THE VIBRATO OF PROFESSIONAL GOSPEL SINGERS

O vibrato de cantores profissionais da música gospel

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ABSTRACT

Purpose: to investigate the characteristics of professional singers vibrato according to the style of gospel music, and check if the verbal command to perform the vibrato interferes with their characteristics. **Methods:** we analyzed the characteristics of vibrato spectrography of 20 professional gospel's singers, 06 men and 14 women, (mean age: 30 years), based on two gospel style – Pentecostal and adoration. Two situations were structured: with and without verbal commands to do the vibrato. All participants responded to the item of vocal signs and symptoms of CPV-P protocol and were submitted to videolaringoscopy. **Result:** in comparing the spectrographic analysis of the pentecostal style with the adoration style it was observed that in the pentecostal style 95% of participants had regular vibrato, with greater amplitude variation, higher energy spectrum with better definition and presence of harmonics; in the adoration style 100% had irregular vibrato, with a smaller amplitude variation, lower energy spectrum and 50% had presence of harmonics with lower resolution and 50% had not harmonics. In the comparison of spectrographic analysis of the pentecostal style with and without verbal commands it was observed that 75% of the participants had regular vibrato, greater amplitude variation (65%) more energy in the spectrum (55%), with greater definition and presence in harmonics(70%). There was no statistical significance between vocal training and speech therapy. **Conclusion:** The vibrato of singers trained change with the gospel style singing. The verbal command to do the vibrato increases the definition of regularity, amplitude, power spectrum and harmonic.

KEYWORDS: Tremor; Spectrography; Voice; Singing

INTRODUCTION

The vibrato is one of the most striking features of the singing voice and can be found in various musical styles [1,2], i.e. classical, country and gospel. The creation, performance, significance, and even the definition of gospel music vary according to culture and social context [3]. Gospel music is written and performed for many reasons, ranging from aesthetic pleasure, religious or ceremonial occasions, and as an entertainment product for the commercial market. The main theme, in general, is to praise and worship the Lord, Christ and / or the Holly Spirit [3]. The style of gospel music falls under the category of popular music, in which the interpretation is the main resource used for the transmission of emotion and adoration, through two main styles, namely: Pentecostal , marked by fast-paced , greater intensity and speech rate , and worship , characterized by increased smoothness, slower pace and speech speed and lower energy[3].

To fully understand voice and singing, you must have a clear association between source and filter constituted respectively by the vocal cords, pharynx, mouth, nasal and paranasal cavities, which together determine the final quality of the emitted sound[4] and of the vibrato itself[5], mainly by the relationship between the frequencies produced by the vocal cords and modified by the vocal tract[6]. One of the resources used for objective evaluation of the voice is the spectrogram analysis that contributes to the determination of parameters of normal range[7], enabling storage of data for subsequent analysis and comparison and whose aim is to quantify and

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characterize the sound signal, allowing even qualitative analysis of vibrato[7-11].

The vibrato is a kind of ordered physiological tremor, produced by the vocal cords, which causes the fundamental frequency (F0) to vary up and down, in a small extent, many times per second [5,9,12], resulting in an intentional physiological tremor, whose acoustic characteristics have changed over the years[13]. Currently, it is often used by classical trained singers and country, gospel and rock singers[1,2].

This tremor may be due to an oscillation of the cricothyroid muscle, the alternation between the cricothyroid and arytenoid muscles, the alternating contraction of the laryngeal and diaphragm muscles, or the tremor of respiratory muscles and vocal tract. This tremor can be more easily identified and analysed by spectrographic voice analysis[8-10,12,14-16]. Learning and perfecting this technique usually requires professional voice use combined with vocal techniques[2,9,16-21].

With the growth of gospel music it becomes necessary to understand the peculiarities of this singing style which is marked by the use of vibrato. This study aims to: 1. Check the characteristics of professional singers vibrato according to two styles of gospel music (Pentecostal and worship), and 2. Check if there is modification on spectrographic characteristics of the vibrato during the presence of verbal command to perform it.

