Body aches in call center operators and the relationship with voice use during work activities

Dores corporais em teleoperadores e sua relação com o uso da voz em atividades laborais

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ABSTRACT

Purpose: To characterize types of body aches presented by call center operators and to verify the relationship of the selected body aches with voice use in work activities. **Methods:** 235 call center operators and 235 individuals from the general population responded to a questionnaire with closed questions about body aches (classified into proximal and distal larynx aches), voice problems, professional activity and search for specialized help. It was investigated whether there was a relationship between each type of pain and the other aspects addressed by the questionnaire. **Results:** Body aches were reported by both groups; however call center operators reported a greater number of them. Call center operators also reported having greater need of calling sick and more aches (shoulders, neck, head, back, arms, hands and ears) than the general population. There was a relationship between most of the body aches with voice problem, absenteeism from work due to voice problems and appointment with an otolaryngologist in the group of call center operators. In the general population, the workload tended to relate to chest and hand pains. There was no difference between the groups when the body aches were compared. **Conclusion:** Call center operators suffer from more body aches that are both proximal to and distal from the larynx and have greater need to call sick due to voice problems than the general population, fact that highlights the vocal and physical fatigue of these professionals.

Keywords: Pain; Pain, referred; Evaluation studies; Speech, language and hearing sciences; Questionnaires; Voice

INTRODUCTION

The presence of pain is a frequently reported symptom by professional voice users. Pain can produce a negative impact on work development, professional activity limitation as well as quality of life, well-being and health decline. When an individual uses his/her voice inadequately, with strain and effort, he or she may feel discomfort or even pain during phonation[1].

The International Association for Study of Pain (IASP) defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or describe in terms of such damage". From October 2009 to October 2010, the Global Year against Musculoskeletal Pain took place. It was an initiative with the goal of drawing attention to the disabling pain experienced by people from all over the world that suffer from musculoskeletal damage[2]. Due to an intense workload, under not always adequate conditions, the call center operator is a professional voice user that has the risk of presenting vocal deviations[3] and musculoskeletal body pain related to work[4], whom deserves special attention to his/her work conditions[3].

The efficacy of the call center operator's communication with the customer can build up a good reputation for the company, thus the call center is an area that has been most valued in the corporations nowadays[5]. The work organization is very strict, and it can expose the call center operator to risks of developing diseases related to voice use or body conditions, such as postural alterations due to repetitive movements (use of mouse, typing, use of telephone). The speech-language pathology action and the search for general health enhancement of call center operators have been expanding and projecting in this country for the past years due to the growth of this segment in the market[6].

Professional voice users may present negative vocal signs and symptoms at different degrees and therefore, they run into risk of developing vocal deviation. The main risk factors are background noise, environment acoustics, excessive talking, bad air quality, bad posture and vocal fatigue during professional use[7]. Voice deviations may involve laryngeal alterations, which restrict the performance and expression of the individual's functional needs[5,8].

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The present study has the goal of investigating the types of body aches experienced by call center operators and to check whether there is a relationship between them and voice use during work activities.

METHODS

The study was approved by the Research Ethics Committee of Universidade Federal de São Paulo (CEP-UNIFESP number 1050/11). All participants signed the Consent Term, therefore, allowing the performance and disclosure of the results of this research; according to the demands of the 196/96 act (BRAZIL. Act MS/CNS/CNEP number 196/96 of October 10th 1996).

A total number of 235 call center operators from a company with its own call center and 235 individuals from the general population participated in this research. Both groups were paired according to gender and age, 195 of them were female and 40 were male, aged between 20 to 51 years.

Inclusion criteria for the call center operators were: to belong to the same call center, to be within the same work conditions, to have a workload of 4 to 8 hour/day, to be an active operator, and to not use their voice professionally for other work activities. The group of individuals from the general population consisted of employees from other companies, offices, beauty salons, clinics, hospitals and shops. The participants from the general population were demographically similar to the experimental group regarding gender and age. Unemployed and retired people and students were excluded. Both groups had more women aged between 21 to 30 years (Table 1).

