

“SINGING CHASES AWAY THE BLUES.” KNOWLEDGE AND USE OF THE VOICE AS HEALTH PROMOTION RESOURCES FOR CHORISTERS

“Quem canta seus males espanta.” Conhecimento e uso da voz como recursos promotores da saúde de coralistas

“Quien canta, a los males espanta.” Conocimiento y uso de la voz como recursos de promoción de la salud de coralistas

Original Article

ABSTRACT

Objective: To comprehend the knowledge and use of the voice by female choristers and the implications for health promotion, according to their interpretations. **Methods:** A qualitative study was conducted from December 2011 to February 2012 with 13 women aged 23 to 66 years old, members of a university chorus, in Fortaleza, Ceará, Brazil. A semi-structured interview was used for data collection. Thematic analysis was used to organize the results into categories, which were analyzed according to the symbolic interactionism. **Results:** Two core meanings were identified: knowledge regarding the voice and the use of the voice. The participants defined the voice as a means of communication, a personal identity, and a way to express feelings. They did not show consistent knowledge of the anatomical or physiological aspects of the voice, but the given definitions show they understand that the voice permeates personal, social, and professional spaces. The professional voice and aging emerged as two of the most prominent issues in the context of the vocal use. The participants recognize that knowledge and use of the voice can be improved by the activities in the choir, which leads to health promotion. **Conclusion:** The choristers show limited knowledge about vocal health, yet they comprehend the beneficial effects of chorus on women's health, raising their understanding of vocal health; that stimulates the adoption of healthy habits and preventive measures, which favors the vocal use.

Descriptors: Women's Health; Health Promotion; Communication; Voice.

RESUMO

Objetivo: Compreender o conhecimento e o uso da voz por mulheres que cantam em coral e as repercussões para a promoção da saúde. **Métodos:** Realizou-se estudo qualitativo, de dezembro de 2011 a fevereiro de 2012, com 13 mulheres de 23 a 66 anos, membros de um coral de uma universidade, em Fortaleza, Ceará, Brasil. Coletaram-se os dados através de entrevista semiestruturada. Aplicou-se a análise temática para organizar os resultados em categorias, analisando-as à luz do interacionismo simbólico. **Resultados:** Identificaram-se dois núcleos de sentido: conhecimento sobre voz e uso da voz. As coralistas definiram a voz como meio de comunicação, identidade pessoal e forma para expressar emoções. Elas não demonstraram conhecimento consistente sobre os aspectos anatômicos e fisiológicos da voz, mas as definições apresentadas mostram que elas entendem que a voz permeia espaços pessoais, sociais e profissionais. A voz profissional e o envelhecimento destacaram-se no contexto do uso vocal. As participantes reconhecem que o conhecimento e o uso da voz podem ser aprimorados pelas atividades no coral, o que remete à promoção da saúde. **Conclusão:** As coralistas apresentam conhecimento limitado sobre a saúde vocal, porém, compreendem os efeitos benéficos do coral sobre sua saúde, ampliando a compreensão sobre a voz; isso estimula a adoção de hábitos saudáveis e de medidas preventivas, o que favorece o uso vocal.

Descritores: Saúde da Mulher; Promoção da Saúde; Comunicação; Voz.

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RESUMEN

Objetivo: Comprender el conocimiento y uso de la voz por coralistas mujeres y implicaciones para la promoción de la salud según sus interpretaciones. **Métodos:** Un estudio cualitativo fue realizado entre diciembre de 2011 y febrero de 2012 con 13 mujeres entre 23 y 66 años participantes de un coro de una universidad de Fortaleza, Ceará, Brasil. Para la recogida de datos fue utilizada la entrevista semi-estructurada. El análisis temático fue utilizado para organizar los resultados en categorías las cuales fueron analizadas según el Interaccionismo Simbólico. **Resultados:** Fueron identificados dos núcleos de significados: el conocimiento respecto la voz y el uso de la voz. Las participantes definieron la voz como un medio de comunicación, una identidad personal y una manera de expresar sus sentimientos. Ellas no han demostrado un conocimiento consistente de los aspectos anatómicos y fisiológicos de la voz pero las definiciones presentadas muestran la comprensión de que la voz permea los espacios personal, social y profesional. La voz profesional y el envejecimiento emergieron como los dos principales temas en el contexto del uso de la voz. Las participantes reconocieron que el conocimiento y el uso de la voz pueden mejorar a través de las actividades en el coro las cuales conducen a la promoción de la salud. **Conclusión:** Las coralistas presentaron el conocimiento limitado de la salud de la voz sin embargo ellas comprenden los efectos benéficos del coro en la salud de la mujer aumentando su comprensión de la salud vocal, estimulando la adopción de hábitos saludables y de medidas de prevención que favorecen el uso de la voz.

