Original

Anxiety, depression, and suicide risk among health workers during the COVID-19 pandemic

Ansiedade, depressão e risco de suicídio entre trabalhadores de saúde na pandemia de COVID-19

Ansiedad, depresión y riesgo de suicidio entre los trabajadores sanitarios durante la pandemia de COVID-19

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Abstract
Objective: To evaluate the relationship between symptoms of anxiety, depression and risk of suicide in hospital health workers during the COVID-19 pandemic. **Methods:** This is a quantitative, cross-sectional, web survey-type study carried out with 270 health workers from a university hospital in September 2022, using an electronic form, in which the Hospital Anxiety and Depression Scale and questions of the Self-Reporting Questionnaire were used. Data were analyzed using SPSS Software, version 26. Described and inferential statistics were performed. The study was approved by the Research Ethics Committee, through Opinion number 5,625,667. **Results:** There was a prevalence of 40% for anxiety symptoms and 33% for depressive symptoms in female nursing professionals and that professionals who reported "ideas of ending life" increased the chances of presenting symptoms of anxiety and depression by 17,620 and 12,362 times, respectively. **Conclusion:** The findings of this study add to those already existing in the literature that highlights the need for investments in strategies to welcome and protect the health of healthcare personnel.

Descriptors: COVID-19; Health Personnel; Mental Health; Anxiety; Depression.

Whats is already known on this?
The pandemic caused by the coronavirus responsible for severe acute respiratory syndrome (SARS-CoV-2) has resulted in significant global instability, with major repercussions not only of an epidemiological nature, but also producing economic, social, cultural and political impacts never reported in the recent history of epidemics.

What this study adds?
This study provides an analysis of the susceptibility of health workers, especially nurses, to risk factors for mental illness during coping with the COVID-19 pandemic.

Resumo

Objetivo: *Avaliar a relação entre sintomas de ansiedade, depressão e risco de suicídio em trabalhadores de saúde hospitalares durante a pandemia de COVID-19.* ***Métodos:*** *Trata-se de estudo quantitativo, transversal, do tipo websurvey, realizado com 270 trabalhadores de saúde de um hospital universitário no mês de setembro de 2022, por meio de formulário eletrônico, no qual foi utilizada a Hospital Anxiety and Depression Scale e questões do Self-Reporting Questionnaire. Os dados foram analisados utilizando o Software SPSS, versão 26. Realizou-se estatísticas descritas e inferenciais. O estudo foi aprovado por Comitê de Ética em Pesquisa por meio do Parecer n. 5.625.667.* ***Resultados:*** *Evidenciou-se prevalência de 40% para sintomas de ansiedade e 33% para sintomas depressivos em profissionais da enfermagem, do sexo feminino e que os profissionais que referiram "ideias de acabar com a vida" aumentaram as chances de apresentar sintomas de ansiedade e depressão em 17,620 e 12,362 vezes, respectivamente.* ***Conclusão:*** *Os achados deste estudo se somam aos já existentes na literatura que alertam para a necessidade de investimentos em estratégias de acolhimento e proteção da saúde do pessoal de saúde.*

Descritores: *COVID-19; Pessoal de Saúde; Saúde Mental; Ansiedade; Depressão.*

Resumén

Objetivo: *Evaluar la relación entre síntomas de ansiedad, depresión y riesgo de suicidio en trabajadores de salud hospitalarios durante la pandemia de COVID-19.* ***Métodos:*** *Se trata de un estudio cuantitativo, transversal, tipo encuesta web, realizado con 270 trabajadores de la salud de un hospital universitario en septiembre de 2022, mediante un formulario electrónico, en el que se utilizó la Hospital Anxiety and Depression Scale y preguntas del Self-Reporting Questionnaire. Los datos fueron analizados mediante el software SPSS, versión 26. Se realizó estadística descrita e inferencial. El estudio fue aprobado por el Comité de Ética en Investigación, mediante Dictamen no. 5.625.667.* ***Resultados:*** *Hubo una prevalencia del 40% para síntomas de ansiedad y del 33% para síntomas depresivos en profesionales de enfermería y que los profesionales que reportaron "ideas de acabar con su vida" aumentaron las posibilidades de presentar síntomas de ansiedad y depresión en 17.620 y 12.362 veces, respectivamente.* ***Conclusión:*** *Los hallazgos de este estudio se suman a los ya existentes en la literatura que alertan sobre la necesidad de inversiones en estrategias para acoger y proteger la salud del personal de salud.*

