

# Kuwaiti Teachers' Perceptions of Voice Handicap

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**Summary: Objectives.** The study aimed to investigate the effects of age, gender, level of education, experience, and class level taught on the perception of voice handicap by Kuwaiti teachers using the Arabic version of the Voice Handicap Index (VHI-Arab). The mean VHI scores of Kuwaiti teachers were compared with those of Jordanian and Emirati teachers.

**Methods.** The study had a cross-sectional survey design. A total of 460 individuals (100 controls and 360 teachers) participated in this study and completed the paper copy of the VHI-Arab. We recruited 360 teachers, 180 males and 180 females (age range: 20–50 years), from 60 schools in 6 Kuwaiti districts. Teachers' VHI scores were compared with 100 nonteaching voice users (50 males and 50 females, with an age range of 18–42 years).

**Results.** Female teachers scored significantly higher than male teachers in all subscales (ie, physical:  $P = 0.02$ ; emotional:  $P = 0.007$ ; total:  $P = 0.017$ ), except for the functional subscale ( $P = 0.147$ ). Elementary school teachers scored significantly higher than teachers of other levels (middle and high school) in all VHI subscales (physical:  $P = 0.047$ ; emotional:  $P = 0.01$ ; total:  $P = 0.039$ ), except for the functional subscale ( $P = 0.47$ ). The mean score of Jordanian teachers was higher than that of Kuwaiti and Emirati teachers in all VHI subscales.

**Conclusions.** Teachers with a more favorable teaching environment scored better on the VHI. Gender differences were found in all the Arabic nationalities studied. Female teachers of the elementary level, in particular, should be the focus of attention of efforts to prevent voice damage.

**Key Words:** Occupational voice users–Occupational health–Perception of handicap–Teachers–Voice Handicap Index (VHI-Arab).

## INTRODUCTION

### Teachers as occupational voice users

Teachers are considered to be occupational voice users. As they use their voices continuously over extended periods of time, they have to speak loudly, project their voices, and manipulate their voice tone.<sup>1–5</sup> Because of their excessive use of voice and the demands of their profession, teachers often abuse their voice, and thus they have a strained, tired, or hoarse voice.<sup>1–9</sup> Therefore, teachers may be at risk for developing voice disorders.<sup>10,11</sup>

The literature showed that research has been focused on comparing the representation of voice disorders between teachers, as occupational voice disorders, and nonteachers. For example, Roy et al<sup>6</sup> found that teachers had a higher prevalence of voice disorders than nonteachers. Teachers also had a higher prevalence of dysphonia and abnormal acoustic features than nonteachers.<sup>12</sup> Further, the acoustic and perturbation measures of teachers changed (higher fundamental frequency [F0], sound pressure level, and lower jitter and shimmer) during the working day.<sup>13</sup>

### Gender and voice disorders

Gender was one major differentiating factor within the group of teachers. Russell et al<sup>14</sup> found that female teachers were more

prone to be affected by voice disorders than male teachers. Similarly, Laukkanen et al<sup>13</sup> found that female teachers experienced more throat fatigue than male teachers after the working day. Differences between males and females are most probably due to anatomic and physiological differences.<sup>6,14</sup> For example, a shorter, smaller cross-sectional mass and a higher tension of the female vocal folds produce higher F0s, which renders female voice users more prone to voice disorders.<sup>15</sup>

### Voice Handicap Index (VHI) as a method of self-assessment of voice handicap

In addition to the classical assessment methods using acoustic and aerodynamic measures, other methods of assessment of voice handicap have evolved, such as the VHI, established by Jacobson et al.<sup>16</sup> The World Health Organization's International Classification of Functioning, Disability, and Health<sup>17</sup> states that a handicap is a limitation in an individual's activities arising from a disorder and the personal, social, and environmental factors that may change the *individual's perception* of this disorder.<sup>17,18</sup> The VHI has been introduced as a tool to assess peoples' perception of their voice handicap. It is a self-assessed questionnaire that consists of 30 questions clustered under three subscales, that is, physical, functional, and emotional.<sup>16</sup> Using the VHI allows individuals to assess the perception of their voices by how voices affect their lives.<sup>16</sup>

The VHI gives a valid and reliable indication of the clients' perception of their voice disability and can be used as a measure of a clients' quality of life resulting from the disability.<sup>19</sup> The VHI is also used to compare perceptions of voice pretreatment and posttreatment<sup>20–25</sup> and to compare voice characteristics before and after phonosurgeries.<sup>26–28</sup> The VHI has been widely used to determine whether professional voice users (teachers in particular) perceive their voice as handicapped.<sup>16,29,30</sup>

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VHI has been translated into multiple languages. Some of these VHI translations are available in different languages, such as German,<sup>31</sup> Portuguese,<sup>32</sup> Polish,<sup>33</sup> Swedish,<sup>34</sup> and Arabic.<sup>30</sup> The Arabic version of the VHI (VHI-Arab) has been used as a tool to examine Jordanian<sup>29</sup> and Emirati teachers' perception of their voices.<sup>35</sup> The latter studies suggested that exceeding a cutoff score in VHI-Arab is an indicator of a perception of voice handicap. Thus, this tool could be used in clinical settings with traditional acoustic and aerodynamic measures to formulate more reliable clinical decisions.

