ASSOCIATION BETWEEN TEACHING EXPERIENCE AND VOICE SELF-ASSESSMENT AMONG PROFESSORS: A CROSS-SECTIONAL OBSERVATIONAL STUDY

Associação entre o tempo de magistério e a autoavaliação vocal em professores universitários: estudo observacional transversal

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ABSTRACT

Purpose: to investigate the association between teaching career time and voice self-assessment in college teachers. **Methods:** a questionnaire for sample characterization and identification of vocal sensations/symptoms and the Voice Activity and Participation Profile were applied to 42 college teachers. **Results:** the participants were considered young regarding teaching career length and there was a predominance of the female gender in the sample. The most reported vocal symptoms were dry throat (66.6%) and hoarseness (40.4%). There was no significant correlation between teaching career length and the partial and total Voice Activity and Participation Profile scores. Effects on daily communication(-0,08), social communication (-0,00), participation restriction (-0,20) and total score (-0,01) showed a negative (inverse) correlation. **Conclusion:** although the studied population presents complaints about vocal symptoms, this does not reflect in limitations of their professional and daily activities. In addition, the time of professional use of the voice does not compromise the voice-related quality of life.

KEYWORDS: Public Health; Voice; Faculty; Occupational Health; Quality of Life

INTRODUCTION

Considered a relevant factor in human socialization, voice impacts people's quality of life, especially of those who use it professionally. For this reason, research on the professional use of voice has received increasing attention in recent years[1].

Teachers are the voice workers with the greatest predisposition to develop voice disorders[2]. This occurs due to inappropriate working conditions and to the prolonged, intense use of the voice[3]. Researches[4-6] have revealed that these risk factors are harmful to teachers' health, leading to musculoskeletal, vocal, and respiratory issues that negatively impact their quality of life, i.e., their voice is vulnerable to time and inappropriate use[7].

According to the 3rd National Council on Professional Voice, diseases related to the vocal tract either deriving from or detrimental to work have effects at the social, economic, professional, and personal levels. Therefore, besides leading to voice sensations/symptoms, vocal disorders may negatively impact teachers' performance and quality of life[8].

Researches on teachers' health have been carried out mostly in kindergarten, elementary school, and high school given the prevalence and risk factors to which these professionals are exposed[1]. On the other hand, few studies are carried out with professors since they enjoy good work organizational and environmental conditions. However, changes over the past 20 years in work

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organization in universities have caused greater psychological strain with various working demands, both those pertinent to teaching itself and the ones related to competitiveness and recognition in the academy[9].

Some instruments have been developed aiming to verify the impact of voice changes on quality of life. In Brazil, there currently are three important instruments that have been translated, adapted, and validated: the Voice-Related Quality of Life (V-RQOL) questionnaire, the Vocal Activity and Participation Profile (VAPP) protocol, and the Voice Handicap Index (VHI). V-RQOL is considered a self-assessment protocol that is easily and quickly applied, VAPP can be used to map areas more affected by dysphonia on quality of life; while VHI assesses the handicap a dysphonic person experiences[10,11].

Taking into account how complex the subject of quality of life and voice issues is, this study aimed to assess the association between teaching experience and voice-related quality of life among professors.

METHODS

The present observational cross-sectional study was approved by the Research Ethics Committee of the Federal University of Healthcare Sciences of Porto Alegre under protocol 075/05 in July 23rd, 2011.

The sample consisted of 42 professors of the Federal University of Healthcare Sciences of Porto Alegre, who received an e-mail inviting them to take part in the research. Those who fit the inclusion criteria joined the sample. The following inclusion criteria were considered to select the subjects: Working as a professor for 40 weekly hours, having complains related to professional voice use, and signing the term of free and informed consent.

Regarding hearing loss information, the subjects were asked about their last hearing assessment and only one participant was excluded. Those who either had undergone or were undergoing any treatment for vocal disorder or voice enhancement were excluded.

First, the researcher applied a questionnaire to characterize the sample and identify voice sensations/symptoms. Next, the subjects answered the 28 items of the Vocal Activity and Participation Profile (VAPP) protocol[12], which assesses the perception of a voice issue regarding the limitation in activities and restriction in participation based on the concept of the International Classification of Functioning, Disability, and Health (ICF) of the World Health Organization (WHO).

