

Anxiety in Primary Health Care professionals during the COVID-19 pandemic

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ABSTRACT

Fundaments: The imbalance between professional duty and fear during the in COVID-19 pandemic caused emotional instability in health workers. **Objectives:** To assess anxiety in Primary Health Care (PHC) professionals and associated factors and analyze the positive and negative perceptions of the pandemic. **Methodology:** This is a descriptive-exploratory, quantitative and qualitative cross-sectional study, with PHC professionals, in a municipality in the state of São Paulo, Brazil, from December 2020 to March 2021. Descriptive statistics were carried out, and the chi-square test was applied at the 5% level. For textual content, lexical analysis was carried out by Descending Hierarchical Classification. **Main results:** It was identified that more than 50% of participants had anxiety, and it was associated with having contracted COVID-19 (p -value = 0.0327), interference with daily activities (p -value < 0.0001) and occupation (p -value < 0.0001) -value = 0.0483). Negative points were mental health, working conditions, service and behavior. Positive points were biosafety, self-care and personal protective equipment use. **Conclusions:** Most PHC professionals presented anxiety, and it was associated with sociodemographic factors. The pandemic brought positive and negative points from PHC professionals' perspective.

Keywords: Pandemics, Primary health care, Occupational health, Mental health, Anxiety.

INTRODUCTION

The SARS-CoV-2 pandemic generated an unprecedented global health crisis that lasted far beyond expectations. It was believed that it would soon settle down and that normal life would resume, however COVID-19 is still ongoing, causing much greater economic and social damage than expected.

Disease transmission control measures have led to changes in people's daily routine with limited social interactions, restriction of people's movement, family conflicts because of confinement, fear of being sick and/or spreading the virus, loss of family and friends, suspension of various on-site activities and maintenance of essential activities only¹. For health professionals, the impact was even greater, mainly due to overload in health services².

The crisis caused by COVID-19 brought great challenges, mainly in terms of organization of health services, leading public and private

systems, at all levels of care, to implement their work routines in order to react quickly and effectively to the pandemic². In this context, Primary Health Care (PHC) was not immune to these misfortunes³, despite its importance in responding to health emergencies⁴, in addition to all its other characteristics as an effective and resolving care model⁵.

Professionals working in PHC faced problems such as the reduced ability of users to access services⁶⁻⁷, decreased quality in provision of care⁸⁻⁹, and limitations in the care for non-COVID-19 patients^{3,6-7,10}.

In this context, however, PHC professionals continued to provide care, under stressful physical and emotional conditions, which were aggravated by the scenario of uncertainties and unpredictability brought about by the pandemic. The lack of balance between professional duty, altruism and constant fear can cause conflicts and cognitive dissonance, which has given rise to a global concern about health workers' mental health.

Given this scenario, several studies have been carried out with health professionals regarding the psychological disorders brought about by the pandemic¹¹⁻¹⁹. However, after reviewing the literature carried out from December 2020 to November 2022, it was identified that research addressing mental health PHC professionals is scarce²⁰⁻²².

Given that the pandemic continues, although controlled, there are risks of new variants that may reflect, again, in the increase of cases; therefore, it is important to know and understand the emotional impact of COVID-19 on PHC workers. That said, the objective was to assess anxiety and possible associated factors, and the positive and negative perceptions of the health crisis experienced by PHC workers.

METHODS

A descriptive-exploratory cross-sectional study, of a quantitative and qualitative nature, with PHC professionals, within the scope of the Brazilian Health System (in Portuguese, *Sistema Único de Saúde - SUS*, was carried out in a municipality in the northeast of the state of São Paulo. The locality has an area of 650 km², with an estimated population of 711,825 inhabitants, demographic density of 928.92 inhabitants/km², urbanization rate of 99.72%, per capita income of R\$ 1,052.00 or US\$ 210.40 and a Municipal Human Development Index of 0.800²³.

