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Effect of a program to improve oral communication skills on self-reported anxiety and stress

Efeito de um programa de aprimoramento das habilidades de comunicação oral na ansiedade e no estresse autorreferidos

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ABSTRACT

Purpose: The present study aimed to verify the effects of a speech therapy program to improve oral communication skills by measuring self-reported anxiety and stress indexes. **Methods**: This is a randomized controlled clinical trial approved by the Research Ethics Committee under number 2,729,273. Research participants were randomly divided into two groups: intervention group (IG) and control group (CG). The IG participated in six workshops to improve oral communication skills. The CG participated in a single vocal health workshop. The protocols were applied before the first and after the last workshop: Sample characterization questionnaire, Self Statements During Public-Speaking Scale (SSPS), Perceived Stress Scale (PSS), and the Social Anxiety Questionnaire for Adults (SAQA). After six months, a follow-up was carried. **Results**: The IG showed, after training, a significant reduction of anxiety scores in the SAQA in general, and in all protocol parameters. The PSS values related to stress demonstrated an increase in positive self-assessment and a decrease in negative self-assessment. In the self-assessment when speaking in public by the SSPS, there was an increase in the overall score in relation to the CG. **Conclusion**: The speech therapy improvement program for oral communication skills promoted a decrease in self-reported anxiety and stress levels, increasing positive self-perception when speaking in public. The present study was registered in the Brazilian Registry of Clinical Trials (ReBEC) under the primary identifier RBR-37r3S2.

Keywords: Speech therapy; Communication skills; Anxiety; Stress; Voice training

RESUMO

Objetivo: Verificar os efeitos de um programa fonoaudiológico de aprimoramento das habilidades de comunicação oral, por meio da mensuração dos índices autorreferidos de ansiedade e estresse. **Métodos:** Trata-se de um ensaio clínico randomizado controlado. Os participantes da pesquisa foram divididos aleatoriamente em dois grupos: grupo intervenção (GI) e grupo controle (GC). O GI participou de seis oficinas de aprimoramento das habilidades de comunicação oral. O GC participou de uma única oficina sobre saúde vocal. Foram aplicados, antes da primeira e após a última oficina, os protocolos: Questionário de caracterização da amostra, *Self Statements During Public-Speaking Scale* (SSPS), *Perceived Stress Scale* (PSS) e o *Cuestinário de Ansiedad Social para Adultos* (CASO). Após seis meses, foi realizado um *follow-up*. **Resultados:** O GI apresentou, após o aprimoramento, redução significativa dos escores de ansiedade no CASO, de forma geral, e em todos os parâmetros do protocolo. Os valores da PSS referentes ao estresse demonstraram aumento da autoavaliação positiva e diminuição da autoavaliação negativa. Já na autoavaliação ao falar em público, foi verificado, na SSPS, aumento da pontuação geral, em relação ao GC. **Conclusão:** O programa de aprimoramento fonoaudiológico das habilidades de comunicação oral promoveu a diminuição nos índices de ansiedade e estresse autorreferidos, aumentando a autopercepção positiva ao falar em público. O presente estudo foi registrado no Registro Brasileiro de Ensaios Clínicos (ReBEC), sob o identificador primário RBR-37r3S2.

Palavras-chave: Fonoaudiologia; Comunicação; Ansiedade; Estresse; Treinamento de voz

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INTRODUCTION

Communication is an essential skill for human beings. Its process occurs in the exchange of messages between a sender and a receiver through verbal, vocal, and non-verbal channels. In addition to its social role, communication plays an important role in the professional and leadership context[1]. What we say, how we speak, and what we want to say makes a total difference and can change the way we are understood by others. Thus, the use of effective communication strategies can reduce stress, promote well-being and, therefore, improve the overall quality of life[2].

Although essential for personal and professional development, public speaking is still considered one of the most avoided and feared activities by people around the world. Contemporary society lives a reality that increasingly demands the search for strategies that make personal and professional progress possible. However, communication plays an important role in this process[3,4]. Aspects related to professional development are involved with the communicational performance of both employees and managers, where the act of speaking publicly is a way of expressing ideas and arguments[1,5]. For university students, public speaking is a requirement that becomes common in their training process. In the presentation of seminars, papers, or even during class, the act of speaking in public can be challenging and can cause discomfort or fear[6,7].

