Signs and symptoms of autonomic dysfunction in teachers and their relation to voice complaints and occupational variables

Sinais e sintomas de disfunção autônoma em professores e sua relação com as queixas vocais e as variáveis ocupacionais

Signos y síntomas de disfunción autonómica en docentes y su relación con sus las quejas vocales y las variables ocupacionales

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Abstract

Objective: describe the occurrence, correlate and associate the signs and symptoms of autonomic dysfunction related to voice with the occupational characteristics, vocal complaints, sex and age of a group of teachers. Material and Method: 114 individuals, aged between 20 and 66 years, mean 37,76 years, with 102 women and 12 men. The participants answered the Questionnaire of Autonomic Dysfunction (QAD), and also collected identification data, occupational and vocal complaints. Data were analyzed statistically using the nonparametric ANOVA and Pearson correlation, with an interval of 5% significance. Results: teachers had average duration of use of the professional voice of 12,7 years, working on average 6,96 hours daily. There was an average of 16,89 with symptoms directly related to the voice. There was no correlation of the signs and symptoms of autonomic dysfunction with age, time of practice and daily use of voice or association with the schools in which teachers worked. There was an association between the mean domain scores of signs and symptoms of autonomic dysfunction with the female and the presence

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of vocal. Conclusion: in the group of teachers studied, the average occurrence of symptoms unrelated to the voice was 24,72; symptom reporting directly to the voice was 16,89 and not relevant questions was 5,32. Women and individuals with vocal complaints showed more signs and symptoms of autonomic dysfunction.

Keywords: Faculty, Occupation Health, Autonomic Nervous System, Central Nervous System, Voice

Resumo

Objetivo: descrever a ocorrência, correlacionar e associar os sinais e sintomas de disfunção autônoma relacionados à voz com as características ocupacionais, queixas vocais, sexo e idade de um grupo de professores. Material e Método: 114 indivíduos, com idade entre 20 e 66 anos, média de 37,76 anos, sendo 102 mulheres e 12 homens. Os participantes responderam ao Protocolo de Disfunção Autônoma (PDA), sendo coletados também dados de identificação, ocupacionais e queixas vocais. Os dados foram analisados estatisticamente por meio dos testes não paramétricos Correlação de Pearson e ANOVA, com intervalo de significância de 5%. Resultados: os professores apresentaram tempo médio de utilização da voz profissional de 12,7 anos, trabalhando em média 6,96 horas diárias. Houve média de 16,89 sintomas com relação direta com a voz. Não houve correlação dos sinais e sintomas de disfunção autônoma com idade, tempo de atuação profissional e utilização diária da voz ou associação com a rede de ensino em que os professores atuavam. Houve associação entre a média dos escores dos domínios de sinais e sintomas de disfunção autônoma com o sexo feminino e a presença de queixas vocais. Conclusão: No grupo de professores estudado, a média de ocorrência de sintomas sem relação com a voz foi de 24,72; de sintomas com relação direta com a voz foi de 16,89 e de questões não relevantes foi de 5,32. Mulheres e indivíduos que apresentavam queixas vocais mostraram mais sinais e sintomas de disfunção autônoma.

Palavras-chave: *Docentes, Saúde do Trabalhador, Sistema Nervoso Autônomo, Sistema Nervoso Central, Voz.*

Resumen

Objetivo: *describir la ocurrencia, correlacionar y asociar los signos y síntomas de disfunción autonómica relacionadas con la voz con las características ocupacionales, quejas vocales, sexo y edad de un grupo de profesores.* ***Material y método: 1****14 individuos, con edades comprendidas entre 20 y 66 años, media de 37,76 años, con 102 mujeres y 12 hombres. Los participantes respondieron el "Protocolo de Disfunção Autonoma" (PDA), y también se recogieron los datos de identificación, ocupacional y quejas vocales. Los datos se analizaron estadísticamente usando el ANOVA no paramétrico y de correlación de Pearson, con un intervalo de 5% de significancia.* ***Resultados:*** *profesores tenían duración media de uso de la voz profesional de 12,7 años, trabajando en promedio 6,96 horas al día. Hubo un promedio de 16,89 con síntomas directamente relacionados con la voz. No hubo correlación de los signos y síntomas de disfunción autonómica con la edad, el tiempo de la práctica y el uso diario de la voz o de la asociación con las escuelas en las que los profesores trabajaban. Hubo una asociación entre las puntuaciones medias de dominio de los signos y síntomas de disfunción autonómica con la hembra y la presencia de quejas vocales.* ***Conclusión:*** *en el grupo de los profesores estudiado, la incidencia media de síntomas no relacionados con la voz era 24,72; síntoma que depende directamente la voz era 16,89 y no a las preguntas pertinentes era 5,32. Mujeres y personas con quejas vocales mostraron más signos y síntomas de disfunción autonómica.*

