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Fear of COVID-19, food insecurity and anxiety in women dwelling in João Pessoa, Paraíba: a cross-sectional study

Medo da COVID-19, insegurança alimentar e ansiedade em mulheres residentes em João Pessoa, Paraíba: um estudo transversal

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ABSTRACT

Objective
To describe the fear caused by the COVID-19 pandemic and to analyze the association of food insecurity and fear of COVID-19 as anxiety predictors in women who are *Sistema Único de Saúde* users.

Method
A cross-sectional study was conducted in 2021 with 73 women out of 118 who were followed up in a cohort study in the municipality of João Pessoa, Paraíba, Brazil. The women were selected in health units before the pandemic and their telephone contact enabled remote data collection. Socioeconomic and demographic information, food insecurity, fear of COVID-19, and anxiety were assessed. The Brazilian Food Insecurity Scale, the State-Trait Anxiety Inventory, and the Fear of COVID-19 Scale were used. An association between variables was performed using the chi-square test and a logistic regression verified the independent effect of variables concerning anxiety. A 5% significance level was considered.

Results
The median age of the women was 33 years and the median per capita family income was BRL 665.33. Most of them lived with a partner and declared themselves mostly black or brown. Lower income and greater severity of food insecurity were associated with greater fear of COVID-19, and this feeling increased the probability of women being in a high anxiety state (OR=3.167).

Conclusion
The most vulnerable women, with lower income and greater food insecurity had more fear of COVID-19 which increased their anxiety. Even after the pandemic is over, the effects of these events can maintain a state of mental distress that must be considered and properly cared for.

Keywords: Anxiety disorders. COVID-19. Fear. Food security.

RESUMO

Objetivo
O estudo teve como objetivo descrever o medo causado pela pandemia da COVID-19 e analisar a associação da insegurança alimentar e do medo da COVID-19 como preditores da ansiedade em mulheres usuárias do Sistema Único de Saúde.

Métodos
Trata-se de um estudo transversal realizado em 2021 com 73 mulheres de um total de 118 que foram acompanhadas em um estudo de coorte no município de João Pessoa, Paraíba, Brasil. As mulheres foram selecionadas em unidades de saúde antes da pandemia, e o contato telefônico possibilitou a coleta de dados de forma remota. Informações socioeconômicas e demográficas, sobre insegurança alimentar, medo da COVID-19 e ansiedade foram avaliadas. Utilizou-se a Escala Brasileira de Insegurança Alimentar, o Inventário de Ansiedade Traço-Estado e a Escala de Medo de COVID-19. A associação entre variáveis foi realizada com teste qui-quadrado, e a regressão logística verificou o efeito independente das variáveis com relação à ansiedade. Considerou-se significância de 5%.

Resultados
A mediana da idade das mulheres foi de 33 anos, e a renda familiar per capita foi de R$ 665,33. As mulheres, em sua maioria, conviviam com companheiro e se autodeclararam pretas ou pardas. Menor renda e maior severidade da insegurança alimentar estiveram associadas a maior medo da COVID-19, e esse sentimento aumentou as chances de as mulheres estarem em estado de alta ansiedade (OR=3,167).

Conclusão
As mulheres mais vulneráveis, com menor renda e maior insegurança alimentar tiveram mais medo da COVID-19, e isso colaborou para o aumento da ansiedade dessas mulheres. Mesmo com o fim da pandemia, os efeitos dessa fase podem manter um estado de sofrimento mental que precisa ser considerado e cuidado apropriadamente.

Palavras-chave: *Transtornos de Ansiedade. COVID-19. Medo. Segurança alimentar.*

INTRODUCTION

The limitations imposed by the Coronavirus Disease 2019 (COVID-19) pandemic, which began in 2020, led to a reduction in interpersonal relationships and had a negative impact on quality of life, raising feelings of fear and affecting people's mental health [1,2]. The fear generated by the ability to identify situations that represent a potential threat has already been observed in previous epidemics, such as Severe Acute Respiratory Syndrome (SARS) [3] or Middle East Respiratory Syndrome Coronavirus (MERS-CoV) [4] which was responsible for the increase of anxiety levels both in individuals with some type of pre-existing mental health impairment, and in healthy individuals [5,6].