The municipality has 51 Primary Care teams and 48 Family Health teams, which correspond, respectively, to coverage of 63.90% and 23.55%. In oral health, there are 30 teams in Primary Care and 11 teams in family health, corresponding, respectively, to coverage of 33.76% and 14.59%²⁴.

In participant selection, all PHC workers were included (N=977). Professionals on bonus leave, away from work and retired (n=12) were excluded, making a total of 965 eligible subjects, of which 222 participated in the survey, voluntarily responding to the survey.

Data collection took place from December 2020 to March 2021; to this end, a questionnaire was prepared consisting of questions that addressed professionals' perception of health work

during the pandemic, what was best and worst with the arrival of COVID-19 and the possible effects on these workers' anxiety. The contact with participants was made by sending the link, by email, together with the Informed Consent Form, containing the information about the research.

A part of the data collection instrument consisted of questions adapted based on the World Health Organization' document called "Risk assessment and management of exposure of health care workers in the context of COVID-19"²⁵. Quantitative variables were related to sociodemographic characteristics such as gender, age, profession, belonging to a risk group or living with people in this group and having contracted COVID-19. For work-related questions, the dichotomous variables studied included: working overtime; work in reference units for caring for patients with suspected COVID-19; role displacement during the pandemic; and the type of work performed, whether assistance or service management.

To verify the items adapted from this instrument as well as its form of analysis the consensus technique called Traditional Committee was used²⁶, involving researchers and experts in public health service management, allowing for an open discussion and exchange of ideas.

The other part of the instrument, to assess the anxiety condition in PHC professionals, consisted of questions already validated from the Generalized Anxiety Disorders Scale 7-item (GAD-7)²⁷. This scale, considered an effective tool for quantitative assessment and identification of possible cases of generalized anxiety disorder, is recommended by the American Psychiatric Association²⁸. In this part, questions dealt, in the context of the pandemic, with the frequency (0= not at all; 1= several days; 2= more than half the days; and 3= nearly every day) with which PHC professionals felt uncomfortable to the point of being so restless that it is hard to sit still; feeling nervous, anxious, or on edge; not being able to stop or control worrying; worrying too much about different things; trouble relaxing; becoming easily annoyed or irritable; feeling afraid as if something awful might happen. According to scoring criteria, the score was divided into 4 subgroups: 0~5, 6~9, 10~14 and 15~21,

corresponding to “minimal”, “mild”, “moderate” and “severe” anxiety.

Still within the American Psychiatric Association’s validated instrument, the interference of the discomfort caused by anxiety in carrying out work, taking care of the home and in relationships with people was also measured. The answers ranged from none, some, a lot and extreme inference.

For a better understanding of the possible factors related to anxiety, the instrument was composed of two qualitative questions addressing what changed for the worse and for the better with the pandemic, from professionals’ perspective.

Upon examining the data, descriptive statistics were performed, with calculation of absolute and relative frequency of quantitative variables. Subsequently, bivariate analysis was carried out with a crossing of dependent variable (perceived anxiety in PHC professionals) and independent variables (sex; age group; profession; degree of interference at work, home and interpersonal relationships; belonging to or living with people in the risk group for COVID-19; type of health unit where they work; working overtime; function performed; role displacement; and having contracted COVID-19). For such an association, the chi-square test of independence was applied at a significance level of 5%. For this step, the BioEstat 5.3 software was used.

For textual content, lexical analysis was carried out using the technique of Descending Hierarchical Classification (DHC), which is a type of qualitative and multivariate analysis²⁹, through processing by the IRAMUTEQ software³⁰. In DHC, text segments are classified according to their words and their set is divided based on the frequency of reduced forms, formed from the root of words and is systematized by a dendrogram. From the classes, frequencies and/or the statistical chi-square test (χ^2) of the words, the researcher assigns a title to these classes according to their semantics. In this research, the words that showed in the chi-square test (χ^2) a value greater than 3.84, $p < 0.0001$ were selected.³¹

Workers’ speeches were coded (“Px”) and identified as participants 1, 2, 3, 4...222, according to the sequence in which they were analyzed, safeguarding professional anonymity.

