


## ANALYSIS OF THE IMPACTS ON THE PHYSICAL AND MENTAL HEALTH OF FAMILY FARMERS AS A RESULT OF THE COVID-19 PANDEMIC

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### ABSTRACT

This article presents an important analysis of the impacts of the COVID-19 pandemic on the physical and mental health of family farmers in Brazil. The collection of quantitative and qualitative data, with men and women over 18 years of age, and that they work on small properties located within the Brazilian territory, reveals the difficulties faced by this group. The main issues addressed and that deserve to be highlighted were in relation to the contagion of COVID-19, comorbidities that are aggravating factors for the infection of the virus, deaths in the family as a result of the new coronavirus, if they presented symptoms and if anyone had any sequelae. Regarding mental health, the approach was qualitative, asking several questions to understand the degree of change regarding psychological symptoms that were presented after the pandemic period, the most answered being: insomnia, mood swings, feelings of fear or insecurity, and difficulty concentrating. And, in relation to the aspects of life most affected by the pandemic, the main ones were: professional life, financial life, and mental health. Finally, it is concluded that it is necessary to create new programs aimed at promoting the health of family farmers and the dissemination of existing policies such as the National Policy for the Integral Health of Populations of the Countryside, Forest and Water (PNSIPCFA), in addition to psychological support to deal with the impacts resulting from the pandemic. In this context, the article achieved its objectives of collaborating in the understanding of the challenges faced by family farmers during the pandemic and for the formulation of strategies that promote the health and well-being of this group.

**Keywords:** family farming; health; COVID-19; agroecology.

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## INTRODUCTION

The COVID-19 pandemic was officially declared by the World Health Organization on March 12, 2020, emerging as a historic crisis for the planet and an unprecedented reality in recent human history. The presence of the SARS-CoV-2 virus, also known as the new coronavirus, was initially recorded in December 2019 in the city of Wuhan, China, with a notification to the WHO of several cases of a "pneumonia of unknown etiology", which caused the death of more than 6 million people worldwide (World Health Organization, 2020).

In the face of social isolation, changes in daily life, and the disorganization of the health system, the measures adopted in Brazil to contain the spread of COVID-19 have had repercussions in several spaces. This collapse in health has also affected the context of the country's rural area as a result of the coronavirus pandemic not only caused radical changes in the urban area of Brazil, but also directly affected family farming with impacts on production, but mainly on the health of farmers, including mental, physical and social health (NEPOMOCENO, 2021).

According to a 2021 survey by the Food and Agriculture Organization of the United Nations, small producers are responsible for producing 80% of the world's food and of the 608 million existing properties, 90% are occupied by family farmers. It is possible to see that family farming plays a great role in productivity and food security, not only in Brazil, but worldwide. And with the emergence of the pandemic, it brought irreversible problems to this community, such as significant impacts on income, reinforcing social inequality. The precariousness of the health system in rural areas has accentuated the degradation of both the mental health of producers, due to daily changes and the death of family members, and physical health, due to comorbidities and debilitation due to the symptoms caused by the new coronavirus.

In this sense, the article in question focuses on the analysis of collected data and discussing the consequences on the health of family farmers in Brazil during the COVID-19 pandemic, with the aim of helping to understand the challenges faced by family farmers during the pandemic and for the formulation of strategies that promote the health and well-being of this group.

## **METHODOLOGY**

The present research was based on data collection during the months of May to August 2021 by applying an online questionnaire through the Google Forms platform, with dissemination on several social networks and the target audience being self-declared family farmers over 18 years of age residing in Brazil. Thus, 65 responses were collected from family farmers from 14 Brazilian states: Pará (PA), Paraná (PR), São Paulo (SP), Santa Catarina (SC), Minas Gerais (MG), Ceará (CE), Bahia (BA), Rio Grande do Sul (RS), Espírito Santo (ES), Maranhão (MA), Mato Grosso do Sul (MS), Sergipe (SE), Rio de Janeiro de Janeiro (RJ) and Paraíba (PB). The analysis of quantitative data was performed using Microsoft Excel (LOPES; MURATA; MURATA, 2023)

Being a field study, with exploratory and descriptive methods, but also quantitative and qualitative, issues related to the production and marketing of products, personal economic situation, difficulties, physical and mental health of producers, contagion of COVID-19, changes in daily life and adaptations during the pandemic were addressed.

