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Sociodemographic and occupational factors associated with anxiety symptoms in Community Health Agents

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Abstract *Community Health Agents (CHAs) play a crucial role in assisting the population. Due to the complexity of functions and situations to which they are exposed, they can present with emotional problems. The aim of this article was to verify the prevalence of anxiety symptoms and the association with sociodemographic and occupational factors in community health agents. It is a cross-sectional and populational study that used a questionnaire to collect data on the sociodemographic, economic and occupational conditions and the State Trait Anxiety Inventory (STAI). Descriptive analyses and multiple Poisson regression were performed with robust variation, considering a 5% significance level (p <0.05) for the final model. A total of 673 community health agents were evaluated. The prevalence of anxiety symptoms in the STAI-State was 47.4% and in the STAI-trait, 42.4%. The time working as a CHA longer than five years was associated with the STAI-state (p<0.001) and the STAI-trait (p=0.018), where as the female gender was associated with the STAI-trait (p=0.011). A high prevalence of anxiety symptoms in community health agents was verified. Health promotion strategies aimed at improving and monitoring the mental health of these workers by reducing anxiety disorders is required.*

Key words *Anxiety, Community Health Workers, Occupational health, Primary Health Care*

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Introduction

The Brazilian Unified Health System (SUS, *Sistema Único de Saúde*) has a policy on the Family Health Strategy (FHS) that emerged for the reorganization, orientation and strengthening of primary health care[1]. The target of this strategy is to provide comprehensive and continuous care through health promotion and disease prevention actions[1,2]. The work is performed by teams that include several professionals from different areas through educational actions in health, carried out both in the households and in the community[2].

Among the FHS professionals are the Community Health Agents (CHAs) and they play a crucial role in the comprehensive and continued care of the local population, constituting a triad that encompasses the individual/family/community[1,2]. The CHAs are responsible for mapping their operation area, enrolling new users, guiding the community, developing health promotion, disease/injury prevention, and health surveillance actions[3]; carrying out actions that seek the integration between the health team and the enrolled population and monitoring the families and individuals under their responsibility. The CHA develops individual or collective actions in households or in the community, in accordance with SUS guidelines[4].

For professional practice, the CHA is required to have finished elementary school education and reside in the area of the community where they work. CHAs who work in the same community where they live can provide assistance that is more connected to the socioeconomic and cultural context of the population[5,6]. Home visits represent the main means of promoting health in the CHA's routine, and their work is recognized by the assisted families[6]. Their relationships with teammates in meetings are considered positive, as they allow the discussion of problems and strategies in the work environment[6].

This profession has characteristics in their daily work routine that can have an impact on their health. The work overload arising from both the health system demands and the demands from the community itself is a relevant aspect in the work of the CHAs[1,2,6,7]. These professionals are also exposed to difficult working conditions, namely: lack of adequate space in the Basic Health Unit, poor working conditions, scarce professional training, excess of bureaucratic responsibilities; high demand for short-term service; facing difficulties arising from deficiencies at other levels of the health system; possibility of dealing with problems that exceed their capacity as a CHA and concerns about causing harm to an individual if they make a mistake[2,6-8].

Due to the complexity of roles and situations to which community health agents are exposed, this professional can present with both nonspecific symptoms of psychological distress, such as: low self-esteem, feeling of insecurity, nervousness, irritability, fear, insomnia, restlessness and autonomous nervous system hyperactivity, stress, exhaustion and anxiety, as well as mental disorders[1,5,8]. The impact that the CHA's work context has on their mental health is questioned, especially regarding anxiety.

To quantify the subjective components related to anxiety, the State-Trait Anxiety Inventory (STAI) has been used. State-anxiety is a temporary situation, the way an individual deals with anxiety at a given time in life, so the response may be different at different times. Trait-anxiety is how the individual deals with anxiety, being a relatively stable and permanent condition[9,10].

Scientific studies that address the work of CHAs are important to identify the characteristics of the profession, the positive aspects and the problems, caused by the geographic extension of the country[3,6], with different social, demographic, economic and cultural characteristics. There is a scarcity of articles that investigate this topic, especially in the northern region of Minas Gerais, in order to support coping strategies for this health problem of the CHAs.

Therefore, the present study aimed to verify the prevalence of anxiety symptoms and the association with sociodemographic and occupational factors in Community Health Agents working in the municipality of Montes Claros, state of Minas Gerais, Brazil.