Descriptores: Salud de la mujer; Promoción de la Salud; Comunicación; Voz.

INTRODUCTION

Oral communication stands as an important element for good health and interpersonal relationships in personal as well as professional life. Researchers postulate that the voice is essential to socializing and an indispensable resource for communication⁽¹⁾.

For good vocal production, the anatomical and physiological integrity of the phonological structures must remain uncorrupted. Likewise, maintaining healthy vocal behaviors favors such good production and good health, whereas organic and functional changes in the voice box negatively affect individual quality of life (QoL) and overall well-being⁽¹⁾.

That which compromises vocal health can trigger problems that affect the voice quality, especially when the person uses it for work. In the professional realm, public health research gravitates toward men's voices⁽²⁾, thus we consider incumbent upon us the amplification of our scope to include the women's demands as they conquer

new spaces in the labor market, occupying a 49% share of the economically active population in Brazil⁽³⁾. Within this evolution, women have quantitatively surpassed men in various occupations (telemarketing, teachers, vendors, etc.), and they develop vocal disturbances with greater frequency because of their anatomical, physiological and psychological characteristics^(4,5).

The female characteristics that predispose the onset of voice disorders, as grounded in medical literature, relate most commonly to: the small size of the larynx, which facilitates changes in glottal configuration, in cases of inadequate use and environmental interference^(6,7); the influences of hormones on the larynx throughout women's life cycles⁽⁸⁻¹⁰⁾; as well as the effects of aging⁽¹¹⁾. Some studies even show that the larynx is a target organ for hormone fluctuations along women's lifespans^(8,9), which may cause problems that directly affect their vocal health and QoL.

A large number of women in Brazil and beyond look for activities that can improve their health and QoL. One example of these activities is the participation of women in choir groups, which requires professional monitoring to achieve its goals. As members of interdisciplinary teams, speech therapists that treat vocal professionals insert themselves into the universe of the singing voice and deal directly with singers. Speech therapists, therefore, concentrate on vocal health promotion, improving the physiological and functional conditions, and honing a healthy and aesthetic use of the voice⁽¹²⁾.

Although a majority of Brazilian choruses maintain amateur status⁽¹²⁾, many professionalize under the demand of extensive practice schedules and frequent performances, all of which necessitate rigor, technique and, above all, intensive use of the voice. Researchers frequently observe signs of vocal irritation among singers and conductors (throat clearing, hoarseness, scapular and cervical strain, respiratory changes, dryness of the throat, etc.), in spite of the fact that most perform vocal warm-ups before songs, refrain from drinking alcohol, and abstain from smoking. Many, however, often talk excessively and eat irregularly, while few perform vocal cool-down exercises⁽¹³⁾. Research demonstrates that singing can assist in properly training the voice – and many women commonly report using their voices for this purpose – even though they do not know precise strategies to maintain healthy voices⁽¹⁴⁾.

Historically, hormonal changes, the premenstrual period, menopause, and thyroid surgeries comprised the most common vocal problems women suffered from⁽¹⁵⁾. Currently, however, women's voices face additional challenges, such as the adoption of a lifestyle that can involve alcohol, tobacco, and drugs; professions that propel

women into leadership positions but also result in higher stress, overuse of the voice, and potential contact with toxic chemicals; the use of medications that interfere in vocal physiology; and increased longevity^(16,17). This reinforces the real necessity to adopt health promotion strategies focused on female singers, since several studies show the contribution of a good health to the QoL⁽¹⁸⁾.

