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How to Measure and Interpret the Singing Voice Handicap Index In Opera Singers

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ABSTRACT

We can emphasize that the impact of voice disorders in professions where the voice is an occupational tool is two- sides. They not only have a negative effect on the quality of life o those who suffer from them, but they also have consequences in our society with additional health care expenses (Verdolini & Raming , 2002).

Voice problems negatively affect job performance and about 23% of singers have been reported to miss workdays because of voice problems.

*Voice disorders, often known by the generic name dysphonia when caused by laryngeal pathology, convey the presence of a poor functioning of the voice in its most general aspects. The different types of dysphonia can be classified as: organic, functional and psychiatric. Voice professionals especially tend to present *nodular lesions, (fusiform edema, vocal cord nodules or serous pseudocysts); *hyperfunctional or hypofunctional dysphonia. All of these lesions are due to prolonged or inappropriate use of the voice. Dysphonia is a pathological process that is very common among voice professionals and presents significant work-related, economic, social and cultural problems.*

KEYWORDS : voice disorders, opera singers, VHI, phoniatry, dysphonia, vocal symptoms

Introduction

The importance of the voice as an occupational tool in a number of professions today is so clear and everyday facing problem.. Singers, actors and teachers have traditionally been seen as professional heavy voice users. During the last decades several studies have been devoted to the use of the voice as a tool of the trade for a large number of other occupations(Coyle,Weinrich, &Stemple, 2001; Fritzell, 1998; Titze, Lemke, &Montequin, 1997; Herrington-Hall, Lee, Stemple, Niemi, &Mchone, 1999).

Among all the professions mentioned in these studies as heavy voice users there are, lawyers, teachers, telephone operators, priests, counselors, ambulant sellers.

Although, the classical opera singing is a type of profane music, which requires long training, the right posture, the right position of body and legs, frequency of respiration, dominance of vocal projection and vocal quality, the performance quires a complex of skills, if not well executed, may favor the development of vocal alterations and cause handicaps to the singer, with quality of life consequences.

However, the social significance of dysphonia in singers is not only related to sick leave, but also the fact that a dysphonic voice causes a feeling of insecurity, a lack of authority a change in personality and the isolation of the artist.

Measuring the impact of singing voice problems (SVHI - Singing Voice Handicap Index) from the patient's perspective will facilitate evaluation and management of patients who sing. The Singing Voice Handicap Index (SVHI) was developed to assess patients' perception of the severity of their voice disorder. Self-assessment protocols help to determine the impact of a voice problem in the life of an individual. The most popular self-assessment protocol for this matter is the Voice Handicap Index (VHI). However, this instrument is not sensitive to the evaluation of singers. It is mandatory the history of singer, full examination of larynx, vocal fold motility and vidoelaryngostroboscopy.

Measuring and evaluating the results of Singing Voice Handicap Index in classical singers, it is a challenge for the otolaryngolog, because it is a complex procedure. Even more to correlate these scores with the videolaringostroboscopy requires good knowledge and practice on this field.

The Aim of this study is:

•• to determine which handicaps are produced by a vocal problem and whether there are any relations to gender, age, vocal classification or total singing duration, through the application of VHI , only for singers, named SVHI, in Tirana for our classical singers. The other aim of this study was to determine the degree of handicap expressed by professional and recreational presenters with a voice complaint.

•• to develop a model of early intervention which includes a voice screening test and group voice therapy for singers with mild voice disorders.

Method: Singers of State Opera were voluntary recruited (n = 104) to self-administrate the questionnaire of SVHI. Voice symptoms were studied. All of them undergo the program of Vocal Hygiene Habits. Singers with symptoms undergo the resonant voice therapy for 6 weeks (3 times per week). After these procedures all the singers re-administrated the SVHI questionnaire. The SVHI it is adapted version of protocol developed by the phoniatrist Franco Fussi - comprises 30 items, divided into three subscales:

Disability,
Handicap
Impairment.
Disability corresponds to the functional domain and refers to the impact of voice disorders in professional activities;
Handicap corresponds to the emotional domain and relates to the psychological impact of voice problems;

Impairment corresponds to the organic domain, associated with self-perception of characteristics of vocal emission. In the original protocol, each subscale consists of ten items which are answered through a Likert scale of 4 points.

The adapted scale consists of 5 points, where
0 corresponds to never,
1 corresponds to almost never,
2 to sometimes,
3 almost always,
4 always.