Until the vaccines became available and vaccination campaigns were implemented, the measures to curb the spread of the virus included cities in lockdown, physical distancing, use of masks, closing schools and public places. These sudden changes in living conditions caused consequences for health and quality of life depending on social conditions, with the poorest being the most affected [7-14].

A consequence of poverty and social inequalities is the lack of access to food, which is characterized as Food Insecurity (FI) [15]. During isolation food insecurity was impacted by the socioeconomic situation [16]. During that period, the most susceptible population that was already

in a situation of poverty and socioeconomic restrictions, like black people, indigenous population, *quilombolas*, fishermen, the elderly and women, experienced an enhancement of vulnerability and social inequality [17].

The restrictions of social policies imposed by the Government in Brazil, particularly those aimed at food and nutritional security, like the temporary closure of food distribution establishments, the suspension of food purchases by the *Programa Nacional de Alimentação Escolar* (National School Feeding Program) [16], the extinction of the *Conselho Nacional de Segurança Alimentar e Nutricional* (National Council for Food and Nutrition Security), hampered the Human Right to Adequate Food, aggravating particularly the conditions of people with a higher degree of vulnerability [18]. Experiencing FI is associated with health adverse effects including adverse effects on mental health, yielding depression and anxiety symptoms [19-21].

According to the report by the *Inquérito Nacional sobre Insegurança Alimentar no Contexto da Pandemia da Covid-19 no Brasil* (National Survey on Food Insecurity in the Context of the COVID-19 Pandemic in Brazil), out of 211.7 million Brazilians, 116.8 million experienced some degree of food insecurity; actually 43.4 million did not have enough food and 19 million suffered from hunger [22].

Among the social inequalities in Brazil, there is also the inequality associated with gender. Women are in worse conditions when they are heads of household compared to men because this condition has a negative impact on the severity of the family's FI [23]. Women with fear of COVID-19 and in an FI situation are likely to experience high levels of anxiety. It is important to understand the relationship between fear of COVID-19 and food insecurity. Studying this relationship contributes to filling the gaps in the literature, since, to our knowledge, no study has investigated the relationship between fear of COVID-19 and food insecurity and anxiety in women.

This study sought to describe women's perception of fear caused by the COVID-19 pandemic, in the framework of food insecurity, anxiety, use of the *Sistema Único de Saúde* (SUS, Unified Health System) health service and women dwelling in the municipality of João Pessoa (PB), Brazil. The study also aimed at reviewing the association between food insecurity and fear of COVID-19 as predictors of anxiety in that audience.

METHODS

Cross-sectional study with women who participated in a follow-up survey carried out between the years 2018 and 2020 with the objective of evaluating the causal relationships of food insecurity with health conditions and quality of life. This cohort study selected two comparison groups: pregnant and non-pregnant women, all users of the SUS, aged 18 years or older, who did not present neurological, psychiatric, metabolic or communication problems, and among the pregnant women, those with normal gestational development.

To set up the cohort, all women who visited the *Unidade Básica de Saúde* (Basic Health Units) for routine consultations in two of the five Sanitary Districts in the Municipality of João Pessoa (PB) and who met the inclusion criteria, were invited to participate in the survey. The women were recruited until completing the required sample's participants' number. At completion of the cohort, 118 women were under follow up; complete data on socioeconomic and demographic characteristics were collected in addition to a telephone contact and other information of interest to the original investigators. The availability of this information allowed us, at the time of the pandemic, to carry out this survey using remote data collection, via telephone. All 118 women were included, and we were able to contact and apply the complete questionnaire to 73 of them. At least three contact

calls attempts were made using the telephone number provided by those women interested in participating in the interview; the calls were made on different days and times to be able to locate the survey candidates, and at least one contact attempt was made via WhatsApp® to cell phones with an application account. Losses were mostly related to telephone number change or lack of telephone service, plus a few cases of refusal to participate.

Three scales were applied to assess the situation of food security or insecurity, the assessment of fear of COVID-19, and the level of women anxiety respectively.

Food insecurity was measured by the *Escala Brasileira de Insegurança Alimentar* (EBIA, Brazilian Food Insecurity Scale), an instrument validated in Brazil [24], which deploys 14 questions with dichotomous answers referring to the last three months; eight questions were applied in all households and six more questions when the households had residents under the age of 18 [25]. The EBIA classifies families into four categories, according to the total score of affirmative answers: food security, mild food insecurity, moderate food insecurity and severe food insecurity. In this study, this variable was dichotomized into food security and mild food insecurity vs. moderate food insecurity and severe food insecurity, with the characteristic of the latter being food insecurity with quantitative food restriction.

