https://doi.org/10.23925/2176-2724.2021v33i1p59-67

Investigation of mental disorders in adherence to voice therapy

Investigação dos transtornos mentais na adesão à terapia de voz

Investigación de trastornos mentales en la adhesión de la terapia de voz

Ana Emília Ferreira Alves[*]
Hêmmylly Farias da Silva[*]
Rafael Nóbrega Bandeira[*]
Anna Alice Almeida[*]

Abstract

Introduction: Lack of adherence to vocal speech therapy is common, which may be due to several factors. Notwithstanding, few studies have addressed the emotional characteristics of patients. **Purpose:** To verify whether trait and state of anxiety, as well as common mental disorders and vocal symptoms, may differentiate patients with and without adherence to voice therapy. **Methods:** Retrospective field study with a quantitative approach. Participants were 24 patients with a mean age of 47.79 (+18.83) years, distributed into the following groups: patients who adhered to speech therapy (AP) and patients who did not adhere to speech therapy (NAP). The Voice Symptom Scale (VoiSS), the Self-Reporting Questionnaire (SRQ), and the State-Trait Anxiety Inventory were applied. **Results:** For trait and state of anxiety, AP patients averaged 34.20 (+10.67) and 39.53 (+11.09), and NAP patients averaged 33.89 (+10.34) and 45.22 (+9.34), respectively. For the SRQ-20, AP patients averaged 5.93 (+3.99), and NAP patients 7.33 (+3.66). Finally, for the total VoiSS score, the AP group averaged 56.54 (+27.51), and the NAP group 46.38 (+15.80). The groups did not differ significantly between themselves on trait and state of anxiety, SRQ, and total VoiSS score. **Conclusion:** Patients without adherence to speech therapy have lower levels of education, less vocal symptoms, and higher scores for common

* Universidade Federal da Paraíba (LIEV/UFPB), João Pessoa (PB), Brazil.

Funding: This manuscript is linked to a research project that received funding from the National Council for Scientific and Technological Development (CNPq), process no. 482337 / 2013-3.

Authors' contributions:
AEFA: Contributed to the study design, data acquisition and text writing.
HFS and RNB: Contributed to data analysis and interpretation and critical text review.
AAFA: Contributed to the conception and design of the study, analysis and interpretation of data, writing and critical text revision.

Correspondence e-mail: Anna Alice Almeida - anna_alice@uol.com.br
Received: 05/23/2020
Accepted: 10/28/2020

mental disorders. However, these factors were not decisive to differentiate these patients with respect to adherence to voice therapy.

Keywords: Behavior; Mental Health; Anxiety; Voice; Dysphonia; Speech Therapy.

Resumo

Introdução: A falta de adesão à fonoterapia é comum na área de voz. Diversos fatores podem estar associados, porém poucos estudos se propuseram a estudar características emocionais dos pacientes. **Objetivo:** Verificar se o traço e estado de ansiedade, transtornos mentais comuns e sintomas vocais podem diferenciar pacientes com e sem adesão à fonoterapia em voz. **Métodos:** Estudo retrospectivo, de campo e quantitativo. Participaram 24 pacientes, com média das idades de 47,79 (±18.83) anos, distribuídos em: Grupo de pacientes que aderiram à fonoterapia (PAF) e pacientes que não aderiram à fonoterapia na área de voz (PNAF). Foram aplicados a Escala de Sintomas vocais (ESV), *Self Reporting Questionnaire* (SRQ) e Inventário de Ansiedade Traço-Estado. **Resultados:** Pacientes do PAF apresentaram médias de 34.20 (±10,67) e 39,53 (±11,09) para o traço e estado de ansiedade, respectivamente. Enquanto participantes do PNAF apresentaram médias de 33.89 (±10,34) e 45,22 (±9,34), respectivamente. No que se refere ao SRQ-20, pacientes do PAF obtiveram média de 5,93 (±3,99) e o PNAF de 7,33 (±3,66). Finalmente, o grupo PAF apresentou média de 56,54 (±27,51) e o PNAF de 46,38 (±15,80) para o escore total da ESV. Não foram observadas diferenças entre os grupos para o traço e estado de ansiedade, SRQ e escore total da ESV. **Conclusão:** Pacientes sem adesão à fonoterapia em voz apresentam menores graus de escolaridade, de sintomas vocais e escores mais elevados de transtornos mentais comuns. Entretanto não foram fatores decisivos para diferenciá-los quanto à adesão à fonoterapia vocal.