Descriptores*: COVID-19; Personal de Salud; Salud Mental; Ansiedad; Depresión.*

INTRODUCTION

A new acute respiratory infection, caused by the novel coronavirus in late 2019 in Wuhan province, China, spread rapidly around the world, being declared a pandemic by the World Health Organization (WHO) in mid-March 2020. Faced with this reality of insecurities and fears, the population, in general, in all its segments, experienced the crisis in a concrete way, with all the challenges that were presented. As a strategy to reduce the transmissibility of the coronavirus, social isolation measures were adopted, including the suspension of services such as public transport, schools, etc. Such quarantine measures have been associated with the triggering of psychological and emotional problems, such as anxiety and depression.[1]

On this horizon, with the focus on healthcare personnel, who were untimely under pressure to dedicate themselves to treating those infected by this hitherto unknown disease, in order to continue fulfilling the mission of saving lives, they were faced with a fragile category, lonely and immersed in its pain. Even putting their own lives at risk, these workers had to deal with other stressors, such as the lack of physical infrastructure and insufficient human resources to meet the demand that now presented itself, creating a chaotic scenario, with great implications for their mental health, contributing to the triggering of symptoms of anxiety, depression and, in more severe cases, exposure to the risk of suicide among this population.[2]

In this perspective, health workers, especially those who work in the care of people suspected or confirmed of COVID-19, in addition to exposure to infection, face everything from the insecurity of preventive methods and the scarcity of medical-hospital equipment to sharing the suffering of patients and their families, thus being vulnerable both to contamination by the new coronavirus and to mental illness, as they are afraid of being contaminated and taking the virus to their families and friends.[3]

According to a study conducted at a University Hospital in Toronto, many health workers reported feelings of anger, fear, anxiety and frustration while providing care to patients with SARS, an infection with epidemiological characteristics similar to COVID-19, who felt confused and distressed by the role of caregiver and health hero, before the media, and, in another way, potential transmitters of the infection to their loved ones.[4]

From all of the above, it appears that better understanding the reality of the daily work of health workers in the face of a crisis of the magnitude of COVID-19 is important, since these professionals are under the media spotlight, but without real recognition with regard to the reception of their needs as human beings, susceptible to the most diverse health problems, whether physical or mental, because if the provision of care on ordinary days is already challenging for these workers, it is imagined in the

battle against a relatively new disease in which these difficulties were exacerbated, especially in the first phase of the pandemic, with the excess of information and speculations about the forms of transmission, lethality and treatment and, also, the speed with which they changed with each new discovery, in addition to the very working conditions to which this category was exposed.[5-7]

This study is justified by the potential that such investigations have to generate knowledge that subsidizes the development of prevention and intervention strategies in the face of processes that trigger the mental illness of health workers in a pandemic scenario. Thus, the objective of this research is to evaluate the relationship between symptoms of anxiety, depression and risk of suicide among hospital health workers during the COVID-19 pandemic.

METHODS

This is a cross-sectional study, which integrates a macro research project entitled: "Epidemiology, subjectivities and technologies: Brazilian perspective in times of the COVID-19 pandemic". The research was developed in the municipality of Teresina-PI and the data were collected at the University Hospital of the Federal University of Piauí (HU-UFPI).

The population of this study consisted of health workers (physicians, nurses, nursing technicians, physical therapists, occupational therapists, psychologists, social workers, pharmacists, speech therapists, nutritionists, biologists, dentists, laboratory technicians, necropsy technicians and pharmacy technicians) who are part of the staff of this institution.

The inclusion criteria were: health workers of the HU-UFPI, of both sexes. Health professionals who were away from their work activities at the HU-UFPI during the COVID-19 pandemic for a period greater than or equal to 180 days were excluded from the study.

Data collection took place in September 2022, when the third dose of the vaccine was already available, with the forwarding of an electronic survey form, prepared by the authors themselves, through social media (WhatsApp® and Instagram®), to the target audience of the research.

It is noteworthy that the form was composed of three sessions, as follows: I. sociodemographic profile, health profile and professional profile; II. Analysis of anxiety and depression, in which the Hospital Anxiety and Depression Scale - HADS, authored by Zigmond and Snaith[8] (1983), and validation in Brazil by Botega *et al.*[9](1995) was used. The scale consists of 14 items and its measurement receives values from 0 (zero) to 3 (three), using as cutoff points, for both anxiety and depression, from 0 (zero) to 8 (eight) – without anxiety or depression; and, greater than or equal to 9 (nine) – with anxiety or depression. The score values are the result of the sum of the values of all items of the scale per participant, obtaining a total score.