The Fear of COVID-19 Scale (FCV-19S) is a self-report scale, validated in Brazil [26-34], consisting of seven items evaluated on a 5-point Likert-type scale, ranging from 1 "totally disagree" to 5 "totally agree", with total scores ranging from 7 to 35 points. The higher the score, the greater the fear reported [35]. In the literature, different suggestions for classifying the scores obtained from the scale [27,28] are available. This study used the median to categorize the groups into COVID-19 "major fear" and "minor fear"; the version of the scale used was the one proposed by Cavalheiro and Sticca in 2020 [29].

Anxiety was assessed using the State-Trait Anxiety Inventory, a scale that measures the subjective state of anxiety. The state-anxiety subscale which refers to a transient emotional response was used; the scale includes twenty items on a Likert-type scale, with four degrees of intensity. Its score ranges from 20 to 80 points and the higher the score, the greater the anxiety. For the analyses, women were categorized into "Low Level of Anxiety", when they scored up to 40 points, and "High Level of Anxiety", for scores greater than 40 points [36].

Since this is a convenience sample in which the inclusion criteria are independent of the study variables, the formation of the comparison groups was carried out according to the classification of women in the categories of food security and fear of COVID-19, considered independent variables. The dependent variable of the study was the response to the state-anxiety inventory.

Socioeconomic and demographic characteristics, already available in the cohort records, were used to control the relationships reviewed. The following aspects were considered: women's age (≤33 years old and >33 years old), marital status (lives with a partner versus does not live with a partner), number of residents in the household (up to 3 residents or more than 3 residents), per capita income (up to ½ minimum wage and more than ½ minimum wage), self-reported skin color (white, black, brown and yellow), education (illiterate, elementary, high school and college education), occupation (inactive and active) and government income transfer program (included and not included).

Responses to the COVID-19 fear scale were graphically described with the frequency indication of each item on the scale and according to anxiety categories (low vs. high) and food security situation (food security/light FI vs moderate FI /serious). The internal consistency of this scale was assessed using Cronbach's alpha coefficient.

The sample was described considering the total frequencies of the variables, as well as according to the COVID-19 fear classification. The association between variables was tested using Fisher's exact or chi-square test, considering a significance level of 5%.

Variables that were associated with state anxiety were included in a multiple logistic regression model to estimate the independent effect of fear of COVID-19 and food insecurity on the risk of high anxiety (OR, 95% CI). The analyses were performed using the R Software.

The investigation project was submitted to the Research Ethics Committee of the Health Sciences Center of the Federal University of Paraíba. It was compliant with all the Guidelines and Norms for Research involving human beings, according to the Resolution nº 466/12 of the National Health Council and was approved under the Opinion number 2,413,361. All the survey participants were duly informed regarding the objectives of the study and signed the Free and Informed Consent Form.

RESULTS

Seventy-three women who participated in the study indicated a median per capita income of BRL 665.33; they were 33 years old (median) and, most of them lived with a partner; they described their skin color as mostly black/brown; all had completed high school and lived in households with up to 3 residents (Table 1).

Table 1 – Absolute and relative frequencies of sociodemographic and economic variables for the year 2018, food security status and state-anxiety data for 2021, according to the median of fear of COVID-19 (n=73). João Pessoa (PB), Brazil, 2022.

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Characteristics	Minor Fear of COVID-19		Major Fear of COVID-19		Total		χ^2
	n	%	n	%	n	%	*p*
Age group**							
≤33 years	24	60.0	16	40.0	40	54.8	0.834
>33 years	19	57.6	14	42.4	33	45.2	
Marital status**							
Does not live with a partner	16	53.3	14	46.7	30	41.1	0.419
Lives with a partner	27	62.8	16	37.2	43	58.9	
Number of residents in the household**							
Up to 3 residents	31	70.5	13	29.5	44	60.3	0.013*
More than 3 residents	12	41.4	17	58.6	29	39.7	
Per capita income**							
Up to ½ minimum wage	10	41.7	14	58.3	24	32.9	0.036*
More than ½ minimum wage	33	67.3	16	32.7	49	67.1	
Self-declared skin color**							
White	7	50.0	7	50.0	14	19.2	
Black	7	77.8	2	22.2	9	12.3	0.392
Brown	28	59.6	19	40.4	47	64.4	
Yellow	1	33.3	2	66.7	3	4.1	
Education**							
Illiterate	2	20.0	8	80.0	10	13.7	
Elementary	6	75.0	2	25.0	8	11.0	0.054
High School	22	62.9	13	37.1	35	47.9	
College	13	65.0	7	35.0	20	27.4	
Occupation**							
Inactive	17	53.1	15	46.9	32	43.8	0.375
Active	26	63.4	15	36.6	41	56.2	