METHODS

This is a cross-sectional study approved by the Ethics Committee of the University of Vila Velha (CEP 0510). All participants signed an informed consent form, in accordance with Resolution 196/96. A total of 23 professional gospel singers were recruited (average age: 30 years old), with experience in professional gospel singing of at least 5 years, with an average weekly presentations of 4 hours. It was adopted as inclusion criteria for participants: professional singers of gospel music, weekly use of singing voice in professional presentations, aged between 18 and 50 years and absence of airway infection during any stage of data collection. Exclusion criteria were: singers with vocal complaints , with laryngeal image compatible with minor structural coverage, glottal closure (except for the posterior triangular in females) and / or mass lesions on the vocal folds , who were in speech therapy, or that showed overall vocal deviation from moderate to intense .

All participants responded to the item " Vocal Aspects " of the Vocal Production condition protocol (CPV- P) , which is a protocol to be used for teachers, although the item mentioned above is applicable to any voice professional[22] (Figure 1); they underwent a laryngoscopy prior to emissions recording in the studio, with the same Otorhinolaryngologist for functional investigation of the larynx in order to identify functional and / or organic alterations that could compromise the quality of their spoken and sung voices, and performed perceptual evaluation of vocal quality with a voice specialist speech pathologist through the sustained /e/ vowel and counting of the numbers 1 to 30 . After this step, three singers were excluded due to changes in the laryngeal image compatible with vocal nodules and double glottis slit, and overall vocal quality degree of moderate deviation. Therefore, the final total was of 20 professional singers.

Spoken and sung emissions were recorded in a professional studio, acoustically treated with thermal acoustic blocks, carpet and foam. The voices were captured through professional Audacity Software – version 1.3, with no data manipulation of vocal register, using m-audio Fastrak2 recorder and Behringer pedestal microphone distant 10 cm and 45 ° from the mouth of the participant.

Initially, it was requested the productions of the sustained /e/ vowel and the counting numbers from 1 to 30. Then, the Pentecostal and worship singing styles were recorded, in that specific order. For the worship style the song "Espírito Santo" was used (average 70 bpm), and for the Pentecostal style, in which there is a strong presence of vibrato3, song "Deus dos Deuses" was used (average 120bpm). All participants were submitted to three situations: 1. playback (instrumental), for familiarization with the pace and songs melodies, 2. spontaneous recording of the Pentecostal and worship singing styles (with the "individual singing characteristics" of each participant), and 3. directed recording with verbal command to perform the vibrato on the two proposed singing styles. Before recording started, all participants performed, along with researchers, vocal warm-up exercises15 with vibrant sounds, nasal sounds and facilitating sounds in maximum phonation time (MPT), with a maximum duration of 10 minutes.

I- Interviewee Identification			
1	Name:		
2	Date of birth:/ /	3	Gender: 0. feminino 1. masculino
4	Marital status: 1. single 3. divorced	2. married 4. Widow (er)	
5	Schooling: 1.Completed higher education 3.Incomplete higher education 6.Complete basic education	2.Ongoing higher education 4.Completed high school 7.Incomplete basic education	Course: 5.Incomplete high school 8.Other:
II – VOCAL ASPECTS			
6	Have you ever had a voice problem?	never 0 1 2 3 4 5 6 7 8 9 10 always	
7	If so, for how long?		
	1. 0 to 5 months	2. 6 to 11 months	3. 1 to 2 years
8	If you have/ had a voice problem, in your opinion, what might have caused it:		
	1.Intensive voice use	2.respiratory infection	
	3.alergies	4.constant flue	
	5.stress	6.I don't know	
	7.noise exposure	8.no apparent cause	
	9.cold weather exposure	10.others, which one/ ones?	
9	If you have a voice problem, do you undertake any treatment?	never 0 1 2 3 4 5 6 7 8 9 10 always	
10	If so, what kind of treatment?		
	1.speech therapy	2.drug treatment	
	3.surgery	4.others. What kind?	
11	If you have a voice problem, what kind of symptoms do you currently have?		
	1.raspiness	never 0 1 2 3 4 5 6 7 8 9 10 always	
	2.voice loss	never 0 1 2 3 4 5 6 7 8 9 10 always	
	3.voice failure	never 0 1 2 3 4 5 6 7 8 9 10 always	
	4.shortness of breath when speaking	never 0 1 2 3 4 5 6 7 8 9 10 always	
	5.thin voice	never 0 1 2 3 4 5 6 7 8 9 10 always	
	6.rough voice	never 0 1 2 3 4 5 6 7 8 9 10 always	
	7.voice constantly changing thin/ rough	never 0 1 2 3 4 5 6 7 8 9 10 always	
	8.weak voice	never 0 1 2 3 4 5 6 7 8 9 10 always	
	9.effort when speaking	never 0 1 2 3 4 5 6 7 8 9 10 always	
	10.tiredness when speaking	never 0 1 2 3 4 5 6 7 8 9 10 always	
	11.dry throat	never 0 1 2 3 4 5 6 7 8 9 10 always	
	12.hawk	never 0 1 2 3 4 5 6 7 8 9 10 always	
	13.lump in the throat	never 0 1 2 3 4 5 6 7 8 9 10 always	
	14.gritty throat	never 0 1 2 3 4 5 6 7 8 9 10 always	
	15.tingle in the throat	never 0 1 2 3 4 5 6 7 8 9 10 always	
	16.phlegm / catarrh in the throat	never 0 1 2 3 4 5 6 7 8 9 10 always	
	17.pain when speaking	never 0 1 2 3 4 5 6 7 8 9 10 always	
	18.pain when swallowing	never 0 1 2 3 4 5 6 7 8 9 10 always	

