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Fatores associados à depressão e ansiedade em nutricionistas na pandemia por COVID-19

Factors associated with depression and anxiety in nutritionists during the COVID-19 pandemic

Daniela Alves Silva[1*], Tatiana Coura Oliveira[2], Monise Viana Abranches[2], Raquel Ferreira Miranda[2], Maria Carmen Viana[3]

[1] Department of Integrated Health Education, Federal University of Espírito Santo, Vitória (ES), Brazil.
[2] Biological Science and Health Institute, Federal University of Viçosa – Rio Paranaíba campus, Rio Paranaíba (MG), Brazil.
[3] Department of Social Medicine, Post-graduate Program in Public Health, Federal University of Espírito Santo, Vitória (ES), Brazil.

***Corresponding author**: Daniela Alves Silva - *E-mail*: daniela.a.silva@ufes.br

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ABSTRACT

The objective was to investigate the factors associated with depression and/or anxiety and depression in nutritionists during the COVID-19 pandemic. Cross-sectional study with the application of the GAD-7 and PHQ-9 scales. Participants were 1,018 nutritionists, of which 60.2% showed positive screening for depression and/or anxiety, with a greater strength of association for very frequent conflicts in relationships (OR = 11.11; 95%CI 6.61;18.67), use of pain medication (OR = 7.42; 95%CI 4.67;11.79) and always thinking about the pandemic (OR = 6.5; 95%CI 4.14;10.32). Not undergoing psychotherapeutic treatment (OR = 0.39; 95%CI 0.27;0.560) and not taking psychotropic medication (OR = 0.40; 95%CI 0.26;0.60) were associated with lower odds of positive screening. This study contributes to increasing epidemiological knowledge applicable to surveillance, prevention, and control of anxiety and depression among nutritionists.

Keywords: Anxiety. COVID-19. Depression. Suicidal ideation. Nutritionists.

RESUMO

O objetivo foi investigar os fatores associados à depressão e/ou ansiedade em nutricionistas durante a pandemia por COVID-19. Estudo transversal com aplicação das escalas GAD-7 e PHQ-9. Dos 1.018 participantes 60,2% manifestaram rastreio positivo para depressão e/ou ansiedade, com maior força de associação para conflitos muito frequentes nas relações (OR = 11,11; $IC_{95\%}$ 6,61;18,67), uso de medicação para dor (OR = 7,42; $IC_{95\%}$ 4,67;11,79) e pensar sempre sobre a pandemia (OR = 6,5; $IC_{95\%}$ 4,14;10,32). Não estar em tratamento psicoterápico (OR = 0,39; $IC_{95\%}$ 0,27;0,560) e não estar em uso de medicamento psicotrópico (OR = 0,40; $IC_{95\%}$ 0,26;0,60) foram associados a menores chances de rastreio positivo. O estudo resulta em conhecimento epidemiológico aplicável a ações de vigilância, prevenção e controle da ansiedade e depressão entre nutricionistas.

Palavras-chave: Ansiedade. COVID-19. Depressão. Ideação suicida. Nutricionistas.

INTRODUCTION

The year 2020 was marked by the onset of the health crisis triggered by the SARS-Cov-2 infection, affecting, to a greater or lesser extent, all countries[1]. In the first months, the shortage of qualified health professionals, hospital resources, and personal protective equipment, added to the initial lack of reliable information and the lack of articulation of public managers, resulted in an escalation in the number of contaminations and deaths, triggering a permanent alert state[2].

COVID-19 took hold in Brazil as a health emergency, representing a great challenge to people's psychological resilience[3]. The consequences of the pandemic reverberated beyond health, being aggravated by a political crisis that extended to the economic and social spheres[4,5]. Unemployment, changes in work routine, social distancing and its consequences on affective relationships and task performance, as well as uncertainties regarding future life expectations, were factors that deleteriously contributed to fluctuations in the mental state of individuals[6].

The stressful context led to the worsening of mental disorders such as anxiety and depression, which, before the pandemic, affected 9.3% and 5.8% of Brazilians, respectively[7]. A survey carried out in the country between April and May 2020, with the participation of 45,161 adult individuals, revealed that 52.6% felt anxious or nervous and 40.4% often felt sad or depressed[8]. This demonstrates that the consequences of the pandemic affected different dimensions of everyday life, with different impacts on psychic life.

Studies with people who worked directly or indirectly in health services showed worse indicators of generalized anxiety disorder, stress, depression, anguish, and sleep disorders, in addition to fear of getting sick and contaminating colleagues, friends, and family[9-13]. Many studies focused on investigating the mental health of those who worked in the hospital environment, with emphasis on physicians and nurses, and no studies were found that specifically evaluated other health professionals who are part of multidisciplinary teams, such as nutritionists, whose activities during the pandemic included maintaining and restoring the health of hospitalized individuals and supporting frontline medical teams. In addition, they formed multidisciplinary groups for emergency adjustments in the actions of food and nutritional security policies and participated in the planning and management of collective meal production processes in different sectors in which activities had not been paralyzed.

The objective of this work was to investigate the factors associated with depression and/or anxiety in Brazilian nutritionists during the COVID-19 pandemic. Lifestyle, social life,

and health factors are believed to be among the factors that most influence the mental health of these professionals in the evaluated context.

METHODOLOGY

DESIGN, CONTEXT AND POPULATION

This nationwide, cross-sectional study presents the results of the Nutri-Brasil survey (2020), developed through the partnership between the Federal University of Viçosa (UFV) – Rio Paranaíba campus – and the Federal University of Espírito Santo (UFES) – Maruípe campus, Vitória.

Data were collected between July 16 and October 15, 2020, corresponding to the period between the 29th and 42nd week of the epidemiological calendar of notifiable diseases, when an increasing trend in the number of deaths and contaminations was observed, reaching 153,690 deaths on October 17, 2020.

According to the Federal Council of Nutritionists[14], the number of professionals registered in the second quarter of 2020 was 161,964, of whom 46.9% were in the Southeast Region. In order to reach them, the research project was divulged in the federal and regional councils and class entities. The invitation for voluntary participation occurred through social media (Instagram®, Facebook®, and Whatsapp®) and at events in the area. The inclusion criteria in the study were to be a nutritionist working in the national territory and to be 18 years old or older; the exclusion criterion was incomplete completion of the mental health instruments.

VARIABLES

The outcome of interest in the investigation was depression and/or anxiety screening, categorized according to the presence of symptoms into “negative screening” and “positive screening”; the latter category was subdivided into three groups for exploratory analyses: depression without anxiety; anxiety without depression; and comorbid depression and anxiety.