Table 1 – Absolute and relative frequencies of sociodemographic and economic variables for the year 2018, food security status and state-anxiety data for 2021, according to the median of fear of COVID-19 (n=73). João Pessoa (PB), Brazil, 2022.

Characteristics	Minor Fear of COVID-19		Major Fear of COVID-19		Total		χ^2
	n	%	n	%	n	%	*p*
Government income transfer program**							
Not included	34	59.6	23	40.4	57	78.1	0.807
Included	9	56.2	7	43.8	16	21.9	
Food Security Situation							
Food Security/Light Food Insecurity	39	66.1	20	33.9	59	80.8	0.010*
Food Insecurity (moderate/severe)	4	28.6	10	71.4	14	19.2	
State-anxiety							
Low Anxiety Level	19	76.0	6	24.0	25	34.2	0.032*
High Anxiety Level	24	50.0	24	50.0	48	65.8	
Total	43	58.9	30	41.1	73	100	

Note: *For frequency with *p*-value <0.05, Fisher's chi-square or exact test was used. **Information collected in 2018.

The evaluation of the COVID-19 fear scale showed that, in the sample, thirty women interviewed were classified as having the greatest fear, which represents 41.1% of the study sample. The observed frequency of food insecurity was even higher, reaching 52.0% of the women when the prevalence of all levels of food insecurity was pooled (data not shown), with 19.2% in the moderate and severe levels of food insecurity. Anxiety assessment yielded 65.8% of participants with a high level of state-anxiety (Table 1).

The positive response to fear of COVID-19, in turn, increases significantly among women in a more vulnerable situation, which is the case of those living in households with more than 3 members (58.6%), whose income was less than ½ minimum wage per month (58.3%) and who experienced access to food deprivation identified as moderate or severe food insecurity (71.4%). Women classified as having a high level of anxiety also scored higher to fear of COVID-19 (50.0%) (Table 1).

Observing the items on the COVID-19 fear scale, the less severe items showed a higher frequency of positive responses, namely: feeling uncomfortable at thinking about the coronavirus was positive for 82% of the women interviewed, as well as recognizing that the greatest fear experienced at the time of the interview was the aforementioned virus (79% of women). Having a sleep problem, in turn, was answered positively by 22% of the women (Figure 1).

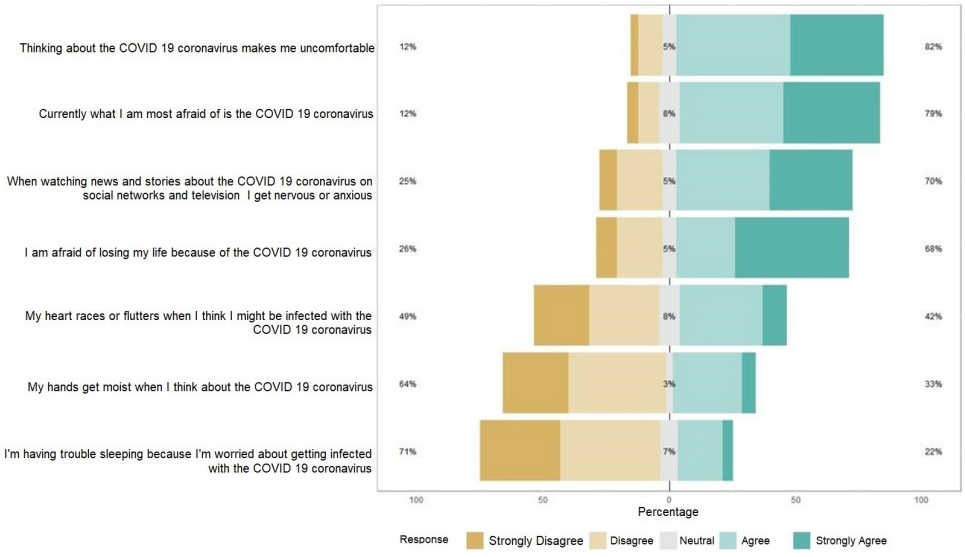

Figure 1 – Fear of COVID-19 in women using Sistema Único de Saúde based on the COVID-19 Fear Scale.

