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Characteristics of the community health agent's work in the COVID-19 pandemic in municipalities of Northeastern Brazil

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Abstract *The community health agents (CHAs) comprised the workforce at the forefront of health systems in the fight against COVID-19. The study identified the structural conditions for organizing and characterizing the work of CHAs in three municipalities of northeastern Brazil during the pandemic period. A qualitative study of multiple cases was carried out. Twenty-eight subjects were interviewed, including community agents and municipal managers. Data production assessed the interviews with document analysis. The operational categories that emerged from the data analysis were: structural conditions and characteristics of the activities. The results of this study disclosed the scarcity of the structural conditions in the health units, which during the pandemic made improvised adaptations of the internal spaces. As for the work characteristics, actions permeated by bureaucratic aspects of an administrative nature were evidenced in the health units, resulting in the elimination of their binding function of territorial articulation and community mobilization. Thus, changes in their work can be seen as signs of the fragility of the health system and, especially, of primary health care.*

Key words *Primary health care, Community health workers, Community orientation, COVID-19*

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Introduction

In universal health systems, Primary Health Care (PHC) is preferably the patient's first contact with health services[1,2]. During the health crisis caused by the COVID-19 pandemic, PHC did not play a central role in the government response in many countries, whose main strategies focused on caring for cases in emergency services and hospitals[3,4].

Previous experiences in facing epidemics, such as the Ebola, severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), Zika and H1N1, have shown the importance of PHC in organizing social and community responses aiming to contain transmission[5].Current recommendations for coping with the pandemic highlight the potential of community action to understand the different social dynamics in communities that support control strategies to minimize the pandemic impact[6,7].

In the case of Brazil, given the existence of an internationally recognized universal health system, the *Unified Health System (SUS)*) it was expected that the country would be a case of success in responding to the pandemic[8]. The expectations were based on the capillarity of the system; on the PHC experience in past health emergencies such as Zika and H1N1; and in the existence of a health care model based on territory with Community Health Agents (CHAs)[2].

The CHAs, because of their familiarity with the local context and the continuous relationship they establish with the community and the PHC teams, constitute a workforce at the front line of health systems that could assume a central role in the responding to a health crisis, developing interventions of safe, feasible, and acceptable social engagement to support community responses to COVID-19[9,10].

However, the federal government's response regarding the normative direction for the reorganization of the work of the CHAs in PHC was permeated by utilitarian rationalities, focused on administrative work, in accordance with regulations identified in recent years and exacerbated by the pandemic[11].

Therefore, even though changes may have occurred in the activities related to the work of the CHAs[8,12-14], the literature has provided few elements to understand the central characteristics of these professionals' work in the response to the COVID-19 pandemic. Considering the above, this article aims to identify the organization and characterize the work of the CHAs, as well as elements that enhance and limit this practice within the scope of PHC in three municipalities in the Brazilian Northeast region, during the pandemic period between January 2020 and August 2021.

Methodology

This is a descriptive, qualitative study, which used the study of multiple cases[15] as an investigation strategy, in three municipalities, headquarters of health regions in the state of Bahia, northeastern Brazil, in the period between January 2020 and August 2021.

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Characteristics of municipalities

The assessed municipalities are from different health regions in northeastern Brazil, more specifically in the east region, mid-east region and southwest region of the state of Bahia.

In Bahia, in 2020, the PHC coverage rate reached 84.34% and the Family Health Strategy (FHS), 77.54%. In the same period, 100% of the FHTs (Family Health Teams) in the state were co-funded with state resources. In 2021, PHC coverage reached 73.77%, while FHS coverage reached 79.23%[16].

In municipality M1, the administrative organization of the Municipal Health Secretariat (SMS, *Secretaria Municipal de Saúde*) includes 12 health districts. In 2020, around 56.36% of the population was covered by PHC services, increasing to 51.67% in 2021. In 2020, it had 155 Primary Health Care Units, 46 of which were Basic Units without Family Health (USF) and 109 Basic Health Units (BHUs) with Family Health Strategy (FHS), with 359 implemented FHTs; five Street Clinic (SC) teams and 12 Expanded Family Health Centers – NASF (*Núcleos Ampliados de Saúde da Família*)[16].

The health system in municipality M2 has a wide network of services that permeate the different levels of health care and constitute a referral for the southwest macro-region of the state of Bahia. In 2020, it had primary care coverage

Ciência & Saúde Coletiva, 28(5):1399-1412, 2023

greater than 61.65% and FHS coverage equivalent to 48.48%, whereas in 2021 these coverage rates were 57.80% and 50.20%, respectively.

Municipality M3 includes five health regions. In 2020, it had primary care coverage of 83.45%, with 22 teams and 66.21% of FHTs and in 2021 it was 64.59% and 63.17%, respectively[16].