Palavras-chave: Comportamento; Saúde mental; Ansiedade; Voz; Disfonia; Fonoterapia.

Resumen

Introducción: La falta de adherencia a la terapia del habla es común en el área de la voz. Se pueden asociar varios factores, pero pocos estudios han propuesto estudiar las características emocionales de los pacientes. **Objetivo:** Verificar si el rasgo y el estado de ansiedad, los trastornos mentales comunes y los síntomas vocales pueden diferenciar a los pacientes con y sin adherencia a la terapia del habla en la voz. **Métodos:** Estudio retrospectivo, de campo y cuantitativo. Participaron 24 pacientes, con una edad media de 47,79 (+18,83) años, distribuidos en: Grupo de pacientes que adhirieron a la terapia del habla (PATH) y pacientes que no se adhirieron a la terapia del habla en el área de la voz (PNATH). Se aplicaron la Escala de síntomas de voz (ESV), el *Self Reporting Questionnaire* (SRQ) y el Inventario de ansiedad por rasgo- estado. **Resultados:** los pacientes con PATH tuvieron promedios de 34.20 (+10.67) y 39.53 (+11.09) para el rasgo y el estado de ansiedad, respectivamente. Mientras que los participantes de PNATH tuvieron promedios de 33.89 (+10.34) y 45.22 (+9.34), respectivamente. Con respecto al SRQ-20, los pacientes del PATH obtuvieron un promedio de 5.93 (+3.99) y el PNATH de 7.33 (+3.66). Finalmente, el grupo PATH tuvo un promedio de 56.54 (+27.51) y el PNATH de 46.38 (+15.80) para el puntaje total de ESV. No hubo diferencias entre los grupos para el rasgo (p = 0,98) y el estado (p = 019) de ansiedad, SRQ (p = 0,4) y la puntuación total de ESV (p = 0,18). **Conclusión:** Los pacientes sin adherencia a la terapia del habla tienen niveles más bajos de educación, síntomas vocales y puntuaciones más altas para los trastornos mentales comunes. Sin embargo, no fueron factores decisivos para diferenciarlos con respecto a la adherencia a la terapia del habla vocal.

Palabras clave: Conducta; Salud mental; Ansiedad; Voz; Disfonía; Logoterapia.

Introduction

Every voice has unique characteristics resulting from the complex relationship between anatomical, physiological, genetic, social, and emotional factors[1]. Mental health conditions such as anxiety disorders, stress, and/or other common mental disorders (CMDs) can be closely related to dysphonia[2,3].

Behavioral dysphonia consists of the presence of a vocal disorder triggered either by the lack of knowledge of the proper use of the voice, by the use of a deficient vocal model, and/or by the maintenance of harmful vocal habits[4], with possible involvement of emotional issues[5].

Anxiety is one of the most common mental disorders in subjects with behavioral dysphonia[2]. The vocal production mechanism of patients with CMDs undergoes neurophysiological impacts at the respiratory and laryngeal levels. This leads to aerodynamic control changes and musculoskeletal limitations, including increased tension in the tongue and pharynx, and affects the intrinsic and extrinsic muscles of the larynx, reducing the vertical displacement of this structure[6].

Changes in voice production can cause social, professional, financial, and emotional impacts such as the development or worsening of common mental disorders[7-8]. The literature highlights speech therapy rehabilitation as one of the best therapeutic resources for treating behavioral dysphonia[9].

Speech therapy consists of procedures to induce changes in vocal habits and behaviors so as to improve voice production, reducing the negative impacts caused to the individual's well-being[9]. However, its effectiveness can be influenced by the patient's level of adherence.

This is a current topic that is of difficult understanding since it involves several external and internal factors that may correlate with adherence to treatment[10,11]. Among the factors that depend most directly on the patient are self-perception about their problem and vocal symptoms, their knowledge about rehabilitation processes, and the recognition of the need for monitoring the problem[12,13]. All of these factors influence the way in which patients commit themselves to the orientations and behavioral changes suggested by the therapist.

Low adherence to vocal speech therapy is relatively common in clinical practice. A review[14] analyzed 294 records of dysphonic patients and found that 38% of patients did not seek speech therapy after medical indication. Of those who started rehabilitation, 47% did not return after the first treatment session.