Methods

This is a cross-sectional, quantitative and analytical study, which is part of a base project called "Work and health conditions of community health agents in the north of the state of Minas Gerais". The study was carried out in the municipality of Montes Claros, located in the north of Minas Gerais, and constitutes the most significant and influential urban nucleus in this region and in the southwestern region of the state of Bahia. According to the Brazilian Institute of Geography and Statistics (IBGE, *Instituto Brasileiro de Geografia e Estatística*), the municipality had an

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estimated population of 404,804 inhabitants in 2018[11] with 135 FHS units, with 100% coverage, of which 125 in urban areas and 10 in rural areas, with 797 CHAs at the time of data collection. Those working for less than one month, those working in other functions, on medical leave due to any reason and pregnant women were excluded. All were contacted and it was observed that a significant number of CHAs were working in other functions or on medical leave. Therefore, 675 individuals were enrolled in the study, but two of them did not answer the questionnaire in full.

The interviewers were trained prior to data collection, and a pilot study was carried out with the CHAs who did not meet the inclusion criteria, aiming to standardize the research procedures. Meetings were held with the municipal management, coordinators of the family health teams and with the CHAs to clarify questions about the research and obtain authorization from those in charge.

Data collection took place from August to October 2018. The CHAs were invited to come to the Regional Reference Center in Occupational Health (CEREST, *Centro de Referência Regional em Saúde do Trabalhador*) on weekdays, in the morning. A self-administered questionnaire was used, which included the sociodemographic and economic conditions: gender (male / female), age dichotomized by the median (≤ 36 years / > 36 years), marital status (married or common-law marriage / single / divorced or separated), level of schooling (complete or incomplete higher education / complete or incomplete high school education/ elementary school education), family income (up to R$ 2,000.00 / > R$ 2,000.00); Occupational conditions: time working as a CHA dichotomized close to the median (up to 5 years / >5 years), weekly working hours (24 hours / 40 hours), number of monitored families dichotomized by the average (≤120 / >120).

For the analysis of anxiety symptoms, the instrument "State-Trait Anxiety Inventory" was used – STAI-6 (short form), which constituted the dependent variables of the study [10]. The STAI was developed by Spielberger et al. (1971)[9] to provide a reliable operational measure for two anxiety components: state and trait. Subsequently, the short form, called STAI-6, was validated [10]. In the STAI-state, the individual must describe how they feel "now, at this moment" in relation to the six items: 1.I feel calm; 2. I am tense; 3. I feel at easy; 4. I feel nervous; 5. I am relaxed; 6. I am presently worrying. The following are presented on a four-point Likert scale: 1- not at all; 2- a little; 3- quite enough; 4- very much. In the STAI-trait, the participant must answer how they "generally feel" for the items: 1. I am calm, cool and collected; 2. I worry too much over something that really doesn't matter; 3. I feel secure; 4. I get in a state of tension or turmoil as I think over my recent concerns and interests; 5. I feel nervous and restless; 6. I make decisions easily. They are presented according to a new four-point Likert scale: 1- almost never; 2- sometimes; 3- frequently; 4- almost always.

The scores of the positive questions are inverted, that is, numbers 1, 3 and 5 on STAI-S and 1, 3 and 6 on STAI-T. The scores are obtained by the sum of the answers, with 6 being the minimum and 24 the maximum score, for both state and trait. Because there is no cutoff point for the short form, and because the mean and median scores of the STAI-trait, in the present study, have approximate values, this variable was dichotomized by the median because it is an integer: those with a value below the median were considered "without anxiety symptoms" and those above "with anxiety symptoms".

The data were tabulated using the statistical program Predictiv Analytics SoftWare (PASW), version 18.0. Initially, descriptive analyses of the variables were carried out, and then the bivariate analysis was performed, using Pearson's chi-square test, to verify the association between anxiety and the other variables. Those that were associated up to the level of 20.0% ($p \leq 0.20$) were selected for Poisson multiple regression analysis with robust variance. A significance level of 5.0% ($p < 0.05$) was considered for the final model.

All participants voluntarily signed the Free and Informed Consent form. The research project was approved by the Research Ethics Committee.

Results

A total of 673 CHAs participated in this study, whose mean age was 36.7 years (SD=9.86), with a minimum of 19 and a maximum of 68 years and a median of 36.5. There was a predominance of females (84.0%). As for the family income, the average was R$2,321.21 (SD=1,133.00). Regarding the time working as a CHA, the average time was 6 years and 1 month (SD=5 years and 7 months), with a maximum of 20 years and a median of 4 years and 6 months. The other data on the profile of this population are shown in Table 1.

On STAI-6, the mean state-anxiety score was 12.4 points and the median score was 12.0 points, whereas the mean and median trait-anxiety score was 13.0 points. The prevalence of the STAI-state is slightly higher than the STAI-trait, as described in Table 2.

In the bivariate analysis, the variables time working as a CHA with the STAI-state and the STAI-trait and gender with the STAI-trait were associated at the 20% level (Table 3).