The study was approved by the Research Ethics Committee, protocol CAAE: 39934320.3.0000.5420, thus complying with Resolution 466/12 of the Brazilian National Council for Research Ethics and other provisions.

RESULTS

Participants’ profile (n=222) showed that 82.43% (n=183) were female; 17.57% (n=39) were male; had a mean age of 51.50 years (\pm SD=22.94). Moreover, 27.93% (n=62) were dentists; 16.22% (n=36) were nurses; 15.32% (n=34) were nursing assistants and technicians; 15.32% (n=34) were oral health assistants; 10.81% (n=24) were community health workers; 9.91% (n=22) were physicians; and 4.50% (n=10) had other professions. Still on sociodemographic characteristics, 75.68% (n=168) reported having had COVID-19; 56.76% (n=126) belonged to the risk group and 53.60% (n=119) lived with people also in the risk group (Table 1).

Regarding work, it was possible to identify that 69.37% (n=154) of professionals worked in reference units for COVID-19; 68.92% (n=153) were not moved from function; and 71.62% (n=159) did not work overtime during the pandemic (Table 1).

Regarding the anxiety scale (GAD-7), it was identified that more than 50% of participants had some degree of anxiety, with 23.87% considered moderate or severe (Figure 1) and that more than 60% reported at least some interference of this anxiety in their daily routine, with 13.06% considered a lot or extreme interference (Figure 2).

Bivariate analysis with the chi-square test of independence, at a significance level of 5%, showed an association between anxiety and the independent variables as follows: having contracted COVID-19 (P-value = 0.0327); degree of interference in the development of their daily activities (P-value < 0.0001) and in their profession (P-value = 0.0483).

Lexical analysis of answers’ textual content allowed deepening questions about anxiety in PHC professionals during the pandemic period.

According to the DHC analysis carried out, regarding professionals’ perception of the negative

Table 1

Sociodemographic characteristics and those related to PHC professionals' work. São Paulo Brazil, 2023

Variables	Yes		No		Do not know		Did not answer	
	n	%	n	%	n	%	n	%
Had COVID-19	46	20.72	168	75.68	7	3.15	1	0.45
Belong to the risk group for COVID-19	126	56.76	92	41.44	0	0	4	1.80
Live with people in the risk group for COVID-19	119	53.60	80	36.04	23	10.36	0	0
Displaced from function during the pandemic	69	31.08	153	68.92	0	0	0	0
Worked overtime during the pandemic	56	25.23	159	71.62	0	0	7	3.15
The unit where they work is a reference for COVID-19	154	69.37	68	30.63	0	0	0	0

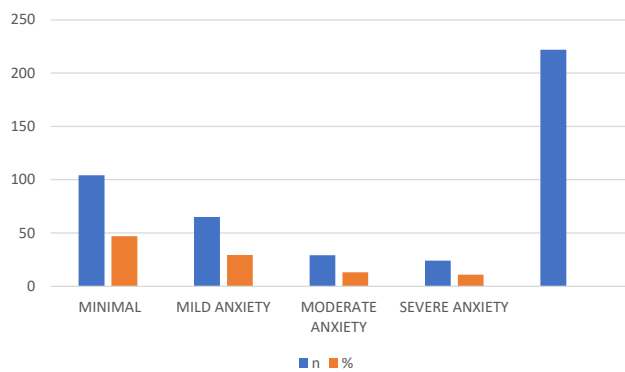


Figure 1: Absolute numerical distribution and percentage according to degree of anxiety between December 2020 and March 2021. São Paulo, Brazil, 2023