	19.difficulties when swallowing	never 0 1 2 3 4 5 6 7 8 9 10 always
	20.dry cough	never 0 1 2 3 4 5 6 7 8 9 10 always
	21.cough with phlegm	never 0 1 2 3 4 5 6 7 8 9 10 always
12	At work, do you usually:	
	1.shout	never 0 1 2 3 4 5 6 7 8 9 10 always
	2.talk to much	never 0 1 2 3 4 5 6 7 8 9 10 always
	3.speak in open spaces	never 0 1 2 3 4 5 6 7 8 9 10 always
	4.speak when doing physical activities	never 0 1 2 3 4 5 6 7 8 9 10 always
	5.speak when carrying heavy loads	never 0 1 2 3 4 5 6 7 8 9 10 always
13	Do you drink water when using the voice (when singing)?	never 0 1 2 3 4 5 6 7 8 9 10 always
14	Do you spare your voice when not singing?	never 0 1 2 3 4 5 6 7 8 9 10 always
15	Have you ever had vocal orientation regarding vocal care?	never 0 1 2 3 4 5 6 7 8 9 10 always
16	Are you happy with your voice?	never 0 1 2 3 4 5 6 7 8 9 10 always
17	1. have you ever missed work due to vocal problems?	never 0 1 2 3 4 5 6 7 8 9 10 always
	2. Have you ever had leave of absence due to medical reasons?	never 0 1 2 3 4 5 6 7 8 9 10 always
	3. If so, how many absent days in the last year?	Absences _____ days Medical reasons _____ days
18	Besides singing, do you perform any other activities that require the use of your voice?	never 0 1 2 3 4 5 6 7 8 9 10 always
	If so, what kind?	
III – LIFE STYLE		
19	Do you have leisure activities?	never 0 1 2 3 4 5 6 7 8 9 10 always
20	Do you eat in regular hours?	never 0 1 2 3 4 5 6 7 8 9 10 always
	1. Do you avoid any type of food?	never 0 1 2 3 4 5 6 7 8 9 10 always
	2. If so, what kind and why?	
	3. When is your last meal before going to bed?	1. up to 30m 2. 31 to 60m 3. more than 1h
21	When opening your mouth or when chewing, do you notice:	
	1.crackling noises	never 0 1 2 3 4 5 6 7 8 9 10 always
	2.gritty feeling	never 0 1 2 3 4 5 6 7 8 9 10 always
	3.chin deviation	never 0 1 2 3 4 5 6 7 8 9 10 always
	4.difficulties opening the mouth	never 0 1 2 3 4 5 6 7 8 9 10 always
	5.difficulties biting the food	never 0 1 2 3 4 5 6 7 8 9 10 always
22	Regarding your sleep:	never 0 1 2 3 4 5 6 7 8 9 10 always
	1. Do you wake up during the night?	never 0 1 2 3 4 5 6 7 8 9 10 always
	2. Do you wake up fully rested?	never 0 1 2 3 4 5 6 7 8 9 10 always
	3. How many hour do you sleep at night, on average?	_____ hours
23	1. Are there any cases of voice problems in your family?	0. no 1. yes
	2. If so, who?	
24	What do you do when you have voice problems?	
How long did it take you to finish this questionnaire?		