Another study[15] observed that the rate of abandonment of vocal speech therapy can range from 10 to 65%. This can be due to factors external to the patient, such as socioeconomic, professional, and cultural issues, and factors internal to the patient, such as the presence of psychological disorders and the degree of complexity that the patient assigns to the treatment[10,14].

It is noteworthy that few studies in the current scientific literature[10,14,15] have sought to understand adherence to vocal speech therapy and the involvement of common mental disorders and vocal symptoms in this process. Conducting studies in this context may contribute to the scientific literature, bringing further evidence to improve the therapeutic dynamics in voice and especially to guide issues related to indirect vocal therapy. This can increase the effectiveness of vocal speech therapy, resulting in better adherence of patients.

Thus, this study analyzes whether trait and state of anxiety as well as common mental disorders and vocal symptoms can differentiate patients with and without adherence to speech therapy.

Methods

This is a retrospective field study with a quantitative approach. The study was approved by the Research Ethics Committee of the Health Sciences Center of a Higher Education Institution (HEI) under protocol number 383.061/2013. All procedures are in accordance with resolutions 466/12 and 510/16 of the National Health Council (NHC).

Participants

The study included patients with behavioral dysphonia who sought care at the Speech-Language Pathology Clinic of an HEI. This clinic is a reference unit for the free treatment of people with speech-language complaints.

All participants voluntarily sought this HEI with a voice complaint. All were invited to participate in voice therapy and, at their option, some continued and others gave up. The proposal of this study was to retrospectively analyze the data of the initial assessment of patients who underwent

therapy (group of patients with adhesion to speech therapy - AP) and those who dropped out (group of patients who did not adhere to speech therapy - NAP). The aim was to check whether there was any previous factor related to anxiety and common mental disorders that determined, or not, adherence to speech therapy. This study did not intend to address post-therapy assessment or therapeutic effectiveness, considering that some participants quit therapy.

For the purposes of analysis, the participants were divided into two groups according to the attendance at therapy sessions: (1) patients with adherence to speech therapy (AP), that is, who regularly attended the first six sessions of speech therapy, without absences; and (2) patients who did not adhere to speech therapy (NAP), that is, who had three or more absences in the first six sessions without justification, or who abandoned speech therapy, regardless of the reason.

Eligibility criteria were as follows: (1) be between 18 and 59 years old; (2) absence of neurological disorders or any other comorbidity affecting cognition and/or communication; and (3) not having previously undergone speech therapy and/or psychological/psychiatric monitoring.

Hence, the sample was composed of 24 participants. The AP group consisted of 15 individuals with a mean age of 46.8 years (+21.0), while the NAP group consisted of 9 individuals with a mean age of 49.4 years (+15.3). In both groups, most of the sample was female, with 66.7% (n=10) in the AP group and 66.7% (n=6) in the NAP group. Most patients in the AP group were individuals with complete higher education, being 40% (n=6). In the NAP group, individuals with incomplete higher education prevailed, being 44.4% (n=6). None of the participants reported having a postgraduate degree. It is worth noting that the groups did not differ for gender (p=0.92) and education level (p=0.38). Data on gender and education levels are shown in Table 1.

Table 1. Frequency and comparison of sample descriptive data by group.

Variable		AP (n=15)		NAP (n=9)		p-value
		n	%	n	%	
Gender	Female	10	66.7	6	66.7	0.92[a]
	Male	5	33.3	3	33.3	
Education level	Complete higher education	6	40.0	2	22.2	0.38[b]
	Complete high school	4	26.7	2	22.2	
	Incomplete higher education	3	20.0	4	44.4	
	Incomplete elementary school	1	6.7	1	11.1	
	Complete elementary school	1	6.7	0	0	

Caption: AP = Adhesion patients; NAP = Non-adhesion patients; aPearson's chi-square test; bMann-Whitney test

Materials and data collection procedures

For this study, we consulted medical records of patients who were referred for speech therapy and who had answered three questionnaires: the Voice Symptom Scale (VoiSS), the Self-Reporting Questionnaire (SRQ), and the State-Trait Anxiety Inventory (STAI). The registration form of each patient was also analyzed to obtain data such as gender, age, education level, and attendance (weekly frequency of speech therapy).

