Cogitare Enfermagem

ORIGINAL ARTICLE

Non-psychotic symptoms among nursing professionals: cross-sectional study in the context of COVID-19

HIGHLIGHTS

1. Women suffer more mentally, if compared to men.
2. Preliminary psychiatric diagnosis increases the chances of mental suffering.
3. Non-psychotic symptoms began post-pandemic.
4. Symptoms started after the pandemic increased the chances of mental suffering.

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ABSTRACT

Objective: Identify non-psychotic symptoms prevalent among nursing professionals in the work context of COVID-19 and analyze the relationship between mental suffering and socio-demographic, clinical, and labor profile. **Method:** Transversal study, conducted online, in 2022, with 175 nursing workers working in public health services in São Paulo, Brazil. The Self-Reporting Questionnaire-20 scale, the Kuder-Richardson coefficient, and Fisher's Exact were used. **Results:** Non-psychotic symptoms, poor sleep (65.1%); feeling nervous or worried (64%); fatigue (59.4%); headaches (52.5%); difficulty satisfying with daily activities or work (46.3%); lack of interest (46.3%). Significant association between mental suffering and sex ($p=0.006$), diagnosis of psychiatric problem ($p<0.001$), and onset of post-pandemic non-psychotic symptoms ($p<0.001$). **Conclusion:** The work during the COVID-19 outbreak intensified the mental suffering of nursing workers, which currently demands psychosocial attention, constant and future follow-up.

KEYWORDS: Nurse Practitioners; Mental Health; Signs and Symptoms; COVID-19; Cross-Sectional Studies.

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INTRODUCTION

Non-psychotic symptoms are associated with common mental disorders and include fatigue, insomnia, forgetfulness, sadness, anxiety, difficulty concentrating, and somatic complaints[1]. Such symptoms cause the individual significant functional disability, mental suffering, and impairment in various areas of his life[2].

Mental suffering is related to the exercise of nursing, considering its essence, which is care, permeated by situations of loss, pain, and mourning[3]. Factors associated with mental illness relate to precarious working conditions[3-4], such as exhausting workload, shortage of individual protective equipment[3-4], lack of professional recognition, lack of training [3,5] and lack of psychological support[4,6]. These working conditions affect the mental health of nursing workers, generating mental suffering and mental illness.

Starting in 2020, the world experienced a state of emergency in public health, due to the COVID-19 pandemic (Coronavirus Disease), which ended after two years, even with an increase in cases of the new variant of Eris (EG5) in August 2023 in the world and the Brazilian territory[7] Within the public and private health services, health professionals experienced this alarming pandemic scenario, as well as its impacts on the health, social, labor, and economic context, making them vulnerable to psychological stress and other symptoms of mental suffering[5-6].

The nursing team formed the front line in the fight against COVID-19 and faced a high risk of exposure due to close and prolonged contact with patients infected with the virus[6].

Before the pandemic, the operation of nursing already faced various challenges, such as the workload and the underdimensionation of teams[8], which could culminate in psychic suffering. In the course of the pandemic, these challenges became worse and their impacts were manifested by higher rates of anxiety disorder, panic, depression, stress, insomnia, irritability, anger, and signs of suicidal behavior[9].

Faced with this pandemic scenario, the Brazilian Federal Council of Nursing has decided to provide mental health care services to nursing professionals in the front line of care, providing them with welcoming and emotional support. The feelings most mentioned by these workers during the care were anxiety, stress, fear, ambivalent feelings, depression, and exhaustion, confirming the physical and psychological wear and the need for emotional support and support[3].

According to the above, such situations intensified psychic suffering beyond those already faced in the context of nursing work, which required the directing of efforts for the care of this specific population during the first years of the pandemic, whose reflexes can be verified today, not only with a focus on the biological context, but also in the psychological scope. Thus, this study seeks to add to the literature information about the mental health of nursing professionals in the work context of COVID-19, considering the repercussions on workers and the health and nursing service. Given the consequences of COVID-19 on the mental health of nursing professionals, this study sought to verify such impacts in local situations. The initial hypothesis is that the developments in the work context during the pandemic are still reflected in nursing work, aggravating or causing non-psychotic symptoms in people of this professional category.