Basing our presuppositions on the interconnectedness of women's health in Brazil, as exemplified by the *Política Nacional de Atenção Integral à Saúde da Mulher* (National Policy of Integral Attention to Women's Health)⁽¹⁹⁾, this study merits attention because of the growing number of choral groups in Brazil, which often include women; the gaps in publications addressing voice in the context of women's health; and the dearth of women's knowledge regarding vocal health; in addition to the necessity to adopt healthcare that positively impacts vocal conditions in addition to the overall well-being. Despite holding clear relevance for health and QoL studies, this issue is rarely explored in the context of women's health and health promotion. To increase knowledge on the subject, this article discusses women's participation in choirs as a health promotion strategy, as this activity provides a better understanding of voice and its use.

This article aims to comprehend the knowledge and use of the voice by female choristers, and the implications for health promotion, according to their interpretations.

METHODS

This qualitative study of female singers focus on their understanding of vocal health and the forms of voice used and the implications for health promotion, via a symbolic interactionism^(20,21) approach.

In this research, the subjectivity, perceptions, and attitudes of the participants, which stem from personal, professional and social experiences, are considered according to the contexts of their lives and interpersonal relationships⁽²²⁾. This study emanates from a bigger project entitled "Women's health and the interface with integrality, technology, and health promotion".

To develop this research, we used the following guiding question: "What do female chorus members know about vocal health, how do they use their voices, and which behaviors do they adopt to keep their voices healthy?"

The research was conducted from December 2011 to February 2012 with participants from a university choir in the city of Fortaleza, Ceará, Brazil. The choir consisted of 29 singers of both sexes, of whom 19 were women; 13 of these women participated in this study and no men, because our focus rests on women's health. Choir practices took place

three times a week, for three hours per day, becoming more frequent in periods preceding festive events. Female singers were chosen for this study because the researchers believe participating in chorus is a positive strategy for vocal health promotion that women everywhere can adopt, since their occupations tend to require vocal use, and they are more susceptible to vocal disturbances given their anatomical, physiological, and psychological characteristics.

All participants were assiduous in practice, having participated in the choir for more than a year. They had different professions but shared similar socioeconomic and educational conditions; they all resided near the practice site. For ethical reasons, the anonymity of respondents has been preserved. For this, the letter "C" is used as a code meaning "chorus member," then the numbers 1-13, which facilitate the reader's comprehension about the convergent and/or divergent views of the various participants.

The criterion to define the number of interviews was the theoretical saturation, represented by the moment when little or no new important information appears in the speech of the participants⁽²³⁾. The script investigated the personal, socioeconomic, and professional characteristics of the choristers, besides information about knowledge and use of the voice, motivation to participate in a choir, and benefits for general and vocal health obtained with this activity.

For the collection, organization, and data analysis, the theoretical and methodological approach of symbolic interactionism⁽²⁰⁾ was applied, conforming to the following steps: visitation to the group to connect with the universe under examination; elaboration of possible problems to investigate; identification of the participants' main characteristics; formulation of questions about the empirical world, converting them into problems; meeting with the singers to validate previously prepared questions; construction and application of semi-structured interviews⁽²⁴⁾.

The participants were individually interviewed in the chorus's practice room during scheduled times, after the researcher oriented each participant about every detail of the study and obtained their signatures on the written consent form. Each interview lasted on average 30 minutes.

Upon collecting the data, it was transcribed, and the researchers read the material various times, identifying important themes. Five core findings were identified during reflection sessions. Then, categories emerged from the establishment of connections with the previous body of knowledge on the subject, which allowed the researchers to discern relationships between the results. The participants' responses were summarized into two main categories for analysis: knowledge about the voice and its use. For this, content analysis^(22,24) was channeled, adopting a thematic

model covering pre-analysis, material exploration, processing of results, and interpretation.