Figure 1 –Vocal signs and symptoms of Teachers Vocal Production Condition Protocol (CPV-P)

All audio files were converted to wav format (through the Soundfourge 9.0 program). For the perceptual analysis of voice quality, a Likert scale of 4 points (0 = absent, 1 = mild, 2 = moderate, 3 = intense) was applied to register the overall degree of vocal deviation. Emissions were presented in random order to the voice specialist speech pathologist, with reproducibility of 10% of the sample for measurement of intra-rater reliability. The judge showed satisfactory reliability. To analyse the vibrato, the files were imported into the Fonoview® (CTS Informática) software, whose configuration was narrow band spectrogram (40hz) and 5512Hz limit. Analyses were performed by a voice specialist speech pathologist considering the following parameters: regularity, amplitude, spectrogram energy and harmonics. For the acoustic analysis of vibrato the word “santo” was selected and the vowel / ã / was analysed, in the song “Espírito Santo” (worship style) and the word “irmão” in the song “Deus dos Deuses” (Pentecostal style) and the vowel /ã/ was also analysed, because these words presented a higher concentration of vibrato for all participants during the second situation – spontaneous recording.

The collected and analysed data were tabulated and subjected to descriptive statistical analysis (GraphPrism version 4.0) by absolute and relative frequency distribution; nonparametric McNemar test, and chi-square test. A significance level of 5% was adopted.

RESULTS

Functional larynx investigation showed presence of laryngeal (45%), edema in retrocricoid region (25%) and the presence of laryngeal asymmetry (20%). Regarding the clinical characteristics it was observed participation in singing lessons (40%), prior speech therapy due vocal issues (35%), use of self-medication for the voice (25%), inadequate food ingestion before professional voice use (65%), vocal rest when feeling vocal discomfort and/or changes in vocal quality (40%). As for the evaluation of voice quality, 65% of participants showed no vocal deviation and 35% showed a mild general degree of vocal deviation (Table 1).

Table 1 – Larynx, clinical and vocal quality characterization

Variables	%*
Larynx Examination Findings	
Larynx alterations	45%
Retrocricoid region edema	25%
Laryn asymmetry	20%
Clinical characterization	
Singing lessons participation	40%
Speech therapy due to vocal problems	35%
Voice self-medication	25%
Inadequate food intake	65%
Vocal rest	40%
Vocal quality evaluation	
Absence of general degree of vocal deviation	65%
Discreet general degree of vocal deviation	35%

*Descriptive statistical analysis

Acoustic analysis revealed that the vibrato characteristics varied according to the gospel singing style, in situation 1 – spontaneous recording – in 95% of participants (Figure 2). There was better definition of in the Pentecostal-style vibrato, marked by greater regularity, amplitude, spectrum energy and greater number of harmonics, demonstrating that each gospel style has a certain vibrato setting (Table 2).

The situation 2 – recording with the verbal command to produce vibrato – produced a modification in its acoustic characteristics in 75% of participants, when singing the Pentecostal style (Figure 3), since there was an increase in the amplitude of the sound wave, of the spectrographic energy and a greater number of harmonics in the analysed passage (Table 3). No differences were observed,

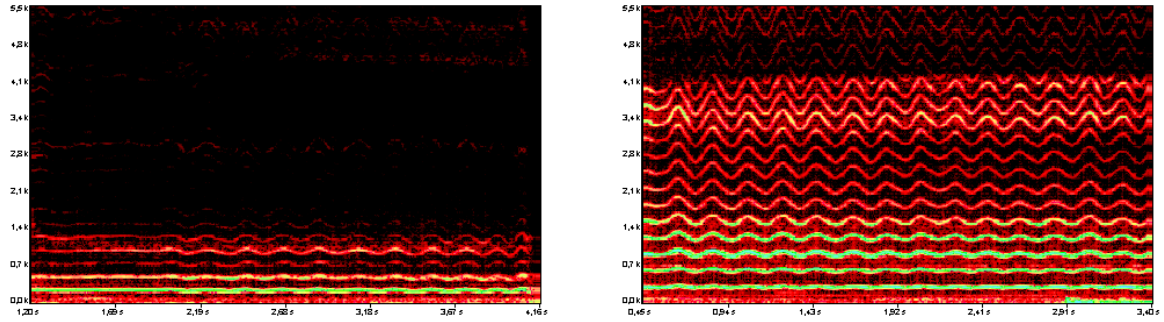

Figure 2 – Spectrographic vibrato comparison on the Worship and Pentecostal styles (Vowel /ã/ in the word "santo")