The scores for each subscale for each individual are found through simple summation of raw scores, which could total 40 points, within each domain. The responses of the severity of each subscale were summed to obtain the total score for each individual with a maximum total of 120 points being that *the higher the score, the greater the severity of voice handicap.*

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The sample was composed of 104 classical opera singers, whose average total ASVHI score was 15.12 points. This value represents 12.6% of a total of 120 points.The sample was divided into two groups according to the presence of vocal complaints or symptoms. Data analysis showed that 29 choristers (27%) presented at least two vocal complaints and/or more vocal symptoms, whereas 75 choristers (73%) had no complaints or less than two vocal symptoms. 36.36% of participants from the group without vocal complaints reported symptoms, being the most mentioned: fatigue (22.72%) and itch (6.81%). All participants from the group with vocal complaints reported symptoms: tiredness (76.47%), dryness (41.17%), and pain (35.29%).

TABLE 2. IDCC scores according to vocal classification and group (with and without vocal complaints).

			Mean	Standard Deviation	p-Value
disability	Without complaint	Bass	1	1	0,552
		Baritone	3	3,35	
		Mezzo	2,63	0,92	
		Soprano	2,67	2,74	
		Tenor	3,7	3,5	
	With complaint	Baritone	5,25	3,2	0,064#
		Mezzo	12,5	3,54	
		Soprano	15,29	7,43	
		Tenor	12	3,61	
Handicap	Without complaint	Bass	1,67	2,89	0,649
		Baritone	1,17	1,83	
		Mezzo	2,88	4,19	
		Soprano	1,07	1,22	
		Tenor	1,7	2,67	
	With complaint	Baritone	2,25	2,06	0,098#
		Mezzo	6	1,41	
		Soprano	10	7,83	
		Tenor	9	6	
impairment	Without complaint	Bass	3,67	5,51	0,503
		Baritone	5	2,83	
		Mezzo	5,13	4,16	
		Soprano	2,87	3,76	
		Tenor	4,9	4,38	
	With complaint	Baritone	7,5	4,43	0,252
		Mezzo	16	1,41	
		Soprano	13,71	7,41	
		Tenor	12,33	5,69	
TOTAL	Without complaint	Bass	6,33	9,29	0,415
		Baritone	9,17	5,91	
		Mezzo	10,63	7,54	
		Soprano	6,6	6,64	
		Tenor	10,3	7,26	
	With complaint	Baritone	15	8,29	0,072#
		Mezzo	34,5	0,71	
		Soprano	39	21,25	
		Tenor	33,33	15,01	

Regarding the comparison between genders, statistically significant difference was observed only for the subscale of Disability of the group with vocal complaints ($p = 0.044$) - women presented a higher score than men. No statistical differences were found among vocal classifications for all IDCC scales, such for the group with as for the group without vocal complaints .

Results: SVHI for classical singers indicate that singers score after the implementation of Program of Vocal Hygiene were significantly lower (less severe) on the SVHI, compared to the same singers before . Singers who perform classical music for 3 hours/day had the lowest mean SVHI of the other singers, who use their voice for more than 4 hours /day. In the absence of vocal complaints, younger and with less total singing duration individuals perceive highest vocal handicap index. The V.H.I adapted to the classical professional singers, appears to be reliable, valid and measure the right patient's perspective.

The prevalence of voice disorder is increasing with the age of singer and were more frequent in age group 49-59 years. A surprising result of our study was that no significant difference in the prevalence of adverse vocal symptoms was in male versus female singer.

Regular voice screening test should be offered to singers in order to select artists for medical examination and voice therapy. These findings are congruent with the assumption that classical singers are more likely to experience and/or notice subtle voice changes and suffer disability from them, which suggests that they should always consult the laryngologist and stay in close with phoniater also.

Discussion: The literature addressing the impact of vocal alterations in singers - especially classical opera singers - is still scarce.

It was observed that opera singers reported good voice as well as low voice handicap related to singing (12.6%). This is probably due to the demands of opera singing and the training required by this type of singing, which features a non-significant impact on their quality of life. However, it is verified that singers with vocal complaints have more symptoms and perceive more handicap related to singing ($p < 0.001$) due to their voice problem. Such handicap, although not signifying a vocal alteration itself, can point an unsatisfactory vocal performance in singing activity. Differences between professional and amateur singers, popular and classical singers can be observed both in speech 1,8 as in singing voice. Moreti et al.9 investigated the voice handicap of amateur choristers.

Several authors have addressed the importance of the prevention of voice disorders among those who work in vocally demanding occupations such as singers. Speech therapist should be included in health care team, of the occupational health care units in order to facilitate preventative voice care for artists.

We recommend two types of prevention. Primary prevention refers to elimination of something that might cause a voice disorder, for example to stop smoking, or jelling, or screaming, as to prevent future voice disorders. Secondary prevention involves early detection and the right treatment of voice disorders.

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