MODERN SINGING HANDICAP INDEX IN SINGERS OF TRADITIONAL AND PENTECOSTAL CHURCHES

Índice de desvantagem para o canto moderno em cantores evangélicos de igrejas tradicionais e pentecostais

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ABSTRACT

Purpose: to assess complaints, laryngopharyngeal and vocal symptoms and voice handicap of gospel singers, comparing singers of traditional churches with singers of Pentecostal churches. **Methods:** one hundred gospel singers of both genders were evaluated, divided in Traditional group and Pentecostal group. A questionnaire about occupation, voice perception, complaints vocal/laryngeal symptoms and the Modern Singing Handicap Index were applied. The data obtained were statistically analyzed by calculating the average percentage, and compared between groups (Mann-Whitney test with a significance level of 5%). **Results:** most gospel singers do not use their voices professionally, and 2% have knowledge of techniques and vocal preparation. The time in singing activities ranged from 6 to 8 hours per week and more than half of the analyzed group reported having good voices. There were no significant differences concerning the vocal and laryngopharyngeal complaints, when comparing both groups. Traditional gospel singers had a higher frequency of vocal symptoms "strong voice" in comparison to Pentecostal singers, considering the male gender (p=0.002). Female Pentecostal singers reported worst result for disability (p=0.008), handicap (p > 0.000) and defect (p=0.004) when compared to traditional female singers. **Conclusion:** with the exception of the symptom "strong voice", which was most reported by the males of the Traditional Group, there were no significant differences regarding vocal abuse and vocal symptoms between the groups. Women of the Pentecostal Group presented worst result in the three subscales, revealing greater voice handicap than women of the Traditional Group.

KEYWORDS: Voice; Voice Disorders; Quality of Life; Religion; Singing

INTRODUCTION

Music has a vital role in gospel churches and this is pointed out by the fact of every community practice to go along music[1].

Recently it is possible to observe the power of gospel music. Authors report that the function of music is to prepare the congregation to specific activities, as bible reading, understanding preaching, to tithes dispensation, beginning and ending of services, reunions and meetings[2]. Through music, gospel people express their way of living and their relationship with God[3].

Gospel church has two basic denominations: traditional and Pentecostal churches[4]. The denominations are different based in a set of doctrines and principles that govern the church style. In this context, it is possible to observe differences between styles: a way of service is more liturgical, objective, and rational, present in historic or traditional churches, while the other has a more emotional approach, found in Pentecostal and neo-pentecostal churches.

Traditional gospel music is followed by human voices technically built, using melodies and lyrics of classic or erudite composers, usually under the

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conduction of a conductor[5]. In Pentecostal church, the service is performed in a festive and joyful way, moment in which the congregation is prepared to receive spiritual gifts[6]. The emotional and involving atmosphere is raised using popular music of a variety of styles. The religious movement requires own music production, in order to expressively incorporate the new type of religious that it presupposes; the religious music expression is always connected to the type of religiosity which represents[7].

Vocal groups and singers soloists are present in major part of gospel churches. In general, they are amateurs that develop singing by calling, talent, or personal satisfaction[8]. These singers may join the congregational singing, groups[9] or chorals[2], in one or more churches during years throughout life time. Usually they are subjects without prepare or specific following, proper to singing voice. For this reason, it is frequently observed vocal complaints in this population. The main complaints related to singing, reported by gospel singers are: difficulty to reach high or low notes, lack of air to finish music phrases, squeeze or lump sensation in the throat, weak or too loud voice sensation, and untune[10].

Amateurs' gospel singers reported vocal complaints as hoarseness and constant phlegm, voice breaks, loosing voice, dry throat, weak voice, and pain in the neck and nape region[11]. During singing, the most reported complaints were difficulty to reach high notes, hoarseness and voice breaks[11]. Theses deviations may be the consequence of lack of knowledge about vocal anatomy and physiology, mistaken voice classification, improper voice usage, as well as not knowing the techniques and voice training specific to singing voice. These factor easier the development of dysphonia in singers that despite being amateurs may compromise their quality of life.

Recently some quality of life instruments addressed to singers were translated and valid to Brazilian Portuguese: Classic Singing Handicap Index (CSHI) [12] and the Modern Singing Handicap Index (MSHI) [13].

The MSHI was created from an adaptation to singers done by the phoniatry Franco Fussi, using the Voice Handicap Index (VHI) questions. The VHI mainly evaluated three aspects: voice disability, handicap, and impairment[13]. It is addressed in adult subjects having vocal complaints and, despite being a tool of proved validation; it does not have proper sensitivity to evaluate singers[14]. The MSHI on the other hand show to be effective to singers' population and must be used as an auxiliary tool to verify possible vocal disturbances in singers[13].

