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Research Article

"Caring for the other is caring for me": impact of the COVID-19 pandemic on the mental suffering of nurses and doctors in a city in Northeastern Brazil

"Cuidar do outro é cuidar de mim": impacto da pandemia de COVID-19 no sofrimento mental de enfermeiros/as e médicos/as de município do Nordeste brasileiro

"Cuidar del otro es cuidarme a mí": el impacto de la pandemia de COVID-19 en el sufrimiento mental de enfermeros y médicos de una ciudad del Nordeste brasileño

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Abstract

Introduction: In January 2020, SARS-CoV-2 virus was isolated in China as the cause of COVID-19 disease, later on disseminating globally as a pandemic. Primary health care (PHC) plays a crucial role in the global response to this threat, as it is one of the entrances for the public health system in Brazil, acting in coordenating health care as well, playing a crucial role in a prompt response to epidemics and outrbreaks. In this scenario, health care professionals working in PHC are potentially exposed to mental suffering, especially in a pandemic setting. **Objective:** To analyze the level of adverse mental health outcomes among health care professionals working ia a PHC setting, as well as possible relations between mental suffering and working during the COVID-19 pandemic. **Methods:** We conducted an epidemiological, cross-sectional, quantitative and exploratory study, in which an online survey was applied, investigating sociodemographic and occupational data, as well as assessing adverse mental health outcomes using the Kessler Psychological Distress Scale (K10), followed by statistical analysis of the data. **Results:** High risk for adverse mental health outcomes was found in 48.6% of respondents, with a mean of 66.8±21.7% of negative symptoms being related do COVID-19 pandemic. In addition, in the 30 days prior to the moment when each participant answered the "survey", 73.4% (corresponding to 72.5% of nurses and 73.9% of doctors) reported a higher frequency than usual in the occurrence of feelings, investigated on the K10 scale. The average percentage of these feelings attributed to insecurities/uncertainties/fears related to the COVID-19 pandemic was 66.8% (with a standard deviation of ±21.7%). Almost all respondents (99.1%) considered it possible to transmit the infection to family members or close people. Thirty-seven of participants (33.94% of the study population) declared that they had used an anxiolytic or antidepressant in the 30 days before the survey was completed, prescribed by an assistant physician with whom they performed follow-up (19 participants), or by self-medication (18 participants). The cause of mental suffering was the possibility of transmitting COVID-19 to relatives. The was an association between high risk for adverse mental health outcomes and participants' perception (total and doctors) of available personal protective equipment, while no other statistically significant associatoin was found. **Conclusions:** In a scenario of constant fear and potential risk of COVID-19 infection in this group of professionals, mental suffering in this group hovers as a permanent threat. It is important to adopt strategies to improve mental well-being of health care professionals working in a PHC setting, and also to carry out further studies on the subject.

Keywords: Coronavirus infections; Pandemics; Psychological distress; Primary health care; Health personnel.