The CHA coverage rate, in 2020, fluctuated monthly, increasing or decreasing and vice-versa. In municipality M1, it ranged from 24.96% to 26.90% (not necessarily in the ascending order), whereas in municipality M3, it ranged from 60.88% to 75.47% (not necessarily in the ascending order). And in municipality M2, it ranged from 87.19% to 90.39%[16].

Study participants

Twenty-eight subjects were interviewed, selected by convenience, including municipal secretaries and undersecretaries, with a total of ten managers of the services primary care and 18 Community Health Agents. Regarding the managers, five interviews were carried out in M2, three in M3 and two in M1. Among the CHAs, three were selected in M2 allocated to two USF in the rural area and one USF in the urban area; four in M3, distributed in four USF in the rural area and four USF/US in the urban area; and eleven in M1.

The vast majority of the CHAs were female, of black ethnicity/skin color, with level of schooling evenly distributed between high school and higher education, working in family health units, with service time ranging from 15 to 20 years.

Data production

Data production was obtained by comparing the interviews with the documental analysis to organize the information about the study object. Specific scripts were prepared for the managers and health professionals, including questions about the work of the CHAs during the period of analysis.

First, all the interviews carried out with the selected CHAs and managers were transcribed, read and reviewed. Subsequently, a processing worksheet was created, based on the grouping of the interviewees' responses. The organization of the textual excerpts guided the analysis of the interview data.

The documental analysis (Chart 1) included the identification of norms, ordinances, decrees, laws, plans, programs, projects and newsletters issued by the three municipalities and recommendations of the Primary Health Care Secretariats (SAPS) during the analyzed period, of which content was related to the recommendations for the structural and material organization of the units and the specific activities of the CHAs within the scope of PHC.

Data analysis was based on two analytical categories derived from the Theory of the Work Process in Health by Mendes-Gonçalves[17], namely: a) the means/conditions of work and b) the work itself. The means and conditions of work are combined to ensure that work is carried out. They comprised the tools and physical structures for work, such as equipment, instruments, establishments and the environment, in addition to knowledges, information and skills used in the work process.

In the present study, only the structural and material conditions for the work were considered for analytical purposes. As for the work itself, it was related to the content of the activities carried out by the CHAs. Therefore, based on the categories of analysis, two operational categories were defined, which guided the interpretation of results: a) structural conditions for work organization; and, b) characteristics of the activities related to the work of the CHA (Chart 2).

Some excerpts from the interviews were selected to highlight the results, choosing the most expressive ones that best represented the propositions and the data set. These excerpts served as a sample of the categorization robustness of the collected raw material.

Results

Structural conditions for work organization

As for the physical structure and the need for adaptations of the health unit for the performance of the CHA's activities, it is emphasized that the assessed municipalities showed no improvements regarding the physical structure of the units, only adaptations that responded to the need to establish isolation of the suspected cases from other users.

There was a change or adaptation in the physical environment of the BHU, we had a room where we saw suspected cases of COVID-19 (EPFSA2).

Three assessed municipalities implemented the isolation of suspected and confirmed cases from other users, with the use of specific rooms for the care of patients with respiratory symp-

Chart 1. Summary of the propositional content of regulations by the Ministry of Health, the Primary Care Secretariat and the municipalities analyzed on the work of the CHA, between January 2020 and August 2021.

Place	Level of evidence	Dimensions of work organization		
		Structural conditions	Characteristics of the activities	
			Internal activities at the services/USF	Community activities
Primary Health Care Secretariats (SAPS)	Recommendations for adapting the actions of Community Health Agents to the current epidemiological situation regarding Covid-19.	. Perform frequent hand washing with soap and water or alcohol gel. . Keep environments well ventilated. . Use a surgical mask and ensure the use of appropriate PPE. . Use disposable tissue paper for nasal hygiene. . Guide and assist in monitoring - preferably by telephone.	. Organize embracement; . Monitoring of suspected and confirmed cases. . Educational activities in the unit; . Identification of suspected cases; . Working at the Unit (CHAs over 60 years old and/or with chronic conditions). . Assist in user service through fast-track.	. Carry out an active search for new suspected cases of flu syndrome and risk group for influenza vaccination. . Health promotion and prevention guidelines. . Assist in vaccination activities. . Peridomiciliary visit (Prioritize risk groups).
	General guidelines on the CHA's work in the face of the Covid-19 pandemic and records to be carried out in the e-SUS PHC.	. Maintain distance from the patient - if not possible, use a surgical mask. . Sanitize hands using alcohol gel. . Wear a mask and ensure the use of PPE.	. Record of the home visit form and the individual registration form in loco.	. The visit will be limited to the peridomiciliary area only and prioritize patients at risk.
M1	Technical Notes: . N. 01/2020, of 03/19/20. . N. 002/2020, of 03/25/2020. . N. 05/2020, of 04/09/2020.	. Use of masks when visiting a patient in isolation at home. . Use PPE when necessary and preventive measures, especially during home visits.	. Assist in the management of supplies and equipment necessary for the performance of COVID-19 care activities.	. Will perform activities of monitoring, guidance, active search, identification of suspected cases at the households. . Develop intersectoral actions.
	Technical Note DAS/APS-New Coronavirus. N. 009/2020, of June/2020.	. Tablet for patient registration - text messaging application, by using a specific chip for this purpose. . Use of communication channels . Use of surgical masks and hand hygiene with water, soap and 70% alcohol.	. Carry out tele-registration. . Carry out most of the workload inside the health unit. . Respond to messages, in addition to embracement and active search using remote means. . Organizing, directing and guiding – BHU ordinance. . Triage and guidance; . Carry out visits (priority group).	. In the territory, actions restricted to the active search of users at greater risk and vulnerability. . Peridomiciliary visits (prioritize risk group) . Communication with community leaders. . Guidelines; . Identification of social vulnerabilities.