Considering the needs that still remain regarding the characterization and reflection about gospel singers voice usage, the general purpose of this research is to verify complaints and vocal and laryngeal symptoms, and the voice handicap of gospel singers, comparing traditional and Pentecostal church singers.

METHODS

This is an observational, cross-cut, and prospective study.

The present study was approved by the Ethic Committee of the institution (CEP 302.062/2013), and all participants signed the informed consent.

Sample

Were participants 100 gospel singers from both sexes, aging between 18 and 78 years (mean of 38 years), divided in two groups, according to denomination (style) of churches: Traditional Group (TG) and Pentecostal Group (PG).

Traditional Group subjects attended to the following churches: Baptist, Presbyterian, and Lutheran. Pentecostal Group subjects attended to the following churches: Assembly of God, Nazarene Church, Grace Church, Christ Congregational Church, United Missionary Church, and God's Universal Kingdom.

In order to preserve the homogeneity of sample it was selected the same number of subjects accounting gender: 50 male singers (25 traditional and 25 Pentecostal), and 50 female singers (25 traditional and 25 Pentecostal).

It was included in both groups singers that practice gospel singing with a minimum of one year experience even not exercising other profession at the same time. It was excluded from both groups gospel singers that might be at the moment of data collection as visitors to the praise ministry that did not belong to church. Similarly it was excluded subjects that declared to receive medical or voice therapy treatment due to voice problems.

Procedures

Following, the subjects answered to the adapted questionnaire[15] about age, profession, number of hours singing and rehearsing per week, vocal image, vocal complaint, and vocal and laryngeal symptoms.

To investigate the vocal handicap it was addressed the Modern Singing Handicap Index (MSHI) [13]. It is composed by 30 items distributed in three subscales: disability, handicap and impairment which correspond to functional, emotional, and organic domains, respectively. The answers were placed in a Likert scale of five points, according to the occurrence: 0=never, 1=rarely, 2=sometimes, 3=often, and 4=always. Each domain has the

possibility of 40 points as maximum score and the total, composed by summation of the three domains, of 120 points. As higher the number of points, higher was the perceived handicap.

Data analysis

The obtained data were organized and statistically treated with the Statistica for Windows software, 11.0 version, StatSoft Inc. It was performed the mean calculus and the percentage of number of subjects to characterize the traditional and Pentecostal groups. To compare the groups, in ordinal variables, it was performed the Mann-Whitney Test. To all statistic tests it was adopted the significance level of 5% ($p<0.05$).

RESULTS

Table 1 data shows 82% of gospel singers do not use voice professionally. Singers that are voice professionals act as salespersons (8%), teachers (6%), musicians (2%) human resources director (1%), and public attendant (1%).

Regarding the number of hours singing and rehearsing by week (Table 2) the sample was composed by singers with mean of 6 to 8 hours of singing per week.

Regarding vocal image (Table 3), from the singers reporting positive vocal image 57.1% also reported a good voice. It is possible to observe in the Traditional group that 52% of women had negative vocal image. From the ones reporting a negative self-perception, 18.2% reported the perception of weak voice.

Table 4 shows the main complaints reported by the gospel singers. There was no difference between the studied groups. The majority of subjects from both groups reported “difficulty to reach high notes”.

The vocal and laryngeal symptoms occurrences are in tables 5 and 6, respectively. It is observed significant result in the comparison of traditional and Pentecostal groups, in male gender, about loud voice symptom. There was no other significant result regarding vocal and laryngeal symptoms.

Regarding MSHI, in the traditional and Pentecostal group comparison, it was observed significant differences in the mean scores of the subscales: disability ($p=0.008$), handicap ($p=0.000$), and impairment ($p=0.004$) in female gender. It was not observed significant results in male gender (Table 7).