Table 2– Vibrato Characterization for Worship and Pentecostal Styles

Variables	Worship		Pentecostal		p-value
	n	%	N	%	
Vibrato					
Regular	0	0,0	19	95,0	0,000*
Irregular	20	100,0	1	5,0	
Amplitude					
Minor variation	19	95,0	1	5,0	0,000*
Major variation	1	5,0	19	95,0	
Energy					
Less spectrum energy	9	95,0	1	5,0	0,000*
More spectrum energy	1	5,0	19	95,0	
Harmonics					
Absence	0	50,0	0	0,0	0,002*
Presence with more definition	0	0,0	19	95,0	0,000*
Presence with less definition	10	50,0	1	5,0	0,012*
TOTAL	20	100,0	20	100,0	-

*Significant values (p≤0,05) – Exact Fisher Test.

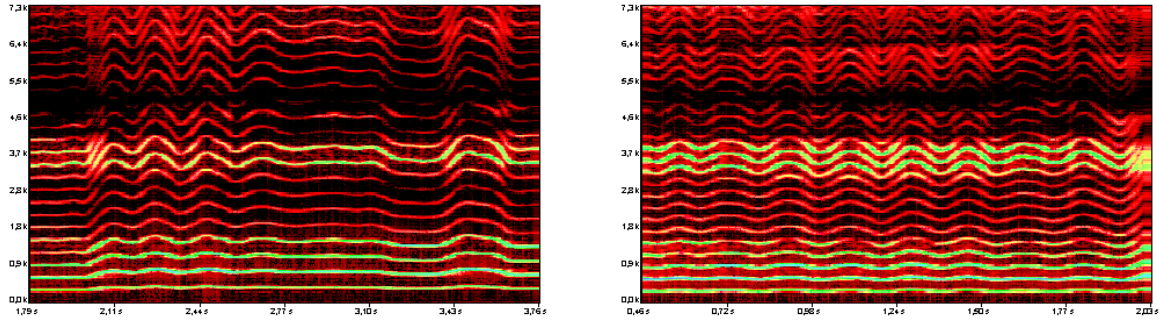

Figure 3 – Spectrographic vibrato comparison on the Pentecostal style (Vowel /ã/ in the word "irmão")

Table 3 – Crossing distribution of vocal training, therapy and vibrato for Pentecostal style

Moment	Variables	Vibrato		p-value
		Irregular	Regular	
No verbal command	Participated in singing lessons			
	No	5 (41,7%)	7 (58,3%)	1,000*
	Yes	4 (50,0%)	4 (50,0%)	
	Had speech therapy sessions			
	No	6 (46,2%)	7 (53,8%)	1,000*
	Yes	3 (42,9%)	4 (57,1%)	
With verbal command	Participated in singing lessons			
	No	3 (25,0%)	9 (75,0%)	1,000*
	Yes	2 (25,0%)	6 (75,0%)	
	Had speech therapy sessions			
	No	2 (15,4%)	11 (84,6%)	0,290*
	Yes	3 (42,9%)	4 (57,1%)	

*Significant values (p≤0,05) – Exact Fisher Test.

on acoustic parameters mentioned above, for the worship style.

Participation in singing lessons and previous speech therapy sessions did not affect the amplitude, energy and definition of vibrato harmonics, knowing that, in both situations investigated (with and without verbal command) participants did not differ in these aspects (Tables 4, 5 and 6), therefore reinforcing that the vibrato setting, regardless of vocal training,

Table 4 – Crossings distribution of vocal training, therapy and amplitude for Pentecostal style

Moment	Variables	Amplitude		p-value
		Minor variation	Major variation	
No verbal command	Participated in singing lessons			
	No	9 (75,0%)	3 (25,0%)	0,642*
	Yes	5 (62,5%)	3 (37,5%)	
	Had speech therapy sessions			
	No	10 (76,9%)	3 (23,1%)	0,613*
	Yes	4 (57,1%)	3 (42,9%)	
With verbal command	Participated in singing lessons			
	No	4 (33,3%)	8 (66,7%)	1,000*
	Yes	3 (37,5%)	5 (62,5%)	
	Had speech therapy sessions			
	No	4 (30,8%)	9 (69,2%)	0,651*
	Yes	3 (42,9%)	4 (57,1%)	

*Significant values (p≤0,05) – Exact Fisher Test.