Individuals moved by excessive anxiety when speaking in public may present: higher-pitched voice, laryngopharyngeal resonance, breaks in frequency, increased muscle tension, pneumophonoarticulatory incoordination, disfluency, among others[8]. These changes may be related to an activation of the brain's defense system causing muscle tension and physiological hormonal changes[9-11]. In response to a stressor, the body activates several processes aimed at preserving life and restoring homeostasis. Physical and psychological factors are responsible, both acutely and chronically, for triggering stress reactions in the body[12]. Public speaking can also be a stressor for the speaker. Excessive stress can bring psychological changes with cognitive and emotional effects, such as decreased attention, concentration, and short-term memory. These can directly interfere in the organization of the speaker's presentation, in addition to reducing the ability to make decisions, impacting the clarity of information and the content of the communication. Concerning emotional aspects, excess stress generates muscle tension in a generalized way and increases the risk of laryngeal tension[11-13].

The individual's self-perception is essential so that he can adjust his communication, in the personal and professional context, and thus transmit clear and objective information. As a way of measuring the subject's self-perception, the use of scales is widely accepted. Because they are easy to apply, low cost, and present results quickly and concisely, self-assessment protocols are an alternative for checking communication patterns. However, these instruments may have limitations, since the events related to the subject's perception of himself may vary according to the context of the moment of the evaluation and the element to be evaluated[14-16].

Considering the changes caused by the growth of the current job market, the search for improving communication skills has become a differential for the individual to have greater opportunities after their studies[1,2]. Speech therapy is a science that has communication as an object of study. It has been studying, researching, and improving the theme of public speaking, to understand the training and improvement of communication skills involved in this process[3,4]. Findings indicate that the improvement of oral communication skills performed by speech therapists allows the individual to gain self-confidence in the use of aspects of communicative expressiveness[3,17].

Considering the importance of the conscious use of communication in public speaking situations by university students, the objective of the present study is to verify the effects of a speech therapy program to improve oral communication skills by measuring self-reported anxiety and stress indexes.

MATERIALS AND METHODS

Participants

This study was approved by the Research Ethics Committee of the Federal University of Health Sciences of Porto Alegre under assessment No. 2.729.273 and in the Brazilian Registry of Clinical Trials (ReBEC) under the primary identifier RBR-37r3s2. All participants were volunteers and signed the Free and Informed Consent Form. University students from different courses from public and private universities in southern Brazil participated in this study.

A sample calculation was performed based on stress and its variation through interventions rooted in communicational adjustment[11], which identified an explained variance of 18.49% (r=0.43). An initial number of 46 participants was estimated, with 23 per group.

This is a randomized controlled clinical trial study and university students were invited to participate in the research through personal contact and social media. The inclusion criteria for this study were: individuals between 18 and 30 years old; be a university student and sign the Free and Informed Consent Form. As an exclusion criterion: having participated in any oratory or similar training; practice a regular activity that involves public speaking; individuals with a medical or psychological diagnosis of social disorder or phobia; and who attended less than 75% of speech therapy workshops during the study.

Evaluations and procedures

All evaluations took place at a classroom at the university, between May and December/2019. Initially, a psychological screening was carried out using the Liebowitz Social Anxiety Scale (LSAS)[14] by a psychologist with experience in the area. The LSAS is a screening instrument for Social Anxiety Disorder (SAD) which is a psychological disorder characterized by heightened fear in performing some activities in which the individual could present a phobic avoidance behavior. The purpose of this screening was to check for social phobia or disorder and screening for high levels of social anxiety. Participants considered fit after applying this scale answered the following questionnaires: Sample characteristics questionnaire, Self Statements During Public-Speaking Scale - SSPS, Perceived

Stress Scale - PSS, and the Social Anxiety Questionnaire for Adults – SAQA.

The sample characterization questionnaire consisted of personal data such as: name, age, sex, marital status, undergraduate course, course period up to the present moment and use of medications – as this can influence the variables studied. The SSPS[9,16] is based on cognitive theories that treat social anxiety as a result of negative self-perception in relation to oneself and others. It is a self-applicable scale translated and validated for Brazilian Portuguese, composed of two subscales: one with a positive self-assessment and the other with a negative self-assessment. Each subscale is made up of 5 questions and scored from 0 to 5. The higher the overall score, the lower the anxiety rate when speaking in public. One study considered a score above 32 points as a reference value when referring to a positive self-assessment when speaking in public, and below this value, a negative self-assessment[10].