## **RESULTS**

### **PROFILE OF FAMILY FARMERS**

According to the questionnaire carried out and mentioned by Lopes, Murata, Murata (2023), the profile of the family farmers who collaborated with the research, most of the participants live in the state of Paraná (63.1%) and the rest in other states (36.9%), with 50.8% of the participants being men and 49.2% women, the age group being 50.8% between the ages of 18 and 40 years, 41.6% between 41 and 60 years old and only 7.7% over 60 years old (age considered a risk factor for COVID-19). Regarding the prominence of these individuals in family farming, the profile that stands out is those who exclusively dedicate themselves only to being a small producer (72.3%), exercise the profession in the range of 11 to 20 years (29.2%), at least 49.2% of the participants dedicate more than 40 hours a week to this occupation, most of them owning the land on which they work (75.4%) and participating in cooperatives (75.4%).

Regarding the production and types of crops grown on the properties, in first place are vegetables (72.3%) and then grains such as corn and soybeans (36.9%), a little more than half produce only organic (55.4%) and the rest are combined with conventional production (44.6%), it is important to take into account that 63.1% of farmers work in more than one agricultural activity on the property. The diversification of production in business is

strategic for small producers due to the possibility of meeting various demands of the consumer market (CLEMENTE, 2015).

Commercialization was characterized by two main forms: street markets (55.4%) and direct sales to consumers or institutions (32.3%). To understand more about the commercialization of family farmers, it is important to mention the public policies aimed at helping producers, thus, in this study 29.2% of the interviewees indicated that they participate in the National School Feeding Program (PNAE), 26.2% in the Food Acquisition Program (PAA).

With the context of the COVID-19 pandemic, many family farmers had their daily activities modified to meet the needs of social isolation. According to Lopes, Murata, Murata (2023), in the survey carried out 27.7% of respondents answered that the degree of change in routine (evaluated in grades from 1 to 10) was 8 and 16.9% answered that it was 10, that is, most participants deeply felt the changes since 60% also answered that the yield of their production decreased and 76.9% had their commercialization affected due to the effects of the coronavirus crisis. One of the negative effects of the pandemic was the closure of street markets and the reduction of public purchases (PREISS *et al*, 2022).

## CHARACTERIZATION OF THE PARTICIPANTS' HEALTH

Family farmers are diverse individuals and, when talking about their health conditions, it is no different, due to the lack of public policies aimed at medical care and the precariousness of the Brazilian health system in rural areas. The discussion about the lifestyle of producers is extremely important for the promotion of health in these places. In this sense, it is relevant to emphasize that there is the National Policy for the Integral Health of Populations of the Countryside, Forest and Water (PNSIPCFA) that the Ministry of Health instituted by Ordinance No. 2,866 on December 2, 2011, which aims to meet the health needs of people who live mainly in rural areas, combating structural inequality. the illness of farmers, deprivation of basic sanitation, among other situations that harm the rural population (RIBEIRO; FAITHFUL; MARTINS, 2021).

With this view, it is possible to perceive that there should be a dissemination in relation to public policies such as the PNSIPCFA, which many farmers may not be aware of the existence, but which can bring several benefits, improving their quality of life and helping in the health issue, considering that, in relation to this point, it was observed during

the present research; that 56.9% of respondents stated that they or someone in their family contracted COVID-19 and 27.7% answered that three or more people in their family were infected with the virus (TABLE 1).