This final interpretation phase was performed in accordance with symbolic interactionism^(20,21), that is, empirical results were extrapolated in an attempt to capture the singers' knowledge of the voice and its forms of use. Throughout this process, the interactionism approach⁽²⁰⁾ enlightened the researchers regarding the relationships and human behavior in groups, allowing for contextualization of those relationships and behaviors according to the individual and collective experiences. Human communication functions as a conduit for exploring the relationship between society and the individual, exposes the genesis of the self, the development of significant symbols, and acts as the instrument for strong societal influences on mental behavior. The authors^(20,21) explored the terms self, mind, and society, originally proposed by Mead in 1934, and they reported that the term society refers to the idea that every group activity is based on cooperative behavior. The self indicates that people can be the object of their actions. The mind constitutes a process that occurs when the individual interacts with him- or herself using significant symbols.

Joining these concepts⁽²⁰⁾ the assumptions of symbolic interactionism are: meaning, action, and interpretation. This triad facilitates understanding of individual and social roles in the construction of individual and collective behaviors in an interdependent and continuous cycle. This was followed in this study, since researchers believed that women's knowledge about the voice can influence the ways they use and take care of it, and also change behaviors to promote vocal health.

This study received approval from University of Fortaleza ethics committee under Opinion No.055/2010.

RESULTS AND DISCUSSION

Characterization of chorus singers

All participants in this study claimed to partake in other activities requiring the use of their voices. The sample consisted of thirteen women: five university students, one teacher, a food supplement representative, a banker, a lawyer, a saleswoman, an educator, a music instructor, and a choral conductor. Six of them (46.15%) had participated in choirs for a period of three to six years; four of them (30.77%) had been in this group for seven to eight years; and the other three (23.08%) had been associated with the choir for more than nine years.

The spread of choruses throughout Brazil has expanded the access of various social groups who seek to join choirs for assorted reasons: personal satisfaction, increased QoL, professionalization, and greater socialization. Health

literature illustrates that women contribute so heavily to this trend that the participation of women in mixed choirs surpasses the participation of men⁽¹⁴⁾.

This leads us to believe in the possibility that women currently outnumber men in the pursuit of alternative activities to improve their health promotion, QoL, and professional performance, thus exemplifying the concern this group holds regarding issues of health and life quality. Choir ameliorates communication, increases socialization, and reduces stress among members, all of which contributes positively to women's overall welfare.

Singers' knowledge about the voice

During the interviews, most women defined the voice as a medium of communication, a form of personal identity, and a means to express feelings, as the testimonies of C₁, C₂, and C₃ portray.

C₁ views the voice as "a mode of communication that uses sounds and usually languages." C₂ declares, "For me, it is the person's identity, it is how I express myself. The voice is the sound that expresses my feelings, and it is also through my voice that I am recognized as a person." C₃ states, "I understand that the voice is a human characteristic that is related to communication, identifying age, gender, personality, and even emotional states."

These descriptions by the chorus members echo the researched literature^(1,2,4,5,11). The women recognize the voice as an element of sound apparent in communication and that, at the same time, contents and meanings impregnate that voice. The women even attach the role of personal identification to voice, because it epitomizes individual characteristics such as age, gender, and personality^(2,6).

The women also assigned the role of working tool and emotional conductor to the voice, because it can reflect the speaker's emotional state via variations in intensity, frequency, rhythm, and pauses, as points out C₆: "*A medium of communication. The voice passes the most varied feelings. For me, the voice – aside from being a tool of my work – is a conductor of emotions.*"

Men, women, children, and the elderly have vocal profiles that reveal their gender and age group. Through the voice, it is possible to perceive emotional states, which underpins the assumptions of symbolic interactionism that assign a unique role to communication in social life. The voice, being able to convey emotions beyond words, plays a part in interpersonal relationships and an individual's relationship with him- or herself by directing and sculpting behaviors and attitudes⁽¹⁾. The voice also exposes the physical state of the individual, conveying good or poor health. Literature⁽²⁵⁾ reveals that vocal symptoms of poor health in singers or choir members may impair the harmony

of the presentations, causing negative reactions among the singers or in the audience. With this argument, researchers⁽²⁵⁾ justify the need for monitoring characteristics and vocal symptoms among singers, especially among women who suffer from greater alterations in vocal health.