The PSS[13] aims to measure the perceived stress indexes, caused by physiological changes resulting from a stressor. It is a scale with a general score between 0 and 56 points, composed of 14 items, divided into seven negative (1, 2, 3, 8, 11, 12, and 14) and seven positive (4, 5, 6, 7, 9, 10 and 13), and the latter factor has its score reversed for the analysis of the general score. This scale can be used in various age groups, from adolescents to the elderly, and does not have specific questions regarding the context in which they are inserted. The higher the score presented by the individual, the greater stress is perceived by him. The literature[13] presents the cut-off point of this scale above 50% of its total score.

As a way of assessing anxiety, the Social Anxiety Questionnaire for Adults (SAQA) was[18] used. This questionnaire was translated and validated in Brazil and its score varies between 0 and 150 points in which the subject with more than 92 points, in general, would be characterized with excessive anxiety[18]. The psychometric properties of SAQA are effective globally, however, their specificity is aimed at university students. The Brazilian version of SAQA is composed of 30 items with questions scored on a *Likert* Scale, where 1 is related to no or very little unease, tension, or nervousness, and 5 is very uneasy, tense, or nervous. SAQA assesses five dimensions of social anxiety, composed of six items: Public speaking / Interaction with people in authority, Interaction with unknown people, Interaction with the opposite sex, Assertive expression of discomfort, displeasure or anger, and Staying in evidence or Make a fool of yourself.

Group allocation

The subjects participating in the research were paired and allocated employing stratified randomization, taking into account age, sex, and the general score in the SSPS. Randomization was performed by the random.org platform in two groups: Intervention group (IG) and Control group (CG).

Workshops

The IG participated in six workshops to improve oral communication skills. These workshops were given by a speech therapist specialized in voice with more than five years of experience in the area. The workshops addressed aspects of verbal, non-verbal, and vocal communication with the following contents: Workshop 1: Vocal self-knowledge; Workshop 2: Breathing; Workshop 3; Speech articulation and rhythm, Workshop 4: Pneumophonoarticulatory coordination, Workshop 5: Vocal expressiveness and Workshop 6: Non-verbal communication. The workshops were weekly, lasted for two hours, and were held in small groups of up to 5 people. The choice of content covered during the workshops with the IG was elaborated based on the literature, taking into account the main communicative skills and competencies necessary for clearer and more objective communication[19-22].

In all workshops, IG participants received theoretical training on the proposed content to promote more conscious communication and thus obtain greater adherence and motivation to perform speech therapy exercises and participation in oral presentations through readings and spontaneous speech. The subjects of the IG used the communicational resources covered in the workshops through activities that did not require prior knowledge, such as improv games and storytelling. Chart 1 illustrates the realization of practical workshops with the IG.

The CG participated in a single vocal health workshop, lasting two hours, where voice care was presented.

After the six workshops to improve the communication skills of the IG and the workshop on vocal health with the CG, the same questionnaires carried out in the pre-intervention period were reapplied.

Six months after the completion of the communication skills improvement workshops, a follow-up was carried out with all participants (CG and IG) to verify the maintenance of the results and the effectiveness of this program in the anxiety and stress indexes. The subjects of both groups were again invited to self-assess the parameters of anxiety, stress, and public speaking through the SAQA, PSS, and SSPS protocols.

Data analysis

The data were analyzed in a descriptive and inferential manner. The SPSS 25.0 software was used. The description of the qualitative nominal variables was carried out utilizing relative frequency and absolute frequency. Ordinal quantitative and qualitative variables were described using measures of variability (standard deviation), central tendency (mean and median), and position (minimum, maximum, first quartile, and third quartile).

The inferential analysis of the association between the variable groups and the qualitative nominal variables of two categories was performed with Fisher's Exact Test and an association between the variable groups and the qualitative nominal variables of multiple categories was performed with Pearson's Chi-Square Test. The quantitative variables underwent an analysis of the homogeneity of the distribution using the Shapiro Wilk test, and only the age variable did not present a normal distribution. Thus, the comparison between the groups according to the normal quantitative variables was performed with the Student's *t*-test for independent samples and according to the non-normal quantitative variable and the ordinal qualitative variables was performed with the Mann-Whitney U test. A significance level of 5% was considered for all inferential analyses.