The Vocal Symptom Scale (VoiSS) is a psychometrically robust self-assessment instrument[16] used to analyze the frequency of vocal symptoms. In this study, a translated and validated version for Brazilian Portuguese was used, which has 30 items answered using a 5-point Likert scale. The calculation of the VoiSS occurs through a simple sum of the items of each domain: limitation, physical, emotional, and total, whose cutoff points for alteration are, respectively: 11.5, 6.5, 1.5, and 16 points.

The Self-Reporting Questionnaire (SRQ) is an instrument recommended by the World Health Organization for screening of CMDs such as anxiety,

stress, depression, somatoform disorders, and neurasthenia. The instrument has a high correlation with the psychiatric diagnosis of these disorders[17-18]. The version validated for Brazilian Portuguese, used in this study, has 23 items answered in a dichotomous way: yes or no. Cutoff values for males and females are, respectively, 7 and 6 points.

The State-Trait Anxiety Inventory (STAI) is one of the most used instruments to quantify subjective elements related to anxiety[19]. It has two subscales with 20 items each, answered using a 4-point Likert scale. The "State" subscale assesses the participant's level of anxiety at the time of the research, with the aim of quantifying the state of temporary anxiety. The second subscale, "Trait", assesses and quantifies the level of stable anxiety, a personality trait of the patient[19]. In both subscales, individuals can be classified according to the level of anxiety. Scores between 20 and 40 points correspond to "Low Anxiety", and scores between 41 and 80 points correspond to "High Anxiety"[17].

It is important to highlight that the patients were instructed about the procedures at the beginning of the therapeutic sessions and, upon agreement, they signed a term of commitment on the importance of frequency and punctuality. This term informs that, in the case of three absences without justification, the patient would be excluded from appointments.

The patients were initially evaluated in a single therapeutic session. Then, the first six treatment sessions took place. The therapeutic sessions followed an eclectic approach, with direct and indirect therapy in group modality. The sessions were guided by trainees in the Speech Therapy course, under the supervision of a professor specialized in the voice field. Each service session took place once a week, lasting 90 minutes. The choice to monitor the patient's adherence to speech therapy after six sessions was based on studies conducted with groups of patients, which suggest a frequency of six to seven sessions in total[15,20].

Data analysis

The data were entered into an electronic spreadsheet and transferred to the IBM Statistical Package for the Social Sciences (SPSS) software (Trial Version 22), being analyzed quantitatively. Descriptive and inferential statistics were performed using Pearson's chi-square tests for nominal variables, Mann-Whitney U for ordinal variables, and t test for independent samples in the case of scalar variables. For all tests, a 95% confidence interval was used with a significance level below 5%.

Results

The results of the instruments used in this research, including their domains and subscales, are presented in Table 2. Regarding VoiSS scores, dysphonic patients with or without adherence to vocal speech therapy present all domains altered according to the cutoff values. However, the means of the AP and NAP groups did not differ significantly between themselves on the domains Limitation (p=0.44), Emotional (p=0.26), Physical (p=0.27), and Total (p=0.18).

Table 2 also shows that the NAP group presented means higher than the cutoff point in the SRQ, indicating a higher frequency of CMDs in relation to the AP group. However, again, there were no significant differences in the comparison of means between groups for this variable (p=0.40).

According to STAI averages, the AP group showed low trait and state of anxiety, while the NAP group showed low trait and high state of anxiety. For STAI scores, once again, there were no statistically significant differences between groups (Table 2).

Table 2. Results and comparison of self-assessment protocols by group.

Variable		AP (n=15)		NAP (n=9)		p-value
		M	SD	M	SD	
VoiSS	Limitation	28.0	13.8	25.3	9.9	0.44
	Emotional	14.0	10.1	8.2	3.9	0.26
	Physical	13.3	5.6	11.0	3.9	0.27
	Total	56.5	27.5	46.3	15.8	0.18
SRQ	Total	5.9	3.9	7.3	3.6	0.40
STAI	Trait	34.2	10.6	33.8	10.3	0.98
	State	39.5	11.0	45.2	9.3	0.19

Caption: AP = Adhesion patients; NAP = Non-adhesion patients; M = Mean; SD = Standard Deviation; t test for independent samples

Table 3 was designed to present and compare the frequency of changes in the SRQ results and STAI classifications of patients who would undergo vocal speech therapy. Of these, 46.7% (n=7) of AP and 66.7% (n=6) of NAP patients showed altered results in the SRQ. Despite the higher difference in the second group, there was no statistical significance (p=0.34) to corroborate these data.