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Resumo

Introdução: Em janeiro de 2020, foi isolado na China o vírus SARS-CoV-2, causador da doença do coronavírus 19 (COVID-19), que posteriorment disseminou-se globalmente numa pandemia. A Atenção Primária à Saúde (APS) desempenha papel crucial na resposta global à ameaça, considerando-se o papel da APS como uma das portas de entrada do Sistema Único de Saúde (SUS) e como coordenadora do cuidado nesse sistema, com atuação ativa na resposta a surtos e epidemias. Nesse contexto, os profissionais atuantes na APS estão potencialmente expostos a sofrimento mental no cenário pandêmico. **Objetivo:** Analisar os níveis de sofrimento mental entre profissionais de saúde da APS de Petrolina (PE) no contexto da pandemia de COVID-19, verificando possível associação entre sofrimento mental e a atuação desses profissionais na linha de frente de combate à COVID-19. **Métodos:** Trata-se de estudo epidemiológico, transversal, com abordagem quantitativa e caráter exploratório. Foi aplicado um *survey online* com dados sociodemográficos e ocupacionais, bem como foi feita a avaliação do sofrimento mental nesse grupo de profissionais, por meio da aplicação da Escala de *Distress* Psicológico de Kessler (K10), sendo as respostas posteriormente analisadas estatisticamente. **Resultados:** Dos participantes, 48,6% apresentaram risco elevado para a presença de transtorno mental no contexto da pandemia de COVID-19, e uma média de 66,8%±21,7% dos sentimentos negativos experimentados têm relação com a pandemia. Além disso, nos 30 dias anteriores ao momento em que cada participante respondeu ao *survey*, 73,4% (correspondendo a 72,5% dos enfermeiros e 73,9% dos médicos) dos entrevistados relataram frequência maior que o habitual na ocorrência dos sentimentos investigados na Escala K10. A porcentagem média desses sentimentos atribuída às inseguranças/ incertezas/ medos relacionados à pandemia de COVID-19 é de 66,8% (com desvio padrão de ±21,7%). Dos respondentes, 99,1% (99,1%) consideram possível transmitir a infecção para familiares ou pessoas próximas. Trinta e sete (33,94% da população de estudo) declararam que fizeram uso de medicamento ansiolítico ou antidepressivo nos 30 dias anteriores ao momento em que o *survey* foi respondido, prescrito por médico assistente com quem realiza acompanhamento (19 participantes) ou por automedicação (18 participantes). É fator de sofrimento mental para os respondentes a possibilidade de ser veículo de transmissão de COVID-19 para familiares ou pessoas próximas. Observou-se associação estatisticamente significativa entre risco elevado de transtornos mentais e percepção dos respondentes (total e médicos) acerca dos equipamentos de proteção individual (EPI) disponíveis nas Unidades de Saúde. Não foi observada associação estatisticamente significativa entre sofrimento mental e demais indicadores. **Conclusões:** Num contexto de permanente medo e risco potencial de infecção por COVID-19 nesse grupo de profissionais, o sofrimento mental paira como ameaça permanente. Recomenda-se a adoção de estratégias para a abordagem do sofrimento mental nessa categoria profissional, além de estudos adicionais para determinar o perfil de adoecimento desse grupo.

Palavras-chave: Infecções por coronavírus; Pandemias; Estresse psicológico; Atenção primária à saúde; Pessoal de saúde.

Resumen

Introducción: En enero de 2020 se aisló en China el virus SARS-CoV-2, causante de la enfermedad por coronavirus 19 (COVID-19), propagándose posteriormente a nivel mundial en forma de pandemia. La Atención Primaria de Salud (APS) juega un papel crucial en la respuesta global a la amenaza, considerando el papel de la APS como una de las puertas de entrada al Sistema Único de Salud (SUS) y coordinadora de la atención en el SUS, con un papel activo en la respuesta a brotes y epidemias. En ese contexto, los profesionales que actúan en la APS están potencialmente expuestos al sufrimiento psíquico en el escenario de la pandemia. Objetivo: Analizar los niveles de sufrimiento psíquico entre los profesionales de salud de la APS en Petrolina (PE) en el contexto de la pandemia de la COVID-19, verificando una posible asociación entre el sufrimiento psíquico y la actuación de esos profesionales en la primera línea de lucha contra la COVID -19. **Métodos:** Se trata de un estudio epidemiológico, transversal con enfoque cuantitativo y exploratorio. Se realizó una encuesta online que contenía datos sociodemográficos y ocupacionales, así como la valoración del sufrimiento mental en este grupo de profesionales, mediante la aplicación de la Escala de Distress Psicológico de Kessler (K10), analizándose posteriormente estadísticamente las respuestas. **Resultados**: El 48,6% de los participantes tenían alto riesgo de presentar trastorno mental en el contexto de la pandemia COVID-19, y un promedio de 66,8%±21,7% de los sentimientos negativos vividos está relacionado con el COVID-19. Además, en los 30 días previos al momento en que cada participante contestó la "encuesta", el 73,4 % (que corresponde al 72,5 % de enfermeras y al 73,9 % de médicos) refirieron una frecuencia mayor a la habitual en la ocurrencia de los sentimientos investigados sobre el Escala K10. El porcentaje medio de estos sentimientos atribuidos a inseguridades/incertidumbres/miedos relacionados con la pandemia de COVID-19 es del 66,8 % (con una desviación estándar de ±21,7 %). El 99,1% de los encuestados (99,1%) considera posible transmitir la infección a familiares o personas cercanas. 37 participantes (33,94% de la población de estudio) declararon haber consumido algún medicamento ansiolítico o antidepresivo en los 30 días previos a la realización de la encuesta, prescrito por un médico auxiliar con el que realizaban seguimiento (19 participantes), o por cuenta propia -medicación (18 participantes). Es un factor de sufrimiento mental para los encuestados la posibilidad de ser un vehículo de transmisión del COVID-19 a familiares o personas cercanas. Hubo asociación entre alto riesgo de trastornos mentales y percepción de los encuestados (total y médica) sobre los EPI disponibles en las Unidades de Salud, no existiendo asociación estadísticamente significativa entre sufrimiento mental y otros indicadores. **Conclusiones:** En un contexto de miedo permanente y riesgo potencial de contagio por la COVID-19 para este grupo de profesionales, el sufrimiento psíquico en este grupo se cierne como una amenaza permanente. Se recomienda adoptar estrategias para abordar el sufrimiento mental en esta categoría profesional, además de estudios adicionales para determinar el perfil de enfermedad en este grupo.