The main explanatory variables were those related to the COVID-19 pandemic, namely: a) lifestyle and clinical (alcohol consumption during the pandemic; use of pain medication; use of sleep medication; psychotherapeutic treatment; and use of medication for mental health reasons); b) work, beliefs and death from COVID-19 (employment during the pandemic;

recurrent thoughts about the pandemic; conflicts in relationships with family, friends and co-workers; fear of losing loved ones; probability of contracting COVID-19; and deaths from COVID-19 -19 between family, friends or acquaintances). The adjustment variables included: a) sociodemographic and economic (gender, age, family income, and marital status); and b) clinical (suicide attempt in life).

DATA SOURCE AND MEASUREMENT

An online questionnaire provided by the Google Forms® platform was used for data collection and management. The questionnaire was completed using a cell phone, computer, or other device with internet access. Initially, the participants accessed the Informed Consent (IC), and, to those who agreed, the research instrument was made available. The semi-structured questionnaire included the following dimensions: 1) sociodemographic and work characterization, and life habits; 2) information and beliefs about COVID-19; 3) professional support; and 4) mental health, through the Generalized Anxiety Disorder scale (GAD-7), validated in Brazil for screening generalized anxiety disorder[15], and the Patient Health Questionnaire (PHQ-9), translated into Portuguese and validated for the Brazilian population for major depressive disorder screening[16]. Screening for anxiety and depression was considered positive when the overall score was equal to or greater than 10 on the GAD-7 and/or PHQ-9, respectively.

The presence of suicidal ideation and attempts was investigated using the following questions proposed by the authors:

A. Have you ever wanted and/or thought about taking your own life?

B. In the past month, have you had or had desires or thoughts of taking your own life?

C. Has anyone in your family (grandparents, parents, children, uncles, siblings, cousins) committed suicide?

D. Have you ever made a suicide attempt?

The answers to the aforementioned questions were evaluated according to screening for anxiety and depression to understand the association between these variables. In this section of the questionnaire, given the situation experienced at the time, but mainly because the participants examined some thoughts, emotions, and behaviors that could cause discomfort, the

researchers made available as an immediate resource (at the end of the questionnaire) the contact of the Centro de Valorização da Vida (CVV), as well as the team, which included psychiatry and psychology professionals.

BIAS CONTROL

The data collection instrument contained detailed instructions in each section, and additional information was included in the questions to facilitate the understanding of the participants. In addition, each one was instructed to clarify their doubts with the project team through the email address provided, if necessary.

STUDY SIZE

The survey encompassed 1,018 participants; however, the sample size was not estimated because it is an online survey that included a convenience sample, considering that it took place in the initial months of the pandemic. Thus, the number of respondents is not representative of the population of Brazilian nutritionists. Among those who participated in the study, 93.9% (n = 952) were women, with a median age of 33 years (25%-75% interquartile 28-40 years). More than half reported professional activity in the southeast region of the country (n = 525; 51.6%).

STATISTICAL METHODS

Data from the electronic form were exported to Microsoft Excel® and subsequently organized, stored, and analyzed using Stata®, version 13.0. Initially, the characteristics of the sample were described, based on frequencies and measures of central tendency. The distributions of the independent variables and their respective associations with depression and/or anxiety screening (negative and positive) were estimated, as well as according to the three groups of exploratory analyses (1. Depression without anxiety; 2. Anxiety without depression; and 3. Comorbid depression and anxiety). Association tests were performed, with a significance level of 5%, processing analyses between depression and/or anxiety screening and sociodemographic, economic, clinical, lifestyle, work, and belief variables.

The chi-square test was applied to identify distributions different from the expected, and logistic regression, based on binomial and multinomial models, to estimate crude and adjusted

Odds Ratio (OR), p-values, and corresponding 95% confidence intervals (95%CI), according to the depression and/or anxiety screening classification and the main explanatory variables. The multiple analysis was adjusted for age, sex, family income, marital status, and suicide attempt, considering the results of the bivariate analyses and the absence of collinearity.

ETHICAL ASPECTS

This research was approved by the Human Research Ethics Committee of the Federal University of Viçosa (CEP/UFV) and by the National Research Ethics Committee (Conep) under opinion 4.157.407 and Certificate of Presentation for Ethical Appreciation (CAAE) 32281220.9.0000.5153. Only the researchers who make up the team registered at Plataforma Brasil accessed the database, which was stored on physical media, in a safe place, under their responsibility. This is a blind study, so no identification data of the participants are presented; the results are released jointly.

RESULTS

Of the total number of participants, 79.0% (n = 802) had completed graduate courses and 90.1% (n = 915) were working professionally; the largest portion maintained some employment relationship (35.1% statutory and 28.0% CLT). A salary range of up to five minimum wages was reported by half of the nutritionists, and 41.5% reported working in the field of clinical nutrition. Regarding family structure, 51.0% lived with spouses, and most reported not having children (62.1%); 34.9% were the head of the family (Table 1).

Table 1. Sociodemographic and occupational characterization and screening for depression and/or anxiety of nutritionists participating in the study, according to Brazilian regions. Nutri-Brasil, 2020. (n = 1,018)

Information	Total
Age, median (25%-75%)	33 (28-40)
Gender, n (%)	
Female	952 (93.9)
Male	62 (6.1)
Graduate studies, n (%)	
None	213 (21.0)
Specialization	476 (46.9)
Master's degree	185 (18.2)
Doctorate degree	141 (13.9)
Region of work	
Northeast	211 (2.7)
North	64 (6.3)
Southeast	525 (51.6)
South	128 (12.6)
Central-West	76 (7.5)
Employment status, n (%)	
Formal contract	284 (28.0)
Self-employed	274 (27.0)
Public servant	357 (35.1)
Student	46 (4.5)
Unemployed	55 (5.4)
Family income in BRL n (%)	
Up to 3 minimum wages	253 (25.0)
> 3 to < 5 minimum wages	253 (25.0)
> 5 to < 10 minimum wages	301 (29.7)
> 10 minimum wages	205 (20.3)
Marital status, n (%)	
Married/Stable Union	519 (51.0)
Dating	191 (18.8)
Separated/Divorced/Widowed	51 (5.0)
Single	256 (25.2)
Children, n (%)	
Yes	385 (37.9)
No	631 (62.1)
Head of household, n (%)	
Yes	353 (34.9)
No	659 (65.1)
Screening for depression and/or anxiety, n (%)	
Non-case	405 (39.8)
Case	613 (60.2)
Depression without Anxiety	78 (7.8)
Anxiety without depression	98 (9.6)
Comorbid depression and anxiety	437 (42.9)
PHQ-9 score	
Mean±SD	10.2±6.5
Median (25%-75%)	10.0 (5.0-14.0)
GAD-7 score	
Mean±SD	10.4±5.8
Median (25%-75%)	10.0 (6.0-15.0)
TOTAL[a], n (%)	1,018 (100.0)

[a] Small difference in the number of participants occurred due to the lack of responses.