Table 1. Distribution of call center operators and the general population according to gender and age

	Call center operators		General population		p-value
	n	%	n	%	
Gender					
Female	195	83.00	195	83.00	1.000
Male	40	17.00	40	17.00	1.000
Age					
≤20 years	17	7.20	18	7.70	0.861
21 to 30 years	166	70.60	161	68.50	0.616
31 to 40 years	42	17.90	42	17.90	1.000
41 to 50 years	8	3.40	10	4.30	0.631
≥51 years	2	0.90	3	1.30	0.653

Equality of Two Proportions Test

A Questionnaire of Vocal Condition and Body Aches during Professional Activity that addresses issues related to work, voice usage and body aches during work practice was utilized (Appendix 1). The questionnaire was replied by the participants after a brief explanation by the first author. The instrument has closed questions distributed into five segments of information: 1- Identification data; 2- Professional activity: time working in the area and workload (hours); 3- Occurrence of voice problems: voice problems during work, absenteeism from work due to voice problems, search for otolaryngologist and/or speech pathologist due to voice problems; 4- Voice self--assessment: ranging from great, good, fair, poor to bad and 5- Self-report of body aches[1,9,10] with 13 locations of aches: seven proximal to the larynx (temporomandibular joint – TMJ, tongue, throat, back of the neck, shoulders, neck and pain while speaking) and six distal from the larynx (arms, back/spine, chest, hands, ears and head).

All answers from the two groups were compared by means of the Equality of Two Proportions test with a significance level of 5%. The same test was used to compare the presence of ache between the genders from each group. The Chi- Square test was used to measure the degree of relationship and/or association between the presence and absence of each type of ache with the time working in the area, daily workload (hours), voice problems during professional activity, absenteeism from work due to voice problems, appointment with an otolaryngologist, appointment with a speech pathologist and voice self-assessment.

RESULTS

The analysis of data regarding professional activity showed that the time working in the area for both groups was from one to five months and the daily workload was from six to eight hours. Both call center operators and individuals from the general population reported voice problems during work, with no differences between the two groups. Call center operators presented greater need of calling sick because of voice problems than the general population. Both groups presented a small rate of appointments with otolaryngologists and speech pathologists because of a voice problem. As far as the voice self-assessment is concerned, more call center operators evaluated their voices as good when compared to the general population (Table 2).

Shoulders and neck pain were more reported by call center operators. Out of the seven aches distal from the larynx, five of them were more reported by the call center operators group: back/spine pain, headache, arm and hand pain, and earache, presented here from highest to lowest occurrence. Chest pain was the only type of ache distal from the larynx that was more reported by the general population group. There was no difference between male and female participants when they were compared regarding presence of body ache, both for the call center operators and general population groups (Table 3).

Aches both proximal to and distal from the larynx did not relate to time working in the area and workload for both groups, except from the arm pain for call center operators. Some of the body aches correlated with a worse vocal assessment, especially for call center operators: throat, neck, arms, head and chest. For the general population this variable correlated only with tongue pain. For call center operators there was a relationship among most body aches and vocal problems, absenteeism from work due to vocal problems and appointment with an otolaryngologist. On the other hand, there was a relationship among body aches, voice problems and appointment with a speech pathologist for the individuals from the general population. For both groups, earache and pain while speaking showed a relationship with appointments with otolaryngologists. For call center operators, throat pain, neck

Table 2. Information on time working in the area, daily workload, voice problems, to call sick, to look for help of an Otolaryngologist, to look for help of a Speech Pathologist and vocal self-assessment of call center operators and the general population