Palabras clave: Infecciones por coronavirus; Pandemias; Distrés psicológico; Atención primaria de salud. Personal de salud.

INTRODUCTION

On December 31, 2019, 44 cases of pneumonia of unknown cause in Wuhan, a city in Hubei Province, China, were reported to the World Health Organization (WHO).[1,2] On January 7, 2020, the SARS-CoV-2 virus, a new strain of coronavirus responsible for the aforementioned cases and causing a pathology that is conventionally called COVID-19, alluding to the abbreviated version of the term "coronavirus disease 2019".[2]

On January 30, 2020, in view of the worldwide escalation of cases, like a "viral tsunami",[3] the WHO established the COVID-19 outbreak as a public health emergency of international concern (PHEIC). Subsequently, less than two months later, a state of pandemic was declared.[1,2] The WHO currently assesses the global risk of the COVID-19 pandemic as "very high".[4] This risk estimate is expressed in the number of cases and deaths by the disease, with 598 million confirmed cases and 6.4 million deaths worldwide by August 28, 2022.[5]

Health professionals working in primary health care (PHC) are, in the context of the pandemic, at the forefront of fighting COVID-19,[6,7] considering PHC as one of the gateways to Brazil's Unified Health System (SUS).[1] It acts in the maintenance of longitudinality and in the coordination of care in the SUS at all levels of care, through the early identification of serious cases to be referred to specialized services.[8] Its responsibility is also to be active in the response to outbreaks and epidemics, thus playing a fundamental and decisive role in the country's response to the spread of COVID-19.[1]

Even before the pandemic, health professionals are prone to mental suffering resulting from their work activity, due to the very nature of the work performed.[9] In this sense, professional work in the health area is already widely recognized as an occupation with a high risk of stress and illness.[9]

Nurses and doctors working in PHC have also reported high levels of stress and burnout.[10] This exposes this group of professionals, particularly during the COVID-19 pandemic, to psychological stress and occupational burnout.[5] Therefore, The objective of this study was, based on the population of nurses and doctors working in PHC in the city of Petrolina (PE), to analyze the levels of mental suffering among these health professionals in the context of the COVID-19 pandemic. Having done this, we also sought to determine the existence of an association between mental suffering and the performance of these individuals on the front line of the fight against COVID-19.

METHODS

This was an epidemiological, cross-sectional study that used a quantitative approach and had an exploratory nature. Respecting the social distancing strategy and to minimize face-to-face interaction, primary data were collected through a confidential and self-administered online survey, using the Google Forms® tool. The link to access the online questionnaire was sent to the WhatsApp® groups in which the study population participates, as well as to each potential participant, individually.

The survey strategy used a previously structured script of questions produced on the basis of the research question delimited by the investigators.[11] The survey used in this study included the assessment of mental distress through the Kessler Psychological Distress Scale (K10)[12] (dependent variable). Also, in an attempt to support the inference of a possible association between mental suffering and the COVID-19 pandemic, a question was added to the survey that asked whether the feelings investigated on the Kessler

Scale (K10) occurred more or less frequently than the usual 30 days prior to the completion of the survey by the participant.

Sociodemographic characteristics (gender identity; age; profession), occupational characteristics (type of PHC; time in the Family Health Strategy (ESF) in Petrolina) and risk factors (perception of sufficiency of personal protective equipment, i.e., PPE) were established as independent variable PPE in the prevention of COVID-19 infection; perception of PPE sufficiency for carrying out work activities). The questions that covered the provision of PPE were organized as dichotomous variables, with the possible answers "yes" or "no" for each of the questions asked, as described in Table 1.