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Place	Level of evidence	Dimensions of work organization		
		Structural conditions	Characteristics of the activities	
			Internal activities at the services/USF	Community activities
M2	New Coronavirus Municipal Contingency Plan (03/18/2020, updated on 06/2020)	Adequate use of PPE and preventive biosafety measures.	. Help in the management of necessary supplies and equipment.	. Acompanhamento domiciliar. Realizar orientações.
	Nota Técnica 01/2020.	. Adequate use of PPE, specifically when there are suspected cases.	. Assist in care based on training to apply the FAST-TRACK, prepared by the Ministry of Health, to identify suspected cases.	. Deverão realizar as visitas não adentrando no domicílio, ao ar livre, priorizando grupo de risco.
	Technical Note issued in July/2021.	. Use of mask during visits and activities during working hours.	. Typing the notification form. . Delivery of exams and procedures.	. Carry out peridomiciliary visits, prioritizing the population at risk; . Notification and monitoring. . Monitoring- risk groups.
M3	Municipal Contingency Plan (03/2020)	. No description regarding the structural conditions	. No description regarding the CHA's work	. No description regarding the CHA's work

Source: Authors, based on documents from the Primary Health Care Secretariat (SAPS) and those available on municipal websites.

toms. Moreover, physical barriers were improvised using chairs and tapes, and a restriction in the number of seats to avoid crowding inside the BHU/USF.

That part, they put up the partitions in the waiting room for social distancing at the USF. [...] there was a specific COVID-19 room just to attend these people (EPVDC1).

The seats have the space demarcations, all to ensure as little contagion as possible, not only for patients but also for unit employees. [...] The maintenance had to adapt the seats and limit the seats, set up distancing at the counter, establish a limit between the patient and the employee there, at the entrance to the pharmacy (EPSSA19).

Here at the USF, it was the isolation, we had the isolation room for COVID-19 care [...] no. No physical changes were made. We had an adaptation, which the health professionals made on their own [...] Apart from that, there were no other changes (EPFSA3).

It should be noted that, for municipality M3, no documents were found reporting the reorganization of the CHA's work during the pandemic period. According to the analyzed documents, mainly from municipality 1 (M1), new attributions were incorporated into the work of the CHAs for the pandemic period, with emphasis on the use of information and communication technologies (ICTs) in health and social media as an alternative for maintaining continuous contact with users, considering the social distancing measures and home visit limitations. However, only in municipality M2 there was the acquisition, albeit insufficient, of telephone sets, computers or tablets for remote communication with users.

[...] we had already received the tablets. [...] they were not purchased at the time of the pandemic, we already had this equipment. [...] Until we received a device, not in the middle of last year, which would be used for this purpose, but the de-

Chart 2. Categories of analysis.

CHA'S work					
Analytical category	**Operational category**	**Description**	**Central aspects for analysis**	**Evidence**	**Script questions**
Working means/ conditions	Organization of work and unit (structural and material conditions)	They are related to physical conditions and facilities and physical and/or material security conditions; tools and physical structures for work, such as equipment, instruments, establishments and the environment.	BHU physical structure - protocols for work organization	Interview with Manager of Services Primary Care (SPC)	Has the municipal coordination of SPC created or adopted protocols to face the pandemic? (CHA's work)
					What were the actions developed by the municipal coordination of SPC to support the surveillance actions carried out by the SPC teams? Notification of cases, guidelines and educational actions, testing?
			Physical structure of the BHU (rooms, locations/ environments adequate for the internal support of activities)	Interview with CHA	Did your unit undergo any type of change or adaptation in the physical environment due to the pandemic? Which?
			Availability of hygiene materials and PPE (quantity and type)	Interview with CHA	In the context of the pandemic, what hygiene measures were adopted in your workplace? Are they adequate?
					Is PPE available for carrying out your work at the unit? Which? Are they adequate and sufficient? Were they made available from the beginning?
			Availability of electronic equipment (cell phone, tablet, computer, landline); Internet access	Interview with CHA	During the pandemic, was electronic equipment purchased in your unit to establish contact with users?
					Do you use your personal cell phone to contact users? How often?
					Does your unit have internet access? Has connectivity improved?