The protocol contains five sections: self-assessment of vocal issue severity, effects on work, effects on daily communication, effects on social communication, and effects on expressing emotions. The tool uses a 10 cm analog visual scale (AVS) ranging from “regular” to “intense” in the first question and from “never” to “always” in the others. The maximum score for a question is 10 and the maximum total score is 280, which reflects the greatest negative impact of a vocal issue. Two additional scores were calculated: The Activity Limitation Score, by adding up the scores of the ten even-numbered questions of the aspects “work,” “daily communication,” and “social communication” (questions 2, 4, 6, 8, 10, 12, 14, 16, 18, and 20), and the Participation Restriction Score, by adding up the scores of the ten odd-numbered questions of those same aspects (questions 3, 5, 7, 9, 11, 13, 15, 17, 19, and 21).

Statistical analysis

Data normality was verified through Shapiro-Wilk test, which showed no Gaussian curve. Thus, the data were expressed as median, interquartile range (25-75), and minimum and maximum to describe the sample in the present study. Teaching experience and the VAPP scores were associated through Spearman’s coefficient of correlation. Correlation was considered higher the closer to 1 or –1 it was for positive/direct or negative/inverse correlations, respectively. All analyses used the software Statistical Package for Social Sciences (SPSS) version 19.0 at a 5% significance level ($p \leq 0.05$).

RESULTS

Table 1 shows the sample’s characteristics with age, teaching experience, and gender.

The most commonly reported vocal symptoms when the questionnaire was applied were throat dryness (66.6%) and hoarseness (40.4%).

Table 3 shows a grouping every 5 years indicating the number of professors who work at given periods, expressed as absolute and relative frequencies.

Table 4 shows the results of the domains and total VAPP score as reported by the participants.

Table 5 shows Spearman’s coefficient of correlation for the association among the domains and between the total VAPP score and teaching experience, which showed no significant correlation. The effects of domains on daily communication and on social communication, participation restriction score, and total score were negatively, or inversely, correlated.

Table 1 – Sample's characteristics with age, teaching experience, and gender

Age (years)	38	(26-59)
Gender*		
Female	36	(85.7%)
Male	6	(14.3%)
Teaching experience (years)	8.5	(1-31)

Legend: Values expressed as median (minimum-maximum) and * absolute and relative frequencies

Table 2 – Symptoms and feelings reported by the professors

Variables	G1 pre	G1 post	G2 pre	G2 post
Hoarseness	8 (40%)	5 (25%)	8 (36.3%)	3 (13.6%)
Throat dryness	12 (60%)	9 (45%)	15 (68.1%)	8 (36.3%)
Soreness	5 (25%)	0 (0%)	1 (4.5%)	0 (0%)
Tension	2 (10%)	1 (5%)	7 (31.8%)	0 (0%)
Pain	1 (5%)	0 (0%)	5 (22.7%)	1 (4.5%)
Vocal fatigue	6 (30%)	0 (0%)	10 (45.4%)	1 (4.5%)
Tightness feeling	2 (10%)	0 (0%)	2 (9.0%)	0 (0%)
Foreign body	2 (10%)	1 (5%)	5 (22.7%)	2 (22.7%)
Voice loss	5 (25%)	1 (5%)	2 (9.0%)	1 (4.5%)

Legend: Values expressed as absolute and relative frequencies

Table 3 – Grouping of teaching experience every 5 years

Teaching experience (years)	n	%
01-|05	10	23.90%
05-|10	14	33.40%
10-|15	7	16.60%
15-|20	7	16.60%
20-|25	3	7.10%
25-|31	1	2.40%
Total	42	100.00%

Legend: n = number of answer frequency; % = relative frequency.

Table 4 – Domains and total Vocal Activity and Participation Profile protocol score for the 42 subjects

Domains	Minimum	Quartile (25-75)	Median	Maximum
Vocal self-perception	0	75-5	2	7
Effects on work	0	1-7.2	3	19
Effects on daily communication	0	25	9.5	61
Effects on social communication	0	0-3.2	1	16
Effects on emotion	0	1.7-15	4	35
Participation restriction score	0	0-5	0	13
Activity limitation score	0	2-9.2	5	18
Questionnaire total	0	12-51.2	23.5	97

Table 5 – Correlation between teaching experience and Vocal Activity and Participation Profile (VAPP) of the 42 subjects

VAPP	r	p
Self-assessed voice problem severity	0.18	0.91
Effects on work	0.87	0.58
Effects on daily communication	-0.08	0.63
Effects on social communication	-0.00	0.99
Effects on emotion	0.01	0.96
Participation restriction score	-0.20	0.21
Activity limitation score	0.02	0.90
Questionnaire total	-0.01	0.963

Legend: r = Spearman correlation; p = level of significance

DISCUSSION

Women made up the majority of the sample in this study, as is the case with voice-related national and international researches[13-15] on teachers, which that also show that most teachers are female. Moreover, women have a higher prevalence of voice problems due to the requirements of using their voices professionally[13,14].

