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PANDEMIC-INDUCED LOCKDOWN'S SHOCK TO HOUSEHOLD LEVEL FOOD SECURITY

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Abstract:

The impact of the lockdown induced by the COVID-19 pandemic was devastating for the farm as well as the non-farm sectors of the India's economy. Many authors expressed the apprehensions of hunger as journalistic accounts of hunger appeared in newspapers during the lockdown. Nevertheless, very few studies were undertaken to investigate the nature and extent of lockdown-induced food insecurity experienced by the households and understand the household management strategies adopted by those households. This study was undertaken in a village located in the Birbhum district of West Bengal during the unlock-I phase to fill the above-stated gap. Data for this study were collected from 40 households using a standardized tool known as the Household Food Insecurity Access Scale (HFIAS), and a semi-structured questionnaire. Results showed that inaccessibility of food was experienced by the households in three domains-anxiety and uncertainty (82.5% households), unsatisfactory quality (100% households), and insufficient quantity (77.5% households). However, quantitative scale scores of food insecurity showed that none of the households experienced the highest possible degree of food insecurity. The public distribution system and mid-day-meal programs were most effective in reducing the food insecurity of many families, but the level of support extended was not enough. More than half of the households reported a reduction in animal protein consumption, higher expenditure on vegetables and fruits, and an increase in taking loans. Based on the findings of the study, two specific suggestions were provided for facilitating the management of disruptions caused by lockdown-like emergency conditions.

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1.0 Introduction:

The rapid spread of COVID-19 has caused unprecedented turmoil on a global scale. Most countries worldwide are focusing on public health strategies like wearing protective face masks, hand hygiene, physical and social distancing, restrictions on traveling, containment zoning, and lockdown to restrain and reduce the spread of viral transmission.

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India went into a nationwide lockdown on 25 March 2020 for the first time. The lockdown was later extended successively till 31 May 2020. Due to the blanket nature of closure and ban on economic activities with minimal exceptions, this lockdown was considered as "one of the world's strictest" (BSG, 2020). A similar level of stringency was observed only in four other countries, namely, Israel, Mauritius, New Zealand, and South Africa (ITWD, 2020). The lockdown restrictions were relaxed in a phase-wise manner since 01 June 2020. Each of these phases had been termed as unlock-1, unlock -2, and so on.

The impact of the complete lockdown for 68 days was devastating for society and the economy. Within the first week of the lockdown, newspapers began to report the hunger and skipping of meals by the destitute and homeless people (Abi-Habib & Yaseer, 2020). The ordeal of migrant laborers stranded at different places during the lockdown and the large-scale reverse migration has been reported compassionately by journalists and activists (Khanna, 2020; SWAN, 2020). The suffering of the patients and their relatives (Deora et al., 2020; Shenoj et al., 2020), doctors, nurses, and other workers associated with the health care industry (B. Ghosh, 2020; Wilson et al., 2020) has also been extensively reported. On the economic front, India experienced a 23.9 % fall of quarterly gross domestic product for the April-June quarter on a year-to-year basis. A report published by World Bank stated that human mobility and the consumption of electricity, steel, and cement declined in an unparalleled fashion due to lockdown (World Bank, 2020).

But the deadliest impact of the blow was felt by the workforce of the informal and unorganized sectors. According to an estimation provided by the Centre for Monitoring Indian Economy (CMIE), 122 million jobs were lost in the month of April 2020 alone. Out of the 122 million, small traders and wage laborers accounted for 91.7 million and salaried employees accounted for 17.8 million (Vyas, 2020a). A telephonic survey covering approximately 5,000 self-employed, casual, and regular wage workers across 12 states revealed a massive increase in unemployment along with a dramatic decline in income (Lahoti et al., 2020). As the jobs evaporated in the non-agriculture sector, agriculture was found to compensate for some of the loss, but only in disguised form (Vyas, 2020b). The farm sector also experienced a massive fall in prices of *rabi* crops which resulted in subsequent disruption of their livelihoods. A survey covering 450 vegetable farmers from 4 states showed that above 80.0 % of farmers had faced a 50.0 % reduction in the selling price of crops during the lockdown. The remaining farmers sold almost nothing during the lockdown (Harris et al., 2020).

