Factors associated with voice complaints in community health agents

Fatores associados às queixas vocais autorreferidas por agentes comunitários de saúde

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ABSTRACT

Purpose: To verify the prevalence of vocal complaints and their association with sociodemographic, economic, occupational, and behavioral factors among the population of Community Health Agents (CHA). **Methods:** This is a cross-sectional and analytical study conducted in the city of Montes Claros, MG, in which 674 CHA participated. Data were collected via a self-administered questionnaire that includes sociodemographic, economic, behavioral, occupational, and voice-use aspects based on the Screening Index for Voice Disorder (SIVD). Bivariate analysis was performed by Pearson's chi-square test and Poisson multiple regression with robust variance to verify the association between the variables. **Results:** There was a high prevalence of vocal complaints, the most cited being dry throat, throat clearing, tiredness when talking, and hoarseness. We observed a significant association between female gender, lack of restful sleep, alcohol use, regular to very poor self-rated health, and anxiety. **Conclusion:** There was a significant percentage of vocal complaints, and the associated factors found will guide actions to promote vocal and general health.

RESUMO

Objetivo: Verificar a prevalência das queixas vocais e a associação com os fatores sociodemográficos, econômicos, ocupacionais e comportamentais entre a população de Agentes Comunitários de Saúde (ACS). **Método:** Trata-se de um estudo transversal e analítico, realizado no município de Montes Claros, MG, no qual participaram 674 ACS. Para os aspectos sobre o uso da voz foi aplicado o Índice de Triagem de Distúrbio de Voz (ITDV) e os demais dados contemplavam as condições sociodemográficas, econômicas, ocupacionais e comportamentais. Realizou-se a análise bivariada, pelo teste do qui-quadrado de *Pearson*, e a regressão múltipla de *Poisson* com variância robusta para verificar a associação entre as variáveis. **Resultados:** Houve alta prevalência de queixas vocais, sendo as mais citadas: garganta seca, pigarro, cansaço ao falar e rouquidão. Verificou-se associação significativa entre: sexo feminino, falta de sono reparador, uso de bebidas alcóolicas, autoavaliação da saúde regular a muito ruim e ansiedade. **Conclusão:** Houve uma porcentagem significativa de queixas vocais e os fatores associados encontrados nortearão ações de promoção da saúde vocal e geral.

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INTRODUCTION

The Family Health Strategy (FHS) aims at reorganizing Primary Care and it is highlighted among the premises of the Unified Health System. It has the important objective of transforming the care model, expanding primary care, and centralizing health in the individual and his family, understanding him more integrally. Therefore, it seeks to plan disease prevention and health promotion actions in the communities assisted[1].

The FHS is operated by multi-professional teams (Family Health Team) that include medical doctors, nurses, nursing assistants or technicians, and Community Health Agents (CHA). It has also dental surgeons, oral health assistants, and/or technicians[1]. Within this context, we highlight the role of the CHA as a key and mediating element between the residents of the territory and the Family Health Team, welcoming and accompanying this population[2].

The CHA must reside in the community in which he/she works, carry out periodic home visits, work as a team, raise the population's health needs and evaluate health actions, seeking to improve their quality of life[2]. As productivity, they have a monthly number of families visited, including night visits to meet the residents[3].

In this sense, these professionals use their voices extensively as their work tool and this work activity has particularities that can compromise vocal well-being[4]. Also, their activities make the CHA more exposed to variations in ambient temperature and respiratory infections, factors that promote the appearance of vocal symptoms such as hoarseness, shortness of breath, voice failure, dry throat, tiredness when speaking, and burning throat[4,5]. These symptoms are usually due to the excessive and/or inappropriate use of the voice in their work activities[4].

Due to the peculiarities of the CHA work and the scarcity of studies on this topic, this research aimed to verify the prevalence of self-reported voice complaints and the association with sociodemographic, economic, occupational, and behavioral factors in the population of CHA working in the municipality of Montes Claros, MG, Brazil.