Table 1 – Traditional and Pentecostal Church subjects distribution in numbers and percentage according to the professional voice usage

Profession	Traditional Group		Pentecostal Group	
	female n (%)	male n (%)	female n (%)	male n (%)
Subjects not using voice professionally	20 (80)	24 (96)	21 (84)	17 (68)
Subjects using voice professionally	5 (20)	1 (4)	4 (16)	8 (32)
TOTAL	25 (100)	25 (100)	25 (100)	25 (100)

Table 2 – Traditional and Pentecostal Church subjects distribution according to the amount of hours per week of singing activities

Vocal activities	Traditional Group		Pentecostal Group	
	Female Mean (h/week)	Male mean (h/week)	Female mean (h/week)	Male mean (h/week)
Singing (presentation)	3.25	4.22	5.00	5.38
Rehearsal	2.43	3.09	2.40	2.36
Total	6.08	7.31	7.40	8.14

Table 3 – Traditional and Pentecostal Church subjects distribution according to vocal complaint

Vocal image	Traditional Group		Pentecostal Group		Total n (%)
	Female n (%)	Male n (%)	Female n (%)	Male n (%)	
Positive self-perception	12 (48)	16 (64)	14 (56)	14 (56)	56 (56)
Negative Self-perception	13 (52)	9 (36)	11 (44)	11 (44)	44 (44)

Table 4 – Comparison of number and percentage of complaints occurrence related to singing and/or rehearsal, reported by the Traditional and Pentecostal Church group subjects in the last 6 months

Vocal and laryngeal complaints related to singing/rehearsal	Traditional n (%)	Pentecostal n (%)	p-value
Difficult to reach high notes	23 (46)	26 (52)	0.548
Difficult to reach low notes	6 (12)	10 (20)	0.275
Difficult to tune	7 (14)	8 (16)	0.779
Discomfort/Pain in the throat after singing/rehearsal	10 (20)	11 (22)	0.806
Fatigue/Sore after singing/rehearsal	8 (16)	10 (20)	0.603
Dry sensation after singing/rehearsal	12 (24)	8 (16)	0.317
Lack of air during singing/rehearsal	6 (12)	6 (12)	1.000
Voice breaks or hoarse after singing/rehearsal	9 (18)	13 (26)	0.334
Difficult to listen to the group during singing/rehearsal	4 (8)	5 (10)	0.727

Mann-Whitney Test *p<0.05

Table 5 – Mean of occurrence of vocal symptoms reported by Traditional and Pentecostal Church Group subjects in the last 6 months (0=never; 1=rarely; 2=sometimes; 3=often; 4=always)

Vocal Symptoms	Female (occurrence mean)			Male (occurrence mean)		
	Traditional	Pentecostal	p-value	Traditional	Pentecostal	p-value
Hoarseness	1.04	1.36	0.433	0.92	1.04	0.742
Voice loss	0.80	0.48	0.242	0.72	0.36	0.063
Voice breaks	0.88	0.96	0.749	0.60	0.56	0.674
Lack of air	0.60	0.92	0.309	0.56	0.32	0.623
High pitched voice	0.36	0.44	0.713	0.36	0.72	0.756
Low pitched voice	0.68	0.52	0.653	0.60	0.64	0.961
Unstable pitch voice (high/low)	0.60	0.44	0.405	0.56	0.84	0.933
Weak voice	0.84	0.56	0.526	0.52	0.80	0.425
Loud voice	0.84	0.72	0.620	0.88	0.04	**0.002***
Effort to talk	0.84	0.88	0.889	0.48	0.40	0.384

* Mann-Whitney Test ($p \leq 0.05$)

Table 6 – Mean of laryngeal symptoms occurrence reported by the subjects of Traditional and Pentecostal Church in the last 6 months (0=never; 1=rarely; 2=sometimes; 3=often; 4=always)

Laryngeal Symptoms	Female (occurrence mean)			Male (occurrence mean)		
	Traditional	Pentecostal	p-value	Traditional	Pentecostal	p-value
Vocal fatigue	0.64	0.52	0.755	0.48	0.60	0.866
Pricking sensation in throat	0.76	0.36	0.191	0.56	0.68	0.629
Lump in the throat	0.60	0.32	0.520	0.44	0.36	0.390
Phlegm	0.88	1.04	0.764	0.60	0.48	0.548
Dry cough	0.96	0.88	0.719	0.64	0.40	0.473
Wet cough	0.64	0.72	0.670	0.88	0.76	0.610
Pain to talk	0.36	0.40	0.931	0.52	0.44	0.772
Pain to swallow	0.48	0.52	0.580	0.32	0.24	0.531
Trouble to swallow	0.48	0.44	0.971	0.44	0.36	0.470
Sore throat	0.96	0.72	0.393	0.64	0.56	0.723
Phlegm Throat	0.76	1.12	0.227	0.56	0.76	0.591
Dry throat	0.92	1.00	0.757	0.68	0.56	0.991
Itchy Throat	0.80	0.88	0.842	0.68	0.40	0.298
Burning feeling	0.56	0.48	0.888	0.56	0.36	0.367