When C₆ equates the voice with an instrument of work, she references people who use their voices professionally, because the voice impacts work practices and relationships, yet it also extends into the personal sphere. In the case of professional or amateur choirs, the voice should signify a work tool, because the harmony of voices within the array of acoustic nuances is an essential element for the beauty and scope of a good-sounding group⁽¹⁴⁾.

We further posit that the preservation of the vocal welfare positively influences relations between individuals and their families, the people they see on a day-to-day basis, and even audiences. Maintaining a good voice quality for listeners, which the speaker can produce without difficulty or discomfort (euphony), facilitates the recognition of individual characteristics and the transmission of oral messages. A distortion of the harmony and/or vocal comfort, however, results in a socially unappealing voice and uncomfortable delivery for the speaker (dysphonia), which can impair interpersonal relationships, professional practices, QoL, and the expression of feelings⁽²⁶⁾. Besides, it can cause negative impacts upon women's health, such as physical and emotional disturbances^(5,8,11,16).

Although the interviews captured many perceptions on the use of the voice, a clear lack of knowledge about the voice was also observed. The informants did not recognize risk factors for vocal health or hormonal and environmental influences that can interfere with the voice. Some of the interviewees even lacked a basic understanding of vocal wellbeing strategies. Experts should relay this information, which goes beyond the guidelines of vocal technique that the conductors teach to chorus members. In an interdisciplinary context, the dialogue between science and art is essential for choirs to reach their maximum potential while promoting and preserving their members' health⁽¹²⁾.

During the analysis of the present research, knowledge was associated with the tenet of symbolic interactionism, which reveals that "the meaning of things is derived from, or arises from, the social interaction that a person has with his or her peers"^(20,21). Thus, the impact of a voice disorder on the QoL of a person depends on the importance of the voice in his or her daily life based on personal and professional factors. That is, the greater the demand for the voice of an individual, the greater the damage that vocal health stressors inflict.

The interviewed singers did not always align the use of their voice with a strong knowledge of best practices for how to use it. An understanding based on action (use),

which can only be described as superficial, intuitive, poorly founded, and incipient was observed, and it is possible that such a lack of understanding of vocal health may contribute to the onset of laryngeal and/or respiratory changes⁽⁴⁾.

Vocal use by the singers

According to the Interactionism perspective, "the human beings act toward things on the basis of the meanings that the things have for them"^(20,21). Researchers suggest that knowing the voice in its myriad dimensions (physical, emotional, social, and professional) is essential to adopting attitudes that enhance self-care and health promotion⁽¹⁴⁾. C₄ epitomized the meaning of preserving the voice and optimizing its use in everyday life, by stating:

"The voice has a great importance in my everyday relationships. It allows me positive communication and diligence with the associations I develop, both in my social and professional life, as I already work with the speech production in oral discourses geared toward students, parents, and teachers at the school where I intern."

All participants recognize the use of their voices as important in the context of social relationships and professional performance; C₈ interprets her voice according to the context she desires, affirming: "I love to sing. For me, music is life. With my voice I can communicate with people around me, as a saleswoman and a singer in the choir."

Most of the women joined the chorus to improve their vocal performance, to increase their fitness, to overcome shyness and personal limitations, to socialize, and to enhance their health and sense of well-being. C₇ extols her perspective on why she signed up:

"Although my voice is high-pitched, it is very useful to me in the typical communication I have with people, as a banker – helping my customers, which I do with pleasure. I get much joy from the choral groups I attend and professionally I am happy to feel that I contribute to the charm and beauty of the group in a choir performance."

Choral singing began in prehistory, involving notions of sociology, anthropology, psychology, phonoaudiology, and other sciences. Throughout history, the choir has evolved to encompass different objectives, which our study substantiated based on the various voice quality profiles we observed and given the diversity of the participants' occupations and their different uses of voice. In the Middle Ages, chorale singing was an activity restricted to men, but with the Protestant Reformation, women reentered this universe of song, thereby presenting a need for the adaptation of musical arrangements to include women's voices⁽²⁷⁾.