METHODS

This is a cross-sectional and analytical study, part of a project entitled "Working conditions and health of community health agents in northern Minas Gerais" and approved by the Research Ethics Committee of the State University of Montes Claros under protocol 2,425,756. All participants voluntarily signed an Informed Consent Form. This study was carried out with the CHAs in the city of Montes Claros, MG, Brazil.

The medium-sized city has the characteristics of a regional capital. It is the most expressive and influential urban nucleus in this region and the southwest of Bahia. According to the Brazilian Institute of Geography and Statistics, the municipality had an estimated population of 404,804 inhabitants in 2018[6] and had 135 teams from the Family Health Strategy, 125 of whom were in the urban area and 10 in the rural area.

All CHAs who work in the 135 FHS teams in the municipality were the target population of the research. Initially, we carried out a pilot study with 15 CHAs as a basis for adapting the questionnaire. CHAs with less than one month of work, CHAs in deviation from their role or leave of any nature, and pregnant women were excluded.

The health professionals and undergraduate students carried out data collection using the facilities of the Regional Reference Center for Occupational Health (*CEREST*) of the municipality on weekdays, in the morning during 2018. The participants answered a self-administered questionnaire that contemplated the sociodemographic, economic, behavioral, occupational conditions, health conditions, and aspects about the voice: voice complaints based on the Screening Index for Voice Disorder - SIVD[7] and the daily use of the voice.

The SIVD is an instrument with a list of signs and symptoms related to the voice, which seeks to screen individuals with possible vocal disorders. It has been validated in a population of teachers but it has been used in other professional categories such as in CHAs. It consists of a four-point Likert scale (never, rarely, sometimes, and always). Each symptom was analyzed in two categories: present and absent, in which it was considered present when the answer was sometimes and always[7]. The signs and symptoms were dichotomized and called "voice complaints", constituting the dependent variable of the study.

The independent variables were gender, age group, marital status, self-reported skin color, education, income, intake of caffeinated beverages, alcohol intake, smoking, sleep quality, self-rated health, number of families monitored by CHAs, time work as a CHA, job satisfaction and anxiety.

The age group was dichotomized by the median age. The self-reported skin color was categorized as white, brown, and others (black, indigenous, yellow). Caffeine intake referred to the daily intake of coffee, tea, and/or soft drinks. The average weekly intake of alcoholic beverages was based on doses, with one dose equivalent to a 340 ml beer can or 142 ml wine glass or a distilled drink (brandy, whiskey, etc.). Smoking was based on a question about the number of cigarettes per day, with non-smokers as those who answered no cigarettes/day. Sleep quality was based on the frequency of having a good night's sleep and feeling rested.

The self-rated health had five options for answers on a Likert scale (Very good, Good, Regular, Bad, Very bad). Job satisfaction also on a Likert scale (Hardly ever/Never, Rarely, Sometimes, With relative frequency, Usually/Always). The question about the number of families monitored was of the open type and later dichotomized by the median.

Anxiety was verified by the STAI-state of the "State-Trait Anxiety Inventory" in its reduced form[8]. Anxiety-state is understood as the way the individual deals with stressors, describing how he feels "now, at this moment" in six items. The score for positive questions is reversed. This variable was dichotomized, with those with scores below the median considered "without evidence of anxiety" and a score above the median "with evidence of anxiety".

The data were tabulated using the statistical program Predictive Analytics SoftWare (PASW) 18.0. Initially, we performed descriptive analyzes of the variables and then the bivariate analysis used Pearson's chi-square test to verify the association between voice complaints and the other variables. Those associated with the 25% level (p≤0.25) were selected for Poisson multiple regression analysis with robust variance, obtaining the prevalence ratios (PR) and their respective 95% confidence intervals (95% CI), with a significance level of 5% (p <0.05), adopted for the final model.