The age variable deserves due attention since vocal efficiency decreases as age advances. According to the literature, the age group between 25 and 45 years old is expected to have the best vocal efficiency, i.e., after this period a series of structural changes take place in the larynx that can impact voice quality[15]. In the sample studied, age ranged from 26 to 59 years and few subjects were above 45 years old, the point at which age-related voice changes may begin[4,16].

Regarding teaching experience, most professors were young both in age and career, with a median of 8.5 years. The authors did not set a minimum limit for inclusion in the research. According to the literature, both teachers beginning their careers and those with more experience require voice health counseling, which should begin at their undergraduate courses[2]. In this study, the professors showed great interest in taking part in the research, which is important because it suggests they are aware of how important their voices are for work.

Among the voice complaints reported, the most common were throat dryness and hoarseness. The same was found in other researches[11,17] at similar rates as the ones in this study. This finding is explained by the unfavorable work conditions such as strong competitive noise, classrooms with inappropriate acoustics, tension when speaking, lack of knowledge of appropriate vocal techniques, and lack of vocal hydration.

The VAPP protocol was chosen for being easily understood and applied, besides being comprehensive and covering several aspects not approached by other tools such as effects on work, which is the focus of this study.

The total VAPP score shows that the total score and the domains are below the values found in other researches[1,11]. Although the subjects did report voice complaints, these have not limited their work-related and daily activities. However, the authors highlight the importance of offering voice-health programs for the reduction of vocal symptoms and of training teachers for the appropriate use of their work tool.
Teaching experience and the domains and total VAPP score were not significantly correlated. These results indicate that, in the sample studied, the time during which the subjects have been using their voices professionally has not compromised voice-related quality of life yet. On the other hand, studies carried out with elementary school teachers[18,19] using quality of life and voice protocols showed that the longer the teaching experience, the more negative the individual's perception is regarding their physical, psychological, and social status.

It must be pointed out that the sample studied is heterogeneous with a broad variation in data, which partially justifies the lack of correlation between teaching experience and vocal self-assessment. Nevertheless, there was no intention of reducing or limiting the sample in order to show the reality of the staff of the university at hand. The authors highlight how important it is to use protocols that enable the individuals to reflect on their own voices, since, besides contributing to a better vocal assessment dimension, the patients' opinion on their own well-being must be taken into account to understand the actual perspective of the impact of a disease.

CONCLUSION

It can be concluded with the present study that, although the sample studied had voice complaints, this does not limit their professional and daily activities yet. Moreover, no association was found between teaching experience and the domains and total VAPP score, i.e., the time using the voice professionally does not compromise voice-related quality of life in this sample of professors.

RESUMO

Objetivo: verificar a associação entre o tempo de magistério e a autoavaliação vocal em professores universitários. **Métodos:** participaram deste estudo 42 professores universitários, os quais responderam a um questionário para caracterização da amostra e identificação das sensações/sintomas vocais e ao Protocolo do Perfil e Participação e Atividades Vocais **Resultados:** os participantes foram considerados jovens quanto ao tempo de magistério, pois a mediana foi de 8,5 anos, sendo que os autores não limitaram um número mínimo para participação na pesquisa, além disso, houve predomínio do gênero feminino na amostra estudada. Os sintomas vocais mais referidos pelos participantes foram sensação de secura na garganta (66,6%) e rouquidão (40,4%). A correlação entre o tempo de magistério com os domínios e o escore total do Protocolo do Perfil e Participação e Atividades Vocais não mostrou correlação significante. Os escores dos domínios: efeitos na comunicação diária (valor da correlação r= –0,08 e valor do p= 0,63), na comunicação social (valor da correlação r=-0,00 e valor do p=0,99), pontuação de restrição de participação (valor da correlação r= –0,20 e valor do p=-0,21) e o escore total (valor da correlação r= –0,01 e valor do p=-0,96) apresentaram correlação negativa, ou seja, inversas. **Conclusão:** embora a população estudada apresentasse queixas de sintomas vocais, isso não se reflete na limitação de suas atividades profissionais e atividades diárias. Portanto, neste estudo o tempo de uso profissional da voz ainda não compromete a qualidade de vida relacionada à voz referida pelos por professores.

DESCRITORES: Saúde Pública; Voz; Docentes; Saúde Ocupacional; Qualidade de Vida

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