The K10 assessment is carried out by summing the scores of the items (ten questions, assessing fatigue, nervousness, nervousness without being able to calm down, hopelessness, agitation, restlessness/ agitation, restlessness without being able to sit still, depression, effort to carry out activities, sadness, uselessness**)** based on a scale of values, namely:

a) low risk (10–15 points);
b) moderate risk, (16–21 points);
c) high risk (22–29 points); and
d) very high risk (30–50).[13,14]

A total score greater than 22 indicates that the participant is at high risk for the presence of a mental disorder (for example: anxiety or depression).[14,15] In the context of this scale, a diagnosis within 12 months is defined as a mental disordet, anxiety disorder, mood disorder, or non-affective psychosis, according to the Diagnostic and Statistical Manual of Mental Disorders, 4th edition — DSM-IV.[12]

Place and period of study

The study was conducted in Petrolina, with data collected between July and August 2020.

Study population

The study took as the research population the doctors and nurses working in PHC in health units linked to the Municipal Health Department of Petrolina — SESAU-Petrolina (PE). The participants included were those who:

a) voluntariarily agreed to participate in the study and
b) had a formal link with SESAU-Petrolina and currently worked in PHS in this city.

Exluded from the study population were professionals who:

a) were not working in PHS in Petrolina during the period because:
   a.1) vacation;
   a.2) leave of absence of any kind; or
   a.3) absences of another nature for reasons related to health (for example: medical leave, maternity leave or by the National Institute of Social Security — INSS); and
b) non-completion — or incomplete filling — of the research instrument in the questionnaire available online.

Table 1. Relationship between risk for mental disorders, assessed using the Kessler Psychological Distress Scale (K10), and sociodemographic and occupational variables, 2020.

Characteristic	Total study population (n=109)					Nurses (n=40)					Doctors /as (n=69)				
	Increased risk	Usual risk	PR	95%CI	p*	Increased risk	Usual risk	PR	95%CI	p*	Increased risk	Usual risk	PR	95%CI	p*
Gender identity															
Woman (cis or trans)	39	41	Ref.			18	20				21	21			
Man (cis or trans)	14	15	1.01	0.65–1.56	0.951	0	2	-	-	0.492	14	13	0.96	0.60–1.55	0,881
PHC modality															
USF urban zone	44	46	Ref.			14	17				30	29			
USF rural zone	9	10	1.03	0.61–1.73	0.904	4	5	1.02	0.44–2.32	0.969	5	5	1.02	0.52–1.98	0,961
Do you consider available PPE sufficient for preventing COVID-19?															
No	46	34	Ref.			15	14	Ref.			31	20			
Yes	7	22	2.38	1.22–4.66	0.002*	3	8	1.89	0.68–5.31	0.165	4	14	2.73	1.12–6.67	0,005†
Do you consider the quantity of PPE sufficient for carrying out work activities?															
No	47	39	Ref.			15	16	Ref.			32	23	Ref.		
Yes	6	17	2.09	1.03–4.28	0.015*	3	6	1.45	0.54–3.92	0.424	3	11	2.71	0.97–7.59	0,014†

*to calculate the p-value, Pearson's χ^2 test was considered for association between variables with all cells >5 and Fisher's exact test for variables with at least one cell <5; †p-value<0,05 with statistical significence at 5%. PR: prevalence ratio; PHC: primary health care; USF: family health unit; PPE: personal protective equipment. Source: Survey online "Sofrimento psíquico em em enfermeiros/as ou médicos/as atuantes na APS de Petrolina/PE no contexto da pandemia de COVID-19 (n=109), 2020.

Processing of data and statístical analysis

After completing the online questionnaire by the participants using the Google Forms® tool, the responses were automatically coded and processed in a Microsoft Excel® spreadsheet. Afterwards, they were statistically analyzed using the free software Epi-Info®, version 7.2.3.1 for Windows 7.

The sample calculation was performed using the formula n=N.Z2.p.(1-p)/Z2.p.(1-p)+e2.N-1, which uses the following parameters: n — calculated sample; N — population; Z — normal variable; p — real probability of the event; and — sampling error. The statistical decision was made on the basis of the descriptive value of the test (p value). To calculate the p value, Pearson's χ^2 test was considered for the association between variables with all cells >5 and Fisher's exact test for variables with at least one cell <5. As a result, considering a sampling error of 5%, with a 95% confidence interval (95%CI) for a more homogeneous distribution of the population (80/20), to confer statistical significance to the data, 109 questionnaires were obtained to be analyzed, considering both professional categories included in the study (doctors and nurses). To confer statistical significance to these subgroups, 69 questionnaires from doctors and 71 questionnaires from nurses would be required.