This study aimed to identify non-psychotic symptoms prevalent among nursing professionals in the context of COVID-19 work and analyze the relationship between mental suffering and sociodemographic, clinical, and labor profile.

METHOD

The STROBE guidelines guided this observational and transversal study (Strengthening the Reporting of Observational Studies in Epidemiology). The Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) funded it as part of a thematic project.

The study was conducted in the period from March to August 2022, in public services included in the three levels of health care of a municipality in the São Paulo interior, namely: 21 Family Health Units (USF), 12 Basic Health Units (UBS), 3 Early Care Units (UPA), 3 Psychosocial Care Centers (CAPS), 1 University Hospital and 1 Brotherhood of the Holy House of Mercy.

Initially, health services were requested to authorize data collection. The recruitment of participants was supported by the Nursing managements of the respective services for the dissemination of a link to the project website, in which were available information, staff, Term of Free and Informed Consent (TCLE) and electronic form composed of two instruments, being a questionnaire on sociodemographic data (sex, age, religion, professional category), labor data (workplace, hours, medical departure due to COVID-19) and mental health (presence or not of psychiatric diagnosis, being of risk group, taking psychiatric treatment, using psychotropic) and another with the instrument Self Report Questionnaire (SRQ-20).

The sample consisted of 175 participants, whose inclusion criterion was to be a front-line nursing professional in actual or temporary municipal public services. The sample was non-probability. Those who did not respond fully to the research instrument were excluded.

The SRQ-20 is an adaptation of the SRQ, a tracking instrument developed by the World Health Organization (WHO) and validated in Brazil, which has 20 questions that assess the presence of non-psychotic symptoms in the last 30 days. The SRQ is recommended the WHO primarily for use in developing countries for community studies and basic health care because it is cost-effective and easy to use[10]. This instrument has four questions about physical symptoms and 16 about psychoemotional symptoms, with alternative answers of "yes" / "no", with each affirmative answer counting a point. The SRQ-20 score ranges from 0 to 20, with the cutting point used in Brazil being seven, which means that a final score equal to or greater than seven is positively tracked for mental suffering[10]. The SRQ-20 is a test of high specificity and sensitivity, but the positive result does not indicate a psychiatric diagnosis, but rather, a strong indication of mental suffering[11].

At the end of the questionnaire, the participant stated whether the onset of the mentioned symptoms occurred after the onset of the COVID-19 pandemic. There was feedback on the score to the participants and an explanation on the significance of the presence or absence of mental suffering, as well as information on mental health during the pandemic.

The ethical aspects of Resolution 510/2016 of the National Health Council were observed and respected. The project was approved by the Technical Chamber for COVID-19 projects of the Committee on Ethics in Human Research of a Federal Higher Education Institution and the National Committee on Ethics in Research (CONEP) for mental health research in the context of the COVID-19 pandemic, under consubstantiated opinion no. 4,537,781 of 12/02/2021.

The collected data was inserted into an Excel spreadsheet, converted in pairing mode and then transferred to the program Statistical Package for the Social Sciences 25.0, being analyzed using descriptive statistics and Fisher's Exact test and adopting a 5% significance level ($p<0.05$).

RESULTS

The sample was composed mostly of women (81.7%), from 20 to 39 years (56.6%). Regarding labor characteristics, the majority of the sample comprised nursing technicians and auxiliaries, representing 62.9% of the total. As for weekly hourly workload, 68% of participants had a 36-hour journey. Nursing/Medical Clinic (37.1%) and Early Care/Emergency Unit (26.3%) were the most representative sectors.

Regarding the characteristics of nursing professionals according to clinical conditions, 137 (78.3%) reported working on the front line during the pandemic, as to the distance from work, 120 (68.6%) did not move away from their work activities during the most critical period of the outbreak. Regarding the risk group, 127 (72.6%) said they were not part of the group, while 48 (27.4%) said they were considered a risk group for COVID-19.