When the answers to the items were stratified by the characteristic of food security/mild food insecurity vs moderate or severe food insecurity, and by the characteristic of low *vs*. high level of anxiety, six of the seven items had a higher frequency in situations of greater women vulnerability, characterized by situations of moderate/severe FI and high level of state-anxiety. In both cases, only the item referring to feeling uncomfortable when thinking about the coronavirus was more frequent among women with food security or mild food insecurity (91% *vs* 74%) and among women with a low level of state-anxiety (84% *vs* 81%) (Figures 2, 3).

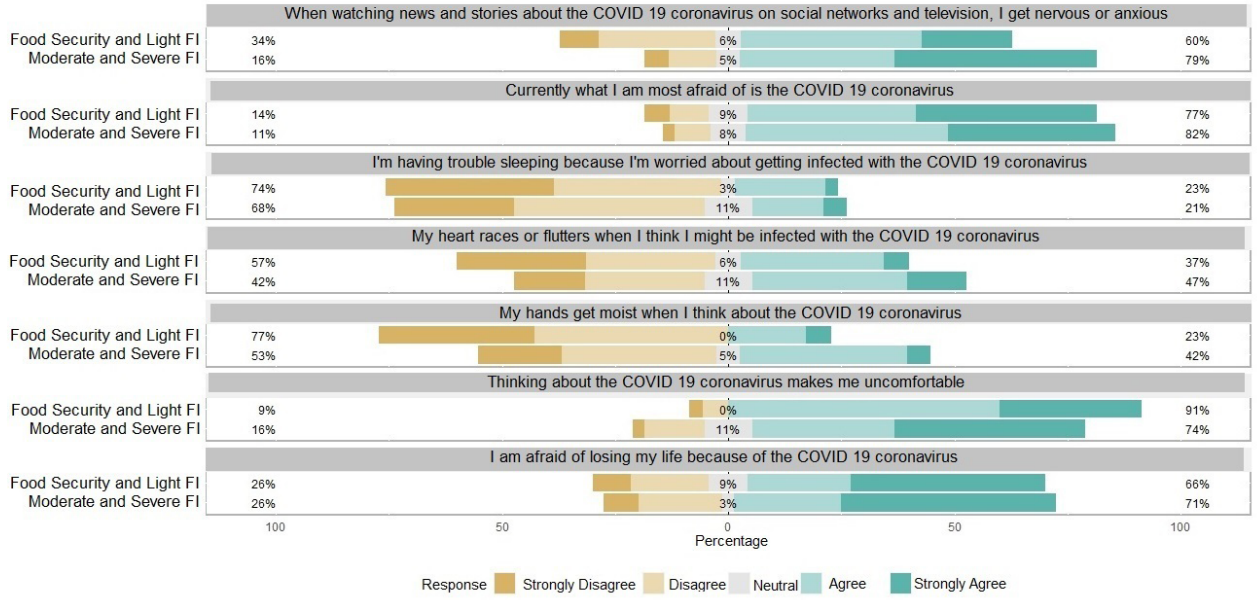

Figure 2 – Association between food (in)security and fear of COVID-19 in women using the *Sistema Único de Saúde*.