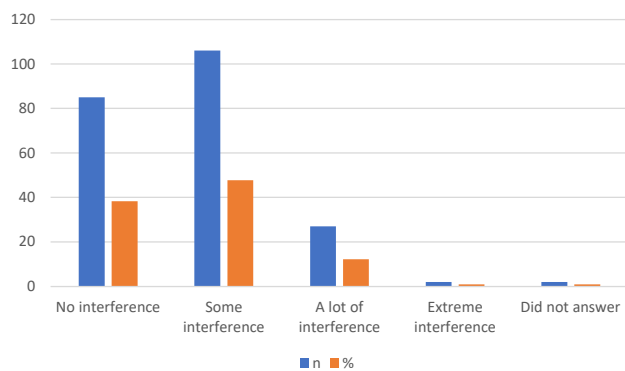


Figure 2: Absolute numerical distribution and percentage according to the degree of interference of anxiety in daily routine between December 2020 and March 2021. São Paulo, Brazil, 2023

points of the pandemic, 1,599 words were found, with 582 being different words, with an average frequency of 7.30 words for each form in the

text *corpus*. Of the total number of words found, 57.99% were matched using DHC in the text segments, indicating the degree of similarity in the vocabulary, resulting in 4 word classes, namely: class 1 – Mental Health; class 2 – Working Conditions; class 3 – Services; class 4 – Behavior. The largest cluster was found in class 4, accounting for 26.77% of the text *corpus*. Thereafter, there are classes 1 and 3, with 25.98% each and class 2 with 21.26%. Classes 2 and 3 derive from the same branch and, therefore, tend to have a greater connection with each other (Figure 3).

Class 1 brings the mental health issue, where it is possible to see how the fear of being sick and transmitting the disease, job insecurity, anxiety and stress were present in professionals' speeches:

“Overload at work, anxiety, insecurity, fear of transmitting to family members, fear of getting sick” (P.120).

“The fear, the insecurity of acting using instruments that produce aerosols in dental treatment” (P.120).

“Exposure to infectious agents and insecurity and fear of the disease” (P.121).

“Overload at work, fear of getting sick, taking the disease to loved ones, losing friends, stress” (P.145).

“Everything, distance from people, fear, uncertainty, banalization of death” (P.147).

“Various psychological disorders, anxiety, panic, stress, anguish” (P.160).

“Family distancing, anxiety and fear of getting sick” (P.166).

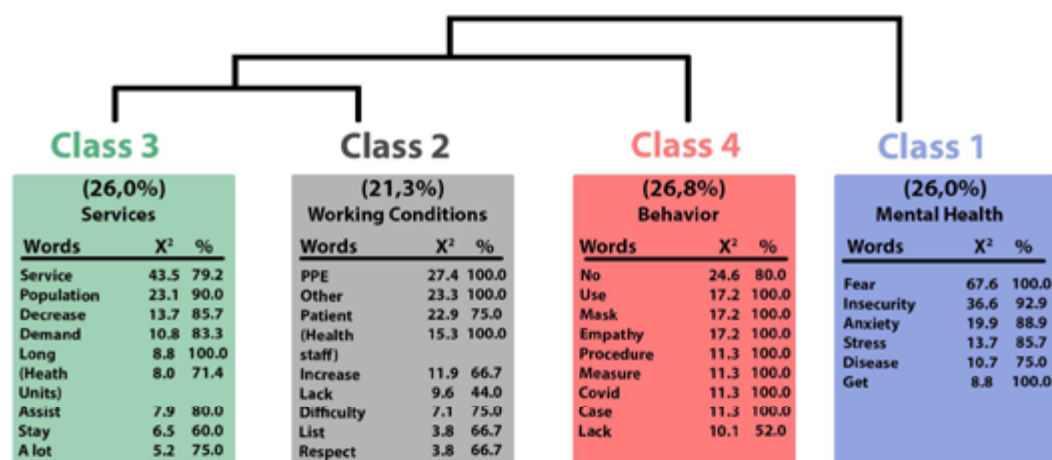


Figure 3: Dendrogram of PHC professionals' perception of the negative points of the pandemic according to CDH between December 2020 and March 2021. São Paulo, Brazil, 2023

"Because of the fear of contracting the disease, we are working more worried" (P.171).

"Insecurity has increased, risks of contamination, fear of contracting the disease" (P.178).