	Call center operators		General population		p-value
	n	%	n	%	
Time working in the area					
Up to 1 month	66	28.10	0	0.00	<0.001*
1 to 5 months	124	52.80	137	58.30	0.228
6 to 10 months	40	17.00	45	19.10	0.549
11 to 15 months	4	1.70	21	8.90	<0.001*
16 to 20 months	1	0.40	9	3.80	0.011*
≥21 months	0	0.00	9	3.80	0.002*
Daily workload					
Up to 4h	0	0.00	19	8.10	<0.001*
4h01 to 6h	78	33.20	46	19.60	<0.001*
6h01 to 8h	157	66.80	155	66.00	0.845
Voice problems during professional activity					
Yes	60	25.50	73	31.10	0.183
No	175	74.50	162	68.90	0.183
To call sick because of voice problems					
Yes	36	15.30	8	3.40	<0.001*
No	199	84.70	226	96.20	<0.001*
To look for help of an Otolaryngologist because of a voice problem					
Yes	44	18.70	33	14.00	0.17
No	191	81.30	202	86.00	0.17
To look for help of a Speech Pathologist because of a voice problem					
Yes	26	11.10	30	12.80	0.569
No	209	88.90	205	87.20	0.569
Vocal self-assessment					
Great	35	14.90	55	23.40	0.019*
Good	160	68.10	128	54.50	0.002*
Fair	40	17.00	49	20.90	0.289
Poor	0	0.00	2	0.90	0.156
Bad	0	0.00	1	0.40	0.317

*Significant values (p≤0.05) – Equality of Two Proportions Test

Table 3. Presence of body aches in call center operators and the general population

Body aches	Call center operators							General population							
	Female		Male		p-value	Total		Female		Male		p-value	Total		p-value
	n	%	n	%		n	%	n	%	n	%		n	%	
Proximal to the larynx															
TMJ	51	4.6	6	4.1	0.761			66	7	7	6.2	0.762	73	31	0.099
Tongue	6	0.5	1	0.7	0.144	57	24	10	1.1	3	2.7	0.838	13	5,5	0.17
Throat	105	9.5	18	12.2	0.249	7	3	115	12.1	18	15.9	0.304	133	57	0.354
Back of the neck	102	9.2	15	10.1	0.35	123	52	93	9.8	8	7.1	0.717	101	43	0.139
Shoulders	144	13	16	10.8	0.598	117	50	108	11.4	11	9.7	0.452	119	50	<0.001*
Neck	125	11.3	18	12.2	0.832	160	68	107	11.3	12	10.6	0.754	119	51	0.026*
Pain while speaking	23	2.1	0	0	0.36	143	61	32	3.4	2	1.8	0.077	34	15	0.12
Distal to the larynx						23	9,8								
Arms	92	8.3	7	4.7	0.719			51	5.4	7	6.2	0.129	58	25	<0.001*
Head	141	12.7	21	14.2	0.555	99	42	119	12.6	12	10.6	0.621	131	56	0.003*
Back/Spine	148	13.4	22	14.9	0.303	162	67	126	13.3	19	16.8	0.618	144	61	0.011*
Chest	24	2.2	1	0.7	0.48	170	72	38	4	3	2.7	0.222	41	17	0.034*
Hands	79	7.1	13	8.8	0.5	25	11	45	4.7	7	6.2	0.47	52	22	<0.001*
Ears	67	6.1	10	6.8	0.809	92	39	38	4	4	3.5	0.737	42	18	<0.001*

*Significant values (p≤0.05) – Equality of Two Proportions Test

Note: TMJ = temporomandibular joint

Table 4. Relationship among body aches and time working in the area, daily workload, vocal self-assessment, voice problems, to call sick, to look for help of an Otolaryngologist, to look for help of a Speech Pathologist of call center operators and the general population