Among the choristers, concern exists about the use of the voice and maintaining its quality, which underpins the idea that the voice is a key to personal and professional communication. For example, *“The voice is important in my job as a representative. I have to always have a clear, strong voice and do everything possible to take care not to become hoarse,”* says C₅.

Several choir members reported that participation in the choir improves understanding of vocal health and use of their voices, as it benefits them in socializing, stress reduction, self-esteem, voice quality, breath control, and awareness and interpretation of voices and the possible complications of voice use.

C₁ claims, *“I use my voice to get along with others, to unwind and escape from the daily grind,”* while C₂ declares, *“I participate in the choir to improve the volume of the voice, the diction, my self-esteem, my emotional state, and to decrease my shyness so that I am more sociable.”* C₃ adds, *“Singing helps me to reduce stress and has a positive effect on my self-esteem and the use of my voice.”*

Research demonstrates that choir attendance generates many health benefits, as the vocal education helps in respiratory control, increased stamina, and rejection of habits like smoking and drinking. Pneumophonoarticulatory coordination also maintains the health of the larynx and pharynx⁽¹²⁾.

Speech therapy and singing align closely with regard to the physiology of the voice, vocal hygiene and health, warm-up and cool-down exercises, singing techniques, and other specifics of the singing voice, as the same organs are used for speech and singing, but singers should always make adjustments as per the requirements of the songs they perform^(12,28).

Two participants (57 and 66 years old) reported worsened vocal quality because of advancing age, which they first noticed at 45 and 50 years old, respectively. Throughout life, women experience continuous fluctuations in hormone levels, so their larynxes – and in fact entire bodies – feel the effects of these changes at puberty, during each menstrual cycle, during pregnancy, as well as at menopause^(8,9,15,29,30). Consequently, the dynamics of voice use and guidelines about vocal health need to be differentiated to ensure better support and more efficient use of the voice in light of the limitations aging imposes⁽¹⁵⁾.

All participants related that activity in the choir minimizes such problems and enriches voice quality. A study⁽³¹⁾ illuminates the improvements choral singing can yield in elderly vocal health, with positive impacts on performance, quality, range, and the effects of the aging voice. In the singers of our study, the following quotation from C₇ implies a direct relationship between good voice quality, improved QoL, and self-esteem:

“I think I have a strong, good voice, and I can harmonize with the group. When I was younger, I managed to perform solos. Soloists currently only get picked with great technique and discipline, but as singer in the group, I’m an ace.”

The professional voice and aging emerged as two of the most prominent issues of our analysis, showing that the participation of elderly members in the choir helps them deal with their age-related vocal limitations. This constitutes a health promotion strategy that health professionals could adopt for women, who should remain vigilant for signs of menopause – a marker of aging for women. After menopause, orientations that deepen women’s understanding of their overall health and encourage healthy behaviors are vital in the prevention of chronic problems⁽³²⁻³⁵⁾, which should also include behaviors to preserve the voice.

According to the Symbolic Interactionist perspective, knowledge mediated by interpretation promotes a continuous cycle that redirects and contextualizes actions consistent with the needs of the individual and the society in which the interpretation originates. So it is with the voice. The individual – from his or her reality – acts, understands, interprets and molds behaviors based on his or her well-being, with interdisciplinary actions that facilitate the success of this process.

FINAL CONSIDERATIONS

The women participation in choirs can bring important benefits to their physical and mental health, enhancing their use of the voice across the various contexts in which contemporary women find themselves inserted. What is more, chorus participation raises member awareness and understanding of vocal health, besides being a very important strategy for women’s health promotion. The adoption of healthy vocal behaviors, the implementation of preventative measures, as well as the adherence to treatments in cases of voice changes are all behaviors which health professionals should encourage, so that the voice is indeed a facet of routine women’s healthcare in Brazil.

The participants’ concern about their vocal health preservation results in the adoption of actions that lead to improved vocal habits. It was observed that they use their voices in different contexts, and they reported that participation in choir contributes to improvements in voice quality and QoL.