Palabras clave: *Docentes, Salud Laboral, Sistema Nervioso Autónomo, Sistema Nervioso Central, Voz.*

Introduction

The function of maintaining body homeostasis is carried out by the sympathetic (SNS) and parasympathetic (PNS) nervous systems, which are part of the autonomic nervous system (ANS) [1]. When the body undergoes stressful situations, the SNS accelerates body's activities, resulting in a three-step organic activation: alarm, resistance and exhaustion[2,3]. In the first stage, known as "General Adaptation Syndrome", there is an intense discharge of hormones that mobilizes the entire organism, during which physical symptoms such as rapid heartbeat, sweating, headache, pallor, high blood pressure, fatigue and tinnitus may occur. Then, the body is able to return to its homeostasis or find a way to cope with that situation, and a possible local mobilization, called "Local Adaptation Syndrome", may also take place. This syndrome leads the most vulnerable organ of the body at that moment to centralize the internal response to stress, generating psychosocial symptoms such as irritability, social withdrawal, inability to detach and fear sensations. If this becomes a permanent situation, it may lead to the emergence of specific symptoms related to the organ concerned, and finally exhaustion. Studies show that the larynx is one of the organs affected by this syndrome, due to the close relationship between voice and stress, especially in vocal disorders of behavioral origin[4,5].

Individuals with vocal problems report symptoms that may be considered an indication of a dysfunction in the ANS. To verify this relationship, a protocol consisting of the main symptoms of ANS dysfunction, called Autonomous Dysfunction Protocol (PAD) was elaborated[1,3,6].

Voice professionals, who have a high and continuous demand, are considered the most susceptible individuals to develop a laryngeal compensation due to stress. Among these professionals, teachers show a higher incidence of vocal problems related to work conditions and organization[7], which makes vocal disorders among these class workers an occupational pathology[8].

Researches shows that the most common vocal complaints reported by teachers are aphonia, vocal fatigue, hoarseness, hawking, sore throat, change in vocal emission, associated or not with signs, such as hyperextension of cervical muscles, neck pain and head tension while talking , temporomandibular pain or discomfort, inadequate posture and breathing pattern, pitch alteration, muffled or unprojected voice, anxiety and stress[2,8-10]. In the national specialized literature, a recent and original study applied the PAD in teachers with and without vocal complaints and showed that the group with vocal complaints displayed a higher average of general symptoms in the PAD and neuro-vegetative symptoms related to voice.

The use of PAD in the vocal phonotherapy can provide relevant information that facilitates the medical care of dysphonia patients, since it opens up the possibility for the application of therapeutic approach on autonomic signs and symptoms that have direct relationship with the voice, as well as constant revaluations to check clinical evolutions and therapeutic responses. Considering that teachers are voice professionals that have a higher risk of developing dysphonia, it is important to know the association between signs and symptoms of autonomic dysfunction and voice, gender, occupational characteristics and the presence of vocal complaints coming from these workers.

In view of the above, the present study aimed at describing the occurrence, correlation and association between signs and symptoms of autonomic dysfunction related to voice and occupational characteristics, vocal complaints, gender and age of a group of teachers.

Materials and Methods

An analytic observational, cross-sectional study, of quantitative type, approved by the Ethics Committee of the authors' institution of origin (23081.016945/2010-76). The research was regulated after the Institutional Authorization Form (IAF) and Informed Consent Form (ICF) were signed by educational institutions and selected subjects, respectively.

The target population consisted of urban elementary school teachers from the the state, municipal and private educational networks, in a mid-sized country town.

In order to make the sample homogeneous, random sampling was performed from the list of all schools comprised in each geographical area of the town, according to the educational network. Each list has a school excluded every two. Finally, it was determined to randomize schools, regardless of education network and region, performing a new draw for the final selection of the schools. All

teachers of the selected schools were invited to participate in the research, and the inclusion and exclusion criteria were applied.