### The aim of the study

Because Kuwait is considered a separate demographic and geographic area, studying Kuwaiti teachers' perception of voice handicap is an important step toward reaching a comprehensive paradigm concerning the perception of voice handicap in the Arab region. Kuwaiti teachers have never undergone such an investigation before. This may pave the way toward identifying factors that may increase the perception of voice handicap and the ways to counteract them. The investigation could also assist in identifying the level of awareness and knowledge of Arab teachers (across different Arab countries) of factors related to preserving vocal health and avoidance of other factors that can be deleterious. The level of involvement of speech pathologists can also be identified, and the level of care provided by schools to teachers can be explored. In addition, the current study may shed light on the teaching circumstances and measures taken by the educational systems to promote a sense of satisfaction among teachers. Thus strategies to increase and promote awareness and knowledge about occupational voice health can be identified, and other strategies that can decrease the level of perception of voice handicap among teachers can be delineated.

The current study aimed to compare responses using the VHI-Arab between elementary, middle school, and high school teachers and a control group. Teachers' age, gender, level of education, experience, and student level taught were used as covariates to be tested. In addition, this study aimed to compare mean scores on functional, physical, emotional, and total scores of the VHI-Arab among Kuwaiti, Emirati, and Jordanian teachers. The hypothesis was that there is a difference between the VHI scores between the Kuwaiti teachers and the control group and that gender has a significant effect on VHI scores.

## METHODOLOGY

### Participants and procedure

A cross-sectional survey design was employed in this study, and the method of sampling was convenience sampling. Concerning the case group, six schools from each of the following Kuwaiti districts were chosen at random (Ahmadi, Capital, Hawalli, Jahra, Mubarak Al-Kabeer, and Farwaniya). The teacher:student ratio varied from school to school, ranging from 1:19 to 1:35. Teachers who participated in this survey had different teaching loads, ranging from teaching 6 to 20 hours per week depending on the teaching disciplines. Teachers from various age levels, education levels, years of teaching experience, and student levels taught were invited to participate in the study. The study was conducted

in the middle of the first semester to nullify the effect of fatigue occurring at the end of the semester versus the effect of vocal rest at the beginning of the semester. A convenience sample was used as a control group. Subjects in the control group were not occupational voice users. They self-reported that they did not suffer any medical problem that may affect their voice production at the time of data collection.

The translated and validated paper version of the VHI-Arab by Saleem and Natour<sup>30</sup> was used in this study. Written formal consent before participation was required, and participants were informed that they had the right to withdraw from participation at any point without any consequences.

A convenience sample of 10 teachers from each school was selected to participate in the study. They were approached through the principals of the schools after we had explained the aims of the study and presented them with the Ministry of Education formal ethical approval to conduct the study. The teachers were then approached at their free time (break time or free classes) and asked to provide their formal written consent to participate in the study after the aims and rationale had been explained to them. They were then handed the paper copy of the VHI-Arab and were asked to complete it and then return it.

### Inclusion and exclusion criteria

Only participants who gave their informed consent voluntarily to participate were included in this study.

Both the experimental and the control groups were required to be free of vocal or respiratory complaints. This was determined by the method of self-report where participants were asked whether they had laryngeal or respiratory infections or whether they had been hospitalized for such reasons.

### Statistical analysis

Data were analyzed using *SPSS Version 22.0* (2016, IBM Corporation, Armonk, NY). For the statistical analyses conducted in the study, an alpha value of 0.05 was predetermined as the level for significance.

A test of analysis of variance was conducted to compare the control group scores with the teachers' scores on the three subscales of VHI-Arab (physical, functional, and emotional) and in the total score of the test to determine whether there were significant differences between the two groups. A multivariate analysis of variance was conducted to determine whether there were significant differences in teachers' scores on the three subscales of VHI-Arab (physical, functional, and emotional) and in the total score of the test across gender, age, level of education, years of experience, and level of students taught.

For comparison purposes, the cutoff scores for VHI-Arab subscales and total score were adopted from the study conducted by Marie et al<sup>29</sup> as follows: physical = 7.34, functional = 7.6, emotional = 3.71, and total score = 16.55.

## RESULTS

The following subsections present the demographic data of participants and the results of the statistical analysis of the effect of factors (ie, group [case-control], gender, level of students taught, educational level, age, and level of experience) on VHI scores.

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