

Awareness of Medical Survey among School Teachers in Jeddah, Saudi Arabia

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Abstract

The study aims to evaluate the awareness level regarding the importance of medical survey among a sample of school teachers in public and the private sectors. The study has investigated the presence of Otolaryngologic diseases including Dysphonia among teachers. A cross-sectional sample was selected from different parts of Jeddah city to enroll the elementary, intermediate, and the high school teachers. There were more than 800 schools; however, the study has selected 26 schools only. The study was conducted during the academic year of 2014. The awareness about medical survey among public awareness is of paramount importance in the detection, management, and planning of health related problems. The study has depicted less than acceptable participation from the school teachers regarding the awareness and management of health problems, and more efforts have to be made to educate the public sectors about the importance of the medical survey.

Keywords: Jeddah, medical survey, school teachers, Otolaryngologic diseases

1. Introduction

The medical survey is an important part of healthcare management as it aims to plan and monitor the treatment strategy regarding a disease condition. Otolaryngologic diseases; including sinusitis, allergy, deafness, and voice disorders, are common among different groups of the society. For the teachers, voice disorders have been known as a major occupational hazard, and patients are found at greater risk of developing voice disorders. Different studies have shown an increased prevalence of vocal dysfunction among the school teachers (Van Houtte et al., 2011; Roy et al., 2004; Sliwinska-Kowalska et al., 2006; De Jong et al., 2006). The intense and prolonged use of voice, inefficient phonation techniques, and speaking in a noisy environment by the teachers are the main causes of the increased prevalence rate of otolaryngologic diseases among them (Van Houtte et al., 2011). As compared to the non-vocal professionals, the susceptibility of teachers to edema, nodules, aphonia, and polyps has been increased.

The factors associated with vocal problems have been assessed using the highly specific populations. Voice problems limit the job performance of the teachers and negatively affect their job and career options in the future. The cumulative use of voice for many years has been identified as risk factor for developing otolaryngologic diseases. Since teaching a large group of students requires increased vocal efforts; therefore, a number of students in the classroom have shown to be significant (Kooijman et al., 2006). The risk of developing voice disorders among teachers has increased due to bad acoustic forces in the classroom and abundant background noise that forces them to speak loudly. The mucosa gets irritated due to unfavorable working conditions; such as smoke, dust, dry air, and temperature changes that influence voice of the teachers negatively.

Dysphonia has been considered as multi-factorial that adds complexity to the environment, which is not easy to manipulate. The adverse consequences of voice disorders affect the ability of teachers to function in the classroom. It also prevents them to develop an effective working association with the students as well as other staff members. Severe and non-treatable voice disorders may even result in leaving the profession permanently. However, the functional voice disorders have been linked with pharyngolaryngeal reflux and vocal fold nodules. It has also been revealed that there is a strong correlation between stress, psycho-emotional factors, and voice disorders. Moreover, emotions tend to affect the production of voice negatively among sensitive and emotional persons (Kooijman et al., 2006).

Dysphonia has been manifested in auditory and proprioceptive vocal symptoms that are likely to occur at different intensities. A certain production of vocal quality is required by the professionals (teachers) to develop and maintain exercise of their daily activity. A study conducted by Lima-Silva et al. (2012) stated that teachers are at higher risk of developing dysphonia. Although, the frequency of reported symptoms is higher; the majority of the teachers are satisfied with their voices. It is believed that vocal alteration can be perceived adequately without any effective measures. Majority of the studies have indicated an association between the life of teachers and vocal self-perception of dysphonia that relates to the symptoms of vocal disorders (Bassi et al., 2011; Pereira Gomes de Morais et al., 2012; Medeiros et al., 2016). The vocal alterations have been associated with limitation in daily activities that involve utilization of vocal cords. Bassi et al. (2011) stated positive association between degree and type of dysphonia, suffered by teachers through otolaryngologic evaluation. The physical and vocal fatigue of the teachers is justified through the increased physical demand and generation of operational strategies.

The changes in acoustic analysis revealed the positive association between working hours, allergy, and reflux along some subclinical findings and pathological lesions (Hamid et al., 2014). The present study has contributed to find the awareness and knowledge among teachers regarding the development of voice disorders that might help in the development of preventive programs for reducing the effect and severity of otolaryngologic disorders among teachers. Moreover, the study has provided appropriate information regarding the vocal problems as it has included teachers without subjective complaints.