In addition, 64.9% of the participants stated that they had only mild symptoms, among them, loss of smell and/or taste; runny nose; sore throat, diarrhea; headache, muscle or abdominal pain, fever, cough and fatigue, while 18.9% had severe symptoms, which were mostly severe acute respiratory syndrome, flu-like syndrome that presents: dyspnea/respiratory distress, persistent pressure in the chest, O<sub>2</sub> saturation less than 95% in room air and bluish color of the lips or face and, finally, 16.2% moderate symptoms of COVID-19, which may be dry and persistent cough with progressive worsening of another symptom related to Covid-19, difficulty breathing, at least one of the symptoms of the previous item plus presence of a risk factor (elderly; people with chronic diseases, among them diabetes, hypertension and asthma; pregnant and breastfeeding women). Regarding deaths resulting from the infection of the virus, the majority (89.2%) answered that there were no deaths in the family, 8.1% stated that one person died as a consequence of COVID-19 and 2.7% answered that two people from their family nucleus died due to the worsening of the disease.

Another characteristic that deserves to be highlighted is the number of people who had sequelae as a result of COVID-19 contagion, although the majority (78.4%) answered that they did not have any sequelae, 21.6% stated that they were left with sequelae due to contracting the virus. Research shows that the probability of contracting a post-infection condition of the disease varies between 43% and 80% and among the most found sequelae are fatigue, headache, changes in memory and mood, tachycardia, arrhythmia, loss of smell and taste, reduced lung capacity, among others. It is important to highlight that the sequelae that most often prevail in people are fatigue with 23% and memory problems with 14% (AGUIAR *et al*, 2022).

**TABLE 1.** COVID-19 contagion index in family farming.

<b>The interviewee or someone in his family contracted the coronavirus</b>		
Yes	37	56,9
No	24	36,9
Didn't know how to answer	4	6,2
Total	65	100
<b>Who contracted it?</b>		
The interviewee contracted the coronavirus	12	18,5
A person from the interviewee's family	3	4,6
Two people from the interviewee's family	4	6,2
Three or more people from the interviewee's family	18	27,7
Total	37	100
<b>Symptoms that those affected have presented</b>		
Mild symptoms	24	64,9
Moderate symptoms	6	16,2
Severe Symptoms	7	18,9
No symptoms/asymptomatic	0	0
Total	37	100
<b>Someone in the farmer's family passed away due to complications from COVID-19</b>		
Yes, one person	3	8,1
Yes, two people	1	2,7
Yes, three or more people	0	0
No	33	89,2
Total	37	100
<b>Someone was left with some sequel</b>		
No	29	78,4
Yes	8	21,6
Total	37	100

Source: Authors' database, 2021.

Regarding health problems, 84.6% of the participants answered that they do not have any health problems and 15.4% stated that they do, 26.2% currently use medication and the majority, 73.8%, do not use any medication. With this view, respondents were asked if they had any comorbidities that could aggravate the contagion of COVID-19, most participants (72.3%) answered that they did not have any type of aggravating factor of the coronavirus, while 12.3% said they had chronic diseases such as diabetes and hypertension, 7.7% participate in the group of people over 60 years old and 6.2% suffer from obesity. It is necessary to monitor the comorbidities reported by the interviewees,

considering that recent studies have revealed that hypertension was present in 37% of patients hospitalized for COVID-19 during 2020 (RIBEIRO; UEHARA, 2022). Diabetes, on the other hand, was seen in at least 20% of people hospitalized for the virus in China (PERIC; STULNIG, 2020).

**TABLE 2.** Factors related to health problems, medication use, and comorbidities that are aggravating factors for COVID-19.