III. For the analysis of the variable "suicide risk", the 4 questions of the "depressive thoughts" domain of the SRQ-20 were used, which question the participant Are you unable to play a useful role in your life?", "Have you lost interest in things?", Do you feel like a useless person who is good for nothing? "Have you had any ideas about ending your life?" The Self-Reporting Questionnaire -SRQ-20, an instrument created by Harding et al, in 1980, and validated in Brazil by Williams in 1986, is a self-administered instrument, composed of 20 questions and allows a screening of mental illness, suggesting suspicion, without, however, attributing a specific diagnosis.[7] The sensitivity and specificity coefficients obtained in the validation for the SRQ-20 are 77% and 74%, respectively.[10] The SRQ-20 cutoff point for this study was set at 7/8, according to the study by Mari[11] (1987). In addition, it is noteworthy that all instruments used in this study are recommended by the World Health Organization (WHO), Ministry of Health and are in the public domain.

Data were organized and tabulated in a Microsoft Office Excel 2016® spreadsheet. To perform the descriptive and inferential statistical analysis, the database was processed in the statistical software (SPSS), version 26. For data analysis, exploratory descriptive statistics was initially applied, organizing the data in the form of tables. For qualitative variables, absolute and relative frequency were applied.

In the inferential analysis, Fisher's exact test was applied to measure the association between sociodemographic variables, health profile, professional and the risk of suicide with the classification anxiety/Depression (HADS) of health professionals at the University Hospital (HU-UFPI). For the variables that presented association, the odds ratio was applied, through binary logistic regression. For all analyses, a significance level < 5% was considered.

The research project was approved by the Research Ethics Committee (REC) of the Federal University of Piauí (UFPI), under Opinion number 5,625,667.

RESULTS

Two hundred and seventy (270) health workers participated in this study, with a predominance of the nursing category (61.1%). The majority of participants was female (73.7%), aged between 20 and 39 years (56.7%), brown (56.7%), married (66.3%), with children (68.5%), Catholic (65.9%) and residing with parents and/or siblings (54.1%).

Regarding the health profile, it was found that the majority did physical activity (66.3%), had no comorbidities (72.2%), had never been diagnosed with mental illness (72.2%) and said they had not sought Psychologist or Psychiatrist during the COVID-19 pandemic (67.0%). As for the professional profile, most had a graduate degree at the specialization level (73.6%), as for the working day, 59.3% referred to a workload of 36 hours per week at the institution, however, (58.1%) had other labor ties making a total weekly workload of 50 hours on mean (Standard deviation = 15). It was also found that most of these workers worked in the institution's wards (45.9%) and work or had worked on the front line of COVID-19 (53.2%).

It was found that there is an association between anxiety symptoms with sex (*p-value*=0.008) and religion (*p-value*=0.038), demonstrating that being female increases the chances of having anxiety symptoms by 2.415 times when compared to males. In addition, being a spiritist increases by 5.345 times and being an evangelical increases by 1.659 times the chances of having anxiety symptoms, when compared to Catholics (Table 1).

It was also observed that having been, at some point in life, diagnosed with mental illness, increases the chances of both anxiety symptoms by 2.840 times and depressive symptoms by 2.057 times. In addition, having sought a psychologist or psychiatrist during the COVID-19 pandemic also increased the odds of having anxiety symptoms and depressive symptoms by 2.593 and 2.078, respectively (Table 1).

Table 1. Analysis of the association between the classification of anxiety/depression (HADS), the sociodemographic profile and the health profile of health personnel. Teresina, Piauí, Brazil, 2023. N=270

	Anxiety				Depression			
	No	With			No	With		
	N(%)	N(%)	p-value[1]	ORa(95% CI)[2]	N(%)	N(%)	p-value[1]	ORa(95% CI)[2]
Sociodemographic profile								
Sex			0.008				0.317	
Male	52(32.1)	19(17.6)		b	51(28.2)	20(22.5)		
Female	110(67.9)	89(82.4)		2.41(1.30-4.46)	130(71.8)	69(77.5)		
Age group			0.483				0.351	
20-39 years	89(54.9)	64(59.3)			99(54.7)	54(60.7)		
40-59 years	73(45.1)	44(40.7)			82(45.3)	35(39.3)		
Race			0.242				0.348	
White	51(31.5)	25(23.1)			55(30.4)	21(23.6)		
Black	16(9.9)	15(13.9)			17(9.4)	14(15.7)		
Brown	91(56.2)	62(57.4)			103(56.9)	50(56.2)		
Others	4(2.5)	6(5.6)			6(3.3)	4(4.5)		
Marital status			0.763				0.09	
Married/stable union	109(67.3)	70(64.8)			128(70.7)	51(57.3)		
Divorced/separated/Divorced/separated	11(6.8)	6(5.6)			10(5.5)	7(7.9)		
Single	42(25.9)	32(29.6)			43(23.8)	31(34.8)		
Have children?			0.285				0.574	
No	55(34.0)	30(27.8)			59(32.6)	26(29.2)		
Yes	107(66.0)	78(72.2)			122(67.4)	63(70.8)		
What's your religion?			0.038				0.395	
Catholic	115(71.0)	63(58.3)		b	123(68.0)	55(61.8)		
Evangelical	27(16.7)	24(22.2)		1.65(0.87-3.14)	35(19.3)	16(18.0)		