Finally, the majority of participants in both groups had a low state of anxiety (Table 3). However, with regard to trait anxiety, low trait prevailed (60%; n=9) in the AP group, and high trait (66.7%; n=6) in the NAP group. There were no statistically significant differences between groups for classifications of state (p=0.80) and trait of anxiety (p=0.20).

Table 3. Results and comparison of the classification of the STAI and SRQ-20 protocols by group.

Variable			AP (n=15)		NAP (n=9)		p-value
			n	%	n	%	
SRQ	Present		7	46.7	6	66.7	0.34
	Absent		8	53.3	3	33.3	
STAI	State	low	11	73.3	7	77.8	0.80
		high	4	26.6	2	22.2	
	Trait	low	9	60.0	3	33.3	0.20
		high	6	40.0	6	66.7	

Caption: AP = Adhesion patients; NAP = Non-adhesion patients; Pearson's chi-square test

Discussion

In this study, we used self-assessment instruments to analyze the influence of vocal symptoms as well as common mental disorders and anxiety in adherence to vocal speech therapy. This is a theme that is still not widespread in the current scientific literature, and this is one of the few studies that have addressed this purpose.

Self-assessment is a valuable procedure in clinical practice since there is a weak correlation between self-perception and professional perception of the problem presented by the patient[17]. Thus, only through this resource is the patient able to inform the real impact of vocal and emotional disorders on the different aspects of his/her life.

In this study, patients from both groups had high scores, above the cutoff values, in all domains of the VoiSS. This is an expected result since this scale was developed to measure the symptoms under study, having an excellent performance to differentiate dysphonic from non-dysphonic patients[17].

Despite the absence of statistically significant differences for VoiSS scores between groups, the NAP group had lower scores than the AP group. Thus, assuming that patients without adherence have less perception of the impact of vocal symptoms, the knowledge of the degree of severity of a problem appears to correlate directly with adherence to its treatment, corroborating with literature findings[21].

Research also associates low adherence with low level of education[22,23]. These findings corroborate the present study, as patients in the group without adherence to vocal speech therapy had lower education levels than patients with adherence to the proposed treatment, even without statistical differentiation between groups.

With regard to the self-assessment of common mental disorders, patients without adherence to speech therapy had higher averages in the SRQ compared to patients with adherence to speech therapy. Likewise, the NAP group showed higher STAI scores, including a high state of anxiety. NAP values were higher than the cutoff points of these instruments, a fact that did not occur with the AP group.

The high scores of common mental disorders may be due to the characteristics of the sample, composed mostly of women. This population shows a higher prevalence of emotional disorders such as anxiety and depression, due to social, cultural, and hormonal factors[24,25].

Dysphonia studies usually show a high frequency of women. This is because women show greater predisposition to vocal changes than men due to anatomophysiological factors[26].

The scientific literature shows that lack of adherence to voice therapy, leading to a large dropout of patients, may correlate with the influence of emotional states in the way the patient deals with the presence of dysphonia and, consequently, with the influence of these states in the search for the appropriate treatment[9,24].

Another study pointed to this relationship[22] after analyzing the difficulties in adhering to insulin analog in approximately 3,500 patients with type 2 diabetes previously treated with human insulin. The authors found that the majority of the sample did not have difficulties in adherence. Notwithstanding, patients who presented this difficulty reported coping strategies guided by emotional issues; little perception of the problem; and depressive symptoms.

When investigating individual characteristics of 167 smokers with and without adherence to a support group for smoking cessation, a study found that variables such as age, daily cigarette consumption, and anxiety levels correlate directly with adherence[27].

Thus, considering that the scientific literature correlates mental disorders such as anxiety and depression with low or no adherence to various treatments, it can be concluded that the highest scores in the self-assessment instruments of CMDs in the NAP group also correlate with low adherence to vocal speech therapy.

In the present study, of a total of 24 participants, 37.5% (n=9) did not show adherence to voice treatment. This corresponds to a high frequency, which has nevertheless been previously described in the literature[10,14,15]. However, these studies did not consider the emotional aspects of patients and did not reflect on the relationship between dysphonia and common mental disorders. In turn, a study with a population of teachers analyzed this association, in which teachers with common mental disorders were 5.8 times more likely to have dysphonia than teachers without mental disorders[28].