Among the evaluated professionals, 60.2% were classified as having a positive screening for depression and/or anxiety, and 42.9% had a positive screening for comorbid depression and anxiety (Table 1). Mean±SD [median (25%-75%)] scores were 10.2±6.5 [10.0 (5.0-14.0)] for PHQ-9 and 10.4±5.8 [10.0 (5.0-14.0)] for GAD-7. Several factors were associated with a greater chance of having anxiety and/or depression (Table 2): a) belonging to the younger age groups: 20-30 years (OR = 3.12; 95%CI 1.84-5.30), 31-40 years old (OR = 2.25; 95%CI 1.33-3.79), 41-50 years old (OR = 2.03; 95%CI 1.14-3.61); b) family income of less than 10 minimum wages: up to 3 minimum wages (OR = 2.66; 95%CI 1.81-3.89); ≥3 and < 5 minimum wages (OR = 2.47; 95%CI 1.69-3.61) and ≥ 5 and < 10 minimum wages (OR = 1.78; 95%CI 1.24-2.55); c) not having a spouse: being single without an affective relationship (OR = 1.46; 95%CI 1.07-1.99), and being single with an affective relationship (OR = 2.08; 95%CI 1.45-2.98); and d) not having children (OR = 1.36; 95%CI 1.01-1.69). Although the female gender was not associated with the outcome, in the exploratory analysis, women were 1.97 times more likely to have comorbid depression and anxiety.

In general, sociodemographic and work characteristics were mainly associated with comorbid depression and anxiety (Table 2). Lower chances of positive screening for depression and/or anxiety (Table 2) were found among professionals: with a doctorate (OR = 0.61; 95%CI 0.40-0.95), public servants (OR = 0.58; 95%CI 0.42-0.80), or self-employed (OR = 0.60; 95%CI 0.43-0.85).

Table 2. Sociodemographic and occupational information of Brazilian nutritionists, according to screening for depression and/or anxiety: distribution and measures of association. Nutri-Brasil, 2020. (N = 1,018)

Information	Non-cases N = 405 Reference	Cases (depression and/or anxiety) N = 613		Cases N = 613					
				Depression without anxiety N = 78		Anxiety without depression N = 98		Comorbid depression and anxiety N = 437	
	N (%)	N (%)	OR (95%CI)[a]	N (%)	OR (95%CI) [b]	N (%)	OR (95%CI) [b]	N (%)	OR (95%CI) [b]
Gender		ns							
Female	375 (92.6)	577 (94.7)	1.44 (0.86-2.41)	70 (90.9)	0.80 (0.33-1.89)	88 (91.7)	0.88 (0.39-1.98)	419 (96.1)	**1.97 (1.07-3.63)**
Male	30 (7.4)	32 (5.3)	Ref.	7 (9.1)	Ref.	8 (8.3)	Ref.	17 (3.9)	Ref.
Age (years)		**							
20 to 30	125 (31.1)	251 (41.3)	**3.12 (1.84-5.30)**	34 (44.1)	**3.81 (1.11-13.0)**	35 (36.5)	1.30 (.58-2.94)	182 (41.8)	**4.07 (2.16-7.66)**
31 to 40	166 (41.3)	240 (39.5)	**2.25 (1.33-3.79)**	31 (40.3)	2.61 (0.76-8.96)	40 (41.7)	1.12 (0.50-2.49)	169 (38.9)	**2.85 (1.52-5.33)**
41 to 50	69 (17.2)	90 (14.8)	**2.03 (1.14-3.61)**	9 (11.7)	1.82 (0.47-7.12)	12 (12.5)	0.81 (0.31-2.08)	69 (15.9)	**2.79 (1.42-5.51)**
50 or older	42 (10.4)	27 (4.4)	Ref.	3 (9.9)	Ref.	9 (9.4)	Ref.	15 (3.4)	Ref.
Graduate studies		**							
None	85 (21.0)	128 (21.0)	Ref.	20 (25.6)	Ref.	16 (16.6)	Ref.	92 (21.0)	Ref.
Specialization	163 (40.4)	313 (51.2)	1.27 (0.91-1.77)	41 (52.6)	1.07 (0.59-1.93)	44 (45.8)	1.43 (0.76-2.69)	228 (52.2)	1.29 (0.90-1.85)
Master's degree	83 (20.5)	102 (16.7)	0.82 (0.54-1.21)	14 (18.0)	0.71 (0.34-1.51)	18 (18.8)	1.15 (0.55-2.41)	70 (16.0)	0.78 (0.50-1.20)
Doctorate degree	73 (18.1)	68 (11.1)	**0.61 (0.40-0.95)**	3 (3.8)	**0.17 (0.05-0.61)**	18 (18.8)	1.30 (0.62-2.75)	47 (10.8)	**0.59 (0.37-0.95)**
Employment situation		**							
Unemployed	14 (3.5)	49 (8.0)	1.73 (0.91-3.29)	8 (10.3)	2.55 (0.95-6.87)	2 (2.1)	0.41 (0.09-1.94)	39 (8.9)	1.91 (0.98-3.71)
Studying	9 (2.2)	29 (4.7)	1.59 (0.72-3.50)	5 (6.4)	2.49 (0.75-8.18)	4 (4.1)	1.30 (0.38-4.53)	20 (4.6)	1.52 (0.66-3.49)
Formal contract	94 (23.3)	190 (31.1)	Ref.	21 (26.9)	Ref.	32 (33.0)	Ref.	137 (31.3)	Ref.
Public servant	164 (40.6)	193 (31.5)	**0.58 (0.42-0.80)**	20 (25.6)	0.55 (0.28-1.06)	38 (39.2)	0.68 (0.40-1.16)	135 (30.9)	**0.56 (0.40-0.80)**
Self-employed	123 (30.5)	151 (24.7)	**0.60 (0.43-0.85)**	24 (30.8)	0.87 (0.46-1.66)	21 (21.6)	**0.50 (0.27-0.92)**	106 (24.3)	**0.59 (0.41-0.85)**
Family income [c]		**							
Up to 3 MW	81 (20.1)	172 (28.3)	**2.66 (1.81-3.89)**	25 (32.0)	**4.40 (1.88-10.24)**	19 (19.6)	1.02 (0.53-1.98)	128 (29.6)	**3.16 (2.07-4.82)**
> 3 to < 5 MW	85 (21.0)	168 (27.6)	**2.47 (1.69-3.61)**	26 (33.3)	**4.35 (1.88-10.10)**	21 (21.6)	1.08 (0.57-2.05)	121 (27.9)	**2.84 (1.87-4.34)**
> 5 to < 10 MW	124 (30.7)	177 (29.1)	**1.78 (1.24-2.55)**	19 (24.4)	2.18 (0.92-5.18)	31 (32.0)	1.09 (0.61-1.95)	127 (29.3)	**2.04 (1.36-3.06)**
> 10 MW	114 (28.2)	91 (15.0)	Ref.	8 (10.3)	Ref.	26 (26.8)	Ref.	57 (13.2)	Ref.
Head of household		ns							
Yes	149 (37.0)	204 (33.5)	0.85 (0.66-1.11)	27 (34.6)	0.90 (0.54-1.50)	37 (38.1)	1.05 (0.66-1.66)	140 (32.3)	0.81 (0.61-1.08)
No	254 (63.0)	405 (66.5)	Ref.	51 (65.4)	Ref.	60 (61.9)	Ref.	294 (67.7)	Ref.
Marital status		**							
Single	92 (22.7)	164 (26.8)	**1.46 (1.07-1.99)**	20 (25.6)	1.75 (0.94-3.25)	19 (19.6)	0.83 (0.47-1.47)	125 (28.6)	**1.60 (1.15-2.23)**
Dating	54 (13.3)	137 (22.4)	**2.08 (1.45-2.98)**	25 (32.1)	**3.73 (2.02-6.88)**	17 (17.5)	1.27 (0.68-2.35)	95 (21.7)	**2.08 (1.41-3.05)**
Separated/Divorced/Widowed	25 (6.2)	26 (4.2)	0.85 (0.48-1.51)	4 (5.1)	1.29 (0.42-3.97)	3 (3.1)	0.48 (0.14-1.66)	19 (4.4)	0.90 (0.48-1.68)

