) were obtained between respondents of different ages (20-30, 30-50) on the variable of awareness about voice disorders. Based on this, we can conclude that respondents of different ages are equally informed about voice disorders. The third hypothesis assumes that respondents with a higher level of education are more informed and aware of voice disorders than respondents with a lower level of education. Based on the application of one-factor analysis of variance (ANOVA), no statistically significant differences (p>05) were obtained between respondents of different levels of education on the variable of awareness of voice disorders. Based on this, we can conclude that respondents of different levels of education are equally informed about voice disorders and that the third hypothesis was not confirmed. The fourth hypothesis assumes that there are statistically significant differences in the level of information about voice quality in relation to smoking status. Based on the application of the t-test for independent samples, no statistically significant differences (p>05) were obtained between smokers and non-smokers on the variable of awareness of voice disorders. Based on this, we can conclude that smokers and non-smokers are equally informed about voice quality and that the fourth hypothesis is not confirmed. Smoking leads to changes in resonator, articulatory and respiratory structures, which lowers the basic laryngeal tone. Smoking can also lead to organic changes in the vocal cords. The mucous membrane becomes swollen and thicker, so the mobility of the vocal cords decreases. Research related to voice hygiene focuses mainly on two areas:

a) voice hygiene as a preventive strategy

b) voice hygiene as a method of treating people with voice disorders

It is difficult to evaluate the effectiveness of voice hygiene as a preventive tool, as research and screening programs are often expensive, leading to limited data. Voice hygiene as the only strategy for the treatment of voice disorders has shown minimal but favorable results. As a component of a comprehensive therapeutic program, it is difficult to highlight its influence. However, certain components of vocal hygiene, including hydration and vocal rest, have been associated with improved treatment outcomes.

In addition, contemporary literature suggests changing the approach to maintaining voice health by moving from taxative and stricter behavioral approaches to therapy to a holistic approach. Voice hygiene should be considered only as a component of a broad voice rehabilitation program. The goal of one of the studies was to critically evaluate the latest peer-reviewed scientific data on the impact of vocal hygiene training on voice quality and function. Data were obtained by direct or indirect measurement of auditory perception, acoustics and self-reporting of professional voice users. In this study, a systematic review was performed using systematic review and meta-analysis protocols. Five databases were searched using the keywords "voice hygiene", "teaching voice hygiene", "voice health", "voice quality" and "tone quality". The study included twenty-three studies that met the selection criteria. Four studies associated low voice hygiene awareness or insufficient voice hygiene training with self-reported acute and chronic voice symptoms, as well as greater perception of voice problems among professional voice users. Numerous studies have shown that adequate voice placement or voice hygiene instruction is associated with positive voice outcomes. However, six studies have shown that teaching voice hygiene is more effective when combined with direct speech therapy. When voice hygiene training is performed in isolation, there is a clear superiority of a direct approach to voice therapy, with or without voice hygiene training, over a voice hygiene training program alone (indirect treatment). Research in the field of voice hygiene is specific and focused on finding concrete solutions. It is generally accepted that hydration and rest are beneficial for the voice; recent research supports this assumption. Research suggests that vocal, speech and otolaryngology experts need to pay more attention to voice treatment. It is necessary provide accurate medical diagnosis and specific recommendations for singers. The greater the complexity of the vocal tasks that are put before a person, the more it is necessary to take care of the voice carefully and in a structured way. In the past, voice hygiene had a negative connotation; a more positive and supportive approach to voice care is recommended. The conducted research on the awareness of the general population about vocal hygiene of the voice can be the basis for further research in order to gain the best possible insight into the awareness of citizens about vocal hygiene and voice disorders in order to obtain data that would be more credible and to could be generalized to the wider population.

**Response to reviewer's tenth comment**

In accordance with the remark of the reviewer, I deleted the eleventh reference and put another one in its place. I also added four new references to the paper.