Chart 1. Contents and activities carried out in the communication improvement workshops with the IG

	Content	Strategies and Activities
Workshop 1	Vocal self-knowledge	**Pedagogical intervention:** Expository content on communication Types of communication; Communication elements; Interaction and *rapport*
Workshop 2	Breathing	**Pedagogical intervention:** Expository content on breathing and its importance during speech and anxiety control. **Respiratory Intervention:** Breathing type assessment and adjustment; Stimulus for self-perception and body proprioception during breathing; Emission of fricative sounds in MPTs; Fractionated emission of fricative sounds; Inspiratory and expiratory control; Breathing attention amidst multiple stimuli
Workshop 3	Speech articulation and rhythm	**Pedagogical intervention:** Presentation on the importance of articulation for clear and effective communication **Articulatory intervention:** Conducting articulatory exercises (tongue snapping, reading tongue-twisters, diadochokinesia, over-articulation with stoppers, and reading only vowels in music texts); Individual reading with a focus on articulation and rhythm of speech
Workshop 4	Pneumophonoarticulatory coordination (PPAC)	**Pedagogical intervention:** Expository content on pneumophonoarticulatory coordination performing **Speech intervention:** Respiratory support and vocal function: Inhale in 4s, hold 5s and release with words, phrases and texts
Workshop 5	Vocal Expressiveness: Use of pauses, emphasis, and intonation	**Pedagogical intervention:** The importance of using pauses, emphases and intonation during speech **Intervention in expressiveness:** Conducting training using vocal resources (pause, emphasis, and intonation) by reading aloud from different text types
Workshop 6	Non-verbal communication: Posture, facial expression, gestures, personal and body image	**Pedagogical intervention:** Impact of non-verbal communication How to demonstrate effective communication through the use of body language **Intervention in non-verbal expression:** Oral presentation from each participant lasting 3 minutes on a topic of general knowledge with a focus on adjusting posture, balance in facial and body expression.

RESULTS

In the initial phase, 67 students were evaluated (Figure 1) where 4 were excluded by age group and 24 students did not attend the workshops. 39 university students participated in this study, divided into two groups: Control Group (CG) - 17 students with an average age of 21 years and nine months; Intervention Group (IG) - 22 students with an average age of 21 years and six months. The median of the CG was the third year of the course, and the IG was between the second and third year of the course. In both groups, single students and white ethnicity were more frequent. It was found that the participants did not use medications that could interfere with the analyses.

It was found that there was a reduction in scores, from the pre to the post-intervention moment, only in the IG, for the domains of the Social Anxiety Questionnaire for Adults (SAQA) in university students, with the total score being significant ($p < 0.001$), interaction with the opposite sex ($p = 0.001$), assertive expression ($p = 0.030$), public speaking ($p = 0.001$), interaction with strangers ($p = 0.001$) and make a fool of yourself ($p < 0.001$). (Table 1)

As for the Perceived Stress Scale (PSS) scores, there was an increase in the values from the pre to the post-evaluation moment in the positive PSS factor in the CG ($p = 0.031$) and the IG ($p = 0.016$) and reduction in the values from the pre to the moment after intervention in the negative PSS factor in the CG ($p = 0.016$) and the IG ($p = 0.007$). (Table 2)

Regarding the analysis of the Scale for Self-Assessment when Speaking in Public (SSPS) after the intervention, there was a reduction in the values of the total ($p = 0.010$) and negative ($p = 0.016$) factors at the time after intervention for the CG, and an increase in the values of the total ($p < 0.001$), positive ($p < 0.001$) and negative factors ($p = 0.007$) from the moment before to the moment after intervention in the IG. (Table 3)

Figures 2, 3 and 4 show the results pre-intervention, post-intervention and follow-up after six months for the self-perception of anxiety when speaking in public (SSPS), Anxiety (SAQA), and perceived stress when speaking in public (PSS) in the studied groups. The values shown in Figure 2 demonstrate that the increase in the overall SSPS score in the IG, post-training, was maintained at follow-up with a small difference in the decrease in this mean. Figures 3 and 4, on the other hand, point to a decrease in the total scores of the SAQA and PSS scales in the IG, after training, with an increase in the overall mean in the SAQA follow-up and a decrease in the total mean in the PSS follow-up.