The analysis was performed using descriptive statistics (absolute and relative frequencies). Statistical analysis was based on frequency distributions, identifying an eventual association between variables with Pearson's χ^2 test for the association between variables with all cells >5 and Fisher's exact test for variables with at least one cell < 5. As a measure of association, the prevalence ratio was used.[16] There was no verification of normality for the variables, since these are dichotomous variables and thus non-numerical data.

Ethical aspects

The research was approved by the National Commission for Ethics in Research (Conep) (Opinion No. 4.080.262, Certificate of Presentation for Ethical Appreciation — CAAE: 32090120.4.0000.0008), on an urgent basis, in accordance with the decision in Plenary of Conep/ National Health Council (CNS) held on January 31, 2020,[17] in compliance with CNS Resolution No. 466/2012 and its supplements. All procedures adopted in this study also received prior approval from the Municipal Health Department of Petrolina.

Participants in this research were duly informed about the importance of this study and its possible risks. The Free and Informed Consent Form (TCLE) was visualized along with the online survey. All participants who answered the questionnaire confirmed that they had previously read the TCLE and authorized the use of data for this research.

RESULTS

Demographic and occupational profile of population

The online survey was sent to the entire study population (nurses and doctors who, during the data collection period, were working in health units linked to SESAU-Petrolina), which totaled 194

individuals, 99 nurses and 95 doctors. After applying the inclusion and exclusion criteria, a total of 109 responses were included in this analysis (Figure 1). Considering the total study population, the response rate was 56.18%.

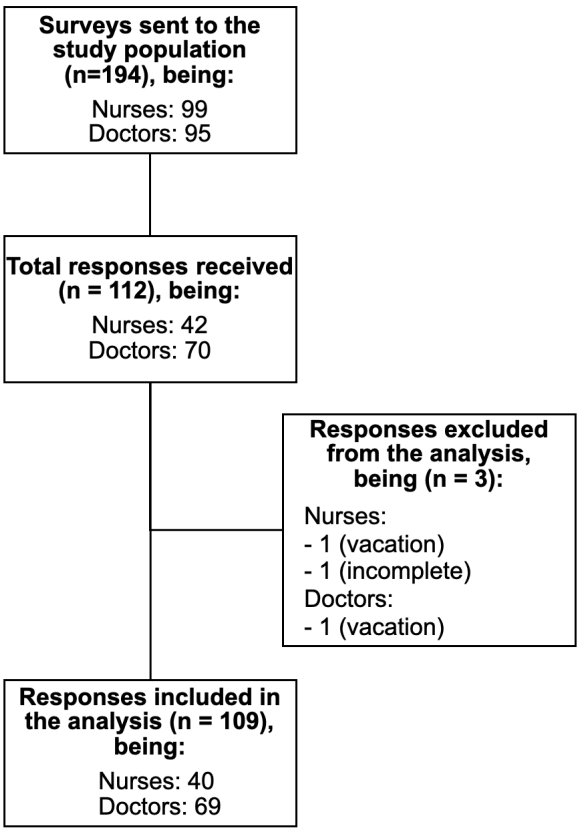

Figure 1. Flowchart of the methodological steps for delimiting the responses to the survey analyzed in the study.

Despite being a convenience sample (defined through voluntary completion of the online survey), the total number of responses — and also that of the doctor subgroup — proved to be sufficient to reach a 95%CI and a sample error of 5%, which allowed us, for the aforementioned excerpts, to make inferences about this population of professionals.

The demographic and occupational characteristics of the respondents are described in Table 2, with data categorization according to occupation (nurse or doctor). The distribution (absolute and relative frequency) of respondents regarding profession, gender identity, age group (in years), type of PHC where they work (urban or rural) and time working in PHC in Petrolina was given.

All respondents confirmed that they worked, at the time of data collection, in Family Health Units in Petrolina. Despite this, one (0.92%) participant did not consider himself to be on the front line for the care of patients suspected or confirmed with COVID-19 infection.

Regarding the supply of PPE in the context of the COVID-19 pandemic, 29 (72.5%) of the nurses and 51 (73.9%) of the doctors considered that the PPE currently available in their respective health units was not sufficient to prevent SARS-CoV-2 infection in their work environment. In addition, 31 (77.5%) of the nurses and 55 (79.7%) of the doctors assessed that the quantity of PPE provided was insufficient for adequate protection during the performance of their work activities.

Table 2. Demographic and occupational characteristics of the respondents, 2020.