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vice did not last long in the unit. And we ended up using our personal devices, which has an easier and faster access (PVDC3).

In municipalities M2 and M3, the CHA's difficulty in the rural area regarding the access to the internet and the lack of basic computer equipment is observed, requiring traveling to the headquarters.

There is no internet, there is no internet available at the USF (EPVDC1).

The USF does not have a system to assist the users. When we have to print a SUS card, we have to go to the health secretariat or a polyclinic (EPFSA3).

When interviewing the CHAs, it is clear that the only equipment they used, in addition to their

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Analytical category	**Operational category**	**Description**	**Central aspects for analysis**	**Evidence**	**Script questions**
Working means/ conditions	Organization of work and unit (Structural and material conditions)	They are related to physical conditions and facilities and physical and/or material security conditions; tools and physical structures for work, such as equipment, instruments, establishments and the environment.	Qualifications and suitability information	Interview with CHA	Have you participated in qualification or training on COVID-19? If so, what topics were covered?
					Is there a source of information about COVID-19 in your workplace that guides actions? What is the source of information? How do you evaluate the information received in your workplace?
Work itself (performed activities)	Characteristics of activities related to the work of CHAs	Related to the content of work activities, the organization and division of work, the ways in which workers carry out their activities.	Content of CHA activities	Interview with CHA	During the COVID-19 pandemic, were there changes in the organization of the work process?
					What were the modified activities?
					Do you consider that the adaptations of your unit's work process were sufficient for the performance of your work activities safely in the context of COVID-19?
					Regarding the home visit by the community health agent for users monitored at the unit, how is it working at the moment?
			Organization and division of work and ways of working (changes in routines and collaboration in teams)	Interview with CHA	Have there been any changes to your work routine during the pandemic? What were these changes?

Source: Authors.

personal mobile phones, were tablets, which had already been purchased before the pandemic period. It is important to emphasize that in several units there was already a shortage of these devices and that during the pandemic period nothing was done to improve or acquire these tools.

I believe there was no purchase of equipment. I definitely use my personal phone. Our tablet was not acquired in the pandemic. It is work equipment (EPSSA5).

No, nothing of the type [...] No; even the USF doesn't even have a landline, which is broken and

there is no electronic system here. We do not have system availability. Only the CHAs work with the tablets, except for this part, which we don't have (EPFSA3).

Although there was no consensus among the interviewed CHAs, the majority demonstrated dissatisfaction with the information they received and the scarcity of specific training for their attributions.

There was no training for us, there was no qualification or training on COVID-19 [...] they did not offer any courses (EPFSA5).

It was only once, when it started, and we stayed in a room and it was online with the secretary. [...] The internet access was bad. After that, we didn't have any training. It was only that once [...] (EPSSA7).

In M2, the management mentions providing training regarding the protocol adopted for the performance of the CHA's attributions.

We even used the experience of Rio de Janeiro, set up a protocol, trained all the community agents, first with the supervising nurses and after that, with their approval, we forwarded that to the community agents (EGVDC9).

The interviews with the CHAs show the transfer of information carried out by the nursing professional and not specific training for community workers.

I participated in some training sessions with the unit nurse. [...] It was the protocol of the Ministry of Health, signs and symptoms of Sars-Cov-2, guidelines regarding the work process of the new guidelines (EPVCD8).

Another issue observed was the role of the nursing professional as responsible for passing on the received information and training to the CHAs.

The nurse, she participated in some training that she always passes on to us in team meetings. What we have had regarding contact with these trainings is like that (EPVDC3).

Our training was conducted more in a spontaneous way. Our nurses have access to online courses. Courses that provide tools on coping with COVID-19. And they brought that to the groups and we ended up enrolling in and taking some online courses. But on our own, it's not like the secretary was available (EPSSA19).

Characteristics of activities related to the CHA's work

During the pandemic, given the need for social distancing, recommendations regarding visits had to be limited to peridomiciliary spaces. What actually happened in the three assessed municipalities:

Because the CHAs did not stop home visits, they were not entering the houses, but they did not stop following the families and making home visits. [...] Home visits are working normally, only entering the home is not allowed. But peridomiciliary visits are still happening. [...] *Since the beginning of the pandemic, peridomiciliary visits have been like this* (EPVDC8).

But we didn't stop doing home visits, because in our work, we just couldn't go inside, but we talked to the home residents from the entrance (EPSSA9).

There were some changes, but now it's back to normal. Just the issue of entering the home, which we are still waiting on the regulation [...] we have not stopped carrying out home visits. We had to keep our distance because of the pandemic (EPFSA3).

The peridomiciliary visits were aimed primarily at risk groups in support of health surveillance actions such as: guidance, active search and monitoring of suspected and confirmed cases.

We also monitored cases of people with COVID at home online, we did this monitoring of cases, we also monitored the houses to find out if they went to the doctor, how and what the symptoms were, if they had worsened, all of this we were doing, but did not stop doing the home visits (EPFSA1).