Table 5 –Crossing distribution of vocal training, therapy and energy for Pentecostal style

Moment	Variables	Energy		p-value
		Less spectrum energy	More spectrum energy	
No verbal command	Participated in singing lessons			
	No	11 (91,7%)	1 (8,3%)	-
	Yes	8 (100,0%)	0 (0,0%)	
	Had speech therapy sessions			
	No	12 (92,3%)	1 (7,7%)	-
	Yes	7 (100,0%)	0 (0,0%)	
With verbal command	Participated in singing lessons			
	No	5 (41,7%)	7 (58,3%)	1,000*
	Yes	4 (50,0%)	4 (50,0%)	
	Had speech therapy sessions			
	No	6 (46,2%)	7 (53,8%)	1,000*
	Yes	3 (42,9%)	4 (57,1%)	

*Significant values (p≤0,05) – Exact Fisher Test.

Table 6 – Crossing distribution of vocal training, therapy and harmonics for Pentecostal style

Moment	Variable	Harmonics			p-value
		Absence	Pesence more definition	Presence less definition	
No verbal command	Participated in singing lessons				1,000*
	No	3 (25,0%)	4 (33,3%)	5 (41,7%)	
	Yes	3 (37,5%)	2 (25,0%)	3 (37,5%)	
	Had speech therapy sessions				0,447*
	No	5 (38,5%)	4 (30,8%)	4 (30,8%)	
	Yes	1 (14,3%)	2 (28,6%)	4 (57,1%)	
With verbal commandl	Participated in singing lessons				-
	No	0 (0,0%)	10 (83,3%)	2 (16,7%)	
	Yes	1 (12,5%)	4 (50,0%)	3 (37,5%)	
	Had speech therapy sessions				-
	No	0 (0,0%)	10 (76,9%)	3 (23,1%)	
	Yes	1 (14,3%)	4 (57,1%)	2 (28,6%)	

*Significant values (p≤0,05) – Exact Fisher Test.VOCAL PRODUCTION CONDITION
"Adapted by Ferreira et al (2003)"

is associated with the style of music[2,11,14] and the ability of the professional singer[18].

DISCUSSION

Singers are the vocal elite of the voice professionals[17], they are characterized by greater knowledge of vocal issues and great vocal hygiene care[23], which may have minimized the occurrence of laryngeal and voice alterations due to vocal phonotraumatic behaviour in the 20 participants of this study, resulting in the absent or mild general voice quality degree and in the absence of larynx mass lesions or glottal closure, also resulting in vocal rest behaviour, singing lessons and voice therapy in the presence of voice alterations (Table 1). However, inadequate food ingestion, often reported by participants, should be considered a risk factor for the development of vocal and / or laryngeal alterations for potentiating the occurrence of gastroesophageal reflux, triggering retrocricoid edema region in 25% of participants. These data demonstrate that, even though they are vocal elite[17], the singers still practice inadequate vocal hygiene habits, like self-medication for voice problems and inappropriate food intake (Table 1).

In the worship style there was lower resolution in the higher register region of the spectrograph and lower amplitude of the vibrato throughout the emission, which is attributed to the singing style, marked by greater vocal smoothness, lower intensity and speed, and even some breathiness during the emission[3]. In the Pentecostal style, there was a better definition on the higher region of the spectrum, higher intensity, amplitude and regularity of the vibrato throughout the emission, since this style calls for the use of higher vocal intensity, accelerated speech rate and more intense vibrato[3]. These findings support previous reports that the characteristics of vibrato are strongly influenced by the vocal intensity[1,18]. This oscillation of the fundamental frequency is more visible and regular at high frequencies by the direct action of the cricothyroid muscle[2,16,23], therefore the Pentecostal style showed higher sound modulation in vocal tract and better definition on the higher spectrographic region (Table 2).