Spiritist	4(2.5)	10(9.3)	5.34(1.55-18.33)		7(3.9)	7(7.9)		
Other	16(9.9)	11(10.2)	1.36(0.58-3.16)		16(8.8)	11(12.4)		
Who do you live with?			0.507				0.106	
Alone	19(11.7)	11(10.2)			19(10.5)	11(12.4)		
With spouse	22(13.6)	8(7.4)			24(13.3)	6(6.7)		
With children)	13(8.0)	12(11.1)			12(6.6)	13(14.6)		
With spouse and children	86(53.1)	60(55.6)			102(56.4)	44(49.4)		
With parents and/or sibling(s)	22(13.6)	17(15.7)			24(13.3)	15(16.9)		
			Clinical/Health Profile					
Do you practice physical activity?			0.227				0.1	
No	50(30.9)	41(38.0)			55(30.4)	36(40.4)		
Yes	112(69.1)	67(62.0)			126(69.6)	53(59.6)		
Do you have comorbidities (other illnesses)?			<0.001				<0.001	
Yes	28(17.3)	42(38.9)		b	35(19.3)	35(39.3)		b
No	130(80.2)	65(60.2)		0.39(0.21-0.71)	144(79.6)	51(57.3)		0.41(0.22-0.75)
the person doesn't know	4(2.5)	1(0.9)		0.22(0.02-2.18)	2(1.1)	3(3.4)		2.08(0.31-13.78)
Have you ever been diagnosed with a mental illness at any point in your life?			<0.001				<0.001	
No	137(84.6)	58(53.7)		b	145(80.1)	50(56.2)		b
Yes	25(15.4)	50(46.3)		2.84(1.46-5.49)	36(19.9)	39(43.8)		2.05(1.06-3.92)
Did you look for a Psychologist or Psychiatrist during the COVID-19 pandemic?			<0.001				<0.001	
No	130(80.2)	51(47.2)		b	137(75.7)	44(49.4)		b
Yes	32(19.8)	57(52.8)		2.59(1.38-4.85)	44(24.3)	45(50.6)		2.07(1.10-3.92)

[1]Fisher's exact test, at the 5% level.
[2]Odds ratio adjusted to the level of 95%.
Source: authors, 2023.

In Table 2, regarding the association between depression/anxiety and the professional profile of the workers, it is verified that in both groups there was no association between the variables studied. However, it is worth noting that in the analysis of the descriptive data, it was evident both in the group with anxiety symptoms and in the group with depressive symptoms, that most had specialization, had a workload of more than 36 hours per week, worked in wards, had other employment ties and worked on the front line of COVID-19.

Table 2. Analysis of the association between the classification of anxiety/depression (HADS) and the professional profile of health personnel. Teresina, Piauí, Brazil, 2023. N= 270

	Anxiety			Depression		
	No	**With**		**No**	**With**	
	N(%)	N(%)	p-valor[1]	N(%)	N(%)	p-valor[1]
Professional profile						
Do you have a graduate degree? If yes. which one?			0.445			0.149
Specialization	96(71.6)	66(76.7)		103(69.6)	59(81.9)	
Master's degree	28(20.9)	17(19.8)		35(23.6)	10(13.9)	
PhD degree	10(7.5)	3(3.5)		10(6.8)	3(4.2)	
What is your weekly working hours at HU-UFPI (in hours)?			0.440			0.608
20h	1(0.6)	1(0.9)		1(0.6)	1(1.1)	
24h	14(8.6)	4(3.7)		14(7.7)	4(4.5)	
30h	19(11.7)	14(13.0)		23(12.7)	10(11.2)	
36h	91(56.2)	69(63.9)		102(56.4)	58(65.2)	
40h	37(22.8)	20(18.5)		41(22.7)	16(18.0)	
Do you have another employment bond?			0.339			0.076
No	64(39.5)	49(45.4)		69(38.1)	44(49.4)	
Yes	98(60.5)	59(54.6)		112(61.9)	45(50.6)	
HU-UFPI sector(s) that operated in the last 90 days:			0.318			0.161
Administrative	17(10.5)	15(13.9)		25(13.8)	7(7.9)	
Wards	70(43.2)	54(50.0)		75(41.4)	49(55.1)	
Intensive care unit	29(17.9)	12(11.1)		30(16.6)	11(12.4)	
Others	46(28.4)	27(25.0)		51(28.2)	22(24.7)	
Have you worked or are you working on the COVID-19 front line? If yes, for how long (months)?			0.472			0.272
No	73(45.1)	53(49.5)		89(49.2)	37(42.0)	
Yes	89(54.9)	54(50.5)		92(50.8)	51(58.0)	

[1]Fisher's exact test, at the 5% level.
Source: authors, 2023.