The study included urban elementary schools teachers (1st to 9th grade), from private, state and municipal education networks; of both sexes; adherence to the ICF. Exclusion criteria were the following: case report of endocrine, neurological, metabolic, syndromic and/or psychiatric disorders; no past or current speech language pathology and audiology and/or otorhinolaryngological treatment for voice; hearing loss.

To apply inclusion and exclusion criteria, all participants answered a questionnaire (elaborated by the authors, which included identification, occupational and general health data, besides vocal complaints), and participated in the hearing screening, with pure tone scanning, at frequencies of 500, 1000, 2000, 4000 Hz and 25 dB, only through the air, using audiometer Amplivox, model A260, 2011. The audiometry was held at the school, in a room with noise levels below 50 dB, verified by the use of a sound pressure meter Instrutherm, model DEC-480. Subjects who did not hear the pure tone at 25 dB were retested, and those who failed the retesting were excluded from the study and referred for a comprehensive hearing evaluation.

The initial sample consisted of 208 teachers, of which 16 were excluded due to endocrine disorders; 14 in the hearing screening; 7 that previously received speech language pathology and audiology or otorhinolaryngological treatment and three due to neurological diseases; 54 were lost due to incomplete data. Thus, the sample consisted of 114 individuals, aged between 20 and 66 years old, mean of 37.76 years, of whom 102 women and 12 men. Despite the discrepancy between the number and distribution of subjects by gender, it was decided to keep men in the study, as other surveys also show a predominance of women in the teaching profession11-15.

Data collection was performed through the application of PAD (Annex 1), and teachers were asked to completely fill out the protocol, while researchers remained available to resolve any questions during filling.

The PAD consists of 46 questions, of which 22 relate to the SNA but are not directly related to the voice (questions 1 to 10, 12 to 20 and questions 42, 44 and 45 of the Protocol), 16 refer both to SNA and the voice (questions 23 to 25; 27 to 30; 32; 34 to 40; and 43), six questions are considered non-relevant (questions 11, 22, 26, 31, 33 and 41) and two are of reliability (questions 21 and 46) 3,10. The protocol grading scale goes from zero to four, where zero equals never and four equals always3,10. The analysis of the symptoms is performed by simple addition, and those symptoms can be analyzed separately, according to the relevance of occurrence. In this article, it was decided that the following symptoms would be considered: "unrelated to the voice", "directly related to the voice" and "non-relevant", thus classified by the specialized literature, in the process of adaptation and validation to Brazilian Portuguese language. As the questions concerning reliability are intended to verify the confidence level of responses, they were not used in data analysis.

Identification and occupational data and the presence/absence of voice complaints were removed from the questionnaire during the sampling process.

Data were tabulated and variables were statistically analyzed using nonparametric tests, Pearson's correlation and ANOVA, adopting a 5% probability significance level, i.e., in the present work, all confidence intervals were constructed at a statistical confidence level of 95%.

Results

Teachers completed an average time of service of 12.7 years, therefore, they used professionally the voices during that period, working approximately 6.96 hours per day.

Table 1 shows the descriptive analysis of the domains of signs and symptoms of autonomic dysfunction in teachers, observing an average frequency of symptoms unrelated to the voice of 24.72, average frequency of symptoms directly related to the voice of 16.89 and non-relevant questions, 5.32.

TABLE 1 – DESCRIPTIVE ANALYSIS OF THE PROTOCOL OF AUTONOMIC DYSFUNCTION (PAD) SCORES

PDA	Symptoms unrelated to the voice	Symptoms directly related to the voice	Non-relevant questions	Total
Average	24,72	16,89	5,32	50,43
Median	25	15,5	5	49
Standard Deviation	15,33	11,07	4,06	30,26

Caption: PAD=Protocol of Autonomic Dysfunction

Table 2 displays the correlations between PAD domains and age, length of professional experience and daily voice use.

TABLE 2 – CORRELATION BETWEEN DOMAINS OF THE PROTOCOL OF AUTONOMIC DYSFUNCTION (PAD) AND AGE, LENGTH OF PROFESSIONAL EXPERIENCE AND DAILY VOICE USE

		Age (years)		Length of Professional Experience (years)		Daily voice use (hours)	
		corr	p-value	corr	p-value	corr	p-value
PDA	Symptoms unrelated to the voice	3,2%	0,738	3,3%	0,727	9,7%	0,306
	Symptoms directly related to the voice	9,7%	0,303	9,6%	0,312	-0,1%	0,992
	Non-relevant questions	2,5%	0,795	6,4%	0,501	6,0%	0,524
	Total	5,6%	0,554	6,0%	0,525	5,7%	0,549

* Statistically significant values (p≤0,05) – Pearson Correlation Test
Caption: corr=correlation coefficient; PAD=Protocol of Autonomic Dysfunction

Table 3 shows the correlation between PAD domains and the education system.