Table 1. Distribution of participants according to sociodemographic and labor characteristics (n=175). São Carlos, São Paulo, Brazil, 2022

(continued)

Variables	n (%)	IC-95%[1]	Average(IC-95%)[2]	SD
Sex				
Female	143(81.7)	(75.5-86.9)		
Male	32(18.3)	(13.1-24.5)		
Age group			38.77(37.56-39.99)	8.15
20-39 years	99(56.6)	(49.2-63.8)		
40-59 years	73(41.7)	(34.6-49.1)		
≥60 years	3(1.7)	(0.5-4.5)		
Spirituality/Beliefs				
I have no religion, but I believe in God	17(9.7)	(6.0-14.8)		
I'm an atheist	2(1.1)	(0.2-3.6)		
Catholic	78(44.6)	(33.2-57.8)		
Evangelical	51(29.1)	(20-40.7)		
Spirit	27(15.4)	(9.0-24.7)		
Professions				
Nurse/Assistant	53(30.3)	(23.8-37.4)		
Nurse/Management or Teaching	12(6.8)	(3.2-13.5)		
Technician/Auxiliary in Nursing	110(62.9)	(55.5-69.8)		
Workplace				
Hospital 1	120(68.6)	(61.4-75.1)		
Municipality	22(12.6)	(8.3-18.1)		
Hospital 2	33(18.9)	(13.6-25.1)		

Table 1. Distribution of participants according to sociodemographic and labor characteristics (n=175). São Carlos, São Paulo, Brazil, 2022

(conclusion)

Variables	n (%)	IC-95%[1]	Average(IC-95%)[2]	SD
Sector working				
Ambulatory and Specialized Care	17(9.7)	(5.9-18.7)		
Basic Care	15(8.6)	(5.1-13.4)		
Surgical Center	3(1.7)	(0.5-4.5)		
Medical Clinic/Nursery	65(37.1)	(29.1-47.2)		
Management	4(2.3)	(0.8-5.3)		
Maternity	7(4.0)	(1.8-7.7)		
Nephrology	1(0.6)	(0.1-2.6)		
Pediatrics	4(2.3)	(0.8-5.3)		
Early Care Unit/Emergency	46(26.3)	(20.2-33.2)		
Intensive Therapy Unit	13(7.4)	(4.2-12.0)		
Hourly/weekly charge				
20h/weekly	1(0.6)	(0.1-2.6)		
36h/weekly	119(68.0)	(60.8-74.6)		
40h/weekly	31(17.7)	(12.6-23.9)		
44h/weekly	24(13.7)	(9.2-19.4)		

Legend: [1]IC-95% – Confidence interval for proportion, at the level of 5%. [2]IC-95% – Confidence interval for average, at the level of 5%. SD – Standard deviation.
Source: The authors (2022).

When asked about having any psychiatric problem diagnosed, 132 (75.4%) respondents denied, 23 (12.1%) said they had some mood disorder, and 29 (15.5%) said they had anxiety problems. The use of nonprescription psychotropic drugs was verified among 20 (11.4%) respondents.

Regarding mental suffering, of the total participants, 93 (53.1%) were positive for non-psychotic symptoms. Regarding the report of the onset of symptoms, 81 (46.3%) of nursing professionals began experiencing symptoms after the onset of the pandemic.

Tables 2 and 3 present the association analysis between mental suffering and nursing professionals' sociodemographic and clinical profiles, respectively.

There was a statistically significant association between the variables mental suffering and sex (p=0.006). Women were 3,043 times more likely to manifest mental suffering than men.

There was a statistically significant association between diagnosis of psychiatric problem (p<0.001) and the onset of post-pandemic non-psychotic symptoms (p<0.001). Participants with a prior diagnosis of a psychiatric problem were more likely to experience mental suffering when compared to those who did not have a previous diagnosis of a psychiatric problem. Nursing professionals reporting the onset of post-pandemic non-psychotic symptoms were 4.73 times more likely to have mental suffering when compared to those who did not report, according to Table 3.

Table 2. Analysis of the association between the classification of mental suffering and the social profile of nursing professionals (n=175). São Carlos, São Paulo, Brazil, 2022

SRQ-20 rating						
	No mental suffering		With mental suffering		P-value1[1]	OR_{brute2}
	n(%)	Average±SD	n(%)	Average±SD		
SOCIO-DEMOGRAPHIC PROFILE						
Age group					0.160	
20-39 years	44(53.7)		55(59.1)			
40-59 years	35(42.7)		38(40.9)			
≥60 years	3(3.7)		0(0.0)			
Sex					0.006	
Female	60(73.2)		83(89.2)			
Male	22(26.8)		10(10.8)			b
Spirituality/Beliefs					0.090	
I have no religion. but I believe in God	5(6.1)		12(12.9)			
I'm an atheist	1(1.2)		1(1.1)			
Catholic	31(37.8)		47(50.5)			
Evangelical	28(34.1)		23(24.8)			
Spirit	17(20.7)		10(10.8)			
Professions					0.791	
Nurse/Assistant	26(31.7)		27(29.0)			
Nurse/Management or Teaching	7(8.5)		5(5.4)			
Technician/Auxiliary in Nursing	49(59.8)		61(65.6)			

