COVID-19 IMPACT ON FOOD SECURITY

By

Bita Afsharinia

Professor Anjula Gurtoo

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Indian Institute of Science

Bangalore

Abstract

The aim of the study is to understand:

1. Impact of COVID-19 pandemic on the household food consumption score (FCS) and variation in major food groups intake before (2018-19) and during the pandemic.
2. Identify the food supports determinants of food consumption score (FCS) at household level and find out the association among these food supports.
3. Determine the impact of food security on child school dropout during pandemic.

The finding attempts to brings out the clear understanding of food and nutrition status among gig economy households with higher vulnerability to food insecurity due to the loss of job and income during COVID-19 pandemic.

Broadly, three findings stand out as significant impact of COVID-19 on food security of households:

- The majority of the household's food consumption score (FCS) has shifted from acceptable towards borderline category.
- Extreme reduction in daily consumption of dairy products and fruits/vegetables, and little reduction in consumption of starch staples and daily pulses is evidenced in the survey. Overall, analysis demonstrates the daily consumption of major food groups has reduced, and the frequency of consumption has changed to once a week from 2-3 times in a week consumption.
- Not sleeping hungry during lockdown is significant contributor to less likelihood of children school dropout. Consumption of a smaller number of meals per day and two per day per day (versus normal 3 meals per day) increased the probability of children school dropout.

INTRODUCTION

The COVID-19 pandemic disrupted the food supply chain and hence, threatened the food and nutrition consumption of individuals worldwide (Tian, Zhou, and Wang 2022). According to the United Nations' Food and Agriculture Organisation (FAO), due to the adverse effects of the global pandemic, the overall global consumption has been limited resulting in changes to the global dietary patterns (FAO 2022). These changes and limitations in food supply chain affects an ndividuals buy and food consumption pattern (e.g., preparing food at home) (Eftimov et al. 2020).

Furthermore, research shows that certain restrictions on food shipment or delivery (e.g., shipments of food items with perishable nature such as fresh fruits, vegetables, and fish products) has led to shortage of food supply and has decelerated the food production process leading to limited food availability (Eftimov et al. 2020; Filimonau et al. 2021). Consequently, the lack of access to major food groups potentially tigger deficiencies in critical nutrients and calories to maintain healthy body, prevent diseases and malnutrition. Additionally, a surplus of nutrient-deficient food and consumption of foods with empty calories could ignite health issues such as obesity, diabetes, and also compromise immune system (O'Hara and Toussaint 2021).

In India, COVID-19 has significantly impacted consumers' food consumption behaviour and healthy eating habits/behaviours (Yang, Chen, and Chen 2022), mainly due to the nationwide lockdowns that mandating isolation at home which further caused marginal reduction in food expenditures per capital in both rural and urban households (as per 2019-20) (Singh, Jain, and Rastogi 2021; Tagat 2021). However, the study empirically revealed striking difference in the food consumption pattern of Indian households across rural and urban sectors, geographical regions and income categories (Srivastava and Sivaramane 2020).

The COVID-19 pandemic posed enormous challenges for rural economy in India. Most of the rural populations' source of livelihood is agriculture, however, due to a sudden shortage of laborers in the agrarian sector, particularly during harvesting time resulted in crop failure and aggravated the food shortages to the market, and in turn, raised food insecurity and well-being of rural population in India (Abhishek et al. 2020; Ceballos, Kannan, and Kramer 2020).

Changes in food consumption pattern during COVID-19 pandemic

Evidence suggested the marginal improvement in consumption of immunity boosting food items such as garlic, ginger, fruits, beverages such as turmeric milk, lemon water, herbal tea during COVID-19. In addition, there was reduction in habit of consuming junk foods and meat products among adolescents during COVID-19 pandemic (Singh and Wadhawan 2021).

However, the loss of livelihoods along with situation of hunger and malnutrition in India during the COVID-19 pandemic resulted in widespread of food insecurity and long-lasting effects on the nutrition status of the population. In Indian context, government support through schemes such as the PDS, school meals, ICDS, and cash transfers through social security schemes towards providing food and financial support during pandemic remains limited (Sinha 2021).

Research shows the closure of a number of public programmes such as the Anganwadis and schools (e.g., mid-day meal (MDM) schemes), which supported access to food, nutrition and health services (especially women and children), made the population residing in rural areas vulnerable to malnutrition (Mishra and Rampal 2020; Sinha 2021). Moreover, prolonged school closure deprived a meal through food and nutrition schemes (e.g., MDM and ICDS) and led to a massive increase in dropouts across countries (Ankit 2020).

The adversities of the COVID-19 pandemic related to increased vulnerability to poor nutrition status and malnutrition compel us to understand the COVID-19 pandemic determinants of household's food insecurity including inadequate food and nutrition consumption particularly in vulnerable populations.