Body aches	Time working	Daily workload	Vocal self-assessment	Voice problems	To call sick	ENT	Speech Pathologist
	p-value	p-value	p-value	p-value	p-value	p-value	p-value
Call center operators							
Proximal to the larynx							
TMJ	0.332	0.319	0.109	0.001*	0.026*	0.004*	0.411
Tongue	0.449	0.581	0.438	0.052	0.04*	0.097	0.134
Throat	0.661	0.888	0.031*	0.003*	0.006*	0.024*	0.201
Back of the neck	0.778	0.518	1	0.152	0.026*	0.161	0.087
Shoulders	0.962	0.639	0.074	<0.001*	0.037*	0.006*	0.346
Neck	0.756	0.484	<0.001*	<0.001*	0.001*	0.002*	0.176
Pain while speaking	0.411	0.768	0.383	0.002*	<0.001*	<0.001*	0.086
Distal to the larynx							
Arms	0.015*	0.202	<0.001*	0.001*	0.003*	0.054	0.62
Head	0.517	0.523	0.008*	0.016*	0.009*	0.222	0.379
Back/Spine	0.486	0.434	0.372	0.001*	0.006*	0.024*	0.561
Chest	0.118	0.56	0.003*	0.001*	<0.001*	0.004*	0.605
Hands	0.077	0.296	0.065	<0.001*	0.092	0.027*	0.559
Ears	0.081	0.646	0.315	0.019*	0.216	0.047*	0.047*
General population							
Proximal to the larynx							
TMJ	0.629	0.297	0.268	0.105	0.23	0.054	0.12
Tongue	0.704	0.301	<0.001*	0.553	0.015*	0.885	0.045*
Throat	0.982	0.129	0.26	0.029*	0.012*	0.002*	0.018*
Back of the neck	0.541	0.158	0.78	<0.001*	0.064	0.003*	<0.001*
Shoulders	0.853	0.98	0.287	<0.001*	0.472	0.014*	0.006*
Neck	0.625	0.508	0.103	<0.001*	0.503	0.002*	0.002*
Pain while speaking	0.473	0.322	0.241	<0.001*	0.393	<0.001*	<0.001*
Distal to the larynx							
Arms	0.111	0.449	0.122	0.009*	0.093	0.093	0.103
Head	0.287	0.643	0.814	0.001*	0.01*	0.325	0.37
Back/Spine	0.272	0.32	0.247	0.003*	0.122	0.008*	0.001*
Chest	0.372	0.086**	0.091	0.02*	0.546	0.109	0.363
Hands	0.535	0.088**	0.211	0.1	0.501	0.752	0.04*
Ears	0.057	0.127	0.054	<0.001*	0.143	0.012*	0.001*

* Significant values ($p \leq 0.05$) – Chi-Square test

** Values with statistical trend

Note: TMJ = temporomandibular joint; ENT = otolaryngologist

pain and chest pain correlated with vocal self-assessment, voice problems, absenteeism from work and appointment with otolaryngologists, whereas for the individuals from the general population, throat pain correlated with voice problems, absenteeism from work due to voice problems and appointment with speech pathologists and otolaryngologists (Table 4).

DISCUSSION

Body aches were reported by both groups, however call center operators reported more number of aches, corroborating with findings of a previous study, which concluded that professional voice users present more body aches than the general population[9]. Call center operators had a greater need of calling sick and reported more body aches (shoulders, neck, head, back, arms, hands and ears) than the general population. There was a relationship among most body aches with voice problems, absenteeism from work due to voice problems and appointment with otolaryngologists in the group of call center operators. There was a correlation tendency in the general population between workload and chest and hand pains. This result highlights the importance of investigating these aches

in future researches. There was no difference between the genders regarding presence of body aches when the groups were compared.

The presence of body aches related to work has been noticed and highlighted in several studies for the past years. Musculoskeletal pain is a known consequence of repetitive movements, of excessive use and of musculoskeletal disorders relate to work, and they are considered one of the biggest health problems in the modern world. They can be associated or related to real or potential tissue damage, which include a variety of disorders that cause pain in the bones, joints, muscles or surrounding structures[2].