In Table 3, when evaluating the risk of suicide and the depression/anxiety classification (HADS) of healthcare personnel, a statistical association was evident between all the variables analyzed. However, it was observed that people who lost interest in things increased their chances of developing anxiety symptoms by 6.584 and depressive symptoms by 19.362, while people with ideas of ending their lives increased their chances of developing anxiety symptoms by 17.620; and in 12.362 symptoms of depression. In turn, the other variables did not have a difference in chances of occurrence, as can be seen in the analysis of the confidence interval.

Table 3. Analysis of the association between the risk of suicide and the classification of anxiety/depression (HADS) of health personnel. Teresina, Piauí, Brazil, 2023. N= 270

	Anxiety				Depression			
	No	With			No	With		
	N(%)	N(%)	p-value[1]	ORa(95% CI)[2]	N (%)	N(%)	p-value[1]	ORa(95%CI)[2]
Are you unable to play a useful role in your life?			0.005				0.007	
No	155(95.7)	93(86.1)		B	172(95.0)	76(85.4)		b
Yes	7(4.3)	15(13.9)		1.07(0.30-3.78)	9(5.0)	13(14.6)		0.52(0.12-2.18)
Have you lost interest in things?			<0.001				<0.001	
No	140(86.4)	43(39.8)		B	161(89.0)	22(24.7)		b
Yes	22(13.6)	65(60.2)		6.58(3.48-12.43)	20(11.0)	67(75.3)		19.36(9.39-39.91)

Do you feel like a useless person who is good for nothing?		<0.001				<0.001
No	158(97.5)	85(78.7)	B	176(97.2)	67(75.3)	b
Yes	4(2.5)	23(21.3)	2.24(0.58-8.68)	5(2.8)	22(24.7)	2.23(0.54-9.13)
Have you had ideas about ending your life?		<0.001				<0.001
No	161(99.4)	84(77.8)	B	179(98.9)	66(74.2)	b
Yes	1(0.6)	24(22.2)	17.62(2.13-145.16)	2(1.1)	23(25.8)	12.36(2.26-67.43)

¹Fisher's exact test, at the 5% level.
²Odds ratio adjusted to the level of 95%.
Source: authors, 2023.

DISCUSSION

This study demonstrated, in relation to biological factors, that women have presented considerably more symptoms that point to anxiety and depression (prevalence of 82.4% and 77.5%, respectively) than men. The literature provides evidence that reinforces the relationship between mental disorders and sex, since female workers presented significantly more depressive symptoms, with a 62% higher prevalence in relation to males.[2] In the same sense, a study by Lai *et al.*[12] (2020) indicates that women from the nursing category who worked in Wuhan, China, the epicenter of the COVID-19 pandemic, presented more severe symptoms of mental illness when compared to other health workers, another finding similar to this study for evidencing a predominance of anxious and depressive symptoms among nurses and nursing technicians. In this sense, it is worth noting that the nursing category is predominantly composed of women, which may be related to historical and cultural issues associated with the act of caring.[13, 14]

The influence of religion was also verified, although in the present study religiosity did not constitute a lower risk for anxious and depressive symptoms. However, it is noted that among Catholics, the predominant religion, most did not present symptoms of anxiety or depression (71.0% and 68.0%, respectively). This outcome differs from other studies that describe religiosity as a protective factor, as it is a coping resource used to deal with life's adversities, as it is associated with greater resilience and the ability to reduce levels of stress related to diseases such as anxiety and depression.[15-16]

Still in the sociodemographic aspect, in this study there was no influence of cohabitation, however, it was observed that workers who have children mostly reported symptoms of anxiety and depression. On the other hand, Santos[17] (2021) argues that the performance in coping with COVID-19 is marked by the female presence, many of them mothers, who had to leave their children after the work period to avoid the spread of the coronavirus in the family environment, contributing to the worsening of psychic vulnerability in these women who often do not have a family support network.