Although women demonstrated limited knowledge regarding vocal health, the various reasons given for their participation in choirs are due to improvements experienced in vocal performance, which impact on the quality of personal and professional life. They also enumerated the

beneficial effects of the choral activity on their breathing, and overall well-being, which they related to improved human communication, stress reduction, and better general health.

These aspects can act as indicators for the development of strategies to promote health, including further voice training for the choir based on their current knowledge, actions, and personal and professional needs. It is important to promote knowledge about the strengths and weaknesses of the female voice, fostering self-care and self-management in vocal health.

As a possible health promotion strategy, indicating the participation of women in choral groups may be an excellent issue to be suggested to health professionals and services that desire to improve and innovate health promotion actions focused on women's health. This way, art and health interact creating a propitious environment to improve knowledge and use of the voice, impacting positively on mental and physical wellness.

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REFERENCES

1. Chiossi JSC, Roque FP, Goulart BNG, Chiari BM. Impacto das mudanças vocais e auditivas na qualidade de vida de idosos ativos. *Ciênc Saúde Coletiva*. 2014;19(8):3335-42.
2. Penteadó RZ, Honorato FG, Nascimento JS. Mulher pastora: questões de gênero e condições de uso da voz no meio religioso. *Distúrb Comun*. 2006;18(3):345-53.
3. Instituto de Pesquisa Econômica Aplicada - IPEA. Mercado de trabalho. Brasília: IPEA; 2011 [accessed on 2014 Dez 12]. Available at: http://www.ipea.gov.br/agencia/images/stories/PDFs/mercadodetrabalho/bmt46_anex01_populacao.pdf
4. Leite APD, Carnevale LB, Rocha HL, Pereira CA, Lacerda Filho L. Relação entre autoavaliação vocal e dados da avaliação clínica em indivíduos disfônicos. *Rev CEFAC*. 2015;17(1):44-51.
5. Behlau M, Hogikyan ND, Gasparini G. Quality of life and voice: study of a Brazilian population using the voice-related quality of life (V-RQOL) measure. *Folia Phoniatr Logop*. 2007;59(6):286-96.
6. Pépiot E. Voice, speech and gender: male-female acoustic differences and cross-language variation in English and French speakers. *XVèmes Rencontres Jeunes Chercheurs de l'ED* 268; 2012.
7. Ortiz É, Costa EA, Spina AL, Crespo NA. Proposta de modelo de atendimento multidisciplinar para disfonias relacionadas ao trabalho: estudo preliminar. *Rev Bras Otorrinolaringol*. 2004;70(5):590-6.
8. Çelik Ö, Çelik A, Atespare A, Boyacı Z, Celebi S, Gündüz T, et al. Voice and speech changes in various phases of menstrual cycle. *J Voice*. 2013;27(5):622-6.
9. Fischer J, Semple S, Fickenscher G, Jürgens R, Kruse E, Heistermann M, et al. Do women's voice provide cues of the likelihood of ovulation? The importance of sampling regime. *PLoS One*. 2011;6(9):1-7.
10. Nacci A, Fattori B, Basolo F, Filice ME, De Jeso K, Giovannini L, et al. Sex hormone receptors in vocal fold tissue: a theory about the influence of sex hormones in the larynx. *Folia Phoniatr Logop*. 2011; 63(2):77-82.
11. 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.
12. Rosa MB, Prestes R, Margall SAC. Caracterização dos aspectos vocais de um coro infanto-juvenil. *Rev CEFAC*. 2014;16(5):1606-14.
13. Coelho ACC, Daroz IF, Silvério KCA, Brasolotto AG. Coralistas amadores: auto-imagem, dificuldades e sintomas na voz cantada. *Rev CEFAC*. 2013; 15(2):436-43.
4. Loiola CM, Ferreira LP. Coral amador: efeitos de uma proposta de intervenção fonoaudiológica. *Rev CEFAC*. 2010;12(5):831-41.
15. Scarpel RD'A, Fonseca MDL. Parâmetros acústicos de vozes de mulheres na pós-menopausa. *Rev Bras Geriatr Gerontol*. 2014;17(4):741-50.
16. Putnoki DS, Hara F, Oliveira G, Behlau M. Qualidade de vida em voz: o impacto de uma disfonia de acordo com gênero, idade e uso vocal profissional. *Rev Soc Bras Fonoaudiol*. 2010;15(4):485-90.
17. Barreto TMM, Amorim GO, Trindade EMF, Kanashiro CA. Perfil da saúde vocal de cantores amadores de igreja evangélica. *Rev Soc Bras Fonoaudiol*. 2011;16(2): 140-5.
18. Gimenes GF. Usos e significados da qualidade devida nos discursos contemporâneos de saúde. *Trab Educ Saúde*. 2013;11(2):291-318.
19. Ministério da Saúde (BR), Secretaria de Atenção à Saúde, Departamento de Ações Programáticas