A recent search performed by the INSS (Social Security National Institute) in Sao Paulo City shows that one out of every 100 individuals presents RSI/WOMD, which is the second most frequent cause of absenteeism in the country[11], causing social and psychological consequences to the individual, problems to the employer and a huge amount of public expenses. Among the several damages in this category, such as tendinitis, bursitis and disc hernia, dysphonia and laryngeal lesions due to prolonged voice use have not been included in this classification yet; however they consist in potential and real causes of absenteeism from work among professional voice users. The definition of professional/occupational diseases differ from country to country and, regardless all the effort of the European Union to reach a consensus, this has not been accomplished yet. As examples of cultural differences, we can mention that dysphonia among teachers of public schools is considered an occupational disorder in countries such as France and Russia, whereas in other countries such as Germany and United Kingdom, they are not. In France, a person with a dysphonia that produces a 25% partial or permanent disability will have all the care necessary covered by the government. In Russia, if an occupational dysphonia is confirmed by a medical team, treatment and vocal rehabilitation can be paid by the Social Security Funds, which requires a specific procedure[12]. This study did not have the goal of investigating absenteeism of call center operators due to body aches or damage diagnosed by an occupational physician; however the fact that these professionals have called sick because of voice problems more times than the general population should be taken into consideration.

A call center company depends on the employees' mental effort, cordiality, and constant problem solving attitude or benefit attainment by offering their services. Thus, attention is demanded from the call center operators to be able to establish an adequate interaction with the costumers and achieve their satisfaction. They should overcome the difficulties without, however, exceeding the fixed timing according to commercial goals or without breaking the assigned control. One of the effects observed, due to the constant professional stress is the development illnesses by the employees[13]. In our study, although the general population had predominantly reported vocal problems during work activities and appointment with a speech pathologist, the call center operators reported more appointments with an otolaryngologist and calling sick because of a voice problem. This can indicate that call center operators keep on working even with mild voice problems, which can make them delay their search for a health professional care. At this point, voice problems can be aggravated and consequently produce a medical leave of absence from work.

An interesting study evaluated individuals with repetitive strain injury due to the use of hand transcription systems, who developed muscle tension dysphonia when they chose to use computerized programs. All patients reported symptoms of dysphonia, tiredness, vocal fatigue and progressive odynophonia (pain when using the voice) in a period from two to eight weeks after using the computerized systems. Speech recognition computer softwares may induce muscle tension dysphonia due to the intense activity, inadequate posture and muscular tension for certain individuals, especially during the initial stages of learning to use the equipment. This situation can be attenuated and treated successfully by means of voice therapy[14]. Such type of work structure, similar to the group of call center operators from our study, may justify voice problems and presence of body aches reported by these individuals.

A study performed with the general population concluded that men and women reported presence of body aches during and/or after professional activity. The occurrence of aches in the study just mentioned was higher for the female population. There was a correlation between the voice self-assessment and presence of body aches. The individuals with higher vocal demand reported having more voice problems during professional activities[1]. Our research utilized the same questionnaire that was employed in the study cited above, however, in a similar manner; the gender did not affect the results. It is worth remembering that even though the call center operator population was mostly female[15] with several different aches that highlights worrying aspects of these professionals' routine; both men and women are susceptible to have body aches. The age range of the groups studied is similar to the usual profile of call center operators in Brazil, with ages ranging from 20 to 40 years[16]. Even though other studies compared pain sensation between the genders and demonstrated that women present less endurance to it and more complaints related to pain[17-19], this was not observed in the present study. Therefore, characteristics concerning the call center operator occupation seem to affect more aspects related to pain than possible aspects related to gender, thus being female should not be a hiring discrimination factor.