This study also evaluated the health profile of these workers, and in this regard, it was demonstrated a predominance of symptoms of anxiety and depression (38.9 and 39.3%, in this order) among workers who reported comorbidities. This finding was similar to that found in the study by Vedovato *et al.*[18] (2021), which is part of the project entitled "Work, health and emotions: health workers in the face of COVID-19", which showed that those workers who worked in the direct care of patients with COVID-19 and who had a history of other diseases, expressed greater concern about contamination, as they recognized themselves as more vulnerable and prone to the most severe forms of the disease, increasing the risks of death among this group.

There was also an association among those who reported a diagnosis of mental illness prior to the pandemic, of whom (46.3%) had anxious symptoms and (43.8%) symptoms of depression. According to Duarte *et al.*[5] (2020), having a diagnosis of previous mental illness makes the individual more vulnerable to the stressors of the pandemic and, when added to the restrictions in the provision of health care during the period of social isolation, may have contributed to the worsening of the health condition of this group.

Similarly, there was a prevalence of symptoms of anxiety (52.8%) and depression (50.6%) among health workers who sought psychological or psychiatric support during the COVID-19 pandemic. It is presumable that amid so many adjustments and challenges in their routines, these individuals have recognized the need to ask for professional help. As a mechanism to deal with the mental suffering of health

workers, several channels of psychosocial intervention emerged in the midst of the crisis and, with the help of the internet, enabled effective and early monitoring, breaking the barriers of isolation.[19]

Regarding the professional profile of these workers, no statistical significance was found for any of the variables studied. It can be inferred that anxiety/depression are independent of factors related to the characterization of the bond of this population (stable, salaries above the market average), as well as having a high educational level (specialization, master's and PhD), although such factors may have contributed to the clarification, care, protection against COVID and, consequently, attenuated negative factors of the crisis. Thus, also, Rosa *et al.*[20] (2021), in their qualitative and quantitative study with nursing professionals, found that despite the report of many participants about the fear of losing their job or income during the pandemic, most (60.9%) denied having this fear. It is also worth considering that in the period there was a greater demand for health workers. In this sense, the present study also revealed that among the participants, most workloads equal to or greater than 36 hours per week and that, of these, 82.4% presented anxious symptoms and 83.2% presented depressive symptoms and, in addition, there is a predominance of workers with more than one employment bond (58.1%). This finding converges with the most reported scenario during the beginning of the pandemic, in which the care teams were exhausted by having to endure the increase in care and the work overload imposed by the pandemic.[21]

Another high point of this study is the analysis of suicide risk indicators among these health workers, so it was found that the variables: "Are you unable to play a useful role in your life?" Have you lost interest in things? Do you feel like a useless person who is good for nothing? And "Have you been thinking about ending your life?" were associated and statistically important (*p-value* < 0.05), regarding the classification of HADS, both for anxiety and depression. Thus, there was a greater chance (19.362) of manifestation of depressive symptoms for the variable "Have you lost interest in things?" and, regarding the variable "Have you had ideas about ending your life?", which refers, more directly, to a tendency to suicide, there were 17.620 times more chances of manifesting anxiety symptoms and 12.362 times more chances for symptoms of depression. Although there is still no proven biological relationship between coronavirus and psychiatric disorders, this finding corroborates and juxtaposes in agreement with other studies that correlate the pandemic scenario of COVID-19 with an increase in suicide rates, revealing a remarkable psychological vulnerability among health workers, especially those already affected by previous mental illness.[22-23]

The results highlight the importance of implementing measures to support and care for the mental health of these workers during public health emergencies, such as the COVID-19 pandemic. Protecting the mental health of health workers is essential not only for the well-being of these professionals, but also for patient safety and the quality of services provided.

This study has limitations because it is cross-sectional in nature, therefore, its results cannot attribute causality. In addition, a possible selection bias can be considered, since the research was outlined in its method as web survey, which, despite the advantage of speed and reach through virtual means, may eventually present the effect of "self-selection", which may lead to an increase in the prevalence of the outcome in the population.

CONCLUSION

The present research showed, in relation to the sociodemographic, health and professional profiles of the health workers evaluated, that the manifestations of anxiety and depression were preponderant in women, from the nursing category, and pointed to a significant index of indications of suicide risk among this population.

Regarding anxiety, female workers were more likely to develop anxiety than males, and this result may have been a reflection of the greater presence of women in the sample. The chances were lower when the professional was of the Catholic religion, compared to the other religions in the sample. It was also evidenced that the existence of a history of mental illness, the search for professional help, as well as the presence of comorbidities increased the chances of developing anxiety/depression.

As for the risk of suicide, it was found that among individuals who had anxiety or depression, the chance of suicide is higher among those who have lost interest in things and those who think about ending their lives.