Married/Stable union	234 (57.8)	285 (46.6)	Ref.	29 (37.2)	Ref.	58 (59.8)	Ref.	198 (45.3)	Ref.
Children		*							
Yes	169 (41.7)	216 (56.1)	Ref.	23 (29.5)	Ref.	42 (43.3)	Ref.	151 (34.6)	Ref.
No	236 (58.3)	395 (43.9)	**1.36 (1.01-1.69)**	55 (70.5)	**1.71 (1.01-2.89)**	55 (56.7)	0.93 (0.60-1.47)	285 (65.4)	**1.35 (1.02-1.78)**
Religious activity		ns							
Yes	280 (69.5)	400 (65.5)	0.83 (0.63-1.09)	45 (57.7)	**0.60 (0.36-0.98)**	66 (68.0)	0.93 (0.58-1.50)	289 (66.3)	0.86 (0.64-1.15)
No	123 (30.5)	211 (34.5)	Ref.	33 (42.3)	Ref.	31 (32.0)	Ref.	147 (33.7)	Ref.
Area of expertise		ns							
Teaching, research and extension	88 (21.7)	103 (16.8)	Ref.	8 (10.3)	Ref.	20 (20.4)	Ref.	75 (17.2)	Ref.
Clinical Nutrition	160 (39.5)	263 (42.9)	1.40 (0.99-1.98)	36 (46.1)	**2.47 (1.10-5.58)**	43 (43.9)	1.18 (0.65-2.13)	184 (42.1)	1.35 (0.92-1.96)
Collective health	55 (13.6)	68 (11.1)	1.05 (0.66-1.66)	9 (11.5)	1.8 (0.65-4.94)	12 (12.2)	0.96 (0.43-2.11)	47 (10.8)	1.00 (0.61-1.65)
Collective feeding	63 (15.6)	107 (17.4)	1.45 (0.95-2.21)	12 (15.4)	2.09 (0.80-5.42)	12 (12.2)	0.83 (0.38-1.83)	83 (19.0)	1.54 (0.98-2.42)
Production chain	27 (6.7)	50 (8.1)	1.58 (0.91-2.73)	10 (12.8)	4.07 (1.46-11.35)	9 (9.2)	1.46 (0.59-3.60)	31 (7.1)	1.34 (0.74-2.45)
Sport and physical exercise	12 (3.0)	22 (3.6)	1.56 (0.73-3.34)	3 (3.9)	2.75 (0.64-11.81)	2 (2.0)	0.73 (0.15-3.53)	17 (3.9)	1.66 (0.75-3.70)

Chi-square test: ns = non-significant; * $p < 0.05$; ** $p < 0.01$; [a] bivariate logistic regression; [b] Bivariate multinomial logistic regression; OR: odds ratio; 95% CI: 95% confidence interval; values in **bold** when $p < 0.05$; [c] MW = minimum wages.

When assessing the association between mental disorders and lifestyle and clinical variables (Table 3), the factors related to greater chances of depression and/or anxiety were: a) increased alcohol consumption during the pandemic (OR = 2.62; 95%CI 1.74-3.95); b) increased use of pain medication (OR = 7.4; 95% CI 4.73-11.57); c) increased use of medication to initiate sleep (OR = 6.58; 95%CI 4.05-10.69); d) present thoughts of suicide in life (OR = 2.36; 95%CI 1.63-3.42) and in the last month (OR = 4.13; 95%CI 2.01-8.46); and e) having made a suicide attempt in life (OR = 3.84; 95%CI 1.78-8.23). On the other hand, not undergoing psychotherapeutic treatment (OR = 0.41; 95%CI 0.28-0.56) and not taking psychotropic medication (OR = 0.42; 95%CI 0.28-0.62) were associated with lower odds of having the outcome.