1.1 Problem Statement

The evaluation of vocal symptoms among teachers needs attention due to the excessive vocal demand at work that triggers voice aggravation and disorders. There is no legal recognition of the correlation between work and vocal disorder despite increased risk to the health of the teachers. Moreover, the true incidence of Otolaryngologic diseases among teachers in Saudi Arabia is not clear. There is lack of researches to investigate whether teachers get proper knowledge about the physiology of their voice, use of vocal hygiene, and vocal techniques during their training. Therefore, this study has aimed to identify the propagating factors; such as premorbid conditions, work environment, and work load that leads to the development of such diseases.

1.2 Aim of the Study

The study has aimed to provide an in-depth analysis and awareness about different factors that result in voice disorders among the teachers. The study has investigated the awareness among teachers regarding the vocal issues and its association with personal, occupational, and clinical aspects.

2. Method

A cross sectional sample was selected from different parts of Jeddah city to enroll the elementary, intermediate, and the high schools. The study aimed to evaluate the presence of otolaryngic diseases including Dysphonia. There are more than 800 schools in Jeddah for both sectors. Sixteen schools from the male side were chosen representing the different Geographical locations, and a similar number of schools were chosen from the female side. The study was conducted during the academic year of 2014. Unfortunately, the responses from females and their participation were poor (less than 20 participants), so females were excluded from the study. 500 questionnaires were distributed equally between the public and private sectors for male schools from which 299 were received with complete information. A total of 16 schools were enrolled in this survey that represented the private and public sectors. There were 4 private and 12 public schools. The number of private schools was less due to the fact that all of them had different stages of education (elementary, intermediate, and high schools) in the same or adjacent buildings. Moreover, the majority of the teachers have more than one class teaching in all of the categories. The public school surpasses the private sector with a bigger number with an increased number of buildings, students, and teachers.

- The study has recruited teachers from the elementary, intermediate, and the high schools. The questionnaire was divided into 5 segments;
- The first was an introduction of the idea of the survey and a guarantee of management of cases that showed Otolaryngologic disorders in the University Hospital
- The second segment included the demographic details like age, experience, and type of teaching
- The third was about otolaryngologic diseases with special emphasis on voice symptoms
- The fourth segment was about environmental factors like size of the room, a number of student per room, the use of chalks and duster or projectors with computers, the presence of background noises, air conditioning, and number of teaching hours per day and per week

- The fifth segment was for past medical history, medications, smoking, and extra curriculum activities

The questionnaire was approved after addressing the official channels through the office of Director General of education in Jeddah district and submitting a sample of the questionnaire. Moreover, the data, collected through the questionnaires from the respondents, was then analyzed through the Statistical Package of Social Sciences (SPSS) version 20.0. Cross-tabulation technique was applied statistically on the responses by comparing different factors of the classroom activities and associated complications. Frequencies have been obtained in terms of the number of responses. The demographic profile of the respondents has been obtained, which included age, experience and the type of teaching.

There are certain limitations, associated with this study. Only males have been recruited as respondents of the study because of the difficulty encountered with female school leaders and staff to respond, which resulted in the exclusion of female leaders. The responses from females were very low, possibly because of the restrictions among Saudi females to communicate. There were 4 private and 12 public schools. The reason behind the small number of private schools was the fact that all of them had different stages of education. Further break down of the private sector was difficult as most teachers have crossed over classes in different grades.

3. Results

A total of 500 questionnaires were distributed among 500 school teachers and 299 responses were received with complete information. The demographic profile of 299 respondents has been represented in following Table 1.