The community agent, when visiting the houses, always reinforces the issue of social distancing, the use of a mask, the use of alcohol gel (EPSSA1).

The interviewed CHAs showed dissatisfaction regarding the deviations from their attributions, which started to focus on internal work in the health units, as porters, cleaning staff, patient triage, among others.

There is a CHA who stays in the unit doing this triage, before the patient enters the unit, we do this triage [...] So I think that our work is increasingly losing a little bit of the characteristic that is essential, right? (EPSSA1).

'The CHA is now a porter at the USF'[...] the CHAs are all involved in the COVID vaccine. and not involved in home visits. It is a question that i s also being asked by the Union and by the Health Secretariat, because the CHA is not a porter (EPSSA11).

We started to go to the USF more often, we got there and helped people inside the USF to do something, dispense medication, help with triage, these things, I think it changed the routine (EPVDC1).

In the interviews with the municipal managers and in the analyzed documents (Table 1),

Ciência & Saúde Coletiva, 28(5):1399-1412, 2023

the construction of protocols for the organization of the CHA's work was evidenced, focused on the interior of the services and surveillance actions, support for vaccination actions, drive thru, remote monitoring of suspected and confirmed cases, not providing enough support for the performance of community work and health education.

I believe it was reduced due to the crowding, due to the social distancing, arriving at the door and not being able to enter the house [...] The use of paper was suppressed, the community agents have tablets to communicate (EGVDC1).

And we had a considerable number of CHAs who were removed, others placed in functional readaptation inside the physical structure of the unit, so some went to work inside the unit and helped in the monitoring of cases through telephone contact [...] (EGFSA9).

Discussion

The results of this study showed changes in the work of the CHAs during the pandemic period in the three municipalities, both due to the intensification of work and new demands, mainly of an administrative nature within the health units. These findings corroborate the study by Fernandez et al.[11], who draw attention to the de-characterization of the CHA praxis with the interruption of community actions, such as home visits and territorialization, substituted by bureaucratic activities in the health units, such as the organization of waiting rooms, reception support and filling out forms.

The pandemic scenario did not find physical structural conditions at the BHU/USF that would allow adapting the work processes, in accordance with the health safety needs of patients and professionals. There is a historic structural deficit in the PHC services and that only allowed, as an alternative, the improvised readaptation of the internal spaces of the health units, as pointed out by studies[3,18] that similarly analyzed the organization of the PHC and the capacity of response in the recent pandemic context.

It is observed that the municipal guidelines and recommendations, regarding the CHA activities, followed the proposal of the Ministry of Health published by the Primary Health Care Secretariat (SAPS), with guidelines regarding the peridomiciliary visit, system feeding, provision of PPE and monitoring of suspected and confirmed cases, prioritizing risk groups[19,20]. However, these documents cover incipient recommendations that make it difficult to direct community work aimed to mitigate the risk of contamination, providing multiple operational interpretations and conditioning a work process permeated by insecurity and fear to face the pandemic[21]. According to Bentes[22], these official documents of CHA work guidelines do not reflect the reality of the different territories of the country, and they disregard the overload arising from the pandemic and the accumulation of pre-existing demands.

Several countries recognize the skills of community health workers to connect marginalized communities, provide information and promote health behaviors, such as social isolation and correct hand hygiene, during the pandemic[23,24]. For that, these workers sought new ways to reach the users, including the use of information and communication technologies (ICTs) such as videoconferences (for those with internet access), phone calls and the use of messaging applications[25], corroborating the results of this study.

The use of ICTs and social networks to monitor families proved to be a challenge in the CHA's work routine, whether due to insufficient equipment and poor internet connection quality or the lack of training that generates knowledge and understanding about the disease, forms of prevention and the use of technology itself to perform their assignments. It is worth considering that the velocity of ICT use expansion aimed to guarantee structural working conditions for the CHAs was below the needs of social distancing, on the one hand. And, on the other hand, below the needs for continuity of care via remote technologies at the time of important changes imposed by the health crisis, the attributions and demands for the CHA's work. Therefore, the implementation of ICTs, mainly related to the CHA's work, a category with less social visibility in the health area, needs to be treated with caution.

According to Lotta and Marques[26], technology does not replace face-to-face contact and the relational and close approach these professionals carry out in the territories where they work. This is consistent with the existing literature, which suggests that the CHA's close relationship with community members helps to reduce the distance between the health system and the community[27].

The digital exclusion barriers also pose challenges to provide remote assistance in rural areas, as seen in municipality M2, which disclosed a shortage of internet connectivity in the assessed rural area. It is worth noting that the challenges

of community work in rural areas of municipalities should not be treated as a demand restricted to local solutions; a set of national, regional and local initiatives is needed to attenuate the pandemic[28,29].

It is necessary to monitor the effective changes that were brought on into the real work practices, the generated demands, the sociotechnical constructions that materialized them, their effects on health and the dimensions of work[30]. Even so, in many cases their viability in health work was only possible with the use of the workers' personal devices, as seen in this study.