Table 3. Clinical and lifestyle information from Brazilian nutritionists during the COVID-19 pandemic, according to screening for depression and/or anxiety: distribution and measures of association. Nutri-Brasil, 2020 (N = 1,018)

Information	Non-cases N = 405	Case N = 613		Cases					
				Depression without anxiety N = 78		Anxiety without depression N = 98		Comorbid depression and anxiety N = 437	
	N (%)	N (%)	OR (95%CI) [a]	N (%)	OR (95%CI) [b]	N (%)	OR (95%CI) [b]	N (%)	OR (95%CI) [b]
Alcohol consumption		**							
Not Applicable/ no change	313 (79.8)	417 (69.7)	Ref.	58 (75.3)	Ref.	68 (71.6)	Ref.	291 (68.3)	Ref.
Decreased	45 (11.5)	62 (10.4)	1.03 (0.68-1.55)	8 (10.4)	0.96 (0.43-2.14)	13 (13.7)	1.33 (0.68-2.60)	41 (9.6)	0.98 (0.62-1.54)
Increased	34 (8.7)	119 (19.9)	**2.62 (1.74-3.95)**	11 (14.3)	1.74 (0.84-3.64)	14 (14.7)	1.89 (0.96-3.72)	94 (22.1)	**2.97 (1.95-4.54)**
Use of pain medication		**							
Not Applicable/ no change	358 (92.3)	393 (65.7)	Ref.	58 (75.3)	Ref.	75 (79.0)	Ref.	260 (61.0)	Ref.
Decreased	6 (1.5)	10 (1.7)	1.51 (0.54-4.21)	0 (0.0)	-	1 (1.0)	0.79 (0.09-6.70)	9 (2.1)	2.06 (0.73-5.87)
Increased	24 (6.2)	195 (32.6)	**7.40 (4.73-11.57)**	19 (24.7)	**4.88 (2.52-9.48)**	19 (20.0)	**3.77 (1.97-7.24)**	157 (36.9)	**9.00 (5.69-14.24)**
Use of sleep medication		**							
Not Applicable/ no change	369 (94.9)	440 (73.1)	Ref.	62 (80.5)	Ref.	77 (79.4)	Ref.	301 (70.3)	Ref.
Decreased [c]	0 (0.0)	5 (0.8)	--	0(0.0)	--	2 (2.1)	--	3 (0.7)	--
Increased	20 (5.1)	157 (26.1)	**6.58 (4.05-10.69)**	15 (19.5)	**4.46 (2.16-9.18)**	18 (18.5)	**4.31 (2.17-8.53)**	124 (29.0)	**7.60 (4.62-12.48)**
Psychotherapeutic treatment		**							
Yes	54 (13.4)	168 (27.6)	Ref.	18 (23.4)	Ref.	17 (17.7)	Ref.	133 (30.5)	Ref.
No	349 (.86.6)	441 (72.4)	**0.41 (0.28-0.56)**	59 (76.6)	**0.51 (0.27-0.92)**	79 (82.3)	0.71 (0.39-1.30)	303 (69.5)	**0.35 (0.24-0.50)**
Use of medication for mental health reasons		**							
Yes	37 (9.2)	118 (19.4)	Ref.	13 (17.1)	Ref.	10 (10.3)	Ref.	95 (21.8)	Ref.
No	364 (90.8)	490 (80.6)	**0.42 (0.28-0.62)**	63 (82.9)	**0.49 (0.28-0.97)**	87 (89.7)	0.88 (0.42-1.84)	340 (78.2)	**0.36 (0.24-0.54)**
Suicidal ideation in life		**							
Yes	43 (10.6)	134 (22.0)	**2.36 (1.63-3.42)**	17 (21.8)	**2.34 (1.25-4.36)**	10 (10.2)	0.95 (0.46-1.97)	107 (24.7)	**2.75 (1.87-4.03)**
No	361 (89.4)	476 (78.0)	Ref.	61 (78.2)	Ref.	88 (89.8)	Ref.	327 (75.3)	Ref.
Suicidal ideation in the last month		**							
Yes	9 (2.2)	53 (8.7)	**4.13 (2.01-8.46)**	4 (5.1)	2.35 (0.71-7.84)	2 (2.0)	0.91 (0.19-4.26)	47 (10.8)	**5.26 (2.54-10.88)**
No	392 (97.8)	559 (91.3)	Ref.	74 (94.9)	Ref.	96 (98.0)	Ref.	389 (89.2)	Ref.
Suicide attempt in life		**							
Yes	8 (2.0)	44 (7.2)	**3.84 (1.78-8.23)**	4 (5.1)	2.68 (0.78-9.13)	2 (2.0)	1.03 (0.22-4.95)	38 (8.7)	**4.73 (2.18-10.26)**
No	397 (98.0)	569 (92.8)	Ref.	74 (94.9)	Ref.	96 (98.0)	Ref.	399 (91.3)	Ref.
Family history of suicide		ns							
Yes	38 (9.4)	82 (13.4)	1.48 (0.98-2.22)	12 (15.4)	1.74 (0.86-3.51)	10 (10.2)	1.09 (0.52-2.27)	60 (13.8)	1.53 (0.99-2.35)
No	364 (90.6)	530 ()	Ref.	66 (84.6)	Ref.	88 (89.8)	Ref.	376 (86.2)	Ref.

Chi-square test: ns = non-significant; * $p < 0.05$; ** $p < 0.01$; [a] bivariate logistic regression; [b] Bivariate multinomial logistic regression; OR: odds ratio; 95% CI: 95% confidence interval; values in **bold** when $p < 0.05$; [c] OR not calculated due to the absence of non-case participants in this category.

When analyzing the association between factors related to the pandemic and screening for depression and/or anxiety (Table 4), the chances of positive screening were proportional to the impairment of income, considering job loss (OR = 4.14; 95%CI 2.05-8.34), suspension of employment with reduced income (OR = 1.69; 95%CI 1.03-2.76) or maintenance of employment with reduced income (OR = 1.61; 95%CI 1.19-2.16). Similarly, the dose-response effect was identified in the occurrence of the outcome studied for recurrent thoughts about the pandemic; frequency of conflict in family relationships, with friends and/or co-workers; fear of losing loved ones; and likelihood of contracting COVID-19. In addition, participants who reported the occurrence of deaths from this disease among family members, friends, or acquaintances were 1.41 times more likely to have depression and/or anxiety.

Table 4. Association between factors related to the COVID-19 pandemic and screening for depression and/or anxiety in Brazilian nutritionists. Nutri-Brasil, 2020. (N = 1,018)