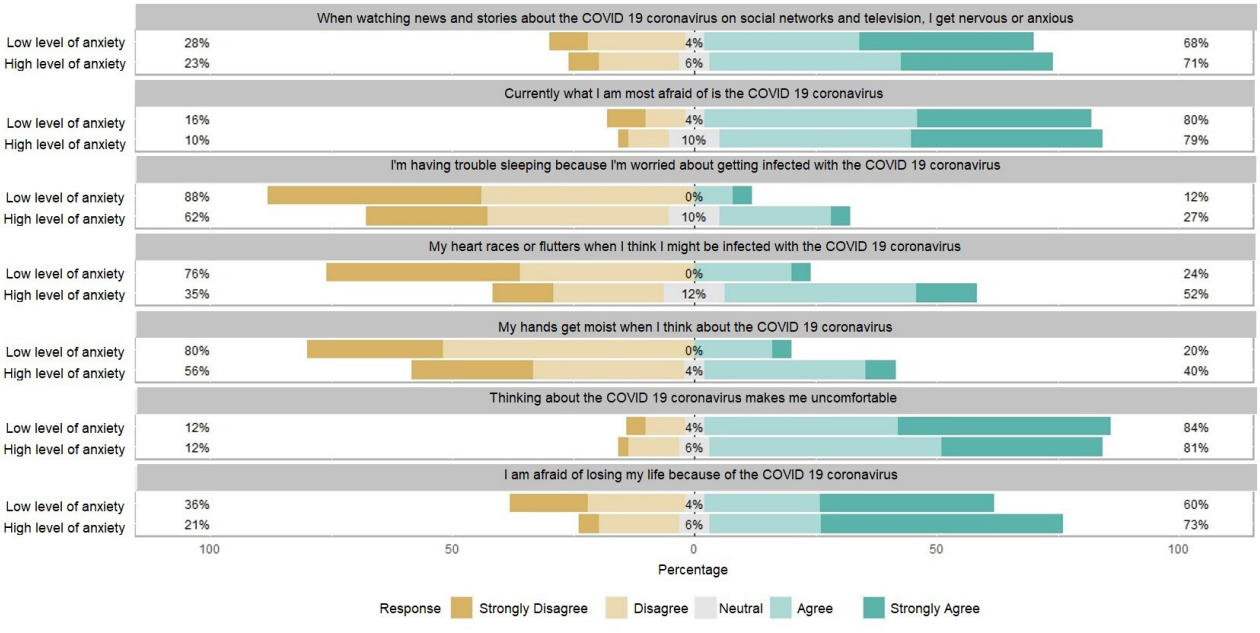

Figure 3 – Association between state anxiety and fear of COVID-19.

The COVID-19 fear scale showed satisfactory internal consistency among the women in the study, with a Cronbach's alpha coefficient of 0.822, which means high reliability of the data. The binary logistic regression model showed that fear of COVID-19 was the only variable associated with the dependent variable: state-anxiety (p-value=0.028). The variables food security situation, per capita income and number of residents in the household were also included in the model because they were associated with fear of COVID-19 and controlled for potential confounding (Table 2).

Table 2 – Univariate and multivariate model logistic regression with anxiety as a dependent variable. João Pessoa (PB), Brazil, 2022.

Variables	Crude OR	Adjusted OR	95% CI		p-value
			Minor	Major	
Fear of COVID-19	3.17*	3.28	1.003	10.778	0.049
Food security situation**	1.38	1.454	0.305	6.926	0.639
Per capita income	0.70	1.722	0.549	5.407	0.352
Number of residents in the household	2.18	0.204	0.204	2.678	0.646

Note: *p<0.050. **Food security situation (Food security and mild food insecurity / moderate food insecurity and severe food insecurity).

Women who gave a positive response on the scale for fear of COVID-19 were 3.28 times more likely to have a high level of state-anxiety, when compared to women who had lower scores. This effect remained virtually the same and still significant with the presence of control variables, demonstrating the independent effect of fear of COVID-19 associated with anxiety in the women assessed.

DISCUSSION

The present study evaluated the frequencies of occurrence of three important conditions experienced by women who have the SUS as a reference, during the period of the new coronavirus pandemic (2019) and the relationship between food insecurity, state-anxiety and fear caused by the COVID-19 pandemic.

In this connection, this work should contribute towards:

1) The applicability of the COVID-19 fear scale in a sample of women similar to the general population of women who are assisted by the SUS in the city of João Pessoa (PB), Brazil. 2) Confirm that the greater the vulnerability of the women surveyed, caused by – (a) lower per capita family income; (b) greater number of residents in the household and (c) greater severity of food insecurity – the greater the fear of COVID-19. 3) Demonstrate that the feeling of fear of COVID-19 has an independent effect, increasing the probability of women being in a state of high anxiety.