<b>Health problem today</b>		
Yes	10	15,4
No	55	84,6
Total	65	100
<b>Medication use today</b>		
Yes	17	26,2
No	48	73,8
Total	65	100
<b>Comorbidity listed as a risk factor for worsening COVID-19*</b>		
Age over 60 years	5	7,7
People with chronic diseases, including diabetes, hypertension and asthma	8	12,3
Cardiovascular disease	1	1,5
Obesity	4	6,2
Pregnant or lactating	2	3,1
Hepatitis B	1	1,5
Wilson's disease	1	1,5
I do not have any comorbidities	47	72,3

Source: Authors' database, 2021.

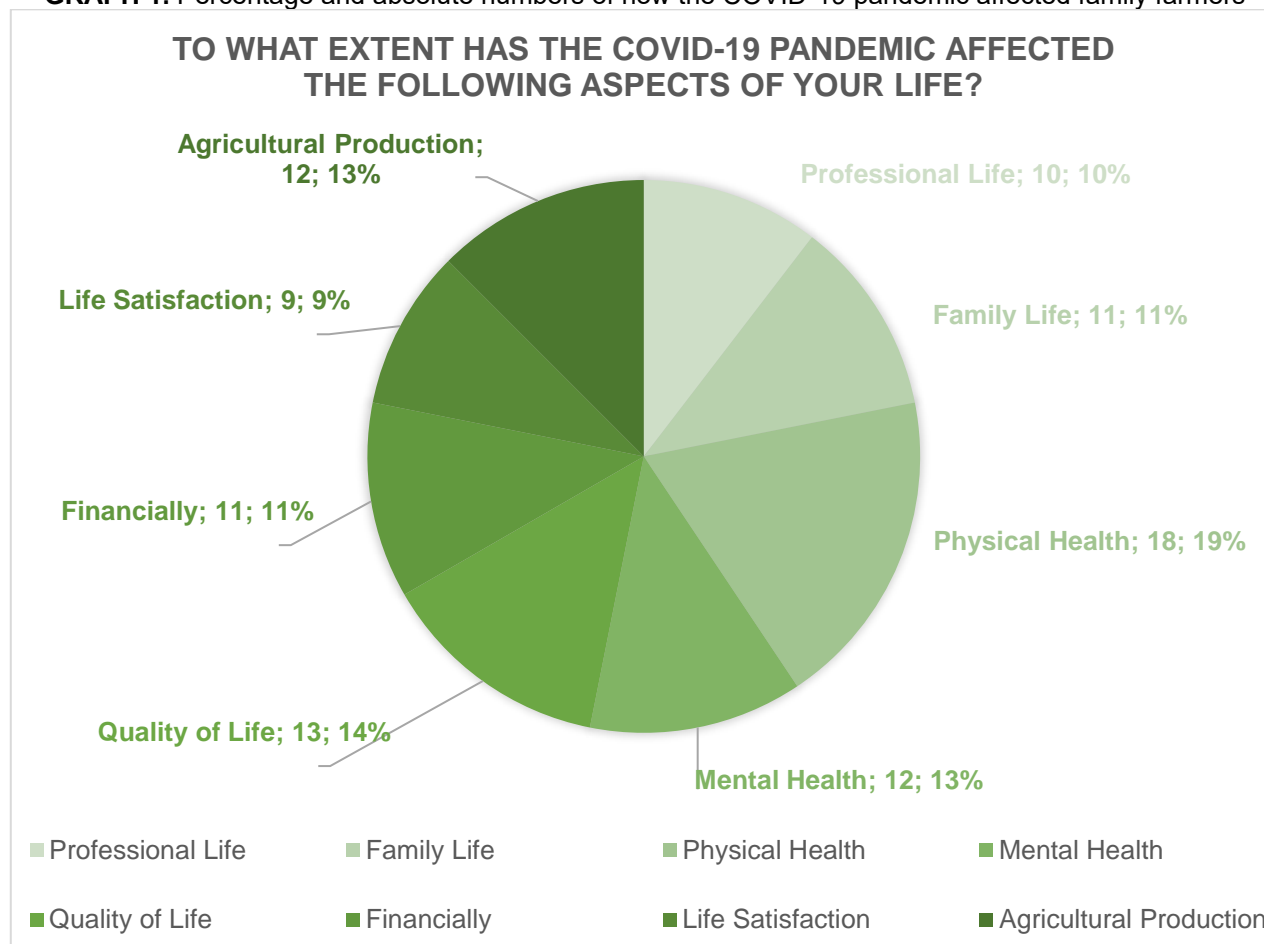
The COVID-19 pandemic has drastically affected everyone's lives due to several limitations, but especially family farmers. since it highlighted the vulnerability of these individuals and highlighted both the lack of public policies and the precarious situation of the health system for small landowners. With the present study, it was noticed that 19% of respondents reported that physical health was the most affected during the pandemic, 14% answered that it was quality of life and 13% stated that it was their mental health and also their agricultural production, showing that the distribution of health-related services is concentrated in urban centers, representing an inequality in the rural area of the country, which is extremely important for the economy of Brazil, food security and valorization of the Brazilian territory (RIBEIRO; FAITHFUL; MARTINS, 2021).