In the study carried out by Singh, Singh[31], they observed that community workers who received training on COVID-19 had a significantly greater perception of security to perform routine activities. Thus, having a reliable source of information is crucial for the consolidation of territorial and community-based actions, as it is this knowledge that subsidizes the work of the CHAs with the population, as well as in the health unit[32]. Therefore, expanding the CHA's qualification and training activities should be a strategic decision to strengthen PHC operations.

In this context of the risk posed by the circulation through the territory and in the home visit, several strategic propositions deal with the meeting of biosafety norms, considering that the CHAs are exposed to numerous occupational risks[33], which should include the visit with distancing (peridomiciliary), rational distribution of personal protective equipment and hygiene and disinfection materials, such as alcohol gel, in addition to training the professionals to ensure their correct use. In the study carried out by Bhaskar and Arun[34], they observed that with training and adequate use of face shields during home visits, there was an interruption of virus transmission among community agents. According to Costa et al.[28], the lack of training is associated with the CHA's perception of insecurity and fear in the performance of their work routine.

In another Brazilian study[35], the authors suggested that, given the uncertainty about how long this health emergency will last and the vital role that CHAs play in the Brazilian health system, health managers and society need to pay greater attention to these professionals to improve the effectiveness of the response to COVID-19 in the country.

Finally, it should be noted that the discontinuation of the work routine of the CHAs perceived in this study directly impacts their attributions inherent to health prevention and promotion with territorial connections, which should be a priority for the containment of community transmission of the virus, as already observed in previous epidemics. Although monitoring tasks persisted, even if they had to be adapted, of families and risk groups, changes in their activities had already been identified in recent years, which were exacerbated by the pandemic[13,28]. It can be observed how the role of 'bridge' in the gap between community and service is sustained, at the same time that the CHA's educational and mobilization practices are weakened, being relegated to the background.

The panorama of rapid transformations requires that new strategies be designed and implemented aiming to attenuate the consequences of a pandemic of such proportions, especially regarding work dynamics. These results can be seen as signs of the fragility of the health system and, mainly, of Primary Health Care.

There is strong evidence[13,36] of the contribution of CHAs in Primary Health Care and at community levels, making it more resilient, which includes surveillance, social support and community engagement, while its potential in outbreaks can be underutilized or neglected. It is evident that the institutional support, training and permanent education for the CHAs during the pandemic were insufficient, which culminated in their leaving their territories, with a possible loss of professional legitimacy, at the same time that it shows the devaluation of the PHC and of the Family Health Strategy as a care model.

The lack of clear guidelines based on the strengthening of attributes inherent to the CHA's work, according to the community and territorial orientation, constitutes a matter of concern, considering the impossibility of carrying out effective actions for the consolidation of a strong and robust PHC, to adequately respond to the needs arising from localized or disseminated health crises.

It is worth mentioning possible limitations of the study. As both intentional and snowball sampling methods were used, our results may not indicate the opinions of most CHAs in the assessed locations. The study was conducted remotely and there were occasions when the internet connection was interrupted and verbal communication was less clear. To mitigate this issue, participants were encouraged to speak openly and reassured about information confidentiality. Moreover, field notes and regular clarification meetings facilitated the adoption of a reflective process. Finally, it should be noted that data saturation was fully achieved.

Ciência & Saúde Coletiva, 28(5):1399-1412, 2023

Despite these limitations, the results presented herein encourage reflections on the CHA's role and indicate the need for further evaluation studies on the attribute of cultural competence/community orientation of work in PHC, in scenarios of health crises of the magnitude of COVID-19. In addition to developing aspects related to the potential of community orientation as a strategic component of the CHA's work, due to its crucial relevance for actions of prevention, promotion, and protection of the population's health, important for the consolidation of PHC when facing new challenges in the post-pandemic period.

Collaborations

All authors contributed equally to the conception, design, acquisition, analysis and interpretation of data, as well as to the preparation of the work, critical review and approval of the final version to be published. They are also equally responsible for all aspects of the engagement, ensuring that questions regarding the accuracy and completeness of any part are properly investigated and resolved.