Thus, it was revealed, through the analyses carried out, that there is a relationship between the stressors of the COVID-19 pandemic and the triggering or exacerbation of symptoms of anxiety, depression and behaviors that signal the risk of suicide among health workers. These findings are in addition to those

already in the literature that warn of the need to invest in strategies to welcome and protect the health of these workers. However, more studies are needed to deepen this theme so that, added to those already existing, they can reach more robust conclusions, especially regarding the factors that trigger these disorders and lead to aspects that can be adjusted.

Although this study was carried out in a single health service, its results can guide the planning of actions with more precise objectives, aimed at promoting health, preventing diseases and constituting a health protection network for these workers, in their work environment, through strategies to improve the organizational climate, based on good people management practices.

CONTRIBUITIONS

Contributed to the conception or design of the study/research: Cruz RL, Júnior FJGS. Contributed to data collection: Cruz RL. Contributed to the analysis and/or interpretation of data: Cruz RL, Júnior FJGS. Contributed to article writing or critical review: Cruz RL, Júnior FJGS, Gonçalves AMS, Sales JCS, madeira MZA. Final approval of the version to be published: Júnior FJGS, Gonçalves AMS, Sales JCS, madeira MZA.

REFERENCES

1. Huang Y, Zhao N. Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: a web-based cross-sectional survey. Psychiatry Res. [internet] 2020 [cited 26 set. 2022];288:112954. DOI: 10.1016/j.psychres.2020.112954

2. Santos KMR, Galvão MHR, Gomes SM, Souza TA, Medeiros AA, Barbosa IR. Depressão e ansiedade em profissionais de enfermagem durante a pandemia da covid-19. Esc. Anna Nery [internet]. 2021 [cited 24 set. 2022];25(spe):e20200370. DOI: https://doi.org/10.1590/2177-9465-EAN-2020-0370

3. Xiang YT, Yang Y, LI W, Zhang L, Zhang Q, Cheung T, Ng CH. Cuidados de saúde mental oportunos para o novo surto de coronavírus de 2019 são urgentemente necessários. Psiquiatria Lancet [internet]. 2020 Mar;7(3):228-9. DOI: https://doi.org/10.1016/S2215-0366(20)30046-8

4. Maunder R., Hunter J, Vincent L, Bennett J, Peladeau N, Leszcz M, Sadavoy J, Verhaeghe LM, Steinberg R, Mazzulli T. O impacto psicológico e ocupacional imediato do surto de SARS de 2003 em um hospital universitário. CMAJ: Rev. Assoc. Médica Canadense [internet]. 2003 maio [cited 04 out. 2022]; 168(10):1245–51. Available from: https://www.cmaj.ca/content/168/10/1245.long

5. Duarte MQ, Santo MAS, Lima CP, Giordani JP, Trentini CM. COVID-19 e os impactos na saúde mental: uma amostra do Rio Grande do Sul, Brasil. Ciênc. Saúde Colet. [internet]. 2020[cited 24 set. 2022];25(9):3401-11. DOI: https://doi.org/10.1590/1413-81232020259.16472020

6. Silva DFO, Cobucci RN, Soares VP, Lima SCVC, Andrade FB. Prevalência de ansiedade em profissionais da saúde em tempos de COVID-19: revisão sistemática com metanálise. Ciênc. Saúde Colet. [internet]. 2021 [cited 01 out. 2022];26(2):693-710. DOI: https://doi.org/10.1590/1413-81232021262.38732020

7. Teixeira CFS, Soares CM, Souza EA, Lisboa ES, Pinto ICM, Andrade LR, *et al*. A saúde dos profissionais de saúde no enfrentamento da pandemia de Covid-19. Ciênc. Saúde Colet. [internet]. 2020 [cited 24 set. 2022];25(9):3465-74. DOI: https://doi.org/10.1590/1413-81232020259.19562020

8. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiat. Scand. [internet]. 1983 [cited 15 out. 2022];67(6):361-70. DOI: https://doi.org/10.1111/j.1600-0447.1983.tb09716.x

9. Botega NJ, Bio MR, Zomignani MA, Garcia Junior C, Pereira WAB. Transtornos de humor em enfermaria de clínica médica e validação de escala de medida (HAD) de ansiedade e depressão. Rev. Saúde Pública [internet]. 1995 [cited 27 set. 2022];29(5):355-6. DOI: https://doi.org/10.1590/S0034-89101995000500004

10. Santos KOB, Araújo TM, Pinho OS, Silva ACC. Avaliação de um instrumento de mensuração de morbidade psíquica: estudo de validação do self-reporting questionnaire (SRQ-20). Rev Baiana Saúde Pública Miolo [internet]. 2010 [cited 29 set. 2022];34(3):544-60. Available from: http://files.bvs.br/upload/S/0100-0233/2010/v34n3/a1881.pdf