TABLE 3 - ASSOCIATION BETWEEN DOMAINS OF THE PROTOCOL OF AUTONOMIC DYSFUNCTION (PAD) AND EDUCATION NETWORKS

PDA	Education Networks	Average	Median	Standard Deviation	n	p-value
Symptoms unrelated to the voice	STA	23,67	23,0	14,55	43	0,204
	MUN	31,57	33,5	12,38	14	
	PAR	23,82	25,0	16,32	57	
Symptoms directly related to the voice	STA	17,21	16,0	9,88	43	
	MUN	18,64	16,5	11,51	14	0,744
	PAR	16,21	14,0	11,92	57	
Non-relevant questions	STA	4,81	4,0	3,82	43	
	MUN	6,29	6,0	4,14	14	0,470
	PAR	5,46	5,0	4,22	57	
	STA	49,33	45,0	28,26	43	

Total	MUN	60,07	59,0	27,40	14	0,447
	PAR	48,89	49,0	32,37	57	

* Statistically significant values (p≤0.05) – ANOVA Test

Caption: PAD= Protocol of Autonomic Dysfunction; STA=State; MUN=municipal; PAR=private; n=number of study subjects

The association between PAD domains and teachers' genders is shown in Table 4.

TABLE 4 – ASSOCIATION BETWEEN DOMAINS OF THE PROTOCOL OF AUTONOMIC DYSFUNCTION (PAD) AND TEACHERS' GENDER

PDA	Sex	Average	Median	Standard Deviation	n	p-value
Symptoms unrelated to the voice	FEM	26,28	27,0	15,25	102	0,001*
	MAL	11,42	14,5	7,96	12	
Symptoms directly related to the voice	FEM	17,72	16,5	11,21	102	0,019*
	MAL	9,83	10,5	6,69	12	
Non-relevant questions	FEM	5,70	6,0	4,07	102	0,003*
	MAL	2,08	2,0	1,98	12	
Total	FEM	53,44	56,5	30,27	102	0,002*
	MAL	24,83	27,0	13,94	12	

* Statistically significant values (p≤0.05) – ANOVA Test

Caption: FEM=female; MAL=male; n=number of study subjects; PAD= Protocol of Autonomic Dysfunction

Table 5 presents the association between PAD domains and the presence of vocal complaints.

TABLE 5 – ASSOCIATION BETWEEN DOMAINS OF THE PROTOCOL OF AUTONOMIC DYSFUNCTION (PAD) AND THE PRESENCE OF VOCAL COMPLAINT

PDA	Presence of voice complaint	Average	Median	Standard Deviation	n	p-value
Symptoms unrelated to the voice	NO	16,55	17,0	12,89	31	**<0,001***
	YES	27,77	28,0	15,11	83	
Symptoms directly related to the voice	NO	11,23	10,0	8,37	31	**0,001***
	YES	19,00	18,0	11,26	83	
Non-relevant questions	NO	4,03	4,0	3,50	31	**0,038***
	YES	5,80	6,0	4,16	83	
Total	NO	34,39	35,0	24,78	31	**<0,001***
	YES	56,42	59,0	30,06	83	

* Statistically significant values (p≤0.05) – ANOVA Test

Caption: n=number of study subjects; PAD=Protocol of Autonomic Dysfunction

Discussion

The teachers evaluated presented an average time of professional voice use of 12.7 years, working on average 6.96 hours per day. Another study performed with preschool and lower elementary school teachers from the same town showed similar data, in which most of the teachers worked eight hours per day (56.31%), and had been working for about 14.6 years11. It was observed an average frequency of symptoms unrelated to the voice of 24.72, an average frequency of symptoms directly related to the voice of 16.89 and non-relevant questions of 5.32 (Table 1). Due to the recent adaptation and protocol validation to Brazilian Portuguese, its analysis quantifies the severity/frequency of symptoms in each domain3, yet, there is no cutoff point to determine the presence or absence of autonomic dysfunction in the subject.