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References

1. Verhoeven V, Tsakitzidis G, Philips H, Van Royen, P. Impact of the COVID-19 pandemic on the core functions of primary care: will the cure be worse than the disease? A qualitative interview study in Flemish GPs. *BMJ open* 2020; 10(6):e039674.
2. Boyce MR, Katz R. Community health workers and pandemic preparedness: current and prospective roles. *Frontiers Public Health* 2019; 7:62.
3. Krist AH, DeVoe JE, Cheng A, Ehrlich T, Jones SM. Redesigning primary care to address the COVID-19 pandemic in the midst of the pandemic. *Ann Fam Med* 2020; 18(4):349-354.
4. Giovanella L, Vega R, Tejerina-Silva H, Acosta-Ramirez N, Parada-Lezcano M, Ríos G, Iturrieta D, Almeida PF, Feo O. Is comprehensive primary health care part of the response to the COVID-19 pandemic in Latin America? *Trab Educ Saude* 2020; 19:e00310142.
5. Miller NP, Milsom P, Johnson G, Bedford J, Kapeu AS, Diallo AO, Hassen K, Rafique N, Islam K, Camara R, Kandeh J, Wesseh CS, Rasanathan K, Zambruni JP, Papowitz H. Community health workers during the Ebola outbreak in Guinea, Liberia, and Sierra Leone. *J Glob Health* 2018; 8(2):020601.
6. World Health Organization (WHO). Risk communication and community engagement readiness and response to coronavirus disease (COVID-19): interim guidance [Internet]. [cited 2022 nov 10]. 2020. Available from: file:///C:/Users/luis.valdetaro/Downloads/WHO-2019-nCoV-RCCE-2020.2-eng.pdf
7. Sohrabi C, Alsafi, Z O'neill N, Khan M, Kerwan A, Al-Jabir A, Iosifidis C, Agha, R. World Health Organization declares global emergency: a review of the 2019 novel coronavirus (COVID-19). *Int J Surg* 2020; 76:71-76.
8. Castro M. Lack of federal leadership hinders Brazil's COVID-19 response [Internet]. Harvard Public Health School. 2020. [cited 2022 nov 10]. Available from: https://www.hsph.harvard.edu/news/features/brazil-covid-marcia-castro/
9. Bhaumik S, Moola S, Tyagi J, Nambiar D, Kakoti M. Community health workers for pandemic response: a rapid evidence synthesis. *BMJ Glob Health* 2020; 5(6):e002769.
10. Gilmore B, Ndejjo R, Tchetchia A, De Claro V, Mago E, Lopes C, Bhattacharyya S. Community engagement for COVID-19 prevention and control: a rapid evidence synthesis. *BMJ Glob Health* 2020; 5(10):e003188.
11. Fernandez M, Lotta G, Corrêa M. Challenges for Primary Health Care in Brazil: an analysis on the labor of community health workers during a COVID-19 pandemic. *Trab Educ Saude* 2021; 19:e00321153.
12. Fernandez M, Lotta G. How community health workers are facing COVID-19 pandemic in Brazil: personal feelings, access to resources and working process. *Arch Fam Med General Pract* 2020; 5(1):115-122.
13. Morosini MV, Fonseca A. Os agentes comunitários na Atenção Primária à Saúde no Brasil: inventário de conquistas e desafios. *Saude Debate* 2018; 42:261-274.