Literature findings demonstrate the interference of emotions with the genesis, maintenance, or worsening of dysphonia. According to these findings, individuals with vocal complaints present a higher level of psychological distress and common mental disorders than subjects who do not report any type of vocal discomfort[29]. A study in the same direction sought to analyze vocal risk factors and emotional aspects of teachers with and without vocal complaints. The authors observed that teachers with vocal complaints are more emotionally committed than teachers without vocal complaints. This fact increases the suspicion of the relationship between vocal symptoms and the patient's emotional component[30].

Another study[3] investigated the correlation between trait anxiety, state anxiety, and vocal parameters. The authors concluded that the greater the level of anxiety, the greater the impairment in the subject's communication process, as well as the number of perceived vocal symptoms.

It must be emphasized that the cause and effect relationship of common mental disorders such as stress, anxiety, and depression with dysphonia is not yet clear in the scientific literature[28]. However, since this relationship is already known, the need to consider CMDs in adherence to vocal speech therapy is highlighted.

The limitations of the present study refer mainly to the sample size. Conducting studies with a more robust and representative sample of dysphonic patients with and without adherence to speech therapy would allow the inference of these results. In addition, further studies may elucidate whether the findings observed in this study and in

the literature of other areas, such as lower levels of education, lower perception about the problem, and higher levels of common mental disorders influencing low adherence, could also apply to adherence to vocal speech therapy.

Despite the limitations, this study is relevant because the information presented, still limited in the scientific literature, can be decisive in speech therapy. Further information on common mental disorders and emotional management, both as components of indirect therapy and from the moment of assessment, with assertive and customized guidelines, can decrease the dropout rate. This will favor adherence and greater success in the therapeutic approach of these patients.

Conclusion

Patients without adherence to speech therapy have lower levels of education, less vocal symptoms, and higher scores for common mental disorders and state anxiety. However, these variables were not decisive factors to differentiate patients with behavioral dysphonia regarding adherence to voice therapy.

References

1. Góes TRV, Ferracciu CCS, Silva DRO. Associação entre a adesão da terapia vocal e perfil de atividades vocais em pacientes disfônicos comportamentais. CoDAS. 2015; 28(5): 595-601.

2. Seifert E, Kollbrunner J. Stress and distress in non-organic voice disorders. Swiss Medical Weekly. 2005;135(27/28): 387-397.

3. Almeida AAF, Behlau M, Leite JR. Correlação entre ansiedade e performance comunicativa. Revista da Sociedade Brasileira de Fonoaudiologia. 2011;16(4):384-386.

4. Behlau M, Madazio G, Moreti F, Oliveira G, Santos LMA, Paulinelli BP, Junior EBC. Efficiency and cutoff values of self-assessment instruments of the impact of a voice problem. Journal of voice, v. 30, n. 4, p. 506.e9-506.e18, 2016.

5. Willinger U, Aschauer HN. Personality, anxiety and functional dysphonia personality and individual differences, Science Direct. 2005; 39(8):1441-1449.

6. Souza OC, Hanayama EM. Fatores psicológicos associados a disfonia funcional e a nódulos vocais em adultos. Revista CEFAC. 2005;7(3): 388-97.

7. Sinkiewicz A, Jaracz M, Mackiewicz-Nartowicz H, Wiskirska-Woznica B, Wojnowski W, Bielecka A, Krásny J, Kaminska I,Borkowska A. Affective temperament in women with functional aphonia. J Voice. 2013; 27(1):129. e11-129. e14.

8. ROCHA, L. M.; BEHLAU, M.; SOUZA, L. D. M. Behavioral dysphonia and depression in elementary school teachers. J Voice. 2015; 29(6): 712-713.

9. Behlau M, Pontes P, Vieira VP, Yamasaki R, Madazio G. Apresentação do Programa Integral de Reabilitação Vocal para o tratamento das disfonias comportamentais. CoDAS. 2013; 25(5): 492-96.

10. Leer EV, Connor NP. Patients perceptions of voice therapy adherence. J Voice. 2010; 24(4): 458-69.

11. Trajano FMP. A efetividade da terapia fonoaudiológica de grupo para a redução da ansiedade de pacientes com disfonia. [Dissertação]. Universidade Federal da Paraíba, João Pessoas, 2015.