Legend: [1] – Fisher's accuracy association test at 5% level. [2] – Chance Ratio at 5%.
Source: The authors (2022).

Regarding the occurrence or not of non-psychotic symptoms in the context of the COVID-19 pandemic, of the total participants who obtained a positive screening for such symptoms after application of SRQ-20, it was observed that 59 (33.7%) nursing professionals reported the emergence of non-psychotic symptoms in the context of work during the COVID-19 pandemic. Table 4 reports the occurrence or absence of somatic non-psychotic symptoms and decreased vital energy in the COVID-19 pandemic. The most common somatic symptom was poor sleep (n=51;86.4%), while the most commonly-reported symptom of decreased vital energy was fatigue with ease (n=55;93.2%).

Table 3. Analysis of the association between the classification of mental suffering and the clinical profile of nursing professionals (n=175). São Carlos, São Paulo, Brazil, 2022

	SRQ-20 rating			
	No mental suffering N(%)	**With mental suffering N(%)**	**P-value[1]**	**Adjusted OR[2]**
Clinic Profile				
Risk group			0,062	
No	65(79,3)	62(66,7)		b
Yes	17(20,7)	31(33,3)		4,670(1,981-11,012)
He worked on the front line			0,767	
No	17(20,7)	21(22,6)		
Yes	65(79,3)	72(77,4)		
Location of Work			0,563	
No	58(70,7)	62(66,7)		
Yes	24(29,3)	31(33,3)		
Cases of COVID at work			0,309	
Suspect Case	2(2,4)	1(1,1)		
Confirmed cases	44(53,7)	60(64,5)		
Cases of Death	36(43,9)	32(34,4)		
Diagnosis of a psychiatric problem			<0,001	
No	73(89,0)	59(63,4)		
Yes	9(11,0)	34(36,6)		
Use of medication without a prescription			0,108	
No	76(92,7)	79(84,9)		
Yes	6(7,3)	14(15,1)		
Reported symptoms began after the pandemic			<0,001	
No	60(73,2)	34(36,6)		b
Yes	22(26,8)	59(63,4)		4,730(2,410-9,284)

Legend: [1] – Fisher's accurate association test at 5% level. [2] – Chance ratio, at the level of 5%.
Source: The authors (2022).

Table 4. Symptoms of somatic and decreased vital energy were reported after the onset of the pandemic, according to the characterization of the answers in the *Self Report Questionnaire* (SRQ-20) (n=59). São Carlos, São Paulo, Brazil, 2022

(continued)

Somatic symptoms	**n (%)[1]**
Do you have frequent headaches?	
No	13(22.0)
Yes	46(78.0)
Do you lack appetite?	
No	45(76.3)
Yes	14(23.7)
Sleep badly?	
No	8(13.6)
Yes	51(86.4)

Table 4. Symptoms of somatic and decreased vital energy were reported after the onset of the pandemic, according to the characterization of the answers in the *Self Report Questionnaire* (SRQ-20) (n=59). São Carlos, São Paulo, Brazil, 2022

(conclusion)

Somatic symptoms	n (%)[1]
Do you have unpleasant sensations in the stomach?	
No	25(42.4)
Yes	34(57.6)
Do you have tremors in your hands?	
No	40(67.8)
Yes	19(32.2)
Do you have poor digestion?	
No	30(50.8)
Yes	34(57.6)
Symptoms of decreased vital energy	**n (%)[1]**
Do you get bored easily?	
No	4(6.8)
Yes	55(93.2)
Have difficulty making decisions?	
No	30(50.8)
Yes	29(49.2)
Do you find it difficult to perform your daily activities satisfactorily?	
No	13(22.0)
Yes	46(78.0)
Do you have service difficulties (your work is hard, causing suffering)?	
No	23(39.0)
Yes	36(61.0)
Feel tired (a) all the time?	
No	5(8.5)
Yes	54(91.5)
Have difficulty thinking clearly?	
No	23(39.0)
Yes	36(61.0)

Legend: [1] – With mental suffering.
Source: The authors (2022).