Table 1. Demographic Profile

Measure	Items	Frequency	Percentage (%)
Age	20 - 25 years	85	17%
	26 - 30 years	100	20%
	31 -35 years	282	56.4%
	36 – 40 years	33	6.6%
Experience	1 – 3 years	238	47.6%
	4 – 6 years	53	10.6%
	7 – 9 years	209	41.8%
Type of Teaching	Nursery Level	257	51.4%
	Primary Level	228	45.6%
	Secondary Level	15	3%

The results of cross tabulation analysis revealed that 23 teachers strongly agreed and 46 teachers agreed on the development of voice disorders due to noise in the classroom and habit of shouting among the teachers. 48 of the teachers had neutral views about the development of voice disorders due to noise in the classroom. Majority of the teachers (56) were responded neutrally for increased risk of developing voice disorders and increased intensity of dysphonia among teachers. However, an equal number of teachers that is 34 teachers agreed and disagreed on developing voice disorders and increased intensity of dysphonia among teachers. Moreover, 68 of the teachers collectively agreed that increased risk of developing voice disorders can be minimized by proper awareness among teachers. Only 5 of the teachers disagreed on the association between increased risk of developing voice disorder and proper awareness required for teachers. The prevalence rate of vocal dysfunction and prevalence of noise in the classroom was agreed by 29 teachers; whereas, 15 of them disagreed on this factor (Table 2).

Table 2. Cross Tabulation of the factors related to the diseases caused by classroom habits

Greater risk of developing voice disorders * noise in the classroom and habit of shouting							
Count		Noise in the classroom and habit of shouting					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Greater risk of developing voice disorders	Strongly Agree	23	46	48	20	5	142
	Agree	19	32	36	21	7	115
	Neutral	6	17	9	3	3	38
	Disagree	1	0	1	2	0	4
	Total	49	95	94	46	15	299
Greater risk of developing voice disorders * Intensity of dysphonia is likely to affect quality							
Count		Intensity of dysphonia is likely to affect quality					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Greater risk of developing voice disorders	Strongly Agree	4	34	56	34	14	142
	Agree	15	36	42	19	3	115
	Neutral	3	10	13	10	2	38
	Disagree	1	1	1	1	0	4
	Total	23	81	112	64	19	299
Greater risk of developing voice disorders * Proper awareness is required for teachers							
Count		Proper awareness is required for teachers				Total	
		Strongly Agree	Agree	Neutral	Disagree		
Greater risk of developing voice disorders	Strongly Agree	46	68	23	5	142	
	Agree	46	43	23	3	115	
	Neutral	7	18	11	2	38	
	Disagree	1	2	0	1	4	
	Total	100	131	57	11	299	
Prevalence rate of vocal dysfunction * noise in the classroom and habit of shouting							
Count		Noise in the classroom and habit of shouting					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Prevalence rate of vocal dysfunction	Strongly Agree	14	29	24	15	6	88
	Agree	19	40	41	17	6	123
	Neutral	14	21	24	11	1	71
	Disagree	2	4	5	2	2	15
	Strongly Disagree	0	1	0	1	0	2
Total	49	95	94	46	15	299	

The results of cross tabulation analysis revealed that 23 of the teachers agreed that the prevalence rate of vocal dysfunction and intensity of dysphonia would affect the quality of life among teachers. Whereas, 30 of the teachers had a neutral response regarding prevalence rate of vocal dysfunction and intensity of dysphonia affects the quality

of life of the teachers. 32 and 37 of the teachers strongly agreed and agreed respectively on the prevalence of vocal dysfunction and proper awareness among the teachers. 53 of the teachers agreed collectively on the increased prevalence rate of vocal dysfunction and awareness among teachers regarding vocal disorders (Table 3).

43 of the teachers agreed on the association between throat burning, dry throat, throat clearing and habit of shouting among the teachers. Only 1 and 2 teachers disagreed and strongly disagreed for the prevalence of worse symptoms as a result of shouting and noise in the classroom. The worse symptoms of voice disorders; including throat burning, dry throat, and throat clearing increases the intensity of dysphonia among the teachers. These factors were agreed by 31 teachers; whereas 32 of the teachers expressed neutral response for throat burning, dry throat, and throat clearing increases the intensity of dysphonia among the teachers. 50 of the teachers agreed on throat burning, dry throat, and throat clearing and proper awareness about voice disorders among teachers. Only 2 of the teachers disagreed on creating proper awareness of voice disorders (Table 3).