In the Pentecostal in style, it was observed modification in the presence of vibrato produced under verbal command (Table 3), mainly by the presence of greater regularity and energy on the spectrogram lines. The regularity in the emission is perceived as a more beautiful and melodious voice, reflected by greater consistency throughout the spectrogram, which can be modified for artistic reasons[2,9,11,14]. Because the presence of vibrato was higher with the verbal command, it seems that the singer, when receiving a specific order to perform the vibrato, can keep a sharper and more regular vibrato, since this oscillation is a resource used by trained singers naturally occurring when the voice is produced with freedom and good technique[14] and, in addition, the voice command may have influenced the higher vocal intensity of the singers during the performance, which resulted in better definition of the vibrato[1,18].

Acoustically the vibrato involves amplitude and fundamental frequency modulation, fluctuations in energy and in vibration of the vocal tract walls, therefore depending on the production source (vocal folds) and filter (vocal tract structures)[4- 6,10,12,24,25], which directly affects the acoustic characteristics[2,5,6,9]. The greater energy required for the Pentecostal style resulted in greater change in spectrographic characteristics when compared to the worship style (noticeably softer).

When participants received verbal command to perform the vibrato, they presented the vibrato with higher amplitude and energy (Tables 4 and 5), with an increase of harmonics, especially in the higher area of the spectrograph (Table 6 and Figure 3), since, greater vocal intensity results in a highest number of harmonics[2, 8,9,12,14], which may have resulted from the increased use of abdominal-diaphragmatic and laryngeal muscles, and vocal tract during emission.

The singing voice has been widely studied by Speech Pathology, Otorhinolaringology, Music, Physics and Engineering, considering not only the final product but also the laryngeal production and refinement of vocal tract necessary for singing, therefore providing the best contributions to the development of the vocal techniques[3] and better intervention for the singers. Further investigations should be developed considering the particularities of gospel music.

CONCLUSION

The vibrato of trained singers varies accordingly to the style of gospel music. Pentecostal-style vibrato is more regular, with more amplitude, with a strong regularity, greater definition of the harmonics in the higher region of the spectrogram and greater amplitude of the sound wave during emission. In the worship style, there is less definition of harmonics in the higher region of the spectrogram, lower amplitude and lower resolution of vibrato during the emission. Trained singers change the vibrato in the presence of verbal command. The main modified acoustic parameters were: increased regularity, largest amplitude, higher energy in the spectrum and higher harmonics definition, showing that,

RESUMO

Objetivo: verificar as características do vibrato de cantores profissionais de acordo com o estilo da música gospel; e se o comando verbal para a realização do vibrato interfere em suas características. **Métodos:** aprovação do CEP. Analisou-se as características espectrográficas do vibrato de 20 cantores gospel profissionais, 06 homens e 14 mulheres (média de idade: 30 anos), por meio de dois estilos gospel – adoração e pentecostal. Estruturou-se duas situações de gravação – ausência e presença de comando verbal para a realização do vibrato. Todos os participantes responderam ao item de sinais e sintomas vocais do protocolo CPV-P e realizaram avaliação laringológica. **Resultado:** observou-se que no estilo pentecostal 95% dos participantes realizaram vibrato regular, com maior variação da amplitude, maior energia do espectro e melhor definição dos harmônicos; na adoração 100% realizaram vibrato irregular, com menor variação da amplitude, menor energia no espectro e 50% tiveram presença de harmônicos com menor definição e 50% com ausência de harmônicos. Na análise espectrográfica observou-se que, no pentecostal, houve vibrato regular em 75% dos sujeitos, maior variação da amplitude em 65%, maior energia no espectro em 55%, e presença com maior definição em 70%, tanto para situação sem comando verbal quanto para a com comando para realização de vibrato. Não houve relação entre aulas de canto, terapia fonoaudiológica e características do vibrato. **Conclusão:** o vibrato de cantores treinados modifica conforme o estilo gospel cantado. O comando verbal para a realização do vibrato aumenta a definição de regularidade, amplitude, energia no espectro e definição dos harmônicos.

DESCRITORES: Tremor; Espectrografia; Voz; Canto

when explicitly required to produce vibrato, singers produce it with higher resolution, especially in the Pentecostal style.

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