Simultaneous bottlenecking of transportation and disruptions in the supply chain resulted in an increase in wholesale and consumer prices. However, data showed that the changes in the prices varied from state to state (Imai et al., 2020). Analysis of weekly price data obtained from 11 Indian cities during March-May 2020 indicated a lack of efficient Government policies for normalizing the disruption in the supply chain of pulses, vegetables, and fruits. As a result, prices of the pulses, vegetables, and fruits increased during the lockdown (Seth et al., 2020).

Food security, as conceptualized by the United Nations' Food and Agricultural Organization (FAO), has four main dimensions: *physical availability of food, economic and physical access to food, biological utilization of food, and stability of other three dimensions over time* (FAO, 2008). As evident from the foregoing discussion, the first two dimensions of food security (i.e., *availability and access*) were hampered during the lockdown. Therefore, it can be logically apprehended that the most vulnerable sections of society were subjected to food and nutritional insecurity as a result of the lockdown. Similar apprehensions have been expressed by many authors (J. Ghosh, 2020; Summerton, 2020).

However, besides the journalistic accounts published in newspapers, very few studies have investigated the nature and extent of food insecurity, as experienced by the household members. In light of this background, the present study was conducted with the following objectives:

- a) to investigate the extent of food insecurity experienced by the households as a result of lack of control over access to food during the lockdown and the unlock period, and,
- b) to understand the household management strategies adopted by households during the lockdown and unlock period.

2.0 Methodology:

2.1 Sampling

Data for this study were collected from a village named Goalpara, located in the Birbhum district of West Bengal. The village is situated at a distance of six (6) Km. from the Santiniketan campus of Visva-Bharati University. Forty (40) households were considered as the sample for this study. The proximity of the village helped us in accessing the village from the university campus and collecting data by visiting these households during the unlock-1 phase. The households were selected through the snowball sampling method.

2.2 Tools

Two (2) tools were used to collect data. The first tool was a standardized one known as Household Food Insecurity Access Scale (HFIAS), initially developed by USAID and later refined by various international organizations, to get a methodologically rigorous measurement of the *access* component of food insecurity by combining various simple-to-collect indicators. The tool contains nine (9) *occurrence* questions and nine (9) *frequency-of-occurrence* questions. Each of the *occurrence* questions had to be answered by respondents as 'Yes' or 'No'. If the answer to an *occurrence* question is 'Yes', then a *frequency-of-occurrence* question had to be asked to find out whether the condition occurred 'rarely' (once or twice), 'sometimes' (3 to 10 times), or 'often' (more than 10 times) in the past 30 days (Coates et al., 2007).

The other tool was a semi-structured interview schedule which was used to collect data on household conditions and household management strategies to complement the data collected through the HFIAS.

2.3 Time of data collection

In India and West Bengal, lockdown restrictions were started to be relaxed in a phase-wise manner since 01 June 2020. The data used in this study were collected in the third week of June, i.e., during the unlock-1 phase.

3.1 Socio-economic Profile of the Households

Data regarding various socio-economic characteristics of the sample households have been shown in Table 1.

The data on the occupational pattern of the main earners revealed that 55.0 % of the main earners were daily laborers who worked in agricultural as well as non-agricultural sectors. None served in government or semi-government organizations. Nevertheless, 20.0 % of the main earners were salaried workers in small-sized private firms. In half of the studied households, the female head of the households worked as secondary earners. They either worked as casual workers (35.0 %) or as household industry workers (15.0 %).

Table 1: Socio-economic characteristics of the households

Category	No. of households (N=40)
Occupation of main earners (male)	
Cultivator	2 (5.0)
Casual labourer (Agri./Non-Agri)	22 (55.0)
Employment (Private sector)	8 (20.0)
Self-employed	3 (7.5)
Small business/ trading	5 (12.5)
Occupation of secondary earners (female)	
Casual laborer	14 (35.0)
Household industry worker	6 (15.0)
Non-worker	20 (50.0)
Type of residential house	
Kutchra	10 (25.0)
Pucca	5 (12.5)
Semi-Pucca	25 (62.5)
Household size	
3 or 4	17 (42.5)
5 or 6	18 (45.0)
7 or more	5 (12.5)

Source: Prepared by the authors (Note: Values in parenthesis are percentages)

Most of the households (62.5 %) lived in *semi-pucca* houses. The household size varied a lot among the sample households. The majority of the households had 3 - 4 members (42.5 %) or 5 - 6 members (45.0%). In one household, there were 11 members. The members of the sample households belonged to either Hindu Scheduled Caste or Hindu General Caste.