Information	Non-cases N = 405 Reference	Case N = 613		Cases N=613					
				Depression without anxiety N = 78		Anxiety without depression N = 98		Comorbid depression and anxiety N = 437	
	N (%)	N (%)	OR (95%CI) [a]	N (%)	OR (95%CI) [b]	N (%)	OR (95%CI) [b]	N (%)	OR (95%CI) [b]
Employment during the pandemic		**							
Job loss	10 (2.5)	49 (8.2)	**4.14 (2.05-8.34)**	7 (9.6)	**5.41 (1.93-15.16)**	3 (3.2)	1.21 (0.32-4.53)	39 (9.1)	**4.83 (2.35-9.92)**
Job suspension with reduced income	27 (6.8)	54 (9.1)	**1.69 (1.03-2.76)**	8 (11.0)	2.29 (0.96-5.44)	4 (4.2)	0.59 (0.20-1.77)	42 (9.8)	**1.92 (1.15-3.23)**
Kept the job with reduced income	96 (24.2)	183 (31.0)	**1.61 (1.19-2.16)**	24 (32.9)	**1.93 (1.09-3.42)**	23 (24.2)	0.96 (0.57-1.64)	136 (31.7)	**1.76 (1.27-2.41)**
Kept the job without change in income	263 (66.4)	311 (52.1)	Ref.	34 (46.6)	Ref.	65 (68.4)	Ref.	212 (49.4)	Ref.
Level of satisfaction regarding the amount of information about COVID-19		ns							
Very dissatisfied/Dissatisfied	93 (27.9)	156 (30.9)	Ref.	18 (27.7)	Ref.	19 (22.1)	Ref.	119 (33.6)	Ref.
Satisfied/Very satisfied	225 (65.8)	312 (61.8)	0.82 (0.61-1.12)	39 (60.0)	1.35 (0.97-1.87)	60 (69.8)	1.21 (0.66-2.20)	213 (60.2)	1.76 (1.00-3.09)
Don't know [c]	24 (7.0)	37 (7.3)	----	8 (12.3)	---	7 (8.1)	---	22 (6.2)	---
Recurring thoughts about the pandemic		**							
Infrequent	218 (64.7)	155 (30.7)	Ref.	31 (47.0)	Ref.	35 (40.7)	Ref.	89 (25.2)	Ref.
Most of the time	86 (25.5)	208 (41.2)	**3.40 (2.45-4.70)**	27 (40.9)	**2.27 (1.24-3.91)**	25 (29.1)	**1.81 (1.02-3.20)**	156 (44.2)	**4.44 (3.09-6.37)**
Always	33 (9.8)	142 (28.1)	**6.05 (3.93-9.31)**	8 (12.1)	1.70 (0.72-4.02)	26 (30.2)	**4.91 (2.62-9.17)**	108 (30.6)	**8.02 (5.05-12.71)**
Conflict in relationships with family, friends, and co-workers		**							
Never									
Sometimes	151 (44.9)	87 (17.2)	Ref.	23 (34.8)	Ref.	18 (20.9)	Ref.	46 (13.0)	Ref.
Very frequent	160 (47.6)	266 (52.7)	**2.88 (2.07-2.00)**	37 (56.1)	1.52 (0.86-2.67)	50 (58.1)	**2.62 (1.46-4.69)**	179 (50.7)	**3.67 (2.48-5.44**)
	25 (7.4)	152 (30.1)	**10.55 (6.40-17.37)**	6 (9.1)	1.57 (0.59-4.26)	18 (20.9)	**6.04 (2.77-13.15)**	128 (36.3)	**16.81 (9.78-28.86)**
Fear of losing loved ones		**							
Infrequent									
Most of the time	201 (59.8)	148 (29.4)	Ref.	31 (47.0)	Ref.	28 (32.9)	Ref.	89 (25.2)	Ref.
Always	74 (22.0)	129 (25.6)	**2.36 (1.65-3.37)**	10 (15.1)	0.88 (0.41-1.87)	21 (24.7)	**2.04 (1.09-3.81)**	98 (27.8)	**2.99 (2.02-4.42)**
	61 (18.2)	227 (45.0)	**5.05 (3.54-7.19)**	25 (37.9)	**2.65 (1.46-4.84)**	36 (42.4)	**4.24 (2.39-7.50)**	166 (47.0)	**6.14 (4.18-9.03)**

Likelihood of contracting COVID-19		**							
Never/Unlikely	122 (36.0)	131 (26.0)	Ref.	25 (37.9)	Ref.	23 (26.7)	Ref.	83 (23.6)	Ref.
Likely	159 (46.9)	240 (47.6)	**1.40 (1.02-1.93)**	27 (40.9)	0.83 (0.46-1.50)	43 (50.0)	1.43 (0.82-2.51)	170 (48.3)	**1.57 (1.10-2.24)**
Very likely	58 (17.1)	133 (26.4)	**2.13 (1.43-3.16)**	14 (21.2)	1.18 (0.57-2.43)	20 (23.3)	1.83 (0.93-3.59)	99 (28.1)	**2.51 (1;64-3.85))**
Diagnosis of COVID-19		ns							
Yes	32 (9.4)	50 (9.9)	1.05 (0.66-1.68)	7 (10.6)	1.14 (0.48-2.71)	8 (9.3)	0.99 (0.43-2.23)	35 (9.9)	1.05 (0.63.1.75)
No	309 (90.6)	456 (90.1)	Ref.	59 (89.4)	Ref.	78 (90.7)	Ref.	319 (90.1)	Ref.
Death from COVID-19 among family members, friends or acquaintances		*							
Yes	132 (38.8)	239 (47.3)	**1.41 (1.07-1.87)**	28 (42.4)	1.16 (0.68-1.98)	38 (44.2)	1.24 (0.77-2.01)	173 (49.0)	**1.51 (1.12-2.05)**
No	208 (61.2)	266 (52.7)	Ref.	38 (57.6)	Ref.	48 (55.8)	Ref.	180 (51.0)	Ref.

Chi-square test: ns = non-significant; * $p < 0.05$; ** $p < 0.01$; [a] bivariate logistic regression; [b] Bivariate multinomial logistic regression; OR: odds ratio; 95% CI: 95% confidence interval; values in **bold** when $p < 0.05$; [c] The "don't know" category was disregarded in the analysis.

Adjusted regression models to evaluate the association between factors related to the COVID-19 pandemic and screening for depression and/or anxiety (Table 5) revealed that positive screening was related to increased consumption of alcohol during the pandemic (OR = 2.84; 95%CI 1.86-4.35), use of pain medication (OR = 7.42; 95%CI 4.67-11.79) and sleep medication (OR = 6.30; 95%CI 3.82-10.36); no psychotherapeutic treatment (OR = 0.39; 95%CI 0.27-0.56); and use of psychotropic drugs for mental health (OR = 0.40; 95%CI 0.26-0.60). In addition, the maintenance of the dose-response effect was observed in the presence of the outcome for job/income changes; those who lost their jobs had a greater chance (OR = 4.14; 95%CI 2.05-8.34) of presenting anxiety and/or depression, followed by those with reduced income, either with job suspension (OR = 1.69; 95%CI 1.03-2.76) or not (OR = 1.61; 95%CI 1.19-2.16). Still, recurrent thoughts about the pandemic (OR = 6.05; 95%CI 3.93-9.31), conflict in relationships with family, friends, and co-workers (OR = 10.55; 95%CI 6.40-17.37), and fear of losing loved ones (OR = 5.05; 95%CI 3.54-7.19) were associated with the studied disorders.