Table 3. Cross tabulation of the prevalence of voice disorders and awareness among teachers

Count		Intensity of dysphonia is likely to affect quality					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Prevalence rate of vocal dysfunction	Strongly Agree	5	23	30	23	7	88
	Agree	13	30	46	25	9	123
	Neutral	4	22	28	15	2	71
	Disagree	1	4	8	1	1	15
	Strongly Disagree	0	2	0	0	0	2
Total		23	81	112	64	19	299
Count		Proper awareness is required for teachers				Total	
		Strongly Agree	Agree	Neutral	Disagree		
Prevalence rate of vocal dysfunction	Strongly Agree	32	37	17	2	88	
	Agree	42	53	23	5	123	
	Neutral	21	36	11	3	71	
	Disagree	4	5	5	1	15	
	Strongly Disagree	1	0	1	0	2	
Total		100	131	57	11	299	

Throat burning dry throat and throat clearing are common * noise in the classroom and habit of shouting							
Count							
		Noise in the classroom and habit of shouting					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Throat burning dry throat and throat clearing are common	Strongly Agree	8	16	21	10	3	58
	Agree	17	43	34	16	10	120
	Neutral	15	27	33	18	0	93
	Disagree	8	5	5	1	2	21
	Strongly Disagree	1	4	1	1	0	7
Total		49	95	94	46	15	299
Throat burning dry throat and throat clearing are common * intensity of dysphonia is likely to affect quality							
Count							
		Intensity of dysphonia is likely to affect quality					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Throat burning dry throat and throat clearing are common	Strongly Agree	5	17	18	14	4	58
	Agree	10	31	48	25	6	120
	Neutral	4	28	32	22	7	93
	Disagree	3	4	11	2	1	21
	Strongly Disagree	1	1	3	1	1	7
Total		23	81	112	64	19	299
Throat burning dry throat and throat clearing are common * Proper awareness is required for teachers							
Count							
		Proper awareness is required for teachers				Total	
		Strongly Agree	Agree	Neutral	Disagree		
Throat burning dry throat and throat clearing are common	Strongly Agree	14	30	11	3	58	
	Agree	40	50	27	3	120	
	Neutral	38	38	15	2	93	
	Disagree	6	9	4	2	21	
	Strongly Disagree	2	4	0	1	7	
Total		100	131	57	11	299	

Table 4 has presented the results obtained from the cross tabulation of awareness about the otolaryngologic diseases among teachers and the prevalence of proprioceptive vocal symptoms during teaching. It has been found that the teachers, who were aware of the disease had some precaution and they had very few cases of proprioceptive vocal symptoms during teaching. Whereas, the teachers, who had no awareness were at higher proprioceptive vocal symptoms. 238 teachers out of 299 agreed that they had no awareness about the symptoms of

Otolaryngologic diseases and had proprioceptive vocal symptoms during teaching.

Table 4. Cross tabulation of awareness about the otolaryngologic diseases * proprioceptive vocal symptoms during teaching

Count		Proprioceptive vocal symptoms during teaching		Total
		Yes	No	
Aware about the otolaryngologic diseases	Yes	27	3	30
	No	238	31	269
Total		265	34	299

4. Discussion

The study revealed that awareness about dysphonia and other vocal disorders among teachers is of immense importance in the diagnosis, management, and planning of health related problems. However, the study investigated decreased participation from the school teachers regarding awareness and management of vocal disorders. It has also been stated that majority of the teachers identified voice issues before it causes impairment in the quality of life (Bassi et al., 2011). In the initial stage, 7.6% of the teachers reported no symptoms because the relation of dysphonia to intensive use of voice cannot be manifested through the symptoms that have been investigated. The voice issues have been identified by the teachers when it negatively affects the quality of life impairment (Medeiros et al., 2016).

The most common symptoms experienced by the teachers include throat burning and throat clearing, which has been prevailed among 42.7% of the teachers; whereas, 54.5% teachers reported dry throat (Ferracciu, 2013). The present study has mainly focused on the difficulty of perception related to the health status of the teachers after concerning the first signs of voice alteration. The combination of speech language assessment among the teachers has been indicated through adequate perception in their vocal changes contributing towards a complete view of the teacher's voice. Teachers are not likely to recognize dysphonia being inherited in their profession, despite increased prevalence of vocal symptoms. The teachers are likely to relate the vocal symptoms to other health problems, although they find difficulty in performing the speech language therapy without comprising with their teaching profession (Rossi-Barbosa et al., 2015).

