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Psychosocial Assessment of Voice Problems among Saudi Imams

Mohamed Farahat[1,2] and Tamer A. Mesallam[1,2,3*]

[1]Department of Otolaryngology, Head and Neck Surgery, King Saud University, Riyadh, Saudi Arabia.
[2]Department of ORL, Research Chair of Voice, Swallowing and Communication Disorders, College of Medicine, King Saud University, Riyadh, Saudi Arabia.
[3]Department of Otolaryngology, College of Medicine, Menoufia University, Shebin Alkoum, Egypt.

Authors' contributions

This work was carried out in collaboration between both authors. Author MF designed the study, wrote the protocol, managed literature search and shared in writing the manuscript draft. Author TAM performed statistical analysis and shared in writing the manuscript final draft. Both authors read and approved the final manuscript.

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ABSTRACT

Background and Objective: Imams, who lead prayers for Muslims, are considered among professional voice users. They have high vocal demand during their prayer times, Khutbah, and educating sessions for Muslims. The aim of this study is to explore the prevalence of voice disorders in Imams and to analyze their psychosocial aspects in relation to their profession using the Arabic Voice Handicap Index.
Setting and Design: This is a cross-sectional study.
Subjects and Methods: Arabic Voice Handicap Index-10 (A-VHI-10) and a general voice questionnaire were administered to 93 Imams and 82 control subjects from Riyadh city, Kingdom of Saudi Arabia. A-VHI-10 scores were compared between both Imams and the control group. Also, A-VHI scores of Imams were compared considering different variables included in the general questionnaire.
Results: Sixty-five percent of Imams reported voice-related problems. The A-VHI-10 showed

**Corresponding author: E-mail: tmesallam@ksu.edu.sa;*

significant difference between Imams and the control group for both total score and the three VHI domains; functional, physical, and emotional. However, there was no significant difference between VHI-10 scores of the Imams group when compared considering different job-related variables.

Conclusion: Sixty-five percent of Imams included in the study reported to have voice-related problems. There is a significant difference between Imams and control subjects regarding their self-perception of voice handicap. However, it appears that some psychosocial aspects of Imams' profession have no significant impact on their voice quality.

Keywords: VHI-10; professional voice users; voice problems.

1. INTRODUCTION

It has been reported that about one-third of the labor force works in professions in which voice is considered the primary tool. Accordingly, voice problems are a common condition in the general population, and are even more common in certain occupations in which a large voice demand is required especially those working in environment with additional voice-loading factors such as background noise and poor room acoustics [1].

Several studies focused on the prevalence of voice disorders among voice care professionals like teachers, and singers. In most of these studies, data have been collected through questionnaires and the prevalence of symptoms varies from 12% to 26% depending on the population and the method used [2-4].

The Imam leads other Muslim prayers in the congregational prayer that are performed 5 times a day in mosques. In three out of these 5 prayers, Imams have to read verses from the Holly Quran in a loud voice that makes other prayers follow him. In addition to these vocal demands during prayers times, some of the Imams read the Khutbah (the lesson delivered in the mosque at weekly "usually Friday" and annual rituals). Although either duty can be performed by anyone who is considered as qualified by the congregation, at most of well-established mosques, Imam Khatib is a permanent (part-time or full-time) position. He may be elected by the local community, or appointed by an outside authority e.g., the national government, which sustains the mosque [5]. To the best of our knowledge, there are no published studies that investigated voice problems in Imams or callers for prayer.

2. THE AIM OF THE STUDY

The aim of this study was to explore the prevalence of voice problems among Imams in Riyadh city through studying the association between VHI scores and different factors believed to have an influence on voice.

3. MATERIALS AND METHODS

The Research Center, Medical College, King Saud University, and its ethical committee approved this cross-sectional survey study. Two questionnaires, the Arabic VHI-10 and a general voice questionnaire were distributed to a random sample of 93 Imams in Riyadh city. The sample was selected from different regions in Riyadh city. Inclusion criteria were; Imams who were actively participating in prayers, Friday sermon (Khutbah), and teaching lessons for public people in Mosques. The Arabic VHI-10 and the general voice questionnaire were self-administered by Imams through volunteers who personally distributed the questionnaires on them.