* Mann-Whitney Test ($p \leq 0.05$)

Table 7 – Comparison of means and standard deviation (SD) of MSHI scores from both Traditional and Pentecostal Church Groups subjects

MSHI domains	Female Mean (± SD)			Male (Mean SD)		
	Traditional	Pentecostal	p-value	Traditional	Pentecostal	p-value
Disability	6.20 (±6.78)	14.48 (±10.82)	**0.008***	5.64 (±7.85)	6.08 (±7.61)	0.824
Handicap	4.72 (±6.96)	15 (±10.25)	**0.000***	3.60 (±5.11)	5.32 (±9.76)	0.390
Impairment	9.32 (±11.00)	17.12 (±9.11)	**0.004***	6.24 (±9.34)	6.64 (±7.96)	0.919
Total	20.24 (±23.41)	46.6 (±25.94)	**0.003***	16.12 (±19.21)	18.04 (±22.44)	0.495

Mann-Whitney Test (*$p \leq 0.05$)

DISCUSSION

The present paper searched to verify complaints and vocal/laryngeal symptoms, and the voice handicap to modern singing of gospel singers, comparing the traditional and Pentecostal church singers.

The majority of participants reported not to be voice professional and, among those stating to use their voices professionally, only 2% declared to have voice prepare. This lack of technique observed in the gospel singers joining this research is also perceived in many popular singers whom base exclusively in their gift to sing[16]. This leads to the observation that all the found data related to vocal complaints and symptoms, as well as the MSHI values, are related to the voice use during gospel singers. According to literature, there is a high index of gospel singers that do not have prepare or proper training[9,17].

About the number of hours singing and rehearsing per week, the mean time of rehearsal reported was approximately of 2 hours and 50 minutes, which is close from suggested by the literature[18]. On the other hand, other authors pointed out that rehearsal should not be longer than 50 minutes[19]. About the time of presentation, in this study it was observed the mean of 4 hours and 15 minutes per week.

The week schedule of rehearsals and presentations observed in this study, associated to the lack of proper technique to singing, may affect the vocal quality of singers. Authors comment that factors as high vocal demand and lack of technique, place the singers in a high vocal risk situation[20,21].

Despite 56% of analyzed singers reported positive self-perception, results similar to the ones described in a research performed with singers from a professional choral[22], this research have 52% of women in traditional group reporting negative vocal self-image. This fact may report that this group may have a better self-perception of vocal deviations, due to requests observed in the style of singing in traditional churches that is similar to classic or erudite. In this style, there is a higher requirement in vocal quality, perception, tuning, timbre, and vocal extension[23], which is not observed in Pentecostal denomination in general. It is valid to highlight that the experience in singing have direct influence in self-perception as well as vocal performance[24].

Other factors that may point out a need of voice and laryngeal assessment in gospel singers, independent of the denomination, are: pain or discomfort complaint in the throat after singing or rehearsing, dry throat, voice breaks or hoarseness after singing/rehearsing – symptoms reported by at least 20% of the sample studied. About the vocal and laryngeal complaints related to singing/rehearsal it was not observed significant differences in the comparison of traditional and Pentecostal groups. However, it is observed a high level in both groups of people having difficulty to reach high notes (46% of TG and 52% of PG), which may be related to the lack of proper voice technique. Symptoms reported by the singers after singing/rehearsing, as pain/discomfort and fatigue/sore in the throat are usually related to vocal fatigue, due to excessive usage of singing voice[25,26]. The dry throat may be related mainly to insufficient hydration. The present study allows to observe that the gospel singers reported complaints are common in this population[10,11]. These data reinforce the importance of proper voice prepare and speech-language following regarding voice care guidance, hydration, and voice exercises practice that may be used before and after singing as warm up and cooling down in order to ease these complaints[9,10,17,27]. Besides, the lack of information about vocal health may contribute to developing laryngeal disturbances and dysphonia through time[11].

Regarding voice and laryngeal symptoms, male gender of traditional group reported loud voice significantly more often than Pentecostal group. In a way, this data may be related to the social behavior that the traditional denomination requires from the subject due to its strong European influence[1]. So, talking or singing loudly in a more conservative environment may seem a improper posture.