A study revealed that majority of the teachers did not adopt specialized care even in the presence of vocal symptoms (Trigueiro et al., 2015). It has increased the importance of speech language therapy in the health surveillance of the teachers. The teachers need to increase their voice intensity if there is an increased level of noise in the classroom, which may sometimes occur due to the noise made by the fans. If the class is big enough, teachers need to raise their voice; so that children at the back can listen to them clearly, which overload their voice adjustments. The working environment of teachers includes chalk, dust, and noise that negatively affects their voice quality leading to various health disorders. A study conducted by Jardim et al. (2007) stated that 51% of the teachers reported that increased prevalence of poor life quality relates to the voice of teachers. However, the aggravation of disease is intensified in unfavorable environmental conditions that are responsible for generating exaggerated voice efforts.

The occurrence of dysphonia has been observed with the predominance of perceptual evaluation of auditory voice. Moreover, the teacher does not prevent to perform usual activities in the presence of a slight degree of dysphonia, which is manifested in an imperceptible way, making it difficult to be recognized as a major voice issue. The teachers, who mentioned increased vocal symptoms, were the ones who experienced a greater change in voice quality and effect on their life quality (Medeiros et al., 2016). The introduction of speech therapy practice of teachers in schools along with health promotion activities is necessary to reduce the cases of dysphonia. The health promotion activities should address the personal health of the teachers as well as their physical and psychosocial environment.

Majority of the teachers are not aware of the negative impact of their working conditions on their health; moreover, they are also unaware about minimizing the negative effects. The vocal abuse among teachers has been associated with the habit of shouting among them that is an aggravating factor for change in voice. The teachers experiencing increased voice impairment are likely to leave their profession that is justified with the development of intense

dysphonia. The proprioceptive vocal symptoms have been reported as an indicator of negative influence on the quality of life of the teachers (Ahlander et al., 2012).

Awareness of the survey importance is identified as a valuable aspect for the general public to understand about different health care conditions. It is necessary for the individuals to be aware of the survey importance, as it will ensure the welfare of the general public. It has been evaluated that general public is extremely prone to the conditions, which have a tendency to influence physical and mental functioning. Lack of knowledge about the particular diseases, specifically otolaryngologic diseases, would certainly affect the physical status of the patients. Moreover, lack of knowledge may also result in the development of serious complications (Johnson, 2016). If general public avoids medical survey, then lack of knowledge can also result in the increased mortality and morbidity rates. Therefore, it is necessary for the general public to develop their awareness level in regards of the medical conditions in an effective way.

Riccardi, Old & Ekins (2017) have mentioned the significance of awareness level about the respiratory diseases. The study has indicated that the general public should increase their knowledge and awareness level about tuberculosis to reduce the risk of mortality. Similarly, Samson, Ranjani and Lokesh (2017) have indicated that dental issues usually results in the development of various physical and oral complications; therefore, it is important to know about the basic medical knowledge of such diseases. Chow, et al. (2013) has also analyzed that it is important to know about the significance of medical survey related to different complications. Pederson et al. (2015) has specifically indicated that it is important for the general public to be aware of the otolaryngologic diseases as it will result in the better therapeutic rates along with better survival rates. Therefore, it can be said that awareness of medical survey is necessary to enhance the quality of life and welfare of the patients.

The study has revealed an increased frequency of proprioceptive vocal symptoms among teachers suffering vocal disorders. The prolonged use of voice by the teachers resulted in throat burning, throat clearing, and dry throat. The vocal symptoms have also been associated with the conversion of noise in the classroom and habit of shouting among the teachers that reinforce the aggravating factors causing dysphonia among the teachers. The perception of dysphonia intensity is likely to increase, including its impact on their life quality as there is an increase in the number of vocal symptoms. The study has depicted decreased participation from the school teachers regarding the awareness and management of health problems. More efforts are needed to educate public sectors about the importance of the medical survey. Moreover, health education programs are needed to increase awareness and develop specific behavioral changes among the teachers to manage the vocal issues. The teachers should be made aware of the early signs of dysphonia through speech therapy actions in the higher education of teachers.

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Competing Interests Statement

The author declares that there are no competing or potential conflicts of interest.

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