The general questionnaire was developed by the authors based on their experience in addition to other similar reports used in many studies investigating professional voice disorders [6-12]. The variables in the general voice questionnaire that were addressed in this study were classified under five main categories: (1) demographic data and living habits including social status data, age, sex, marital status, and number of offspring; (2) work experience characteristics that affect voice demand including years of experience and whether the subject had teaching assignments (3) impact of voice problems on their career including frequent absenteeism from praying (attend but not leading prayers), thinking of leaving the Imam's career; (4) voice-related symptoms including change in voice, choking, and voice fatigue; and (5) impact of awareness of voice hygienic instructions on their career.

Nonparametric tests were used for comparing different variables included in the general questionnaire and the Arabic VHI-10 scores.

Mann-Whitney test was used for comparison between the VHI-10 scores of Imams and control subjects, while Kruskal-Wallis test was applied for comparison between VHI-10 scores of Imams considering more than two variables. The statistical Package for the Social Sciences, version 22 (SPSS Inc, Chicago, IL), was used for all statistical analyses. The level of significance was set at $p \leq 0.05$.

4. RESULTS

The study included 93 male subjects working as Imams with an age range from 15-65 years old and 82 male control subjects with a an age range from 15-60 years old working in different professions with no history of voice-related problems. Sixty Imam (65%) participated in this study reported a change in their habitual voice. As shown in Table 1, on comparing the VHI-10 results between Imams and control subjects, there was significant difference ($P < 0.0001$) demonstrated between the 2 groups regarding the total VHI score as well as the three domains (functional, physical, and emotional).

4.1 Demographic Data and Living Habits

No statistical significant difference was demonstrated on comparing the VHI scores of Imam subjects based on their age groups, marital status classification, or number of offspring (Table 2). Similarly, there was no statistical significant difference revealed on comparing the VHI scores of Imam subjects based on their habits including loud voice and smoking (Table 3).

4.2 Work Experience Characteristics

No statistical significant difference was demonstrated on comparing the VHI scores of Imam subjects based on their work characteristics including, duration of work experience and previous teaching experience if available (Table 4).

4.3 Impact of Voice Problems on Imams' Career

No statistical significant difference was demonstrated on comparing the VHI scores of Imam subjects based on the effect of voice problems on their career including frequent absenteeism and thinking of leaving the job (Table 6).

4.4 Voice Related Symptoms

No statistical significant difference was demonstrated on comparing the VHI scores of Imam subjects based on their feeling of voice-related symptoms including, change of voice character, voice fatigue, choking, sore throat, throat dryness, and globus sensation (Table 5).

4.5 Voice Hygiene

No statistical significant difference was demonstrated on comparing the VHI scores of Imam subjects based on their awareness of vocal hygienic instruction or having extra vocal activities (Table 7).

5. DISCUSSION

Professional voice users include not only singers and actors, but also any person who earns his living using his voice like teachers, receptionist, sales representatives, lawyers, physicians and any other person whose life will be negatively affected with the loss of voice quality and endurance [13]. In Arab countries, Imams (leaders) who lead Muslims in prayers and Khatib (preacher) who reads sermon and sometimes gives awareness sessions for Muslims are considered one of the professional voice users.

This is the first study in the Kingdom of Saudi Arabia and even in the Arab countries to investigate voice problems in this selective population. Ninety-three Imams from Riyadh city in the Kingdom of Saudi Arabia were surveyed in this study by filling up the Arabic Voice Handicap Index-10 and a general questionnaire. Imam subjects had significantly higher VHI-10 scores when compared to the control group considering the total score as well as the score of the three subdomains (physical, functional and emotional). This indicates the self-perception of voice handicap by Imams when asked to evaluate their voices and also signifies the impact of Imams' profession on voice quality. From the general questionnaire, 65% of Imams participating in this study reported change of their habitual voice. This percentage is greater than other results reported in previous related studies investigating the prevalence of voice disorders in different non-Imam professional voice users [2,3,8,9,11, 14,15].

This study included a group of Imams with different ages ranging from 15 years to more than 65 years. All of them were males, as this is

a male job in Muslim countries, 12% of them were single and the rest were married with different numbers of offspring. There was no significant difference when comparing VHI scores of different age groups of Imams included in this study. This result matches the findings of other related studies that investigated risk factors and effects of voice problems among teachers [3,16]. Also, there was no significant difference between voice problems in Imams considering either marital status or number of offspring.

Because of the religious background of this job, only 4 Imams stated that they are smoking, with no significant difference between them and the rest of the group when comparing their VHI scores. However, we noticed that 40 Imams (43%) were using a loud voice during their praying time and their conversation. This signifies the importance of having a proper counseling for such group to preserve their voice.