12. Botega NJ. Prática psiquiátrica no hospital geral. Porto Alegre: Artmed, 2001.

13. Silveira LMC, Ribeiro VMB. Grupo de adesão ao tratamento: espaço de "ensinagem" para profissionais de saúde e pacientes. Comunic, Saúde, Educ. 2005;16(9): 91-104.

14. Portone C, Johns MM, Hapner ER. A review of patients' adherence to the recommendation for voice therapy. J Voice. 2008; 22(2):192-196.

15. Law T, Lee KYS, HO NY, VAN HASSELT AC, TONG MCF. The Effectiveness of Group Voice Therapy: a group climate perspective. J Voice. 2012; 26(2): 41-8.

16. Behlau M. Zambon F, Moreti F, Oliveira G, Barros Couto E. Voice Self-assessment Protocols: Different Trends Among Organic and Behavioral Dysphonias. J Voice. 2017; 31(1): 112.e13-112.e27.

17. Mari J, Williams PA. validity study of a psychiatric Screeninng Questionnaire (SRQ-20) in primary care in the city of São Paulo. Br J Psychiatry. 1986;148(1): 23-6.

18. Gonçalves MD, Stein AT, Kapczinski F. Avaliação de desempenho do Self-Reporting Questionnaire como instrumento de rastreamento psiquiátrico: um estudo comparativo com o Structured Clinical Interview for DSM-IV-TR. Cad. Saúde Pública. 2008; 24(2): 380-390.

19. Fioravanti ACM, Santos LF, Maissonette S, Cruz APM, Landeira-Fernandez J. Avaliação da estrutura fatorial da Escala de Ansiedade-Traço do IDATE. Avaliação Psicológica. 2006; 5(2): 217-224.

20. Almeida AAF, Queiroz Telles M. A autopercepção como facilitadora de terapia vocal em grupo. Distúrb Comun 2009; 21(3): 373-83.

21. Alm-Roijer C,Stagmo M, Erhardt GUL. Better Knowledge Improves Adherence to Lifestyle Changes and Medication in Patients with Coronary Heart Disease. European Journal of Cardiovascular Nursing. 2004; 3(4): 321-330.

22. Kokoszka A. Treatment adherence in patients with type 2 diabetes mellitus correlates with different coping styles, low perception of self-influence on disease, and depressive symptoms. Patient Prefer Adherence. 2017; 11: 587-595.

23. Vélez-Gómez MC, Vásquez-Trespalacios EM. Adherence to topical treatment of glaucoma, risk and protective factors: A review. Arch Soc Esp Oftalmol. 2018; 93(2): 87-92.

24. Rocha SV, Almeida MMG, Araújo TM, Rodrigues WKM, Santos LB, Júnior JSV. Prevalência de transtornos mentais comuns em idosos residentes em município no nordeste do Brasil. Rev Salud Pública. 2012;14(4): 620-29.

25. Albert P. R. Why is depression more prevalent in women? Journal of psychiatry & neuroscience: JPN. 2015; 40(4), 219–221.

26. Inamoto Y, Saitoh E, Okada S, et al. Anatomy of the larynx and pharynx: effects of age, gender and height revealed by multidetector computed tomography. J Oral Rehabil. 2015; 42(9): 670-677.

27. Figueiró LR, Barros HMT, Ferigolo M, Dantas DCM. Assessment of factors related to smokers' adherence to a short-term support group for smoking cessation: a longitudinal study in a developing country. Trends Psychiatry Psychother. 2017; 39(1):19-28.

28. Medeiros AM, Barreto SM, Assunção AA. Voice disorders (Dysphonia) in public school female teachers working in Belo Horizonte: prevalence and associated factors. J Voice. 2008; 22(6): 676-687.

29. Millar A, Deary IJ, Wilson JA, MacKenzie K. Is an organic/ functional distinction psychologically meaningful in patients with dysphonia? Journal of psychosomatic research. 1999; 46(6): 497-505.

30. Costa DB, Lopes LW, Silva EG, Cunha GMS, Almeida LNA, Almeida AAF. Fatores de risco e emocionais na voz de professores com e sem queixas vocais. Rev. CEFAC. 2013; 15(4):1001-10.