The belief that it was very likely to contract COVID-19 was also associated with positive screening for anxiety and/or depression (OR = 2.05; 95%CI 1.35-3.11), which was also associated with the occurrence of deaths from this disease among relatives, friends or acquaintances (OR = 1.56; 95%CI 1.16-2.09).

Table 5. Adjusted models for assessing the association between factors related to the COVID-19 pandemic and screening for depression and/or anxiety in Brazilian nutritionists. Nutri-Brasil, 2020. (N = 1,018)

INFORMATION	NON-CASES N = 405 N (%)	CASES (depression and/or anxiety) N = 613		
		N (%)	MODEL 1 OR (95% CI)	MODEL 2 OR (95% CI)
Alcohol consumption during the pandemic				
Not applicable/No change	313 (79.8)	417 (69.7)	Ref.	Ref.
Decreased	45 (11.5)	62 (10.4)	0.90 (0.59-1.39)	0.90 (0.58-1.39)
Increased	34 (8.7)	119 (19.9)	**2.89 (1.89-4.41)**	**2.84 (1.86-4.35)**
Use of pain medication				
Not applicable/No change	358 (92.3)	393 (65.7)	Ref.	Ref.
Decreased	6 (1.5)	10 (1.7)	1.30 (0.45-3.75)	1.31 (0.45-3.82)
Increased	24 (6.2)	195 (32.6)	**7.65 (4.82-12.14)**	**7.42 (4.67-11.79)**
Use of sleep medication				
Not applicable/No change	369 (94.9)	440 (73.1)	Ref.	Ref.
Increased	20 (5.1)	157 (26.1)	**6.59 (4.01-10.83)**	**6.30 (3.82-10.36)**
Psychotherapeutic treatment				
Yes	54 (13.4)	168 (27.6)	Ref.	Ref.
No	349 (.86.6)	441 (72.4)	**0.37 (0.24-0.53)**	**0.39 (0.27-0.56)**
Use of medication for mental health reasons				
Yes	37 (9.2)	118 (19.4)	Ref.	Ref.
No	364 (90.8)	490 (80.6)	**0.37 (0.25-0.57)**	**0.40 (0.26-0.60)**
Employment during the pandemic				
Job loss	10 (2.5)	49 (8.2)	**3.07 (1.49-6.34)**	**2.90 (1.40-6.01)**
Job suspension with reduced income	27 (6.8)	54 (9.1)	1.40 (0.83-2.34)	1.34 (0.79-2.26)
Kept the job with reduced income	96 (24.2)	183 (31.0)	**1.45 (1.07-1.97)**	**1.39 (1.02-1.90)**
Kept the job without change in income	263 (66.4)	311 (52.1)	Ref.	
Recurring thoughts about the pandemic				
Infrequent	218 (64.7)	155 (30.7)	Ref.	Ref.
Most of the time	86 (25.5)	208 (41.2)	**3.52 (2.50-4.96)**	**3.55 (2.52-5.01)**
Always	33 (9.8)	142 (28.1)	**6.76 (4.29-10.65)**	**6.53 (4.14-10.32)**
Conflict in relationships with family, friends, and co-workers				
Never	151 (44.9)	87 (17.2)	Ref.	Ref.
Sometimes	160 (47.6)	266 (52.7)	**2.80 (1.99-3.95)**	**2.99 (2.11-4.25)**
Very frequent	25 (7.4)	152 (30.1)	**10.97 (6.56-18.36)**	**11.11 (6.61-18.67)**
Fear of losing loved ones				
Infrequent	201 (59.8)	148 (29.4)	Ref.	Ref.
Most of the time	74 (22.0)	129 (25.6)	**2.29 (1.58-3.32)**	**2.27 (1.57-3.29)**

Always	61 (18.2)	227 (45.0)	**5.28 (3.65-7.66)**	**5.13 (3.53-7.45)**
Likelihood of contracting COVID-19				
Never/Unlikely	122 (36.0)	131 (26.0)	Ref.	Ref.
Likely	159 (46.9)	240 (47.6)	**1.37 (0.97-1.91)**	1.36 (0.97-1.91)
Very likely	58 (17.1)	133 (26.4)	**2.03 (1.34-3.07)**	**2.05 (1.35-3.11)**
Death from COVID-19 among family members, friends or acquaintances				
Yes	132 (38.8)	239 (47.3)	**1.59 (1.19-2.14)**	**1.56 (1.16-2.09)**
No	208 (61.2)	266 (52.7)	Ref.	Ref.

Multivariate logistic regression; OR: Odds ratio. 95% CI: 95% confidence interval; values in **bold** when $p < 0.05$.
Model 1: Adjusted for sociodemographic variables (age, sex, family income, and marital status); Model 2: Adjusted by Model 1 + suicide attempt in life.

DISCUSSION

The main finding of the present study was the association of occupational, clinical, lifestyle, and pandemic-related factors with positive screening for anxiety and/or depression among Brazilian nutritionists. Very frequent conflicts in relationships (OR = 11.11; 95%CI 6.61; 18.67), use of pain medication (OR = 7.42; 95%CI 4.67; 11.79), and always thinking about the pandemic (OR = 6.53; 95%CI 4.14; 10.32) had the strongest association. Still, not undergoing psychotherapeutic treatment (OR = 0.39; 95%CI 0.27; 0.56) and not taking psychotropic medication (OR = 0.40; 95%CI 0.26; 0.60) were associated with lower chances of positive screening. As an epidemiological phenomenon, the spread of COVID-19 marked, in different parts of the world, the increase in the prevalence of mental disorders[6,13,17-19].

Our results, in line with the literature[20], corroborate the evidence that, in situations of this nature, the population may present psychopathological manifestations or aggravation. They include behavioral changes such as sleep disorders (insomnia, excessive sleep, and nightmares) and thought disorders (recurring thoughts about the pandemic, the health of family and friends, death, and dying), which are sometimes more prevalent and lasting than the course of the disease.

The pandemic increased the factors associated with clinical symptoms of depression and anxiety in the population, such as concern about COVID-19, low stress tolerance, and the presence of loneliness; family support was associated with low levels of depression[6]. An American survey[21] carried out between the declaration of a state of health emergency and the initial measures of social restriction found high percentages of depression (43.3%, PHQ-8 score $\geq$ 10) and anxiety (45.4%, GAD-7 score $\geq$ 10).

Health professionals were especially evaluated because they are involved in coping with the disease. Despite the particularities (working conditions, gender, and interpersonal relationships) associated with the heterogeneity of this workforce contingent, being on the front line did not represent the main explanatory factor for psychological distress. When comparing the frequency of symptoms of anxiety and depression in Chinese medical teams, consisting mostly of women (87.4%), Liu et al.[13] reported higher values for these outcomes in teams that had characteristics related to loneliness (living alone, not receiving help from friends or care from neighbors and not confiding their problems to others).