Although years of experience were found as an important contributing factor to vocal dysfunction in teachers [3,17], this study showed no significance difference between the different groups of Imams when VHI scores were compared considering years of professional experience. This is because all of Imams, either in the prayers time or during Khutbah, are using microphones during the sermon, so the cumulative effect of prolonged voice use has no major role on their voice.

The results of the current study revealed that Imams who reported current voice-related complaints didn't show significant higher VHI scores when compared to Imams without voice-related complaints. Nevertheless, Imams who reported frequent absenteeism (16%) and those thinking of changing careers (19%) didn't show significant higher VHI scores when compared to the rest of the studied group. This is inconsistent with the findings that were reported by Sapir and colleagues, Russell and colleagues, and Smith and colleagues, who found that more than one-third of teachers with voice problems missed work as a result of voice problems [2,12,18]. Teachers could suffer more during their teaching, as they usually don't use microphones in the classes. Also, the cumulative effect of successive sessions may negatively affects the voice of teachers when compared with the short un-successive sessions that Imams perform.

Table 1. Comparison of the VHI scores between Imams and control subjects

	Imam (n. =93) mean (SD)	**Control (n. =82) mean (SD)**	***P.***
Functional	4.38 (5.84)	1.57 (1.55)	< 0.0001
Physical	1.63 (2.22)	.60 (0.99)	< 0.0001
Emotional	.86 (1.82)	.23 (0.61)	< 0.0001
Total	6.86 (9.33)	2.41 (2.37)	< 0.0001

Table 2. Comparison between VHI results of Imams based on the demographic data

	n. (93)	**Mean**	**SD**	***P.***
Age				Kruskal Wallis
15-30	26	9.38	12.76	0.08
31-40	30	5.50	7.63	
41-50	27	6.85	8.18	
51-60	5	5.00	5.57	
>60	5	2.40	4.34	
Marital status				Mann-Whitney
Single	11	15.00	16.12	0.75
Married	82	5.80	7.76	
Number of off springs				Kruskal Wallis
0	4	9.95	13.86	0.35
1	20	7.13	8.20	
1-3	24	5.47	7.23	
>3	45	3.00	4.76	

Table 3. Comparison between VHI results of Imams based on the habits that could affect their voices

	n. =93	Mean VHI	SD	*P.*
Smoking				
Yes	4	7.03	9.51	Man-whitney test (0.46)
No	89	2.40	4.34	
Loud voice				
Positive	40	7.54	10.61	Man-whitney (0.7)
Negative	53	5.83	7.46	

Table 4. Comparison between VHI results of Imams based on variables of work experience characteristics

	n.=93	Mean VHI	SD	*P.*
Experience duration				Kruskal-Wallis test (0.41)
<5 years	26	9.38	12.76	
6-10 years	34	5.66	7.71	
>10 years	33	5.87	7.45	
Teaching				Man-whitney test (0.57)
Positive	28	7.02	10.05	
Negative	65	6.28	7.72	

Table 5. Comparison between VHI results of Imams based on voice-related symptoms

	n.=93	Mean VHI	SD	*P.*
Throat dryness				
Positive	18	6.95	9.94	Man-whitney test (P=0.3)
Negative	75	6.16	6.71	
Sore throat				
Positive	12	7.29	9.83	Man-whitney test (P=0.77)
Negative	81	3.69	4.64	
Frequent throat clearing				
Positive	12	7.29	9.83	Man-whitney test (P=0.6)
Negative	81	3.69	4.64	
Globus				
Positive	11	7.21	9.79	Man-whitney test (P=0.18)
Negative	82	3.92	4.90	
Voice fatigue				Man-whitney test (P=0.45)
Positive	20	6.90	8.10	
Negative	73	6.75	9.73	
Choking				Man-whitney test (P=0.56)
Positive	4	7.03	9.51	
Negative	89	2.40	4.34	
Change of voice				Man-whitney test (P=0.33)
Positive	60	7.37	10.26	
Negative	33	5.76	7.54	

Table 6. Comparison between VHI results of Imams based on impact of voice disorders on their career

	n.=93	Mean VHI	SD	*P.*
Frequent absenteeism				
Yes	15	4.13	5.26	Man-whitney test (P=0.31)
No	78	7.35	9.88	
Thinking of leaving Imam career				
Yes	18	4.47	7.96	Man-whitney test (P=0.28)
No	75	7.28	9.51	