Table 5 reports the occurrence of non-psychotic symptoms of depressive-anxiety mood and depressive thoughts in the context of the COVID-19 pandemic. The symptoms of depressive-anxiety mood and depressive thinking were, respectively, feeling nervous, tense, or worried (n=56;94.9%) and having lost interest in things (n=44;74.6%).

Table 5. Symptoms of depressive-anxiety mood and depressive thinking were reported after the onset of the pandemic, according to the characterization of the answers in the SRQ-20 questionnaire (n=59). São Carlos, São Paulo, Brazil, 2022

Symptoms of depressive-anxiety mood	n (%)[1]
Are you scared easily?	
No	32(54.2)
Yes	27(45.8)
Feel nervous, tense or worried	
No	3(5.1)
Yes	56(94.9)
Have you felt sad lately?	
No	16(27.1)
Yes	43(72.9)
Have you cried more than usual?	
No	28(47.5)
Yes	31(52.5)
Depressive Thinking Symptoms	
Do you feel like a useless, borrowed person?	
No	43(72.9)
Yes	16(27.1)
Have you lost interest in things?	
No	15(25.4)
Yes	44(74.6)
Have you had any ideas about ending life?	
No	53(89.8)
Yes	6(10.2)
Are you unable to play a useful role in your life?	
No	39(66.1)
Yes	20(33.9)

Legend: [1] – With mental suffering.
Source: Authors (2022).

DISCUSSION

The sample profile is formed mostly of women aged between 20 and 59 who are nursing technicians or auxiliaries. These data are from the Nursing Profile in Brazil[12], which identified that the category is 85.1% composed of women, only 2.1% of nursing professionals are over 61 years old, and 77% are nursing technicians and/or auxiliaries.

The results of this study highlight that the majority of nursing professionals did not belong to the risk group for COVID-19 complications, worked in the front line, and received a positive screening for mental suffering. Such data contradict research conducted in southern Brazil, which has the same professional category. It highlights that nursing workers in the risk group presented a higher prevalence for TMC (52.2%) than those not in the risk group[13]. This divergence may be related to the different periods of data collection between the studies, i.e., one being at the beginning of the emergence of the COVID-19 pandemic (in 2020) and the one of this study was in the middle of 2022, a time when epidemiological data of deaths and new cases of this

disease were falling, and the contribution of the presence of the vaccine in emergency character, which may have minimized the feeling of suffering.

The pandemic intensified the difficulties faced by nursing professionals, adding factors such as fear of contamination of themselves and relatives, anguish, anxiety, and frustration due to the quality of the care provided to the patient, uncertainty regarding the future, and experiencing large-scale deaths[14]. The literature highlights that nursing workers have become vulnerable to psychiatric disorders due to stressful contexts, presenting mainly depressive and anxiety symptoms[15-16].

A study conducted in the first half of 2020 with nurses from Portugal identified high levels of depression, anxiety, and stress in these professionals when compared with the general population of the country[17]. Another study conducted with 1,257 Chinese health professionals working in the treatment of COVID-19-infected people revealed a high prevalence of mental suffering symptoms, such as depression, anxiety, and insomnia, considered non-psychotic symptoms. Following the trend of the studies mentioned, more than half of nursing professionals (53.1%) in this study were positively tracked for mental suffering, reporting at least seven of the symptoms listed on the SRQ-20 scale.

The most prevalent symptoms of mental suffering were: headaches; poor sleep; feeling nervous or worried; having difficulty thinking clearly; feeling sad; crying more than usual; having difficulty satisfying with daily activities or at work; lack of interest; fatigue; and gastric discomfort. The high mental burden can help the nursing professional to remain nervous or worried, have headaches, and reduced quality of sleep[18], symptoms that can cause psychological suffering, interfere with concentration, generate reduced ability to work, and even predispose the occurrence of adverse events[1].