3.1 Access to Food

HFIAS assesses the inaccessibility to food experienced by the households in three domains over a recall period of the last 30 days. The domains are -

- a) *Anxiety and uncertainty*: If the respondent worried at least once during the recall period that her/his household would not have enough food for all members, then the domain of food insecurity experienced by the household was *anxiety and uncertainty*.
- b) *Unsatisfactory quality*: If the respondent or any other household member was unable to eat the food of their preference, or was compelled to eat a limited variety of food only, or was compelled to eat socially or personally undesirable food at least once during the recall period, then the domain of food insecurity was *unsatisfactory quality*.
- c) *Insufficient quantity*: If any of the household members ate no food or less quantity of food than the minimum quantity (considered necessary by the household members) at least once during the recall period, then the domain of food insecurity experienced by the household was *insufficient quantity*.

Data about the prevalence of inaccessibility to food among the sample households have been shown in Table 2.

Table 2: Prevalence of food insecurity

Domains of Food Insecurity	Number of Households (N=40)		
	Reported	Not Reported	Total
Anxiety and uncertainty	33(82.5)	7(17.5)	40 (100.0)
Unsatisfactory quality	40(100.0)	0 (0.0)	40 (100.0)
Insufficient quantity	31(77.5)	9(22.5)	40 (100.0)

Source: Prepared by the authors (Note: Values in parenthesis are percentages)

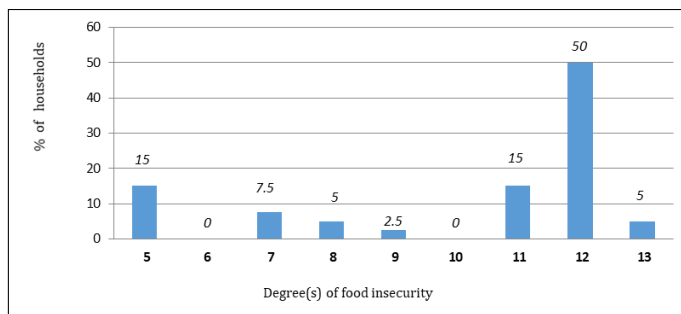
Results indicated that 82.5 % of the sample households experienced anxiety and uncertainty about household-level food supply. Only 17.5 % of families reported that they did not feel anxious or uncertain about food supply during the lockdown or unlock-I period. However, 77.5 % of families reported that they had to eat an insufficient amount of food, while all households (i.e., 100.0 %) reported that they could not eat their preferred quality or variety of food.

3.2 Household Food Insecurity Score

HFIAS allows the generation of a food insecurity score for each household in terms of access to food. The score is generated using the frequency of the conditions experienced by the households over the past 30 days. The score is a continuous variable that measures the degree of food insecurity (in terms of access) at the household level. A lower score indicates a lesser degree of food insecurity. A higher score implies that the concerned household experienced greater food insecurity. The minimum score for a household is zero, and the maximum score is 27. A zero score means that the household enjoys food security and a score of 27 indicates extreme food insecurity.

Fig. 1 shows the distribution of the food insecurity scores of the sample households. The lowest and highest degree of food inaccessibility found among the sample households were 5 degrees (15.0 % households) and 13 degrees (5.0 % households), respectively. The average degree of food inaccessibility experienced by the sample households was 10.5. Therefore 70.0 % of the sample households (comprising the 15.0 %, 50.0 %, and 5.0 % households with 11, 12, and 13 degrees of food insecurity, respectively) experienced a higher degree of food inaccessibility than the average degree of food inaccessibility experienced by the sample households. The rest of the households (i.e., only 30 %) experienced a lesser degree of food inaccessibility than the average degree of food inaccessibility. This also indicated that none of the households experienced the highest degree (i.e., 27) of food insecurity.