Table 7. Comparison between VHI results of Imams based on impact of voice hygiene on their career

	n.=93	Mean VHI	SD	*P.*
Awareness of voice hygiene				
Yes	38	6.07	7.64	Man-whitney test (P=0.78)
No	55	7.26	10.33	
Extra vocal activities				
Yes	31	5.87	10.79	Man-whitney test (P=0.28)
No	62	7.25	8.51	

Although one third of Imams included in this study reported extra vocal activities in the form of extra teaching sessions or teaching Muslims to recite the Holy Quraan, their VHI scores didn't show significant difference when compared to Imams who have their routine regular sessions with no extra voice activities. Surprisingly, 59% of Imams included in this study were not aware of vocal hygiene advices. However, their VHI scores didn't show significant difference when compared to the rest of Imams who were aware about vocal hygiene advices. This could be explained by the low number of Imams who reported voice-related symptoms and not feeling much handicapped by their voice problems.

6. CONCLUSION

Voice problems appear to be a prevalent condition among Imams in Saudi Arabia. Imams have significantly higher VHI scores compared to control subjects. However, there appears that some psychosocial aspects of Imams' profession have no significant impact on their voice quality.

CONSENT

The authors declare that a written informed consent was obtained from all subjects participated in this study.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Vilkman E. Voice problems at work: A challenge for occupational safety and health arrangement. Folia Phoniatr Logop. 2000;52(1-3):120-5.
2. Russell A, Oates J, Greenwood KM. Prevalence of voice problems in teachers. J Voice. 1998;12(4):467-79.
3. Malki KH, Mesallam TA. Psychosocial assessment of voice problems among Saudi teachers. Journal of otolaryngology - head & neck surgery = Le Journal d'oto-rhino-laryngologie et de chirurgie cervico-faciale. 2012;41(3):189-99.
4. Tepe ES, Deutsch ES, Sampson Q, Lawless S, Reilly JS, Sataloff RT. A pilot survey of vocal health in young singers. J Voice. 2002;16(2):244-50.
5. Kasmira A. Imam Khatib [Online]. Wekipedia. Available:https://en.wikipedia.org/wiki/Imam_khatib_(Sunni_Islam)
6. Smith E, Lemke J, Taylor M, Kirchner HL, Hoffman H. Frequency of voice problems among teachers and other occupations. J Voice. 1998;12(4):480-8.
7. Sodersten M, Granqvist S, Hammarberg B, Szabo A. Vocal behavior and vocal loading factors for preschool teachers at work studied with binaural DAT recordings. J Voice. 2002;16(3):356-71.
8. Roy N, Merrill RM, Thibeault S, Parsa RA, Gray SD, Smith EM. Prevalence of voice disorders in teachers and the general population. J Speech Lang Hear Res. 2004;47(2):281-93.
9. Roy N, Merrill RM, Thibeault S, Gray SD, Smith EM. Voice disorders in teachers and the general population: Effects on work performance, attendance, and future career choices. J Speech Lang Hear Res. 2004;47(3):542-51.

10. Yiu EM. Impact and prevention of voice problems in the teaching profession: Embracing the consumers' view. J Voice. 2002;16(2):215-28.
11. Smith E, Gray SD, Dove H, Kirchner L, Heras H. Frequency and effects of teachers' voice problems. J Voice. 1997; 11(1):81-7.
12. Smith E, Kirchner HL, Taylor M, Hoffman H, Lemke JH. Voice problems among teachers: Differences by gender and teaching characteristics. J Voice. 1998; 12(3):328-34.
13. Sataloff RT. Professional voice users: The evaluation of voice disorders. Occup Med. 2001;16(4):633-47, v.
14. Kooijman PG, Thomas G, Graamans K, de Jong FI. Psychosocial impact of the teacher's voice throughout the career. J Voice. 2007;21(3):316-24.
15. De Jong FI, Kooijman PG, Thomas G, Huinck WJ, Graamans K, Schutte HK. Epidemiology of voice problems in Dutch teachers. Folia Phoniatr Logop. 2006; 58(3):186-98.
16. Chen SH, Chiang SC, Chung YM, Hsiao LC, Hsiao TY. Risk Factors and Effects of Voice Problems for Teachers. J Voice; 2009.
17. Sarfati J. [Vocal retraining of teachers]. Rev Laryngol Otol Rhinol (Bord). 1989; 110(4):393-5.
18. Sapir S, Keidar A, Mathers-Schmidt B. Vocal attrition in teachers: Survey findings. Eur J Disord Commun. 1993;28(2):177-85.

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