Another study[19] carried out with Canadian workers working or not in the health area found, in the initial stage of the pandemic, significantly higher anxiety and depression

symptoms ($p < 0.001$) among those who did not work in this segment. Concern about contamination was considered a factor that contributed to this situation. Although not investigated, issues related to gender – since most respondents were women (86.2%) –, related to staying at work, as well as pre-existing mental disorders, were considered relevant by the authors. Barros et al.[8] observed symptoms such as sadness, nervousness, and sleep disturbances among young adults, women, and people with a history of depression during the COVID-19 pandemic in Brazil.

Women have stood out as a vulnerable group in studies related to mental health in Brazil and abroad[3,8,22,23]. Before the pandemic, Gonçalves et al.[23] already pointed out a prevalence of depression of 19.7% in women aged between 20 and 59 years. Previous mental illness and low education were risk factors associated with depression, while protective factors included being married or living with a partner, performing regular physical activity, and reporting positive self-rated health.

Considering that Nutrition is a predominantly female profession, as observed among the respondents of this study, it is worth recognizing the susceptibility of women who are head of the family and who are subjected to inequalities found in other spheres of society[14,24]. This is relevant from the perspective of the division of tasks by gender, in which it is usual for women to be responsible for domestic activities, which include taking care of the family, and it is up to them to reconcile them with professional activities, whether either by choice or by necessity. This situation is naturalized as part of social life, but it is established as a hidden, unaccounted dimension of the (over)load of work[24]. Being the head of the family has been a growing trend in recent decades, as pointed out by the Institute of Applied Economic Research (IPEA)[24], which has already found an increase of 12.3% in the number of women in this condition in the period between 1995 and 2009.

Thinking about the reality of women in the context of the pandemic revisits historical issues, not analyzed in the present study, but existing. There was an overload of the professional and domestic roles played by them, causing physical, cognitive, and affective exhaustion, especially among those who worked in the health area. A research[12] carried out with 1,422 Spanish workers in this segment showed symptoms of depression and anxiety in 46.0% and 58.6% of the evaluated individuals, respectively. The highlight was the condition of being a woman and working a 12- or 24-hour shift as risk factors for these mental disorders, in addition to the concern about the infection of a family member[12].

The social isolation imposed by COVID-19 impacted employment and income. In Brazil, legislation was published that made labor relations more flexible through strategies such as the proportional reduction of working hours and wages and the temporary suspension of the employment contract. Despite the intention of minimizing socioeconomic losses, these measures objectively affected the lives of the participants in the present study: those who lost their jobs were more likely (OR = 4.14; 95%CI 2.05; 8.34) to develop anxiety and /or depression, followed by those who had a reduction in income, either with suspension of employment (OR = 1.69; 95%CI 1.03; 2.76) or not (OR = 1.61; 95%CI 1.19; 2.16).

Depression may be related to unemployment and its consequences, such as precarious housing and food conditions. In addition to the existence of a work relationship, the scenario in which it takes place must be considered, because work is consecrated as a place where a good part of the time is invested, as well as where social relationships are established, forming a professional identity and expectations of achieving personal appreciation. In addition, the workspace is configured as a stage for conflicts that can trigger the emergence of mental disorders. It is important to reflect on how the environment influences people's lives, in which exposure to adverse working conditions is a risk factor for health. Added to this are the multiple invisible roles played by women without due social, financial, and family recognition[23].

In the present study, the lifestyle was impacted by the pandemic. The increase in alcohol consumption (OR = 2.62; 95%CI 1.74; 3.95), use of pain medication (OR = 7.4; 95%CI 4.73; 11.57), and the increase in the use of medication to initiate sleep (OR = 6.58; 95%CI 4.05; 10.69) were related to greater chances of depression and/or anxiety. Changes in mental health conditions linked to changes in lifestyle were also evidenced in a Polish study[22]. The authors evaluated alcohol intake, sleep disorders, and depressive symptoms among health professionals during the pandemic and compared these results with the pre-pandemic period. There was an increase in alcohol intake – which was correlated with more time spent at work – in addition to worse symptoms of depression and insomnia, which were greater among women. The growth in the consumption of alcoholic beverages and tobacco was also observed during the period of social restriction in Brazilian adults[25].

The results found in the analysis of suicidal ideation in life (OR = 2.36; 95%CI 1.63; 3.42) and the last month (OR = 4.13; 95%CI 2.01; 8.46) among nutritionists indicate the need to improve the attention to the mental health of this professional and to promote actions to respond to its consequences. A Brazilian study evaluated the motivations for seeking online mental health care during the COVID-19 pandemic and identified that more than 89% of

accesses were carried out by women aged between 40 and 59 years and that among such motivations stood out anxiety, depression, and suicidal ideation[26].

Despite the association between anxiety and/or depression and suicide risk, there is no evidence that the pandemic has contributed, in middle and high-income countries, to the increase in such risk. Nevertheless, possible socioeconomic changes that may have an impact on this indicator have to be monitored. This is because mental suffering was present during the pandemic period, regardless of the increase in the number of suicides, and it is important to consider it a complex phenomenon[30].

The present study is the first to investigate the mental health of nutritionists in the country and the impacts of the pandemic on the category. The limitation of this study refers to the sampling, which may have been influenced by the difficulty of accessing the internet or, even, by work overload conditions. However, there was a similarity regarding the sociodemographic and work characteristics found in a previous publication that addressed the profile of Brazilian nutritionists - the distribution of respondents was smaller in the North, Northeast, and Central-West regions, where, historically, the number of professionals is smaller[14]. In order to minimize the potential biases of convenience sampling, we sought to increase the number of participants by investing in publicizing and extending the period of data collection.

The data obtained contributes to increasing epidemiological knowledge applicable to surveillance, prevention, and control of anxiety and depression among Brazilian nutritionists. They allowed us to identify an association between anxiety and depression with work, clinical, lifestyle, and pandemic-related factors. Although the end of COVID-19 was decreed by the World Health Organization (WHO) on May 5, 2023, what was presented in the present study sheds light and adds evidence regarding the need to develop strategies that make it possible to anticipate some effects of a pandemic.

Class entities have to be prepared to assist in the mediation of conflicts related to work, thinking about the protection of the professional. Health services and bodies must assess society's demands in the context of mental health, safely and quickly, developing public policies for screening anxiety and depression and mitigating their damage. Our results also reinforce the importance of a gender perspective for actions, considering the socioeconomic transformations of the post-pandemic.

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