The relationship between body aches and voice self-assessment, presence of vocal problems, absenteeism from work due to voice problems, appointment with an otolaryngologist and/or speech pathologist has also been found among other professionals that have an intense voice use during work activities. These relationships are particularly found among teachers, however they are present in many other professional voice users[9]. In the present study, for the group of call center operators there was a relationship between presence of pain and need of calling sick due to voice problems and appointment with an otolaryngologist. Meanwhile, there was a greater rate of relationship with voice problems and appointment with a speech pathologist in the general population. It is difficult to raise hypotheses about these findings, nevertheless it can be thought that the constant presence of a speech pathologist in the actual call centers makes the operator look for medical

help only when the degree of the voice problem becomes disabling form them to perform their activities; since a mild voice problem does not hinder them from working and they are followed-up closely by the speech pathologist in the company. Besides, based on the existing legislation, a medical leave of absence from work due to a voice problem does not incur any financial losses to the operator himself/herself. However, this is not what happens for instance to an entrepreneur or a consultant, who keeps on working even under limited vocal conditions, after all a medical leave of absence means decrease of productivity and salary at the end of the month for these people. Nevertheless, given that this aspect has not been further investigated, there is a lack of findings to support this argument.

Clinically, vocal fatigue, hoarseness, odynophonia and discomfort in the neck area, among other symptoms, are frequently associated with impaired vocal stamina[20,21]. In the present study, the prevalence of aches proximal to the larynx and reports of medical leave of absence from work due to voice problems in the studied population stress these associations found in previous studies.

The recent research focus directed to this area is due to the fact that these professionals have a high vocal demand associated with workload and great number of vocal symptoms reported during work[3,5,8,22,23]. Individuals with low vocal demand report less vocal symptoms[24], but an increase of those symptoms during work[8]. The main symptoms reported by people during work activities related to voice use are hoarseness, throat clearing, vocal fatigue, dry throat, voice breaks, effort to speak, sore throat and voice loss[5,8,23]. The present study identified voice problems in both groups studied with no difference between them. Moreover, this study did not focus on the investigation of specific vocal symptoms.

Vocal symptoms may occur due to the fact that this group of professionals know very little about professional voice use, since their habits are opposite to the ones suggested by the literature, e.g., from voice rest to need of more hydration, especially when performing work activities in which the voice is an important tool[5,24,25]. Recent studies have been highlighting the need and effectiveness of vocal training programs for these professionals, by means of education and exercises[22-26]. In our study, besides the report of voice problems by call center operators, additional data such as presence of body aches and the association with voice use were identified. These are important aspects that influence the body/voice relationship in this group of professionals, which can expand the possibilities of the speech pathologist work.

A study that investigated a group of 65 female patients found a relationship between behavioral dysphonia and presence of headache, TMJ pain, sore throat and neck pain[27]. In call center operators, these aches can be justified by the greater risk of developing dysphonia and muscle tension during their professional activity.

Several professional categories present distinct demands, with differences related to the type of pain. Sitting constantly and the continuing use of computer during work activities for call center operators may justify the report of postural aches in the back, spine and head. People submitted to a higher vocal demand tend to present a greater amount of body aches[1].

In Australia, a highly competitive market, the combination of many hours of work associated with a low professional autonomy and limited decision making power bring an additional and alarming concern regarding the level of stress call center operators suffer from[28].

The absence of relationship among body aches, professional activity and workload may be explained by the fact that great amount of professionals from both groups studied have been working in the area for a short period of time, from 1 to 5 months.

A research that investigated a group of older call center operators that had been working for a longer time in the area did no observe symptoms related to voice usage. This fact can be considered very important after all they were able to keep the same job for a long period of time. Besides, it allows us to discuss this particular characteristic of this profession that has been considered for a long time a temporary work and nowadays it seems to be providing opportunities of professional growth[6]. Therefore, it is necessary to pay attention to symptoms such as pain that affect the quality of life of the professional, at any time or more specifically after a day of work. Attention should be paid to this symptom whether it is associated or not with other symptoms and complaints, as dry throat, hoarseness, voice breaks and vocal fatigue[29], which can significantly affect the work activity of these professionals[30]. When the origin of the pain is related to the work activity it can compromise the worker's productivity and performance, therefore jeopardizing his/her job position. The availability of an interdisciplinary team to work with preventing of these problems in companies may be an important tool for the maintaining quality of life and good professional performance of call center operators.