Nursing professionals are predisposed to psychic suffering, and depression is one of the main diseases that affects this category[5]. Nursing faces several stressful factors, including overwork, professional devaluation, lack of Individual Protection Equipment (IPE), and low salaries[19]. The presence of such stressors combined with the lack of psychosocial support for the professional category results in mental suffering, even before the pandemic context[20], corroborating the results of the present study, in which 53.7% of participants report the onset of non-psychotic symptoms before the pandemic.

Nursing lives in its everyday structural, organizational, and working conditions problems, in which the scarcity of resources influences the psychic suffering of these professionals. Given this, an unfavorable context for safe care is formed, and as a result, many professionals experience burnout, depression, pathological anxiety, panic syndrome, among other diseases[21]. Studies that explored the psychological state of healthcare professionals during the COVID-19 pandemic emphasize higher exhaustion, anxiety, stress, depressive symptoms, and lower occupational satisfaction in nursing professionals when compared to other professionals[6,17,22].

When analyzing the nursing work environment during the pandemic, it is fundamental to consider the power relations between professional categories, gender, social class, and race/color. In this study, when analyzing the association between mental suffering and the social, clinical, and professional profiles of nursing professionals, we found a significant result for "being female" (three times more chances of tracking positive for non-psychotic symptoms). It is documented in the literature that women are more vulnerable to mental or physical problems in response to stressful and/or potentially traumatic events, such as the advent of pandemics[23-24].

Studies conducted worldwide during the pandemic indicate similar results, pointing out that women presented greater stress and greater psychological impact in

the face of the pandemic scenario[25-26]. One of the hypotheses to explain this fact is that women present the burden of domestic work, in addition to the work day outside the home[23]. In the case of women who are nursing professionals, exposure to long hours of work and the often precarious working conditions of nursing, combined with various household tasks, results in overload and stress[25]. In addition, the gender difference in the prevalence of symptoms of mental disorders such as depression and anxiety is already established in the literature[5].

This study found an association between the presence of mental suffering in the pandemic period and the diagnosis of a previous psychiatric problem in nursing workers. This result corroborates the survey conducted 2019 by the Regional Council of Nursing of the State of São Paulo on mental illness in nursing professionals in this territory. The data point out that 52% suffer mentally, due to anxiety (79.3%) and depression (50.8%), triggered mainly by workload (74.5%), precarious working conditions (56.9%), and organizational climate (47.3%)[27]. It is understood that, before the emergence of the COVID-19 pandemic, this professional category already experienced labor precariousness and psychic suffering, which were intensified during the pandemic period.

A study with Chinese nurses points to an increase in symptoms of depression, anxiety, insomnia, and suffering during the early stages of the COVID-19 pandemic[6], corroborating the current study in which the majority of the sample reports that the non-psychotic symptoms began after the pandemic (<0.001). This data makes it possible to reflect on the need for future psychological follow-up by health services, where nursing professionals are allocated, considering that a study with health professionals points to the prediction that 10 to 40% of them will manifest symptoms of post-traumatic stress disorder between one and three years after the pandemic[28].

The limitations of this study involve the difficulty of generalizing the results, considering that despite the efforts aimed at widening the sampling, the sample calculation does not correspond similarly to the total number of healthcare professionals in the municipality under study.

CONCLUSION

The most prevalent non-psychotic symptoms identified in this study were related to sleep, sadness, and somatisation. They were associated with clinical and demographic characteristics. The study confirmed the presence of non-psychotic symptoms in nursing professionals, which were three times higher in the female population, which consists of the majority of this category.

The work during the COVID-19 outbreak intensified the mental suffering of nursing workers. Therefore, there is a need to increase the supply of care and psychosocial support to these workers, who were already required before the pandemic due to their work's nature and precarious conditions.

The contributions from the results of this study point out that the repercussions of COVID-19 damage are still present in the mental health of the nursing professional, which requires special attention, constant and future monitoring, reinforcing the relevance of mental health and other sociodemographic determinants of these, to improve the quality of care and safety of the patient and professional.

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Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - **Nogueira LS, Gonçalvez AMS, Orlandi AAS, Zerbetto SR.** Drafting the work or revising it critically for important intellectual content - **Nogueira LS, Gonçalvez AMS, Orlandi AAS, da Silva FMD, Zerbetto SR.** Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved - **Nogueira LS, Gonçalvez AMS, Orlandi AAS, Zerbetto SR.** All authors approved the final version of the text.

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