Characteristics	n (%)		
	Total	Occupation	
		Nurses	Doctors
General vision	109 (100)	40 (36.7)	69 (63.3)
Gender identity			
Woman (cis or trans)	80 (73.4)	38 (95.0)	42 (60.9)
Man (cis or trans)	29 (26.6)	2 (5.0)	27 (39.1)
Non-binary sex	0 (0)	0 (0.0)	0 (0.0)
Age (years)			
≤20	0 (0.0)	0 (0.0)	0 (0.0)
21–30	48 (44.0)	14 (35.0)	34 (49.2)
31–40	44 (40.4)	17 (42.5)	27 (39.1)
41–50	14 (12.9)	8 (20.0)	6 (8.7)
51–60	2 (1.8)	1 (2.5)	1 (1.5)
≥60	1 (0.9)	0 (0.0)	1 (1.5)
PHC modality			
USF urban zone	90 (82.6)	31 (77.5)	59 (85.5)
USF rural zone	19 (17.4)	9 (22.5)	10 (14.5)
Time in ESF in Petrolina (PE)			
≤6 months	30 (27.5)	12 (30.0)	18 (26.1)
6 months–1 year	13 (11.9)	0 (0.0)	13 (18.8)
1–5 years	37 (33.9)	11 (27.5)	26 (37.7)
5–10 years	9 (8.3)	2 (5.0)	3 (10.1)
≥10 years	20 (18.4)	15 (37.5)	5 (7.3)

PHC: primary health care; USF: Family Health Unit; ESF: Family Health Strategy.
Source: Survey online "Sofrimento psíquico em enfermeiros/as ou médicos/as atuantes na APS de Petrolina/PE, no contexto da pandemia de COVID-19"(n=109), 2020.

Prevalence of mental suffering and associated factors in the population in the context of the COVID-19 pandemic

In characterizing the mental suffering of the study population using the K10 Scale and in the context of the COVID-19 pandemic, 48.6% of the survey respondents (53 in total, 18 nurses and 35 physicians) were at high risk for the presence of mental illness. mental. The distribution of scores on the K10 Scale, categorized by severity levels and in each professional occupation, is detailed in Table 3.

In addition, in the 30 days prior to the moment in which each participant responded to the survey, 73.4% of them (72.5% of nurses and 73.9% of physicians) reported a higher frequency than usual in the occurrence of the investigated feelings. on the K10 Scale. The average percentage of these feelings attributed to insecurities/uncertainties/fears related to the COVID-19 pandemic was 66.8±21.7%).

With regard to transmitting the infection to family members or close people, almost all respondents (99.1%) considered this possible. Of the participants who admitted the possibility of a possible COVID-19 infection in the work environment, 90% considered that this belief caused them psychological distress. As

Table 3. Scoring in the Kessler Psychological Scale (K10) for the total study population (n=109) and occupational subgroups, according to risk levels for mental disorder, 2020.

Risk levels for mental disorder	n (%)		
	Total (n=109)	Occupation	
		Nurses (n=40)	Doctors (n=69)
Low (10–15)	25 (22,9)	7 (17.5)	18 (26.1)
Moderate (16–21)	31 (28,4)	15 (37.5)	16 (23.2)
High (22–29)	36 (33,0)	15 (37.5)	21 (30.4)
Very high (30–50)	17 (15,6)	3 (7.5)	14 (20.3)

Source: Survey online "Sofrimento psíquico em enfermeiros/as ou médicos/as atuantes na Atenção Primária à Saúde de Petrolina/PE, no contexto da pandemia de COVID-19"(n = 109), 2020.

for the use of anxiolytic or antidepressant medication, 37 participants (33.94% of the study population) stated that they used one or the other in the 30 days prior to the moment the survey was answered, prescribed by the attending physician with whom they performed follow-up (19 participants) or by self-medication (18 participants).

Table 1 deals with the association between risk for mental disorders, assessed using the K10 Scale, and sociodemographic and occupational variables. The perceptions of the respondents about the PPE currently available in the health units were associated with a higher risk of occurrence of a mental disorder, in a statistically significant way.

The respondents' perception that the PPE was insufficient to prevent COVID-19 infection in the workplace was considered a risk factor for mental disorders, according to the K10 Scale, both considering the entire study population (odds ratio — OR 4.25 [95%CI 1.62–11.09]; p=0.002) and considering only the subgroup of doctors (OR 5.42 [95%CI 1.56–18.84]; p=0.006).

Also, the respondents' belief that PPE was not being offered in adequate quantity for the proper protection of professionals was considered a risk factor for the occurrence of mental disorders according to the K10 Scale, in the entire study population (OR 3.41 [95%CI 1.22–9.49]; p=0.01), as well as in the subgroup of doctors (OR 5.10 [95%CI 1.27–20.36]; p=0.01).