About voice handicap in singing, the study showed that gospel singers of female gender in Pentecostal group had significant higher voice handicap than traditional group, in the subscales of disability, handicap, and impairment. It was not found in literature researches comparing MSHI in different gospel denominations. However, a study[28] searching the voice handicap index in gospel singers found higher values to females than males. In the present research it was not performed comparisons between genders, but is was observed from the presented data that the values are quite close when comparing the male and females singer of traditional group, which did not happened to Pentecostal singers, in which women had higher values than men.

Ordering the higher to smaller deviation, in this study, the female gender of Pentecostal group had in first place the impairment (organic domain), followed by handicap (emotional domain) and disability (functional domain). In male gender there was no significant difference between studied groups. As for the styles of churches, the fact that women in Pentecostal church to have higher handicap than the ones in traditional churches may be associated to the manners related to the

denomination, considering the singing and God's praise style. In opposition to the traditional service, identified by rigor and solemnity, the Pentecostal service is characterized by informality and freedom to emotion expressions, being possible to observe a big approximation between religion and spectacle[29]. The service in spectacle way, many times considered as a praise show, is independent in its liturgical possibilities[30]. The congregation reactions are from crying, contrition, and introspection up to enthusiastic shouts, dancing, jumping, and collective choreographies[30].

According to the World Health Organization[31], disability is related to any decrease or restriction in the ability to usually perform an activity. Impairment is considered any loss or abnormality anatomic-physiologic or psychological, temporary or permanent. Yet handicap is the result of disability or impairment, characterized by limitation or restriction in performing a role expected by the subject, and may cause social, cultural, and economic consequences. Therefore, singers are capable to perceive something wrong with their vocal production, and may evaluate the sensation as limitation or handicap[32].

In this study, MSHI was capable to investigate questions related to self-perception of gospel singers, distinguishing groups regarding denomination and gender, since it point out specific questions in which was possible to observe women form the Pentecostal group to have higher handicap index when compared to the ones of traditional group, while other questions about complaint and symptoms were not possible to distinguish. In this context, similar results as described in literature are observed[8,13,29,33], in which MSHI shows to be a sensitive and efficient tool to evaluate singers in different styles. This fact point out to the need of addressing MSHI as complementary to gospel singers' assessment.

CONCLUSION

Except from loud voice often reported by male singers from Traditional Group, there were no significant differences regarding vocal complaints and symptoms between the studied groups.

Women in Pentecostal group had higher MSHI scores in the three subscales revealing higher handicap than Traditional group women. MSHI values, in the three subscales, were relatively low to both groups, showing so low perception in questions regarding voice, especially in male gender, independent from the church style. However MSHI was capable to investigate questions related to self-perception of gospel singers, distinguishing the groups regarding denomination and gender.

RESUMO

Objetivo: verificar queixas, sintomas vocais e laringofaríngeos e desvantagem vocal de cantores evangélicos, comparando cantores de igrejas tradicionais com cantores de igrejas pentecostais. **Métodos:** foram analisados 100 cantores evangélicos, de ambos os sexos, divididos em grupos tradicional e pentecostal. Aplicou-se um questionário sobre profissão, autoimagem vocal, queixa, sintomas vocais/laríngeos e o protocolo Índice de Desvantagem Vocal para o Canto Moderno. Os dados obtidos foram analisados estatisticamente por meio do cálculo da média, porcentagem e comparação entre os grupos (Teste de Mann-Whitney com nível de significância 5%). **Resultados**: a maioria dos cantores evangélicos não utiliza a voz profissionalmente, e 2% têm conhecimentos sobre técnicas e preparação vocal. O tempo em atividades de canto/ensaio varia de 6 a 8 horas semanais e mais da metade do grupo analisado referiu possuir boa voz. Não houve diferenças significantes quanto às queixas vocais e laringofaríngeas, na comparação entre os grupos. Cantores evangélicos tradicionais apresentaram maior frequência do sintoma vocal "voz forte" quando comparados aos cantores pentecostais, considerando o gênero masculino (p=0,002). Cantores pentecostais do gênero feminino referiram pior resultado para incapacidade (p=0,008), desvantagem (p>0,000) e defeito (p=0,004), quando comparados aos cantores tradicionais do gênero feminino. **Conclusão:** Com exceção do sintoma "voz forte" mais relatado pelos cantores masculinos do Grupo Tradicional, não houve diferenças significantes em relação à queixa vocal e sintomas vocais entre os grupos estudados. Mulheres do grupo Pentecostal apresentaram pior resultado nas três subescalas, revelando maior desvantagem vocal do que mulheres do grupo Tradicional.

DESCRITORES: Voz; Distúrbios da Voz; Qualidade de Vida; Religião; Canto

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