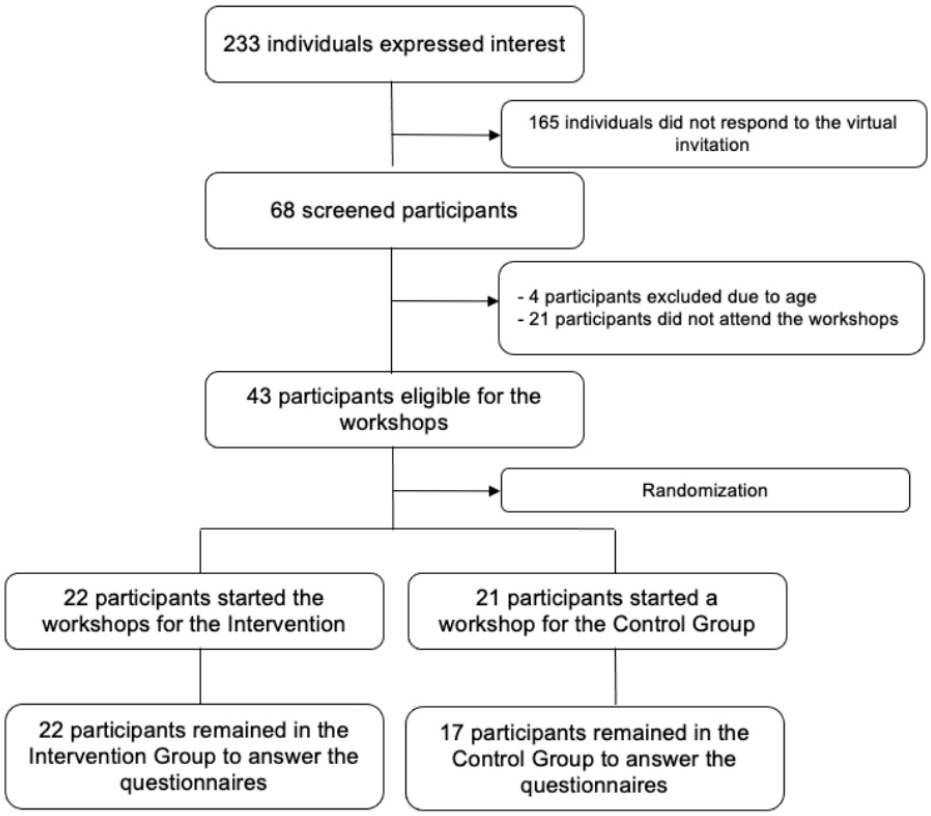

Figure 1. Descriptive flowchart of the sampling process

Table 1. Analysis of the Social Anxiety Questionnaire for Adults (SAQA) in university students, after the intervention

Variable	Group	Pre		Post		p-value
		Mean	SD	Mean	SD	
Total	CG	102.71	20.81	95.53	27.30	0.115
	IG	101.09	19.51	83.73	24.45	<0.001*
Interaction with the Opposite Sex	CG	20.24	6.56	18.76	7.72	0.091
	IG	21.41	5.32	17.18	6.13	0.001*
Assertive Expression	CG	20.24	4.72	19.53	6.21	0.466
	IG	20.00	4.42	18.05	5.09	0.030*
Speaking in Public	CG	22.41	4.80	21.29	5.93	0.351
	IG	21.41	5.73	17.55	6.71	0.001*
Interacting with Strangers	CG	18.00	4.95	16.24	5.67	0.050
	IG	17.32	5.39	13.36	4.52	0.001*
Make a Fool of Yourself	CG	21.82	5.05	19.71	5.64	0.135
	IG	20.95	4.34	17.59	5.85	<0.001*

Student's *t*-test for paired samples. *Statistically significant difference with p <0.05
Subtitle: CG = Control Group; IG = Intervention Group; SD = standard deviation

Table 2. Analysis of the Perceived Stress Scale (PSS) in university students, after the intervention

Variable	Group	Pre		Post		p-value
		Mean	SD	Mean	SD	
PSS Total	CG	31.41	3.16	28.12	9.08	0.194
	IG	33.18	3.81	30.73	8.53	0.225
Positive PSS	CG	13.47	3.73	15.76	4.60	0.031*
	IG	14.50	3.35	17.00	4.93	0.016*
Negative PSS	CG	17.94	4.67	12.35	5.29	0.016*
	IG	18.68	4.31	13.73	4.58	0.007*

Student's *t*-test for paired samples. *Statistically significant difference with p <0.05
Subtitle: CG = Control Group; IG = Intervention Group; SD = standard deviation;

Table 3. Analysis of the Scale for Self-Assessment in Public Speaking (SSPS) in university students, after the intervention