Considering the need to measure the extent to which fear of COVID-19 can affect individuals, given that fear enhancement can amplify the damage of the disease itself and be directly linked to its transmission rate, to its morbidity and mortality [37], the FCV-19S was issued on the same month of the WHO pandemic declaration (March 2020) [38]. The instrument was considered a fundamental assessment tool [35], and its scale was translated and validated by Brazilian researchers [26,27].

Initially, the scale was validated in Brazil in an adult population by two different groups of researchers [26,27]. Subsequent validations were also published with individuals of both genders [28-31,33,34] and robust psychometric tests were performed in all of them in order to investigate the validity and reliability of the scale in the Portuguese language version for the Brazilian population.

The verification of the FCV-19S applicability occurred through confirmatory and exploratory factor analysis, with satisfactory results [26-31,34]. The reliability and internal consistency of the data were verified using the Cronbach's Alpha scale [26-35], like in our study.

Several studies have identified a unifactorial structure of the FCV-19S [26,28,30-35]; however other studies describe this scale with two factors, the first related to "Emotional Reactions", which comprises questions 1 (fear), 2 (discomfort to think), 4 (fear of losing life), 5 (nervousness and anxiety) and the second related to the "Physiological Symptoms" of fear, which comprises questions 3 (moist hands), 6 (I can't sleep) and 7 (heart racing, palpitations) [27,29,39]. In this study, responses to the items "currently what I am most afraid of is the coronavirus", "thinking about the coronavirus makes me uncomfortable", "I am afraid of losing my life because of COVID-19", "when watching news and stories about the coronavirus on social networks and television, I get nervous or anxious", were the items that had the highest number of affirmative answers and are the issues referring to emotional characteristics.

The fear of COVID-19 in this study was present in greater proportion in women who lived in households with more than three residents and with a situation of food insecurity at its highest levels. Women who reported the greatest fear of the virus were also those who had the lowest per capita income, approximately half of a minimum wage, which corresponded to BRL 477.00 in 2018, and those who experienced the highest levels of state-anxiety [40].

The effects of the COVID-19 pandemic on social inequalities in Brazil can be aggravated by previous existing conditions [41], and increased food insecurity is one of them [42,43] just like structural hunger, characterized by its chronicity or permanence, a consequence of inconsistent and disparate economic, social and political policies. In countries like China and the United States, famine may be caused by a catastrophe such as floods, war, droughts, and currently, by the pandemic, but it is a short-lived event, due to the exceptionality of its cause [41].

The main exposure factors in determining food insecurity are family income, number of individuals in the household and type of housing (43%). The concern about losing a source of income, not being able to work, or being terminated as a result of the pandemic, promotes the feeling of distress caused by insufficient income to purchase food [44], and can lead to greater mental instability [40].

Income reduction enhances extreme poverty, limits purchasing power and access to food; it further increases vulnerability [42,45], which affects disproportionally women and the populations of the Northeast and North regions [46]. People with lower income also have an approximately 2.5 times greater risk of developing anxiety and depressive symptoms. Moreover, the number of family members constitutes a risk factor for mental health. As a matter of fact, psychological disorders are more prevalent in families with more than five members [47].

Exposure to food insecurity contributes to a decrease in the consumption of quality food like fruits and vegetables enhancing the risk of chronic non-communicable diseases with consequent impact on public health. Food insecurity may also increase early mortality rates in the population experiencing food insecurity [48,49].

In this study, food insecurity is also caused by the increase in the cost of living, including food, a condition that frequently occurred during the pandemic period. The basic food basket in João Pessoa was worth BRL 495.00 [50] during data collection in 2021, which is equivalent to an increase of 42.65% compared to the 2018 pre-pandemic value [51].

Gender was found to be a significant predictor of mental health problems in a large number of studies, according to the results of a systematic review with meta-analysis [47]. In a study carried out online with a mostly female population, it was observed that anxiety was positively related to increased fear of the current coronavirus pandemic [52]. As with the 2009-2010 swine flu pandemic and the 2015-2016 Zika virus outbreak, anxiety increased as fear increased [53,54]. Fear of COVID-19 during pregnancy can affect anxiety caused by the virus, as well as indirectly affect maternal mental health during that period, including the exacerbation of concerns about gestational development [55].