A research with a similar sample (75 teachers averaging 12.27 years of teaching career and with an average workload of 6.96 hours), which related the number of teachers presenting altered and unaltered voices with variables such as length of professional experience, level of activity and workload, did not find statistically significant differences16. In the present work, albeit with a different methodological design, a relationship between signs and symptoms of autonomic dysfunction and occupational variables was not observed (Table 2), but there was a significant association between the presence of vocal complaints and symptoms related and unrelated to the voice in the PAD (Table 5).

Lower elementary school teachers work full--time with the same group of students, teaching all subjects and only leaving the classroom during time-activity. In order to maintain sustained and focused attention, gaining ground to effectively explain the contents and observing the four-hour work period, many teachers use up resources like shouting, whispering and interpret other voices17,18. In such cases, there are further aggravating environmental factors, as the children are aged between five and ten years old, using increased voice loudness due to their own personality and vocal development that occurs during this stage of life, even including the vocal competition with others classmates.

The use of such resources without vocal techniques and the adequate respiratory support, can lead to the onset of behavioral dysphonia as a consequence of vocal hyperfunction. This fact turns lower elementary school teacher into a strong candidate for developing voice disorders related to work conditions and organization, and the risk increases when there are other factors involved such as the incorrect voice use, breathing, nasal, pharyngeal, laryngeal and gastric problems, alcoholism or smoke21-23. However, there are other aspects directly related to the development of voice disorders that do not depend on vocal hyperfunction, like medical history and individual predisposition to certain vocal diseases21.

In the present study, a higher average frequency of symptoms of autonomic dysfunction in women was found (Table 4). These findings corroborate international researches1,6 and a recent national study10 that used the PAD, showing that female functional dysphonia may be an indication of stress and anxiety, with ANS hyperactivity1,10.

The specialized literature shows that dysphonia in teachers predominantly occurs in women (2.7: 1 ratio), indicating a female predisposition to develop vocal alterations12,14,15. This predisposition results from several factors associated as the anatomical configuration of the larynx, close proximity to children F0 and the multiple activities that are still bound up with women's social role2,12,14,15,22,24. This entails physical and psychological strain, generating stress, which in turn can lead to vocal disorders2,24.

In the present study, teachers who reported vocal complaints (Table 5) showed higher average of autonomic dysfunction symptoms in all domains, in agreement with the results found in a national survey that applied the PAD to teachers with and without vocal complaints10. Other studies found in the specialized literature on quality of life and voice also show greater number of symptoms and worse quality of life related to voice in subjects with vocal complaints13,25.

A study with professional voice users that applied a protocol developed by the authors led to the conclusion that the subjects perceived negative symptoms, but did not relate them to the voice26. Another study with teleoperators concluded that the group that was dissatisfied with the job presented more negative symptoms, such as fatigue while talking, burning sensation and voice failures, as well as the influence of emotional factors, when compared with the control group27.

A research that used other protocols like the Voice Handicap Index (VHI) and the Voice-Related

Quality of Life (VRQL) also found similar results, showing that individuals with vocal complaints have lower levels of quality of life related to the voice[28]. These findings show that there is a consensus in the literature that individuals who have vocal complaints, regardless the professional class, display worse results in protocols that verify quality of life and its relation to the voice[10].

When considering the totality of symptoms, the teachers who reported vocal complaints showed a significantly greater number compared with the group without complaints (Table 5), reinforcing the results achieved in another study that applied the PAD in teachers and showed that the group with vocal complaints presented an average of 13.7 symptoms in the PDA and the group without complaints, an average of 7.7, with significant differences between them[10].

A similar result was found in a study with 447 future schoolteachers, which, through the application of the protocol, concluded that the subjects with vocal complaints showed greater reactivity to stress[29]. The literature shows that besides the teachers' common vocal complaints, anxiety and stress have been related to their vocal symptoms[2,9].

The extra workload, a consequence of wage problems, leads teachers to undertake a double or triple shift, carry on full-time work at school, or even perform activities outside the education sector in order to increase the monthly income. This overload can lead to health problems such as vocal disorders and the need for sick leaves or absences[12,30]. Research on the demand for professional help due to voice disorders has shown that the assistance is only required in prolonged periods of aphonia, or when respiratory symptoms appear7. The teacher tends to seek professional assistance when is in the exhaustion stage, in which the larynx has been affected by the Local Adaptation Syndrome[4,5].