Variable	Group	Pre		Post		p-value
		Mean	SD	Mean	SD	
SSPS Total	CG	30.53	5.40	26.41	5,77	0.010*
	IG	29.55	4.92	37.36	5.74	<0.001*
Positive SSPS	CG	15.06	4.96	16.82	3.67	0.194
	IG	15.77	3.48	18.59	3.70	<0.001*
Negative SSPS	CG	15.47	6.40	9.59	4.02	0.016*
	IG	13.77	5.19	19.36	3.33	<0.001*

Student's *t*-test for paired samples. *Statistically significant difference with p <0.05
Subtitle: CG = Control Group; IG = Intervention Group; SD = standard deviation

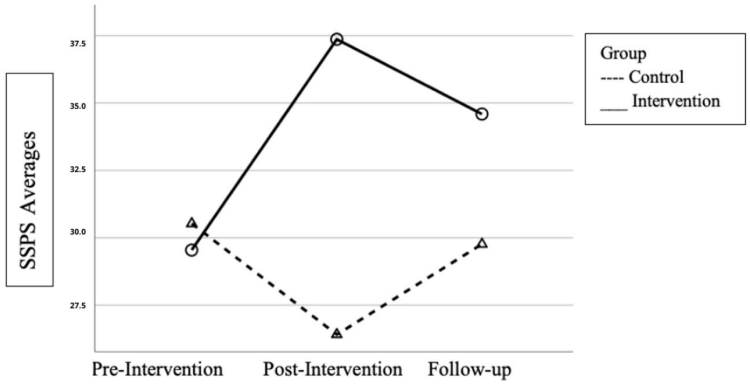

Figure 2. Averages of the SSPS scale in relation to the moments of application
Subtitle: SSPS = Self Statements During Public-Speaking Scale

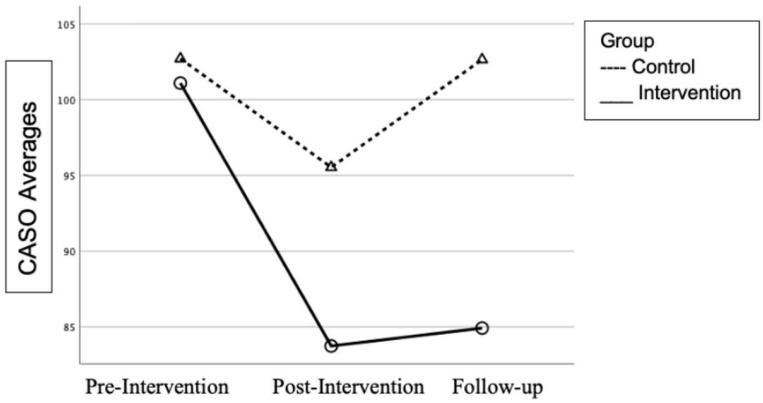

Figure 3. Total averages of the SAQA questionnaire in relation to the moments of application
Subtitle: SAQA = *Social Anxiety Questionnaire for Adults*

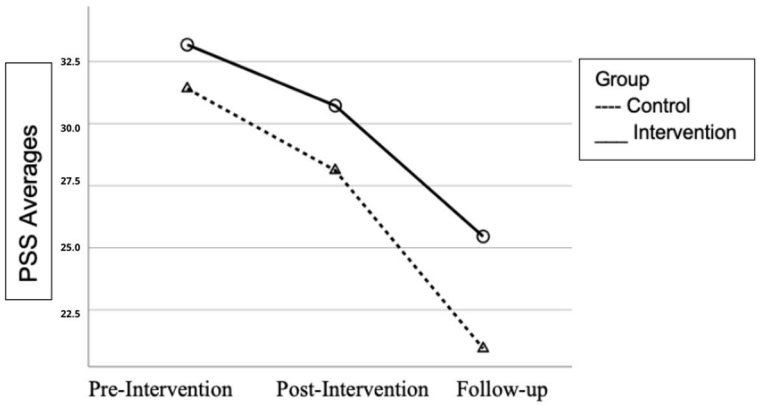

Figure 4. Total averages of the PSS scale in relation to the moments of application
Subtitle: PSS = Perceived Stress Scale

DISCUSSION

The fear of public speaking is the most prevalent in the world population, according to epidemiological studies, regardless of gender, age, race, or social class and can be considered something common in people's lives. Possibly any individual has already presented at least some anxiety related to this aspect at some point in his life[5,7,10]. A study carried out in Brazil with university students showed that more than 60% of students are afraid to speak in public. This fact can be associated with excessive anxiety and have a direct impact on communication[7,10].