The variables that remained in the final model are shown in Table 4, with adjusted prevalence ratios and their respective confidence intervals.

Discussion

The present study showed a high prevalence of anxiety symptoms, being a little higher in the STAI-state than that in the STAI-trait, which could mean that the CHAs have more difficulty dealing with an adversity at a given time than dealing with anxiety in events throughout life.

A study carried out with 116 CHAs in the city of Uberlândia, state of Minas Gerais, in which the STAI-state instrument was used, found that most of them had a moderate degree of anxiety and 17.2% had severe anxiety, perhaps due to the specific characteristics of the profession, as they must have initiative and a spirit of leadership, as well as being more sympathetic[3]. A population survey, carried out with 1,536 CHAs in cities in the south and northeast of Brazil, showed a prevalence of 18.4% of minor psychiatric disorders, which include anxiety disorders[12].

There was an association of STAI -trait with the female gender, probably related to the role of the CHA, who develop a job with an accumulation of roles, less time to take care of their house, their children and develop leisure activities[13,14]. Studies report that the CHA's routine constitutes as a double[14-17] and even a triple burden[17], having to perform domestic activities, in addition to those inherent in their paid employment. Another factor for this difference in the STAI-trait between genders can be attributed to the possible role of caregiver, which is instinctively played by women[7].

Women showed a higher prevalence of anxiety when compared to men and had a higher

Table 1. Distribution of community health agents according to sociodemographic and occupational variables. Montes Claros, MG, (N=673).

Variables	Categories	N	%
Gender	Male	108	16,0
	Female	565	84,0
Age range	≤ 36 years	337	50.1
	> 36 years	336	49.9
Marital status	Married/Common-law marriage	396	58.8
	Single	222	33.0
	Divorced / Separated	49	7.3
	Widowed	6	0.9
Level of schooling	Complete Higher Education	165	24.5
	Incomplete Higher Education	126	18.7
	Complete High School	360	53.5
	Incomplete High School	19	2.8
	Elementary School (6th to 8th year)	3	0.4
Family income	Up to R$ 2,000.00	373	55.4
	> R$ 2,000.00	300	44.6
Time working as a CHA	Up to 5 years	382	56.8
	> 5 years	291	43.2
Weekly workload	24 hours	42	6.2
	40 hours	631	93.8
Number of assisted families	≤ 120	353	52.5
	> 120	320	47.5

Source: Field work carried out in the study "Work and health conditions of community health agents in northern Minas Gerais" in the municipality of Montes Claros, Minas Gerais, from August to October 2018.

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Table 2. STAI-state and STAI-trait scores distributed according to anxiety indices of the community health agents in the municipality of Montes Claros, MG (N=673).

STAI-state				STAI-trait			
No anxiety symptoms		With anxiety symptoms		No anxiety symptoms		With anxiety symptoms	
N	%	N	%	N	%	N	%
355	52.7	318	47.3	390	57.9	283	42.1

Source: Field work carried out in the study "Work and health conditions of community health agents in northern Minas Gerais" in the municipality of Montes Claros, Minas Gerais, from August to October 2018.

Table 3. STAI-state and STAI-trait scores and bivariate analysis according to the sociodemographic and occupational characteristics of the community health agents in the municipality of Montes Claros, MG, (N=673).

		STAI-state				STAI-trait	IDATE-Traço				
Variables	Categories	No anxiety symptoms		With anxiety symptoms		p-value	No anxiety symptoms		With anxiety symptoms		p-Valor
		N	%	N	%		N	%	N	%	
Gender						0.290					0,008
	Male	62	57.4	46	42.6		75	69.4	33	30.6	
	Female	293	51.9	273	48.1		315	55.8	250	44.2	
Age range						0.906					0,255
	≤ 36 years	177	52.5	160	47.5		188	55.8	149	44.2	
	> 36 years	178	53.0	158	47.0		202	60.1	134	39.9	
Marital status						0.651					0,809
	With partner	206	52.0	190	48.0		231	58.3	165	41.7	
	No partner	149	53.8	128	46.2		159	57.4	118	42.6	
Level of schooling						0.585					0,921
	Incomplete/ Complete Upper Education	157	54.0	134	46.0		168	57.7	123	42.3	
	Elementary / High School education	198	51.8	184	48.2		222	58.1	160	41.9	
Income						0.415					0,358
	Up to R$ 2,000.00	202	54.2	171	45.8		222	59.5	151	40.5	
	>R$ 2,000.00	153	51.0	147	49.0		168	56.0	132	44.0	
Time working as a CHA						< 0.001					0,014
	Up to 5 years	238	62.3	144	37.9		237	62.0	145	38.0	
	More than 5 years	117	40.2	174	59.8		153	52.6	138	47.4	
Weekly workload						0.556					0,666
	24 hours	24	57.1	18	42.9		23	54.8	19	45.2	
	40 hours	331	52.5	300	47.5		367	58.2	264	41.8	
Number of assisted families						0.665					0,930
	≤ 120	189	53.5	164	46.5		204	57.8	149	42.2	
	> 120	166	51.9	154	48.1		186	58.1	134	41.9	