Futemma, *et al* (2021), highlighted in their research the impacts of COVID-19 on the lives of small producers, with 11% of those who were interviewed stating that they had



severe symptoms of the virus, but did not receive any type of medical care, many also reported the lack of ICU beds in nearby municipalities and 33% of technical managers answered that they had no knowledge about COVID-19 tests being carried out among small producers. Thus, it is possible to perceive the negligence of the state and the lack of information of farmers at the time of the pandemic (FUTEMMA *et al*, 2021)

**GRAPH 1.** Percentage and absolute numbers of how the COVID-19 pandemic affected family farmers



Source: Authors' database, 2021.

It is important to note that with the health emergency with COVID-19, discussions about mental health have been significantly expanded due to the increase in people with anxiety and depression after the pandemic. A survey showed that one in three farmers were concerned about the lack of food during the pandemic and showed symptoms of anxiety and fear of hunger spreading to their family (MENDONÇA *et al*, 2021).

According to table 3, the results indicate that most farmers show an increase in the various characteristics related to mental health as a result of the COVID-19 pandemic. Insomnia affects 16% of farmers, while loss of appetite affects only 3%. On the other hand,



increased appetite is reported by 13% of farmers. Constant mood swings are a reality for 19% of farmers, while crying or panic attacks are experienced by 9% of them. In addition, feelings of fear or insecurity are experienced by 19% of farmers, and suicidal thoughts affect 1% of them. Aggressiveness is reported by 10% of farmers, while difficulty concentrating and irritability reach 19% and 17% respectively. Depression is a condition present in 6% of farmers, while alcohol use/abuse is observed in 8% and drug use/abuse affects only 1% of farmers.

Therefore, with the analysis of these alarming data, it is possible to conclude that they point to the urgent need for effective interventions to mitigate the negative effects on the mental health of family farmers due to the pandemic. Social support programs, such as communication groups and networks, are needed that can provide farmers with a sense of belonging and emotional support. It is also essential to implement public policies that guarantee access to services, both quality mental health and the physical health of producers, as well as actions aimed at raising awareness and destigmatizing mental health problems.

In addition, the 65 farmers who participated in the survey were asked if they would be able to continue in family farming after the pandemic, 87.7% said they had the financial, physical and psychological conditions to continue in family farming. These farmers expressed confidence in their ability to face the challenges and overcome the difficulties associated with the pandemic and remain active in this agricultural activity. On the other hand, only 1.5% of farmers stated that they would not be able to continue with family farming after the pandemic. This small portion probably faces major health difficulties, whether financial, physical or psychological, which affect their ability to dedicate themselves to the family economy. Finally, 10.8% of farmers answered that they do not know if they will be able to continue with family farming after the pandemic because they are not aware of the future scenario for their production.