Studies point to a relationship between food insecurity and gender vulnerability [56], with women being more susceptible to changes in the food system, reflected in food consumption. Researchers have demonstrated that these relationships are expressed in the high prevalence of associated food insecurity, in addition to nutritional and lifestyle factors, unstable situation of informal workers in relation to the socioeconomic level and the gender of the head of the family. Gender inequality is revealed in issues of food and nutrition security as one of the results of unequal access and control of income [57], even leading women to abstain from their own food to save that of their children [23]. It should be added that limited access to education is an important factor in this connection and, consequently, of greater vulnerability to food insecurity [58].

Physical distancing, despite being a recommendation to protect against the spread of the disease, resulted in anxiety, particularly for vulnerable groups [59]. If, on the one hand, physical distancing was mandatory, on the other hand, the stay-at-home policy caused an inevitable coexistence increasing the risk of imbalances in family dynamics, generating tense situations, contributing to the enhancement of stress induced by the routine change [44].

On the other hand, during physical isolation, there was a reduction in requests for the delivery of ready-to-eat meals, as preference was given to buying groceries and preparing meals at home, which contributed to a reduction in the consumption of fried foods. Isolation also contributed to changing the number of meals per day to four main meals and one or two snacks. Nevertheless, it was difficult to find foodstuffs thus affecting vegetables consumption [60]. In Brazil, populations that were able to maintain access to food increased their consumption of ultra-processed foods, mainly due to their low cost, variety and shelf life [61].

According to a systematic review and meta-analysis Education has been a significant factor of depression, anxiety and stress in some of the studies conducted during the COVID-19 pandemic in Bangladesh [47]. In our study, most of the women had completed secondary education, but no significant associations were observed between the two variables.

Fear of COVID-19 was shown to be a predictor of anxiety levels in women, regardless of other factors that were associated with this outcome in univariate analyses. Previous studies indicated that women are generally more afraid of COVID-19 than men, and gender differences are believed to play a role in sensitivity and susceptibility to stress and increased mental health risk [62-64].

Frontline healthcare workers involved in the direct diagnosis, treatment, and care of patients with COVID-19, regardless of gender and profession, were associated with an increased risk of anxiety symptoms [65]. In a systematic review study with meta-analysis, associations were demonstrated between fear of COVID-19 and factors related to mental health, including anxiety [66].

Findings obtained with the application of the FCV-19S in other countries showed that being a woman and being married was associated with higher levels of fear of COVID-19 [67,68]. On the other hand, age and educational level do not seem to affect individuals' fear [35,38,69]. The data from our study reinforce these findings.

The study carried out online by Andrade et al. (2020), with adults of both genders in Brazil, suggests that new studies should be carried out with women, given the presence of a high predisposition to fear and anxiety in this population [27]. The present study constitutes a contribution to filling this gap in the literature. In addition it enhances the high reliability of the COVID-19 Fear Scale evaluated through the Cronbach's alpha coefficient.

The fear of coronavirus, despite its transience since it will exist as long as the pandemic situation lasts is a real and present aspect of the current pandemic. The fear of COVID-19 significant relationship with EBIA provides evidence that it is associated with FI and, consequently, influences anxiety, which may not be transient, and triggers several other mental health problems.

The present study has limitations given the sample size and the fact that the socioeconomic data were collected in the year 2018. However, it is relevant and unprecedented concerning the observation of the association between the outcomes that enhance the vulnerability of women who use the SUS in a critical period of the current pandemic in Brazil characterized by the high transmissibility of COVID-19 and the high number of cases and mortality. During the period of our survey, vaccines were not available. The findings can no longer be replicated, but they are important and highlight the need for further studies to review the effects of the pandemic on anxiety and food insecurity in women after vaccination coverage.

CONCLUSION

Our study's data demonstrate that the current pandemic has contributed to increased anxiety in women. Food insecurity was associated with fear of COVID-19, which, in turn, increased state-anxiety by 3.28 times with an effect independent of FI and other social variables described in the literature. There are concerns regarding the non-transience of this condition, which can have long-term consequences for the general health and quality of life of this vulnerable group of the population. The presence of many households suffering from food insecurity is frequent. The vulnerability of women was evidenced and expressed by the lack of a minimum family income, in the high number of residents in the households, in the high prevalence of food insecurity at its different levels as well as in the fear of COVID-19, situations that need to be discussed and considered in the development of public policies aimed at caring for women in the current pandemic framework.

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CONTRIBUTORS

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