11. Mari JJ. Morbidade psiquiátrica em três clínicas de atenção básica na cidade de São Paulo. Social Psiquiatria [internet]. 1987 [cited 27 set. 2022];22:129-38. DOI: https://doi.org/10.1007/BF00583847

12. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, *et al*. Factors associated with mental health outcomes among health careworkers exposed to Coronavirus Disease 2019. JAMA Netw Open [internet]. 2020 [cited 10 out. 2022];3(3):e203976. DOI: http://dx.doi.org/10.1001/jamanetworkopen.2020.3976

13. Dal'Bosco EB, Floriano LSM, Skupien SV, Arcaro G, Martins AR, Anselmo ACC. Mental health of nursing in coping with COVID-19 at a regional university hospital. Rev Bras Enferm. [internet]. 2020 [cited 10 out. 2022];73(Suppl 2): e20200434. DOI: https://doi.org/10.1590/0034-7167-2020-0434

14. Guilland, R, Klokner SGM, Knapik J, Crocce-Carlotto PA, Ródio-Trevisan KP, Zimath SC, *et al*. Prevalência de sintomas de depressão e ansiedade em trabalhadores durante a pandemia da COVID-19. Trab. Educ. Saúde [internet]. 2022 [cited 13 out. 2022];20:e00186169. DOI: https://doi.org/10.1590/1981-7746-ojs00186

15. Chow SK, Francis B, Ng YH, Naim N, Beh HC, Ariffin MAA, *et al*. Enfrentamento religioso, depressão e ansiedade entre os profissionais de saúde durante a Pandemia COVID-19: uma perspectiva Malaia. Healthcare [internet]**.** 2021 [cited 13 out. 2022]; 9(1):79. DOI: https://doi.org/10.3390/healthcare9010079

16. Panzini RG, Bandeira DR. Coping (enfrentamento) religioso/espiritual. Rev. Psiq. Clín. [internet]. 2007 2021 [cited 13 out. 2022];34(Suppl):126-35. DOI: https://doi.org/10.1590/S0101-60832007000700016

17. Santos BMP. A face feminina na linha de frente contra a pandemia de COVID-19. Nursing, [internet]. 2021 [cited 13 out. 2022]; 24(275):5480-3. DOI: https://doi.org/10.36489/nursing.2021v24i275p5480-548

18. Vedovato TG, Andrade CB, Santos DL, Bitencourt SM, Almeida LP, Sampaio JFS. Trabalhadores(as) da saúde e a COVID-19: condições de trabalho à deriva? Rev. bras. saúde ocup. [internet]**.** 2021 [cited 13 out. 2022];46:e1. DOI: https://doi.org/10.1590/2317-6369000028520

19. Lima CKT, Carvalho PMM, Lima IAS, Nunes JAVO, Saraiva JS, Souza RI, *et al*. The emotional impact of coronavirus 2019-Ncov (new Coronavirus Disease). Psychiatry Research, [internet]. 2020 [cited 16 out. 2022];287:e112915. DOI: https://doi.org/10.1016/j.psychres.2020.112915

20. Rosa TJL, Nascimento SM, Sousa RR, Oliveira DMN. Análise sobre a Saúde Mental dos Profissionais de Enfermagem no enfrentamento da COVID-19: Uma Análise num Hospital Regional. Braz J Dev, [internet]. 2021 [cited 16 out. 2022];7(5):44293–317. DOI: http://dx.doi.org/10.34117/bjdv.v7i5.29229

21. Bezerra ECD, Santos PS, Lisbinski FC, Dias LC. Análise espacial das condições de enfrentamento à COVID-19: uma proposta de Índice da Infraestrutura da Saúde do Brasil. Cien Saude Colet [internet]. 2020 [cited 6 dez. 2022];25(12):4957-67. DOI: https://doi.org/10.1590/1413-812320202512.34472020

22. Schuck FW, Weber GMF, Schaefer CK, Reinheimer MW, Rockenbach DM. A influência da pandemia de COVID-19 no risco de suicídio. Braz. J. Hea. Rev. [internet] 2020 [cited 16 out. 2022];3(5):13778-89. DOI: https://doi.org/10.34119/bjhrv3n5-194

23. Cabrera MA, Karamsetty L, Simpson SA. Coronavirus and its implications for psychiatry: a rapid review of the early literature. Psychosomatics [internet]. 2020 [cited 16 out. 2022];61:607–15. DOI: https://doi.org/10.1016/j.psym.2020.05.018