Branch analysis, in which classes 2 and 3 are contained, portrays the greatest representation in the text *corpus* and shows how professionals perceived the changes that occurred in assisting the population and in working conditions, as can be seen in the excerpts below:

"Large-scale layoffs, lack of health workers, stress on staff and users, and backlog of work" (P.27).

"Customer service, in general, has become more difficult. At the health unit we continue to provide care, but many have lost follow-up in specialties that are difficult to find a place" (P.29).

"The repressed demand that the changes in the agenda generated and that will lead to crowding in the resumption of care" (P.36).

"Lack of personal protective equipment, due to increased use in health units" (P.44).

"Decreased access to health units by the population" (P.46).

"Increased amount of work for the same number of active employees" (P.47).

"Huge queues outside the units, increased areas to suit the ministry's requirement, lack of physical space in health units for patients and staff" (P.55)

"Increase in the number of calls and services, lack of hospital beds and observation in the district units" (P.66).

"Difficulty in using so much personal protective equipment" (P.102).

"Decrease in service; the population is more unassisted with dental treatments" (P.146).

"Decreased provision of routine services to users to meet the demand for respiratory symptoms..." (P.172).

"Proximity to patients suspected of having a contagious disease without our knowledge. Lack of staff for the job. Increase of work and decrease of professionals" (P.179).

"The service provided by the dental clinic is being practically extinct" (P.214).

In class 4, professionals emphasized users' and professionals' behavior in health services, as shown below:

"Lack of humanization and empathy" (P.05).

"The concern that everything goes through COVID, on the part of uninformed people. Like the receptionists and the doorman at the health unit, overzealous, not even wanting to talk to people. Even explaining

what should be done, maintaining distance, wearing a mask, hand hygiene and cleaning surfaces after consultations” (P.13).

“Lack of population protection measures” (P.39).

“Inappropriate Basic Health Unit use by users with unnecessary scheduling for the moment, erroneous use or non-use of a mask, lack of compliance with information, little or no respect for social distancing” (P.165).

“I believe that, in dentistry, the limitation when performing the procedures. The emission of aerosols is our biggest challenge. Have common sense and parsimony when to use and how to use it. Attention and tension are redoubled, we are responsible for ourselves, our team, patients and colleagues from other professional segments who work with us” (P.168).

“Lack of empathy for people who do not use a face mask and who crowd together without proper precautions...” (P.59).

According to the DHC analysis carried out, regarding professionals’ perception of the positive aspects of the pandemic, 1,363 words were found, of which 409 were different words, with an average frequency of 6.28 words for each form in the text *corpus*. Of the total number of

words found, 43.32% were matched using DHC in text segments, indicating the degree of similarity in the vocabulary, resulting in 3 word classes, namely: class 1 – Biosafety; class 2 – Self-care; class 3– PPE. The largest cluster was found in class 3, accounting for 43.62% of the text *corpus*. Thereafter, there is class 1 with 32.98% and class 2 with 23.4%. Classes 2 and 3 derive from the same branch and, therefore, tend to have a greater connection with each other (Figure 4).

In class 1, it is possible to identify the perception of improvement regarding biosafety by PHC professionals in the statements below:

“Greater care in personal protective equipment use and also in the disinfection of surfaces and sterilization of materials. Another thing, I think assisting eight patients is a lot in four hours, as it was before, there is barely enough time to properly clean the equipment and others. Not to mention the simultaneous assistance in two chairs. The air quality was really bad, but we didn’t realize it” (P.08).

“Number of consultations, care with asepsis, hygiene care, care when changing patients” (P.11).

“Hygiene care, prevention and biosecurity were highlighted and reinforced in terms of their importance” (P.40).