RESULTS

A total of 674 CHAs participated in the study, which corresponded to 84.6% of the total CHAs in the municipality. Most were female (83.8%), with a mean age of 36.7 years old (SD = 9.85 years old), a median of 36 years old, minimum of 19, and maximum of 68 years old; the average length of time as a CHA was 3.7 years (SD = 2.7 years) with a minimum of one month and a maximum of nine years, all of whom worked in units of the Family Health Strategy (FHS). The average family income was R$ 2,320.59 (SD = 1,132.27).

Regarding their voice complaints, the prevalence was 70.5% and the four most-cited signs and symptoms were dry throat (49.7%), throat clearing (35.2%), tiredness when speaking (32.3%), and hoarseness (26.7%). Regarding the perception of how to use the voice daily, 50.1% speak a lot, 34.6% speak moderately, 13.6% speak too much and 1.6% reported speaking little.

In the final analysis, female gender, lack of sleep, intake of eight or more alcohol doses per week, poor self-reported health assessment, and anxiety had statistical significance (Table 1).

DISCUSSION

We observed a female predominance among the CHAs, similar to the studies carried out in Pinhalzinho - SC[9], Pelotas - RS[10], São Paulo - SP[5], and Itabira - MG[11] with a percentage of 82.7%, 88.6%, 89.3% and 100.0% of women, respectively. There is a tendency towards the feminization of the profession[5,12] since the health-disease process has the figure of the woman for the caring and educating performed in society[12].

We observed that the high prevalence of voice complaints among CHAs was above 42.9% and 56.9% in two other studies[4,5]. This difference can be explained not only by the sample size but also by the health condition that was self-reported by the participants. Both physical and psychological health can influence vocal quality[13].

Dry throat was the most prevalent symptom and the frequency of the symptom was above 32.1% in a study with 28 CHAs from a Basic Health Unit in the city of São Paulo[5] and below 61.5% in another study with 65 CHAs[4]. The throat clearing and hoarseness were the second and third voice complaints with a prevalence above 32.1% in one study[5] and below 43.1% and 48.4% respectively in another study[4].

Such complaints are also observed among teachers of different educational levels, with the dry throat, 45.8%; hoarseness, 35.4%, and vocal tiredness 32.7% as the most prevalent symptoms related to this work activity[14].

Regarding the perception of how CHAs use their voices daily, we know that the use of a greater amount of speech can favor the development of vocal changes since speaking for a long time can lead to the phonatory muscles fatigue and consequently, causing an increased effort to speak[15]. A longer speech time can trigger changes in the voice due to phono-trauma due to the exposure of vocal fold tissues, that is, more speaking people are more likely to develop laryngeal lesions[16].

We expected an association between the presence of voice complaints and the female population. Due to having a smaller larynx and a reduced glottic proportion than men, women are more likely to develop vocal disorders[17].

We also observed another association of the presence of voice complaints in the population using alcoholic beverages and we verified this in other studies[18-20]. Frequent alcohol consumption was associated with laryngeal pathologies[19] and a study with an elderly population found that alcohol concomitant with smoking increased the risk of laryngeal diseases[20]. Research with teachers concluded that the voice complaints associated with the consumption of more than one dose of an alcoholic drink at a time[21].

Unlike the study conducted in São Paulo[2], this research found an association between the presence of voice complaints and lack of restful sleep. We know that a good night's sleep is a fundamental factor for adequate voice production. Research has shown that people with vocal problems have a better perception of the interference of sleep quality in the voice, unlike those who do not have vocal problems because they do not perceive that their voice gets worse after a bad night's sleep[22].

Another significant association observed in this study was the self-reported health assessment. The vocal problems were more evident in the group that reported health as regular to very poor. A study carried out in Rio Grande do Norte found that the CHAs complained of physical tiredness and pain in the body due to the activities performed and that they need to carry out their work effectively[23]. The voice reflects physical and emotional factors. Vocal health is an important indicator of general health. Although self-perception is a subjective parameter, we know that information is important and must consider both voice complaints and the general health status.