The speech therapy improvement programs are carried out in groups and with specific objectives for each training session. These programs address aspects related to guidance and vocal health, training, and improvement of verbal, non-verbal, and vocal resources, to promote objectivity, clarity, and flexibility in communication[3]. The training of emphasis and communicative expressiveness resources are carried out through the reading of varied texts and spontaneous speech. Breathing techniques, pneumophonoarticulatory coordination, speech rate, articulation, and body expression are used as strategies to promote more security and credibility in the communication of speakers. These techniques allow better reading fluency, distribution of pauses, and proper adjustment of vocal resources. In addition, participants in these training sessions report more emotional security, better interaction with their listeners, and greater body awareness during their presentations[4,21].

Research involving the improvement of these skills and carried out by speech therapists have shown positive results in the perception of speech, body, emotional and interactional aspects[20-22].

The results of the present study point out that only the university students of the IG had a significant reduction in the anxiety scores, observed in the SAQA, after the speech-language workshops to improve the oral communication skills, in general, and with regard to the aspects of interaction with the opposite sex, assertive expression, public speaking, interaction with strangers and fear of being ridiculous.

According to studies carried out by the authors of the SAQA protocol, a cut-off point was defined to determine the degree of anxiety in relation to the overall score answered. Values above 92 points are classified as having high anxiety in relation to values below this score[18]. In this way, in addition to the significant decrease in the values in the IG after the workshops were held in relation to the pre-moment, the students had an average below the cut-off point and thus showed to be less anxious at that moment. The CG, in addition to not showing a significant decrease after the vocal health workshop, still showed values higher than the established cutoff point, which points to higher levels of anxiety. It is important to note that before the workshops were held, the SAQA general score values showed high levels of anxiety in both groups.

In the literature, the findings indicate that the higher the levels of anxiety, the more negative impact can be demonstrated during the subject's communicative performance[6,8]. However, the participation in programs to improve oral communication skills, promote self-confidence in the use of the expressive aspects of communication, and thus reduce factors associated with fear and anxiety, demonstrating clearer and more objective communication[19-23].

We can observe that the decrease in anxiety scores, obtained through the improvement of communication skills, influenced not only the parameter "public speaking" of the SAQA scale but all the other parameters. Thus, it is possible to suggest that when we present a better performance in communication skills, the results are also reflected in other aspects related to social interaction, whether with the opposite sex or with strangers, indicating that the increase in self-confidence in communicating can promote a higher quality of life for the individual from a social point of view. With the decrease in anxiety scores in the parameters related to "assertive expression" and "make a fool of yourself ", it is expected that students, who participated in the program to improve communication skills, present more positive thoughts, and thus demonstrate an assertive communicative expressiveness.

The use of strategies in a communication improvement program in university students promotes the conscious use of these skills and thus, when faced with situations that are necessary to speak in public, demonstrate greater security, clarity of information, and credibility in front of their interlocutor. A survey carried out with university students in health courses, evaluated the effectiveness of a program to improve speech and language skills in oral communication skills through workshops focused on communicative performance for eight weeks. All results had a positive evolution and were statistically significant from the pre to the post-intervention moment, both in the assessment of speech therapist judges and in the self-assessment tests, corroborating the results of the present study[24].

Concerning the effect of stress on the situation of public speaking, the literature points to several psychological, cognitive, and emotional effects on the speaker that directly interfere with his communicative performance[12,13]. In the present study, the results obtained with the training of communication skills related to stress when speaking in public revealed, through PSS, positive and significant data in the CG and IG groups in the positive and negative subscales. We can infer that the training of communicative skills in the IG promoted a positive effect in reducing the perception of public speaking as a stressor, and thus stimulated a greater balance of emotions in a situation of exposure to the other, in addition to positive self-perception of well-being. leading to increased self-esteem. These results can directly reflect on the communicative performance of the IG with a more organized presentation, a greater concentration at the time of their presentation, and a decrease in the characteristic tension of stress[11,13].

Regarding self-assessment in public speaking, university students from the IG showed significant results in general and in the positive and negative parameters of the SSPS in relation to the CG. A study that applied SSPS as a form of self-assessment of anxiety when speaking in public, used values below 32 points in the overall score as a cutoff point to determine high anxiety in communicating. The values above this score would represent a more positive self-assessment[9,25]. Therefore, despite the CG after the vocal health workshop, showing significant values in relation to the pre-moment, the average of the general score was 27 points which, according to the literature used, demonstrates a more negative self-assessment when speaking in public.