**TABLE 3.** Impacts related to the mental health of family farmers during the COVID-19 pandemic and whether they intend to continue with the activity after the coronavirus crisis.

Feature	Not currently presented	Presents less than before the pandemic	In the same proportion as before the pandemic	Presents more currently than before the pandemic
I Insomnia	35	6	8	16
II Loss of appetite	55	3	4	3
III Increased appetite	36	4	12	13
IV Constant mood swings	33	2	11	19
V Crying or Panic Crisis	51	3	2	9
VI Feeling of fear or insecurity	37	3	6	19
VII Suicidal thoughts	62	2	0	1
VIII Aggressiveness	46	4	5	10
IX Difficulty in Concentrating	33	5	8	19
X Irritability	35	4	9	17
XI Depression	51	3	5	6
XII Alcohol Use/Abuse	49	7	1	8
XIII Drug Use/Abuse	60	3	1	1
<b>After the Pandemic, he will have the conditions (financial, physical and mental) to continue to exercise family farming</b>				
Yes	57		87,7	
No	1		1,5	
I don't know how to answer	7		10,8	
Total	65		100	

Source: Authors' Database, 2021

## DISCUSSION

The discussion of solutions and new alternatives to promote the health of family farmers is extremely important and is necessary when analyzing the conditions in which these producers currently live. The National Health Plan provides that the rural population has the highest rate of infant mortality and endemic diseases and these are just one of the difficulties that farmers suffer, given that the COVID-19 pandemic has made the situation even more precarious.

With the booklet of the National Policy for the Integral Health of the Populations of the Countryside, Forest and Water (PNSIPCFA) of 2011, it is possible to see that the debate in relation to the health of people who live in rural areas has expanded, showing the difficulties faced by this population and the concern of the state in carrying out public policies that help producers to ensure access to health services, to contribute to the reduction of the social vulnerability of these individuals and to the improvement of the quality of life. However, it is necessary for the government to publicize not only this policy,

but others that involve the guarantee of the health of this population, since many farmers are not aware of the existence of these programs created to help them (MINISTRY OF HEALTH, 2011).

Ribeiro, Leal and Martins (2021) highlighted the fact that the units of the Unified Health System (SUS) such as the UPAs (Emergency Care Units), are still precarious in small municipalities due to the lack of infrastructure and, during the COVID-19 pandemic, they were left in second place in the background, showing that it was not only the pandemic scenario that contributed to the precariousness of the health system for farmers, but also extensive problems they have previous history. The coronavirus crisis only highlighted the scarcity of public policies aimed at rural people and exposed that this population had to adapt in its own way in the face of a pandemic.

## **CONCLUSION**

In summary, analyzing the data exposed in this article, it is possible to conclude that many family farmers residing in Brazil suffered the consequences of the COVID-19 pandemic, considering that 56.9% of the survey participants stated that they contracted the virus or that someone in the family contracted it during the months of May to August 2021, in addition to the fact that all respondents highlighted that they had symptoms during the infection of the disease and 27.7% confirmed it that three or more people in the family tested positive for the new coronavirus.

In addition to the issue of physical health, more than half of the participants said that they had their routine profoundly changed due to the COVID-19 crisis, they have a reduction in their quality of professional life, mental and financial health, many showed symptoms that they did not have before the pandemic such as: insomnia, mood swings, feelings of fear or insecurity and difficulty concentrating, showing that the pandemic scenario brought adversities that were not faced before by farmers Family.

With this vision, it is necessary to build public policies aimed at the health of small producers spread throughout the Brazilian territory, such as the PNSIPCFA and also the dissemination of existing programs so that farmers can ensure an improvement in the quality of life and their health and, mainly, specific support for this post-pandemic period where many are facing difficulties in relation to physical and mental health.

Attention to physical and mental health, along with social and economic support, are essential for the recovery and sustainable development of family farming in Brazil.

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