In the present study, high standard deviations were observed in the results shown in Tables 1, 3, 4 and 5, and in the translation and validation study of this protocol3 the standard deviations found are not displayed, hindering the discuss of the results. However, a recent research10 determined that only the presence or absence of symptoms would be considered, restricting the monitoring field, and found low standard deviations. Given the homogeneity of the sample of the present study, defined according to strict inclusion and exclusion criteria, and the high standard deviations found, it can be inferred that the analysis of the results of the PAD adopted was not the most reliable, as it evidenced a great variability, which can compromise the trustworthiness of the instrument itself. Therefore, further studies using the PDA will be necessary, as well as different forms of analysis to verify the variability and stability of the results obtained, for example, through the frequency of occurrence or just presence/absence of symptoms, as it was previously performed in a survey[10].

The contribution of this work lies in the exploration of a new self-assessment protocol, recently translated to Brazilian Portuguese3, related to the voice, which can bring data regarding professional voice use into clinical practice, considering teachers' high vocal demand and the importance of using self-assessment procedures that can verify singularities, which are not detected by traditional clinical evaluations. In the case of PAD, such teachers' particularities may suggest a possible relationship between vocal symptoms and ANS symptoms, presenting alternatives for the therapeutic planning.

Conclusion

In the group of teachers evaluated, the average frequency of symptoms unrelated to the voice was 24.72; the average frequency of symptoms directly related to the voice was 16.89 and non-relevant questions value was 5.32. Women and individuals with vocal complaints displayed more signs and symptoms of autonomic dysfunction.

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Annex 1

PROTOCOL OF AUTONOMIC DYSFUNCTION - PAD

PARK, K.; BEHLAU, M. Sinais e sintomas da disfunção autônoma em indivíduos disfônicos. J Soc Bras Fonoaudiol. v. 23, n. 2, p. 164-69, 2011.

Name: _____

Occupation: _____BD: _____/_____/_____ Age: _____

Sex: _____ Height: _____ Weight: _____ Date: _____/_____/_____

Mark with an "X" the symptoms and complaints you have been experiencing lately. There are no right or wrong answers. To answer this questionnaire, consider both the severity of the problem and the frequency of appearance, evaluating each item according to the sign or symptom you experience.
Use the following scale: 0=never; 1=rarely; 2=sometimes; 3=often; 4=always.

Number	Complaint	Level				
1	Cold hands	0	1	2	3	4
2	Cold feet	0	1	2	3	4
3	Excessive sweating	0	1	2	3	4
4	Feeling cold	0	1	2	3	4
5	Heat sensation	0	1	2	3	4
6	Diarrhea	0	1	2	3	4
7	Constipation	0	1	2	3	4
8	Intestinal gas	0	1	2	3	4
9	Air swallowing	0	1	2	3	4
10	Sickness	0	1	2	3	4
11	Lack of apetite	0	1	2	3	4
12	Belches	0	1	2	3	4
13	Hiccups	0	1	2	3	4
14	Heartburn (burning sensation)	0	1	2	3	4
15	Dizziness	0	1	2	3	4
16	Buzz	0	1	2	3	4
17	See bright spots	0	1	2	3	4
18	Difficulties in concentrating	0	1	2	3	4
19	Sleep badly	0	1	2	3	4
20	Suffer from lack of energy	0	1	2	3	4
21	You are tense	0	1	2	3	4
22	Kidney problems	0	1	2	3	4
23	Constant need to swallow	0	1	2	3	4
24	Sore throat	0	1	2	3	4
25	Wheezing	0	1	2	3	4
26	Specific allergy	0	1	2	3	4
27	Sneezing	0	1	2	3	4
28	Stuffy nose	0	1	2	3	4
29	Difficult nasal breathing	0	1	2	3	4
30	Breathing through the mouth (while sleeping)	0	1	2	3	4
31	Hearing loss	0	1	2	3	4
32	Head tension while talking	0	1	2	3	4
33	Headache	0	1	2	3	4
34	Constant need to yawn	0	1	2	3	4
35	Teeth grinding	0	1	2	3	4
36	Temporomandibular pain or discomfort	0	1	2	3	4
37	Painful neck (while or after talking)	0	1	2	3	4
38	Chest discomfort (while or after talking)	0	1	2	3	4
39	Fatigue while talking	0	1	2	3	4
40	Constant throat clearing	0	1	2	3	4
41	Chronic diseases	0	1	2	3	4
42	Heart palpitations	0	1	2	3	4
43	Difficulties to communicate with other people	0	1	2	3	4
44	Nail biting	0	1	2	3	4
45	Sensation of extreme tiredness	0	1	2	3	4
46	You are nervous	0	1	2	3	4