There was no statistically significant association between increased risk for mental disorders according to the K10 scale and other sociodemographic and occupational indicators evaluated in the survey.

DISCUSSION

Comparison with existing literature

In this study, 48.6% of respondents were at high risk for the presence of a mental disorder in the context of the COVID-19 pandemic. Chinese studies conducted with health professionals in an in-hospital environment[18,19] also reported a high prevalence of mental disorders in health professionals working during the COVID-19 pandemic (38.7% with depressive disorders and 30% with anxiety disorders among professionals working in the COVID-19 pandemic and who had symptoms of insomnia, in Zhang et al.;[18] 50.4% of participants with depressive symptoms and 44.6% with anxiety symptoms, in Lai et al.[19]). However, an Indian study (8.1% of depressive disorders and 10.8% of anxiety disorders among medical

professionals, without specifying whether in primary or in-hospital care)[20] and Chinese research (25.5% of prevalence of anxiety disorders and 12.1% of depressive disorders among medical professionals working in hospitals during the COVID-19 pandemic)[21] showed divergent results.

It can be assumed that this apparent discrepancy between the studies is due to a number of factors, namely:

a) moment of the COVID-19 pandemic in which they were conducted;
b) different instruments used to evaluate mental suffering; and
c) variable population cut, which ranged from intra-hospital teams[18,19] to health professionals in general,[20-22] in some cases including other health professionals besides doctors and nurses.[18,20-22] It is also important to note that none of the quantitative studies found particularly mentioned the inclusion of health professionals working in PHC in the sample.

On the other hand, the present study reached conclusions similar to those found in literature reviews that analyzed the impact of the COVID-19 pandemic on the mental health of front line health professionals. A systematic review that explored the topic[23] found medium to high rates of anxiety (26.5–44.6%) and depression (8.1–25%) in this group of professionals. Accordingly, in the comprehensive review by Prado et al.,[24] levels of anxiety between 20.1 and 44.6% and depression between 12.7 and 50.4% were identified.

When comparing the results of this study to the 3rd phase of a more extensive survey conducted in Brazil (involving 1,520 public health professionals, including community health agents/agents to combat endemic diseases (ACE), nursing professionals, physicians, etc.) and similar in scope to the present study,[11] a similar result was observed. In that survey, 79.0% of respondents felt their mental health was negatively affected by the COVID-19 pandemic,[11] while in the present study, adding the scores on the K10 Scale for “moderate”, “high” and “very high” risk ” of mental suffering, the percentage of 77.07% of respondents was reached, with an average percentage of 66.8±21.7% of these feelings attributed to insecurities/uncertainties/fears related to the COVID-19 pandemic.

It should also be noted that a participant in the present study did not yet perceive themself, at the time of the study, as part of the front line of combating the COVID-19 pandemic, going against an understanding already established in the literature.[6,7] It is inferred that this non-identification as a front line against the COVID-19 pandemic may be related to the persistence, to some extent, of a hospital-centered care model in the Brazilian health system, with an emphasis on hospital care as a model of care.[25,26]

In the present study, sociodemographic data and occupational category (nurse/doctor) had no statistically significant relationship with mental distress in the context of the COVID-19 pandemic. This is a discordant finding from the literature attributing to the female gender[11,27-29] and, mainly, to female nurses[11,27,28] a higher frequency of symptoms of depression, anxiety and stress, with greater severity.

In a quick review and meta-analysis of the psychological reactions of health professionals in various pandemics, including COVID-19, Kisely et al.[30] also found an increased risk of mental health involvement among nurses more than among physicians (ten studies), which was not corroborated in the present study. This may have been because of the bias of the sampling operations due to the low number of respondents who are nursing professionals.

Data related to the respondents’ perception of whether the PPE available at the health units was in adequate supply and whether it was sufficient to prevent COVID-19 infection was associated with statistical significance with the parameters of mental suffering in the study population. This result was in line with other investigations, which attributed part of the emotional suffering of health professionals to the

"existence and sufficiency of personal protective equipment",[27,31,32] mentioning the confidence in individual protection measures as protective factors, which reduce the risk of adverse psychological events.[30]

The finding of this study was also verified by other studies, that the majority of respondents (99.1%) considered it possible to become a vehicle for transmitting COVID-19 to family members or people around them and the fact that this caused them suffering mental. The fear of contaminating family members was mentioned in several studies as an important risk factor for mental suffering.[11,23,24,30] It was also highlighted in the literature the importance of implementing measures to support the mental health of health professionals working in the fight against the COVID-19 pandemic, including care with a focal specialist (psychologist/psychiatrist)[28,32] in person or online[28]

Strengths and limitations of the study

The main strength of the study was to combine the epidemiological moment currently experienced (COVID-19 pandemic) with the thematic relevance of addressing mental suffering among PHC health professionals precisely in this context. In addition, this research joins other studies already published on the subject,[33-35] to serve as an additional source of epidemiological data for a better understanding of the impact of the COVID-19 pandemic on the mental health of this population group.