Fig. 1: Percent of households having different degrees of food insecurity



(Source: Prepared by the authors)

3.3 Strategies to combat food insecurity

Sample households had to adopt different strategies for combating food insecurity during the lockdown. Data regarding this aspect are shown in Table 3.

Table 3: Sources of support to combat food insecurity

Sources of support	No. of households (N=40)
Public Distribution System (PDS)	37 (92.5)
Schools (dry foods in lieu of Mid Day Meal)	35 (87.5)
Individual creditors	23 (57.5)
Own savings	10 (25.0)
Local club	4 (10.0)
Anganwadi center (dry foods in lieu of cooked food)	3 (7.5)
Household-level employers	3 (7.5)

(Source: Prepared by the authors)

(Note: Values are not mutually exclusive; values in parenthesis are percentages)

Majority of the households used the food grains provided by the public distribution system (92.5 %) and schools (87.5%) for combating food insecurity. Rice and pulses supplied by *Anganwadi* centers were useful for very few families (7.5%), as not all the households had children of appropriate age to go to these centers. Interestingly, none of the sample households had kitchen gardens or nutrition gardens, even though many households had sufficient space for the same. Hence, they could not avail the benefit of growing vegetables in their kitchen gardens and were completely dependent on the market.

More than half of the households had to take loans to buy food items during this period. One-fourth of the respondents reported that they spent their savings to buy food and other things during the lockdown.

3.4 Changes in consumption and expenditure pattern

Table 4 shows data on the impact of lockdown on consumption and expenditure patterns of the sample households. The data include three types of items: *food, other items required in daily living, and items required for taking covid-19 prevention measures.*

Table 4: Changes in consumption and expenditure pattern

Category of Items	Reduction in consumption	Increase in expenditure
Food Items		
Rice and pulses	8 (20.0)	6 (15.0)
Animal proteins (fish, chicken, and egg)	31 (77.5)	6 (15.0)
Vegetables and fruits	7 (17.5)	35 (87.0)
Other Items Required in Daily Living		
Medicine and Doctors fee	9 (22.5)	10 (25.0)
Phone and TV	7 (17.5)	6 (15.0)
Dress materials	37 (92.5)	0 (0.0)
Education of children (exercise books, pen, pencils, private tuition)	32 (80.0)	0 (0.0)
Items Required for Taking COVID-19 Prevention Measures		
Mask	0 (0.0)	25 (62.5)
Sanitizer / soap / liquid hand-wash	0 (0.0)	36 (90.0)

(Source: Prepared by the authors)

(Note: Values are not mutually exclusive; values in parenthesis are percentages)

A reduction in the consumption of rice and pulses was reported by 20.0 % of households, while an increase in expenditure on rice and pulses was reported by 15.0 % of households. As shown in Table 3, 92.5 % of households reported that they received rice and pulses from the Government public distribution system. As a result, the consumption of rice had not been reduced for most of the families. However, rice and pulses were not enough for all. For example, one of the respondents, Mrs. L. Lohar, said, "We work every day to earn and get meals. The government gave only rice and *dal*. We had to suffer a lot (Respondent's original statement in Bengali: *Amra din ani din khai. Sorkarsudhuchal r dal diyechhe. Khub koster modhay din keteche*)." On the other hand, all households did not have ration cards. From one such household, Mrs. P. Banerjee, a respondent whose husband used to work in a private firm, resented, "We had to borrow money. We don't have ration cards (Respondent's original statement in Bengali: *Taka dhar korte holo. Amader ration card nei*"). Such families had to buy rice and pulses from the market. Moreover, 12.5 % of families having 7 or more members (as shown in Table 1) had to buy rice and pulses as the quantity of food supplied through ration shops was not enough for them.

A particular matter of concern was that 67.5 % of families had to reduce animal protein consumption in the form of fish, chicken, or egg. This was worrying because regular and daily intake of animal protein (in terms of egg, milk, fish, and meat) had been suggested by the World Health Organisation (WHO) as crucial for boosting the immune system to prevent infection of the novel Coronavirus. But, a reduction in the consumption of animal proteins made the low-income families more vulnerable to infection.

Another interesting finding was that expenditure incurred by 87.5 % of families for vegetables had increased during the lockdown, even though there had been no increase in the consumption of the same. None of the sample households had a kitchen garden, which explains why most families experienced the increased expenditure for vegetables and fruits.