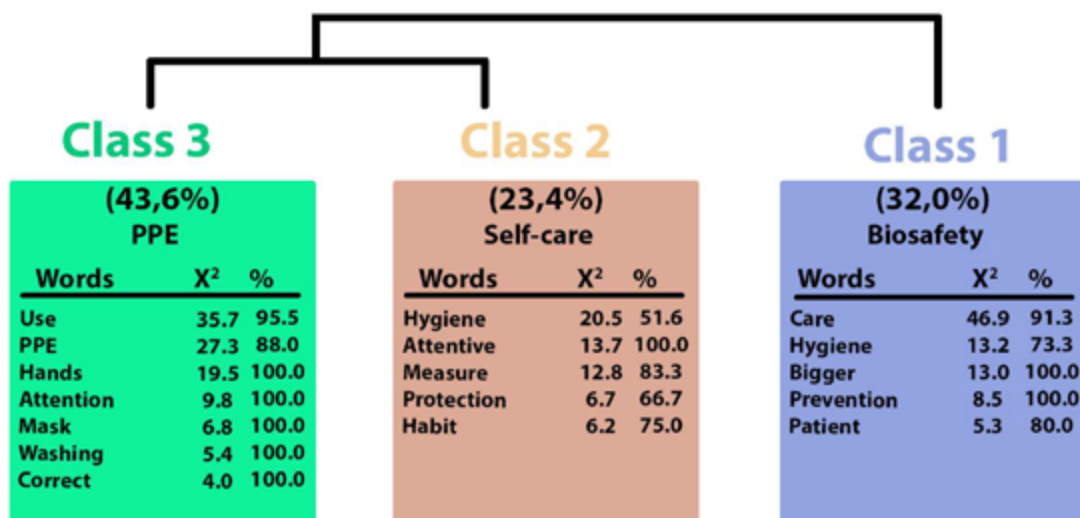


Figure 4: Dendrogram of PHC professionals’ perception of the positive points of the pandemic according to CDH, between December 2020 and March 2021. São Paulo, Brazil, 2023

“Greater care and fewer patients per period” (P.141).

Branch analysis, in which classes 2 and 3 are contained, portrays the greatest representativeness in the text *corpus* and shows how professionals noticed improvement mainly in issues of self-care and personal protective equipment use that occurred at work, as can be seen in the excerpts below:

“Hygiene and personal protection issues in the work environment” (P.26).

“We are more attentive with regard to hygiene and our protection” (P.135).

“We are more careful with hygiene measures” (P.218).

“The concern with the correct personal protective equipment use” (P.13).

“Use of a mask by community agents during home visits. “I believe it is more hygienic and safer for our profession” (P.22).

“Hand hygiene and mask use to protect against respiratory diseases.” (P.56).

“Awareness of hand washing, personal protective equipment, individual and collective protection use” (P.103).

“More attention to face shield use by professionals” (P.107).

“More attention to health standards” (P.161).

“Reinforcement of dentistry as effective in its use of personal protective equipment properly, showing safety in performing dental procedures for health professionals and patients in any situation” (P.181).

“Availability of personal protective equipment” (P.208).

“Use of mandatory personal protective equipment and the rescue of hand washing” (P.216).

DISCUSSION

In this research on anxiety in PHC professionals, it was possible to identify that the majority felt some degree of anxiety and that this interfered with the daily routine in more than 50%

of participants. The issue mental health issue was also seen as one of the negative points of the pandemic from workers’ perspective.

The findings of this research corroborate with several studies on mental health with professionals from both PHC and other levels of care during the pandemic around the world^{12-16,18-22,32}. A large survey conducted at a New York City hospital of workers who provided frontline care for COVID-19 in 2020 showed that 39% of participants experienced symptoms of post-traumatic stress, depression or anxiety¹². Another study, with PHC professionals from a municipality in the countryside of São Paulo, showed that they suffered from the fear of being contaminated at work, work overload and stress, and changes in behavior after the start of the pandemic²¹.

The impact caused by COVID-19 on the mental health of professionals interfered with their work activities, with an increase in absenteeism-illness³³⁻³⁴, in addition to patient care and personal and professional decision-making processes¹⁶. This research also found data that point in this direction, since an association was identified between anxiety and interference in participants’ daily routine.