Source: Field work carried out in the study "Work and health conditions of community health agents in northern Minas Gerais" in the municipality of Montes Claros, Minas Gerais, from August to October 2018.

risk of developing this disorder, probably due to genetic factors and sexual hormones[18]. Added to this fact are the negative aspects at work (disorganization, poor teamwork, large number of people

Table 4. Variables associated with STAI-trait and STAI-state after multivariate analysis in community health agents in the municipality of Montes Claros, MG, (N=673).

Variables	Adjusted RP	CI (95%)	p-value
STAI-trait			
Gender			
Male	1		
Female	1.100	1.023-1.183	0.010
Time working as a CHA			
< 5 years	1		
> 5 years	1.065	1.010-1.122	0.019
STAI-state			
Time working as a CHA			
< 5 years	1		
> 5 years	1.160	1.104-1.220	<0.001

PR – Prevalence Ratio. CI – Confidence Interval.

Source: Field work carried out in the study "Work and health conditions of community health agents in northern Minas Gerais" in the municipality of Montes Claros, Minas Gerais, from August to October 2018.

to be assisted, users' lack of understanding), interpersonal conflicts, problems with children and spouses[3], financial and health concerns[3,13,17,19] and even the unsafe place where the person lives.

In the present study, both domains of the STAI-6 were associated with time working as a CHA > 5 years, probably because they were influenced by the longer duration of exposure to a certain work context. The population study[12] carried out in the South and Northeast regions, with professionals from family health units (physicians, nurses, CHAs and others), also showed that the prevalence of minor psychiatric disorders was significantly higher in health professionals who had been working for more than five years.

Some people, after years of work, feel disturbed by small changes that may occur at the present moment, while others feel affected due to exposure for a prolonged period of time. Over time, stress can lead to anxiety problems and factors at work, in one's personal life and in the environment can contribute to it[3].

It is also observed that, as time goes by at work, the difficulties in establishing limits between one's personal life and the connection with the assisted population increase, which generates an overload of functions and responsibilities[3]. The distress can also originate from the feeling of impotence when facing the lack of recognition and appreciation of the performed activities, both by colleagues in the work team and the institutions' managers, in addition to the system limitations[14,15]. There were no associations with the other variables; however, there are articles that show an association between anxiety and a low level of schooling[12,20], single individuals[21,22] and low income[12]. As for age, there are studies that report an association with both older individuals[23,24] and younger ones[12,21,25].

The present study was limited by the use of self-reporting to assess anxiety symptoms. Although a validated instrument was used to assess these issues, it should be taken into account that this is a screening test, not a diagnostic one. Despite the high rate found in the study, it must be acknowledged that the exclusion of participants on medical leave of any kind may have underestimated the prevalence of anxiety symptoms. Moreover, as this is a cross-sectional study, it is not possible to establish a causal relationship. On the other hand, this is a relevant population-based study with a representative number of participants. There are few studies on anxiety as a dependent variable in CHAs, especially one using the short version of the STAI-6 instrument.

The data obtained here are already being shared through lectures and conversation circles with the CHAs (initially at remote meetings). Moreover, the goal is to develop an application on mental health conditions so that these professionals can receive advice.

Conclusion

The present study verified a high percentage of anxiety among the CHAs in the city of Montes Claros, state of Minas Gerais, Brazil. Time working as a CHA for more than five years was seen as an associated factor both in the STAI-state and in the STAI-trait, and female gender was associated with the STAI-trait.

It is expected that the results found herein may contribute to sensitize managers who work in primary care and workers' health, to appreciate the work of CHAs, as they have an important role in consolidating the reorientation of the health care model.

Future studies are suggested, which will be carried out using a longitudinal design, to verify

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the presence of a causal relationship using STAI-6, as it is a short, easy-to-apply instrument that quantifies subjective components related to anxiety, with no restriction regarding its application in population studies.

Collaborations

MS Barbosa participated in the project conception and design, data collection and writing of the manuscript. JFO Freitas and FAP Filho participated in the literature search and study selection and the writing of the manuscript. L Pinho and MFSF Brito contributed to the project conception, design, data collection and analysis. LAR Rossi-Barbosa participated in the project conception and design, data collection, analysis and interpretation, writing of the manuscript, critical review and approval of the final version of the manuscript.

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