The present investigation has several limitations. Among them, stand out:

a) the type of study chosen — the cross-sectional design —, which makes generalization difficult[36] and prevents the determination of causality between the variables included in the study;[37]
b) the option for the online survey, which may have contributed to a smaller sample than that which could have been achieved with the face-to-face application of the instrument;
c) the limited time frame (and no longitudinal follow-up), since the progression of the COVID-19 pandemic itself can affect the mental suffering of the study population;
d) participation bias resulting from the possibility of non-respondents with significant mental distress (and therefore unable to respond to the survey) or without any mental distress (and therefore not interested in participating in the survey);
e) limited study population, not representative of the heterogeneous totality of professionals working in PHC (nursing technicians, receptionists, general service assistants, community health agents, etc.);
f) in the literature search carried out for the present study, the fact that no quantitative national studies were found with the same scope as the present study, which would allow direct comparison of this with similar studies in the country; and
g) the fact that potential confounding factors were not considered in the present study in the analysis.

Finally, we highlight that, for the preparation of future studies, a more gender-balanced sample of participants has greater potential to more clearly illustrate the differences between the separate groups in terms of gender identity..

Implications of the research in the area and professional practice

Acting on the front lines of combating the COVID-19 pandemic can have a negative impact on the mental health of health professionals in this situation — including those linked to PHC —, with a consequent compromise in the quality of services provided to SUS users. However, adequate mental health care should have as a starting point the previous assessment of the mental health status of this

group of professionals. The present study meets this scope and may serve to help health managers for the adoption of strategic actions that contribute in preventing mental health problems in PHC workers, because of their involvement in the fight against the COVID-19 pandemic. In addition, this research can serve as a guide for future productions on the theme addressed, with new population cuts and the possibility of adopting other methodological outlines.

CONCLUSION

In Brazil, PHC, as the preferred gateway to the SUS, is an important front line scenario in the fight against the COVID-19 pandemic and the stage for crucial interventions that define the course of the pandemic. In this sense, health professionals working in PHC are key actors to contain the spread of this infection in the country. However, in a context of permanent fear and potential risk of infection in this group of professionals, mental suffering hovers over them as a permanent threat.

As for the analysis of the levels of mental suffering in the population studied, a high risk of mental disorder was found in this population, with a higher frequency of negative feelings in the 30 days prior to the survey response, as well as recognition of psychological distress resulting from the possibility of becoming infected with COVID-19. However, an association was only found between mental suffering and working on the front line of combating COVID-19 with regard to the perceptions of respondents about the PPE currently available in health units.

In this context, and especially considering future escalations in the contagion curve, resulting from new waves of COVID-19 infection in the country, it is essential that strategies are devised by health managers in all spheres, to safeguard the health of this group of professionals. In this regard, possible measures to be taken would include:

a) promotion of debate spaces on the subject in discussion forums on health policies, encompassing municipal and state health departments and the federal government;
b) more comprehensive strategy for offering psychotherapeutic follow-up — in person or online — to this group of professionals; and
c) greater involvement of professionals from the Family Health Support Center (NASF), especially psychologists, in this care strategy; among other measures.

It is also necessary to proceed with the investigation of this topic, with additional studies that have a larger population and a longitudinal approach and explicitly include health professionals working in PHC in the context of the COVID-19 pandemic in their sample, to support intervention strategies in this area, both during the pandemic and after.

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CONFLICT OF INTERESTS

Nothing to declare.

AUTHORS' CONTRIBUTIONS

FTCJ: Project administration, Formal analysis, Conceptualization, Writing – original draft, Writing – review and editing, Investigation, Methodology. EDVF: Project administration, Formal analysis, Conceptualization, Writing – review and editing, Methodology. Supervision. PVCE: Data curation, Writing – original draft, Investigation. ESF: Data curation, Writing – original draft, Investigation.

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