In addition to mental health, from research participants’ perspective, the other negative points raised by them covered the issues of care, working conditions and people’s behavior, because the pandemic aggravated the well-known precariousness of work in health. A similar study on the nursing team’ working conditions during the pandemic corroborates the findings of this research and showed an increase in demand and work overload, a lack of human resources, increased pressure for productivity and low population compliance with preventive measures, all of this causing a physical and psychological overload³⁵.

The issue of working conditions, in this research, became even more evident when an association was found between anxiety and the profession, something expected at that time. Health professionals are known to face a highly stressful job on a daily basis, with a higher risk of contamination by infectious agents³⁶ the possibility of being responsible for the proliferation of diseases in their families^{12,15}, work overload³⁵ and lack of

support from service managers and supervisors¹². Studies have shown that even health students have suffered from the mental health issue during the pandemic³⁷⁻³⁸.

In addition to the profession, this research showed an association between anxiety and previous contamination by COVID-19 among professionals; this could be explained by the experience of being infected by the disease and not wanting it again for themselves or their family members, which could generate psychological symptoms of post-traumatic stress, as evidenced by a review carried out by Nogueira *et al.*³⁹.

Aiming to protect health workers' physical and emotional health in coping with COVID-19, studies bring recommendations such as: adequacy measures in relation to the number of professionals⁴⁰; improvement in organization and working conditions⁴¹⁻⁴²; appropriate places to rest and eat⁴³; psychological support from professionals in the field⁴³; resizing of working hours⁴¹; reduction of occupational stress⁴¹; use of digital tools to support and improve access to mental health services⁴⁴; provision of personal protective equipment in adequate quantity and quality⁴⁰; guidelines on infection control⁴³; and implementation of measures that encourage strengthening teams⁴⁰. Despite all the negative impact mentioned by PHC professionals, in this research, they highlighted positive aspects brought about by the pandemic, such as concern with personal protective equipment use, a greater focus on self-care and the issue of biosafety in work environments. Despite the undeniable damage caused by the pandemic, a moment of crisis can become an opportunity for great advances. In the case of COVID-19, there was a strengthening of already established health measures, a reformulation of practices and expansion of new actions and policies aiming at preventing and controlling infectious disease transmission⁴⁵. In this way, health services are better prepared for future health crises.

This research is, therefore, important because, in addition to showing positive and negative points generated by the pandemic, it brings relevant information about PHC workers' emotional status and exposes the need for an attentive and humanized look at these professionals. The identified gaps will help managers to formulate

policies that prioritize actions to improve PHC workers' mental health, with the development of effective and sustainable interventions that can address both acute and long-term processes, during and after the pandemic. In this regard, David *et al.*¹¹ warn about the need for transformative and supportable programs, in various aspects, in the post-pandemic period. According to these authors, the health crisis caused by COVID-19 presents an important opportunity to rethink and expand access to mental health care for health workers.

Despite the contributions brought by this research, some limitations can be pointed out, such as sample size and regionalization of collected data; this is because Brazil is a very large country with great economic and social differences. More comprehensive studies would be needed, with a greater number of participants and diversity of municipalities so that anxiety can better understood in PHC professionals during the pandemic and possible associated factors.

CONCLUSIONS

It is concluded that most PHC professionals had some degree of anxiety and that more than half reported at least some interference from this anxiety in their daily routine, in addition to the perception of positive and negative aspects brought about by the pandemic. This study also showed that there is an association between anxiety and profession variables, such as having already contracted COVID-19 and carrying out daily activities.

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Conflict of interests

The authors declare that there was no conflict of interest.

Contributions

TAS: Substantial contribution to the study design or data interpretation; Participation in writing the preliminary version, Compliance with being responsible for the accuracy or completeness of any part of the study

CCMPN: Substantial contribution to the study design or data interpretation; Participation in writing the preliminary version; Participation in the review and approval of the final version; Compliance with being responsible for the accuracy or completeness of any part of the study

CASG: Participation in the review and approval of the final version; Compliance with being responsible for the accuracy or completeness of any part of the study

NAS: Participation in the review and approval of the final version; Compliance with being responsible for the accuracy or completeness of any part of the study

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