Items like exercise books, pens, and pencils required for the education of children have also been bought less frequently. The respondents provided two reasons for the same. First, the schools were closed. Second, many of the households did not buy such goods as their income reduced. On the other hand, expenditure on items like masks, soap, sanitizer, and liquid hand-wash increased in most families. However, only 62.5 % of households reported buying masks, whereas 90% reported an increase in the use of soap, hand-wash, or sanitizers.

3.5 Anxiety about future

The respondents were asked to identify the issues that made them worried or anxious about the future as they faced the COVID-19 crisis. Their responses have been shown in Table 5.

Table 5: Causes of anxiety about future

Causes	No. of households (N=40)
Income loss / unemployment	36 (90.0)
Repayment of debt	10 (25.0)
Loss of life and COVID-19 vaccine	6 (15.0)

(Source: Prepared by the authors)

(Note: Values are not mutually exclusive)

The majority of the respondents (90.0 %) reported that they were worried about the loss of income and uncertainty to get a job, whereas only 15.0 % of the respondents expressed worries about death in the pandemic due to the non-availability of a vaccine. Worrying about the loss of



income and unemployment was quite natural as most of the families were dependent on the unorganized sector. Repayment of the loan was a concern for 25.0 % of the sample household. Since the overall expenditure of living had increased, many of the respondents were uncertain about the time it might take to come out of debt.

Two respondents who used to work as casual laborers also expressed frustration as they were unable to get any work under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The wage under MGNREGA could partially compensate for income loss during the lockdown. But none of the respondents had any information or update about the initiation of the MGNREGA work by the Gram Panchayat.

4.0 Conclusion:

This study established that the lockdown, which continued approximately for 10 weeks, has worsened the capability of the sample households to ensure food security. However, food insecurity was not experienced by the households during the lockdown only. Food insecurity continued even in the unlock phase. The experience of pandemic-induced lockdown showed that the disruption of normal economic activities for a time period of just 10 weeks could create food insecurities for a much longer-term. Even though the public distribution system and mid-day-meal programs were instrumental in reducing the food insecurity of many families, the level of support extended by the Government was felt inadequate. The support offered by generous individuals and civil societies was too small to cater to the needs of a large number of households. As a result, the lockdown eroded the savings of households. Some of the households were compelled to take loans to buy food or other essentials, although they would never have considered taking a loan for such purposes under normal conditions. One may wonder whether it is too early and too dim to assume that our nation narrowly escaped from a spiral that could have paved the path for famines.

The disruptive ripples of lockdown demand attention because of the simple and undeniable fact that we are members of an inter-connected global society and economy. The virus, which emerged in the Wuhan city of China at the fag end of 2019, has been creating devastating effects throughout 2020 in the life of people all over the world. Most of them live in far-away places from China and have no direct connection with Wuhan. Another emergency condition in the form of war or nuclear accident or a natural disaster or another pandemic at any corner of the world may have a similar effect on the global scale. Such disasters may not only wreck the economy and threaten human lives in that particular area but may quite possibly endanger the lives of people in geographically far-away areas. Therefore, the Government(s) and societies should be prepared to tackle such conditions.

The following suggestions have been proposed by the authors of this study in the context of food security. These suggestions are expected to facilitate effective management of socio-economic disruptions caused by lockdown-like emergencies. First, the public distribution system and the ration shops should be strengthened so that they can cater to additional households on a temporary basis during any emergency. The ongoing digitization efforts of the public distribution system should pave the way to identify the households that may not need subsidized grain during the normal period but may require temporary support during an emergency. Second, the self-sufficiency campaigns like Atma-Nirbhar Bharat should not be geared to industrial production only. The message should also be sent out to people that developing a kitchen garden or nutrition garden can help people gain self-sufficiency in terms of food production and accessibility, at least, to some extent. History indicates that the small-sized kitchen gardens were used along with food ration systems to reduce pressure on the public food

supply in the United States of America and many European countries during World Wars I and II. Besides aiding the Government, these gardens were considered as 'civic morale boosters'. Hence, there should not be any doubt about this strategy's effectiveness in the post-COVID era.

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