- Estratégicas. Política Nacional de Atenção Integral à Saúde da Mulher: princípios e diretrizes. Brasília: Ministério da Saúde; 2009.
20. Blumer H. Symbolic interactionism perspective and method. Los Angeles: University of California Press; 1969.
 21. Haguette TMF. Metodologias qualitativas na sociologia. 12ª ed. Rio de Janeiro: Vozes; 2010.
 22. Minayo MCS. O desafio do conhecimento: pesquisa qualitativa em saúde. 10ª ed. São Paulo: Hucitec; 2010.
 23. Fontanella BJB, Ricas J, Turato ER. Amostragem por saturação em pesquisas qualitativas em saúde: contribuições teóricas. *Cad Saúde Pública*. 2008;24(1):17-27.
 24. Bardin L. Content analysis. Lisbon: Edições 70; 2009.
 25. Ribeiro LR, Hanayama EM. Perfil vocal de coralistas amadores. *Rev CEFAC*. 2005;7(2):252-66.
 26. Kasama ST, Brasolotto AG. Percepção vocal e qualidade de vida. *Pró-Fono*. 2007;19(1):19-28.
 27. Universidade de São Paulo. A História do canto coral. São Paulo: USP; 2005. [accessed on 2014 Dez 12]. Available at: <http://www.usp.br/espacoaberto/arquivo/2005/espaco62dez/atualiza/cultura.htm>
 28. Universidade Federal do Rio de Janeiro, Pró-Reitoria de Pessoal. Canto Coral. Rio de Janeiro: UFRJ [accessed on 2012 Ago 18]. Available at: <http://www.pr4.ufrj.br/canto-coral.htm>
 29. Liu K, He L, Tang X, Wang J, Li N, Wu Y, et al. Relationship between menopause and health-related quality of life in middle-aged Chinese women: a cross-sectional study. *BMC Womens Health*. 2014;14:7.
 30. Jurgenson JR, Jones EK, Haynes E, Green C, Thompson SC. Exploring Australian Aboriginal women's experiences of menopause: a descriptive study. *BMC Women's Health*. 2014;14(1):47.
 31. Penteado RZ, Penteado LAPB. Percepção da voz e saúde vocal em idosos coralistas. *Rev CEFAC*. 2010;12(2):288-98.
 32. Smith-Dijulio K, Windsor C, Anderson D. The shaping of midlife women's views of health and health behaviors. *Qual Health Res*. 2010;20(7):966-76.
 33. Vagetti GC, Moreira NB, Barbosa Filho VC, Oliveira V, Cancian CF, Mazzardo O, et al. Domínios da qualidade de vida associados à percepção de saúde: um estudo com idosas de um programa de atividade física em bairros de baixa renda de Curitiba, Paraná, Brasil. *Ciênc Saúde Coletiva*. 2013;18(12):3483-93.
 34. Geib LTC. Determinantes sociais da saúde do idoso. *Ciênc Saúde Coletiva*. 2012;17(1):123-33.
 35. Moura MAV, Domingos AM, Rassy MEC. A qualidade na atenção à saúde da mulher idosa: um relato de experiência. *Esc Anna Nery Rev Enferm*. 2010;14(4):848-55.

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