14. Lotta G, Nunes J, Fernandez M, Correa MG. The impact of the COVID-19 pandemic in the frontline health workforce: perceptions of vulnerability of Brazil's community health workers. *Health Policy Open* 2022; 3:100065.
15. Yin, RK. *Estudo de caso: planejamento e métodos*. Porto Alegre: Bookman; 2015.
16. Ministério da Saúde (MS). Secretaria de Atenção Primária à Saúde (SAPS). E-Gestor, Informação e Gestão da Atenção Básica [Internet]. [acessado 2022 nov 12]. Disponível em: https://egestorab.saude.gov.br/paginas/acessoPublico/relatorios/relCoberturaAPS-Cadastro.xhtml
17. Mendes-Gonçalves RB. *Tecnologia e organização social das práticas de saúde: características tecnológicas de processo de trabalho na rede estadual de centros de saúde de São Paulo.* São Paulo: Hucitec, Abrasco; 1994.
18. Silva BRG, Vechi Corrêa AP, Uehara SCDSA. Primary health care organization in the COVID-19 pandemic: scoping review. *Rev Saude Publica* 2022; 56:94.
19. Ministério da Saúde (MS). Secretaria de Atenção Primária à Saúde (SAPS). *Orientações gerais sobre a atuação do ACS frente à pandemia de COVID-19 e os registros a serem realizados no e-SUS APS*. Brasília: MS; 2020.
20. Ministério da Saúde (MS). Secretaria de Atenção Primária à Saúde (SAPS). *Recomendações para adequação das ações dos agentes comunitários de saúde frente à atual situação epidemiológica referente ao COVID-19.* Brasília: MS; 2020.
21. Quirino TRL, Silva NRB, Machado MF, Souza CD, Lima L FS, Azevedo CC. O trabalho do agente comunitário de saúde frente à pandemia da COVID-19. *Saude Soci* 2020; 5(1):1299-1314.
22. Bentes RN. A COVID-19 no Brasil e as atribuições dos agentes comunitários de saúde: desafios e problemáticas enfrentados no cenário nacional de pandemia. *Hygeia* 2020; Esp:175-182.
23. Shrestha A, Thapa TB, Giri M, Kumar S, Dhobi S, Thapa H, Dhami PP, Shahi R, Ghimire A, Rathaur ES. Knowledge and attitude on prevention of COVID-19 among community health workers in Nepal-a cross-sectional study. *BMC Public Health* 2021; 21(1):1424.
24. Gebremedhin T, Abebe H, Wondimu W, Gizaw AT. COVID-19 prevention practices and associated factors among frontline community health workers in Jimma Zone, Southwest Ethiopia. *J Multidisciplinary Healthcare* 2021; 14:2239-2247.
25. Carter J, Hassan S, Walton A. Meeting the needs of vulnerable primary care patients without COVID-19 infections during the pandemic: observations from a community health worker lens. *J Prim Care Community Health* 2022; 13:21501319211067669.
26. Lotta GS, Marques EC. How social networks affect policy implementation: an analysis of street-level bureaucrats' performance regarding a health policy. *Social Policy Administration* 2020; 54(7):345-360.
27. Olateju Z, Olufunlayo T, MacArthur C, Leung C, Taylor B. Community health workers experiences and perceptions of working during the COVID-19 pandemic in Lagos, Nigeria – a qualitative study. *PloS One* 2022; 17(3):e0265092.
28. Costa NDR, Bellas H, Silva PRFD, Carvalho PVRD, Uhr D, Vieira C, Jatobá A. Agentes comunitários de saúde e a pandemia da COVID-19 nas favelas do Brasil. *Observatório COVID-19 Fiocruz* 2020; 24p.
29. Edwards M. Rural health workforce response to Australia's 2019/20 natural disasters and emergencies and in particular COVID-19. *Rural Remote Health* 2023; 23(1):8130.
30. Lotta G, Wenham C, Nunes J, Pimenta DN. Community health workers reveal COVID-19 disaster in Brazil. *The Lancet* 2020; 396(10248):365-366.
31. Singh SS, Singh LB. Training community health workers for the COVID-19 response, India. *Bull World Health Organ* 2022; 100(2):108-114.
32. Almeida ACM, Nóbrega CDCS, Silva CVSRD, Silva TSD, Saffer DA, Morosini MVGC, Borges CF, Morel CMTM, Petuco DRS, Nogueira ML. Orientações para agentes comunitários de saúde no enfrentamento à COVID-19. Rio de Janeiro: Secretaria de Estado de Saúde do Rio de Janeiro; 2020.
33. Soares SL, Abreu CRC. A importância do uso de equipamentos de proteção individual-EPIs pelos Agentes Comunitários de Saúde (ACS). *Rev JRG* 2021; 4(8):109-114.
34. Bhaskar ME, Arun S. SARS-CoV-2 infection among community health workers in India before and after use of face shields. *JAMA* 2020; 324(13):1348-1349.
35. Monreal TJ, Falcão EO, Araújo MEA, Adania DZ,-Santos-Pinto CB. Community health workers and COVID-19 in a Brazilian state capital. *Sociol Spectrum* 2022; 42(3)27-230.
36. Maciazeki-Gomes RC, Souza CD, Baggio L, Wachs F. O trabalho do agente comunitário de saúde na perspectiva da educação popular em saúde: possibilidades e desafios. *Cien Saude Colet* 2016; 21(5):1637-1646.
37. Governo do Estado da Bahia. Secretaria de saúde do estado da Bahia (SESAB). COVID-19 (Novo Coronavírus) [Internet]. [acessado 2022 nov 10]. Disponível em: http://www.saude.ba.gov.br/temasdesaude/coronavirus
38. Secretaria Municipal de Saúde de Salvador. Notas Técnicas [Internet]. [acessado 2022 nov 10]. Disponível em: http://www.saude.salvador.ba.gov.br/covid/notas-tecnicas/
39. Prefeitura Municipal de Vitória da Conquista. Plano Municipal de Contingência para Enfrentamento da Infecção Humana pelo Novo Coronavírus [Internet]. 2020. [acessado 2022 nov9]. Disponível em: https://www.pmvc.ba.gov.br/wp-content/uploads/PLANO-DE-ENFRENTAMENTO-DO-CORONAV%C3%8DRUS-DO-MUNIC%C3%8DPIO-DE-VIT%C3%93RIA-DA-CONQUISTA-1-edicao-28032020.pdf

40. Prefeitura Municipal de Vitória da Conquista. Plano Municipal de Contingência para Enfrentamento da Infecção Humana pelo Novo Coronavírus [Internet]. 2020. [acessado 2022 nov 9]. Disponível em: https://sapl.vitoriadaconquista.ba.leg.br/media/sapl/public/documentoacessorio/2020/13141/plano_municipal_de_contingencia_para_enfrentamento_da_infeccao.pdf
41. Secretaria Municipal de Saúde de Salvador. Nota Técnica DAS/APS [Internet]. 2020. [acessado 2022 nov 9]. Disponível em: http://www.saude.salvador.ba.gov.br/wp-content/uploads/2020/06/14.-NT-DAS_APS-n.-09-de-23.06.2020-Reorganiza%C3%A7%C3%A3o-da-APS.pdf

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