CONCLUSION

Call center operators suffer from more body aches that are both close to and far from the larynx and have greater need to call sick due to voice problems than the general population, fact that highlights the vocal and physical fatigue of these professionals.

RESUMO

Objetivo: Caracterizar os tipos de dores corporais apresentados por teleoperadores e verificar sua relação com o uso da voz em atividades laborais. **Métodos:** Duzentos e trinta e cinco teleoperadores e 235 indivíduos da população geral responderam um questionário contendo questões fechadas sobre dores corporais proximais e distais à laringe, problemas de voz, atuação profissional e consulta à especialista. Investigou-se se há relação e/ou associação de cada tipo de dor com os demais aspectos do questionário. **Resultados:** As dores corporais foram referidas por ambos os grupos, entretanto, os teleoperadores as referiram em maior número. Teleoperadores tiveram maior necessidade de se afastar do trabalho e relataram mais dores corporais (ombros, pescoço, cabeça, costas, braços, mãos e ouvidos) que a população geral. Houve relação da maioria das dores corporais com problemas vocais, afastamento do trabalho por problemas vocais e consulta ao otorrinolaringologista no grupo de teleoperadores. Na população geral houve tendência de relação entre jornada de trabalho e dores no peito e nas mãos. Não houve diferença na comparação de presença de dores corporais entre os gêneros em ambos os grupos. **Conclusão:** Teleoperadores sofrem mais dores distais e proximais à laringe e têm maior necessidade de se afastar do trabalho por problemas de voz que a população geral, evidenciando o desgaste vocal e físico desses profissionais.

Descritores: Dor; Dor referida; Estudos de avaliação; Fonoaudiologia; Questionários; Voz

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Appendix 1. Questionnaire of Vocal Condition and Body Aches during Professional Activity

1. Identification Information Full name: Today's date: / /					
Sex: ( ) female ( ) male					
Age: Birthday: / /					
Profession:					
2. Professional activity:					
Period of time working in the area (in years and months: e.g. 3y and 5mo):					
Daily workload (in hours and minutes: e.g. 6 hours 30min):					
3. Occurrence of voice problems					
Have you ever experienced voice problems during professional activity?			Yes	No	
Have you ever called sick because of voice problems?			Yes	No	
Have you ever looked for help of an Otolaryngologist because of a voice problem?			Yes	No	
Have you ever looked for help of a Speech Pathologist because of a voice problem?			Yes	No	
4. Vocal self-assessment					
What is your voice like?	Great	Good	Fair	Poor	Bad
5. Self-report of body aches[1,9,10]					
In your work, during or after speaking, do you usually experience any of these symptoms? In case of yes, how frequently do you experience them? (check one of the options in front of each item)					
a. Headache	Never	Sometimes	Many times	Almost always	Always
b. TMJ pain	Never	Sometimes	Many times	Almost always	Always
c. Tongue pain	Never	Sometimes	Many times	Almost always	Always
d. Sore throat	Never	Sometimes	Many times	Almost always	Always
e. Back of the neck pain	Never	Sometimes	Many times	Almost always	Always
f. Shoulders pain	Never	Sometimes	Many times	Almost always	Always
g. Back/spine pain	Never	Sometimes	Many times	Almost always	Always
h. Neck pain	Never	Sometimes	Many times	Almost always	Always
i. Chest pain	Never	Sometimes	Many times	Almost always	Always
j. Arms pain	Never	Sometimes	Many times	Almost always	Always
k. Hands pain	Never	Sometimes	Many times	Almost always	Always
l. Earache	Never	Sometimes	Many times	Almost always	Always
m. Pain while speaking	Never	Sometimes	Many times	Almost always	Always