However, the IG showed a significant increase in values after the completion of the speech-language improvement of oral communication skills and showed an average in the general score of 36.91 points, which suggests in these individuals, a

more positive self-assessment and lower levels of perception of anxiety when speaking in public[9,16].

The increase in the positive subscale in the SSPS, associated with the decrease in anxiety scores in the SAQA, may demonstrate a decrease in the perception of anxiety when communicating in public and more positive attitudes towards situations that require communication and self-confidence when interacting with others. According to the scores presented, by the negative subscale of the SSPS, the scores of the individuals in the CG were significantly reduced while in the IG these values increased. These data demonstrate that the training of communicative skills, in addition to promoting the mastery and conscious use of communicative resources, were relevant to the self-perception of the pattern of communication and self-analysis, which was initially negative, but along the process of speech therapy, there was a promotion of a new communication standard, making the self-assessment more positive.

Among the positive and negative aspects, the positive self-assessment of communication is related to better professional performance[26]. Anxiety related to communication in university students leads to a passive attitude in their studies and a lack of interest in learning. This can affect their academic performance resulting in poor outcomes in their assessments and generating a negative perception from others[27].

However, when students obtain communication preparation, before or during their training process, these individuals are likely to present more significant results in their academic trajectory, since a more positive self-assessment of communication is related to better results according to the literature[26,27].

Some people have difficulty speaking in public due to phobia and psychological issues, but a large proportion of individuals who are poor speakers demonstrate difficulties only in their communication skills such as breathing, voice, diction, posture, and gestures. These subjects avoid public speaking because of a negative self-perception of their communication skills and because they have never undergone any type of communication training[3,11].

Interventions to improve communication skills, such as the one carried out in this study, reduce people's communication difficulties. They also promote a more positive image and thus help to eliminate barriers that keep them from an effective interaction in their academic and professional environment. By having a broad view of human communication, the speech therapist is the most qualified professional to provide training to people who have difficulties speaking in public[3,4,20,24].

Regarding the follow-up results, after six months from the intervention period, the IG participants demonstrated stability in the overall score in relation to the post-intervention moment in the parameters related to anxiety and public speaking (SAQA and SSPS). It is observed in the IG that after six months there was a reduction in the total scores in the SSPS and an increase in the overall SAQA score, but it is still possible to notice that these results demonstrated that the effects of the interventions in these individuals remained stable. We can attribute this to an increase in self-perception of oral communication skills that were improved during the workshops.

In the CG, the values obtained were approximately equal to the data collected in the pre-intervention moment in both protocols, demonstrating that the subjects still had levels of anxiety to speak in public. In the parameters related to self-perceived stress, there was no statistical difference between the intervention group and the control group in the three moments. This can be justified by the fact that students are in a constant period of academic evaluation and the moment of application of these protocols may have interfered with responses in relation to stress.

It is important to highlight that, the self-assessment of communication promotes self-regulation, provides a sense of continuity, influences social perception, determines behavior in social relationships, and contributes to a projection of consistent and relevant self-image to others. The self-assessment of university students is associated with positive factors in their academic trajectory[15,26,28].

The results of the present study were evaluated in a general way after all the speech therapy improvement workshops. All communicational parameters were positive for achieving these results, but we can highlight the breathing parameter with the highest positive relationship among all aspects addressed in the workshops. The literature points out that the use of breathing in a conscious and balanced way during oral communication is essential for the message transmitted to be clear and for the speaker to demonstrate greater control of anxiety levels when communicating[22,24]. The performance of breathing exercises, combined with the adjustment of breathing patterns during speech were essential to obtain greater self-confidence during oral communication[20,29].

With this study, it can be inferred that the improvement of communication skills in IG university students, was effective with regard to aspects related to anxiety when speaking in public and point out that when more conscious and assertive communication is used, mastery over aspects related to expressiveness can be demonstrated, thus promoting greater self-confidence when communicating[23,28]. However, there was no verification of the individual effects of each workshop. Therefore, it is suggested that further studies be conducted in order to assess the effectiveness of each workshop on fear of public speaking.

CONCLUSION

The speech-language improvement program for oral communication skills promoted a decrease in self-reported anxiety and stress levels and increased positive self-perception when speaking in public for university students.

These findings contribute to the knowledge of the limitations caused by anxiety and stress in public communication and encourage the search for speech-language improvements in oral communication skills for students, from their education to their professional practice, promoting assertive, clear, and objective communication.

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