Regarding anxiety, a review article shows that it can generate, maintain or be the consequence of a vocal problem, becoming a vicious cycle between vocal and emotional symptoms. High levels of anxiety can harm the voice, increasing voice complaints. Also, the state-anxiety interferes with communication[24].

Although the CHAs are voice professionals, there are few studies focused on this aspect in this population, hindering the comparison of results. When verifying the prevalence of voice complaints in a significant sample of CHAs, this study presented the factors that interfered with its production. Therefore, now detected, we can plan actions to prevent vocal disorders and promote health.

Table 1. Description of the sociodemographic, economic, behavioral, and occupational profile of Community Health Agents and prevalence ratio for the association between voice complaints and independent variables that remained in the final model. Montes Claros, MG, Brazil, 2018.

Variable	Voice complaints				p-value[*]	Adjusted Analysis	
	Without complaint		With complaint			PR (CI)	p-value[**]
	N	%	N	%			
Gender							
Male	45	41.3	64	58.7		1	
Female	154	27.3	411	72.7	0.003	1.216 (1.032-1.433)	0.019
Age group							
≤ 36 years old	110	32.5	228	67.5	0.085	-	-
>36 years old	89	26.5	247	73.5			
Marital status							
Without a partner	80	29.5	191	70.5	0.998	-	-
With a partner	119	29.5	284	70.5			
Self-reported skin color							
White	25	28.7	62	71.3	0.964	-	-
Brown	142	29.8	334	70.2			
Others	32	28.8	79	71.2			
Education level							
Incomplete and complete higher education	93	32.0	198	68.0	0.227	-	-
Complete high school and elementary school	106	27.7	277	72.3			
Income							
Up to 2,000.00	119	31.8	255	68.2	0.145	-	-
More than 2,000.00	80	26.7	220	73.3			
Drinking caffeinated drinks							
Never to twice	147	30.4	337	69.6	0.442	-	-
More than twice	52	27.4	138	72.6			
Average alcohol intake per week							
Up to 7 doses	192	30.4	440	69.6	0.059	1	
Eight or more doses	7	16.7	35	83.3		1.237 (1.062-1.440)	0.006
Smoking							
No-smoker	193	29.9	452	70.1	0.286	-	-
Smoker	6	20.7	23	79.3			
Sleep: sleep well and feel rested							
Always to frequently	145	36.2	255	63.8	<0.001	1	
Never to sometimes	54	19.7	220	80.3		1.177 (1.067-1.298)	0.001
Self-reported health							
Good to very good	140	35.2	258	64.8	<0.001	1	
Regular to very bad	59	21.4	217	78.6		1.129 (1.023-1.246)	0.016
Number of families followed-up							
≤ 120	101	28.5	253	71.5	0.552	-	-
>120	98	30.6	222	69.4			
Working time as CHA							
≤ 5 years	126	33.1	255	66.9	0.021	-	-
> 5 years	73	24.9	220	75.1			
Job satisfaction							
Always and relatively frequent	156	32.6	323	67.4	0.007	-	-
Hardly ever or sometimes	43	22.1	152	77.9			
Anxiety-state							
Not anxious	126	35.6	228	64.4	<0.001	1	
Anxious	72	22.6	247	77.4		1.132 (1.026-1.248)	0.013

[*]Pearson's Chi-square test; [**]PR = Prevalence ratio after Poisson Regression with robust variance. CI = Confidence Interval, N= Number participants.

CONCLUSION

In this research carried out with a group of Community Health Agents working in the municipality of Montes Claros, MG, we verified a prevalence of voice complaints in a significant percentage, with association with females, use of alcoholic beverages, absence of restful sleep, regular self-reported health assessment as very bad and anxiety.

We observed the need for interventions to improve the general and vocal health of these professionals so that their actions can have a positive impact and, consequently, reflect on the health of the population.

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Author contributions

JANM participated in the writing of the article; MSB participated in the design and data collection; APC participated in the research design and final approval of the version to be published; MRBM participated in the review and writing of the article and LARRB guided all stages of the work and participated in the review and writing of the project and the article.