RESEARCH STUDY

The aim of the study is to understand

- impact of COVID-19 pandemic on the household's food consumption score (FCS) and variation in major food groups intake before (2018-19) and during the pandemic.
- identify the food supports determinants of food consumption score (FCS) at household level, and find out the association among these food supports
- determine the impact of food security on child school dropout during pandemic.

The finding attempts to brings out the clear understanding of food and nutrition status among gig economy households with higher vulnerability to food insecurity due to the loss of job and income during COVID-19 pandemic.

Data was collected from a representative sample household in Bangalore, India to study the COVID-19 shock has affected their food consumption. Data from 2830 individuals the age group between 18-80 years old were collected across gig economy workers using a cross-sectional survey conducted in two durations of July-Nov 2018-19 and Dec-Jan 2020-21. In addition to socio-demographic factors, the information gathered from the survey include livelihood factors such as education of children, food intake, clothing, medical care, housing, employment and environmental impacts of the pandemic among others.

Methodology

The Food Consumption Score (FCS) indicator used to categorize and tracking household's food security across time. The FCS aggregates household-level data on the diversity and frequency of food groups consumed over the previous seven days, which is then weighted according to the relative nutritional value of the consumed food groups. The food consumption score is a proxy indicator of household caloric availability and useful for categorizing and tracking households' food security across time, specifically as a proxy for the quantity dimension (e.g., caloric sufficiency) of food security, for which this indicator has been validated.

To calculate the FCS from these results, the consumption frequencies are summed and multiplied by the standardized food group weight (see the food groups and corresponding weights below). Households can then be further classified as having "poor (0-21),"

"borderline (21.5-35)," or "acceptable (>35)" food consumption by applying the World Food Programme (WFP) recommended cut-offs to the food consumption score (WFP 2008).

We employ Paired Sample T-Test to determine the difference between FCS before (2018-19) and during (2020) COVID-19 pandemic. Further, we employed the Chi-Squared Test to examine the association between categorical variables. Subsequently, we build Binary Logistic Regression model to bring out the food availability factors (e.g., food donation from community, government, or bought food without support i.e., bought food by ration without any card, or bought food by themselves) that are associated with likelihood of acceptable food consumption (as per WFP's recommendations) at household level.

Analysis and Results

ANALYSIS 1: HOUSEHOLD FOOD CONSUMPTION SCORE

The descriptive statistics results in Table 1 clearly shows the major changes in borderline category of household's FCS during the pandemic. Table-1 illustrates the household's food consumption score before (2018-19) and during COVID-19 (2020) pandemic. The FCS before COVID-19 pandemic indicate 15.7 percent of poor, 3.8% borderline, and 80.9% acceptable by applying the WFP's recommended cut-offs to the food consumption score. However, the results demonstrate dramatically change in FCS during the pandemic, as 10% poor, 19.8% borderline, and 70.2% acceptable.

Table-2 presents descriptive statistics, percentage of changes in consumption of each major food groups across time, before (2018-19) and during COVID-19 (2020) pandemic. Comparing FCS before and during the pandemic show the higher proportion of reduction in food consumption on basis of daily and non-consumed each food groups frequency.

RESULTS

Daily consumption of starch staples has been reduced from 56.9% before the pandemic to 46.1% during the pandemic. The statistics bring out bring out the extreme reduction in daily consumption of dairy products during pandemic (53.3%) as compared to before pandemic (72.2%). Daily pulses consumption has been reduced from 54.2% before the

pandemic to 43.6% during the pandemic. Daily consumption of vegetables and fruits has been changed from 24.2% before to 15.4% during the pandemic.

Daily consumption of non-veg reduced from 9.0% before the pandemic to 4.8% during the pandemic. Additionally, among all the major food groups, the percentage of households who did not consumed non-veg foods before pandemic (18.2%) has been increased to 22.9% during the pandemic. Overall, these statistics has demonstrated that the daily consumption of major food groups has reduced, and the frequency of consumption has been changed to weekly from 2-3 times in a week consumption.

Table 1. Descriptive statistics for comparing FCS across time

		2018-19		2020	
		Count	Percentage	Count	Percentage
FCS	Poor	445	15.7	285	10.1
	Borderline	108	3.8	559	19.8
	Acceptable	2277	80.5	1986	70.2

Table 2. Descriptive statistics for comparing each food groups consumption

		2018-19		2020	
		Count	Percentage	Count	Percentage
Starch staples	No	331	11.7%	247	8.7%
	weekly	246	8.7%	283	10.0%
	2-3 time in a week	642	22.7%	994	35.1%
	Daily	1611	56.9%	1306	46.1%
Dairy products	No	439	15.5%	416	14.7%
	weekly	132	4.7%	230	8.1%
	2-3 time in a week	217	7.7%	677	23.9%
	Daily	2042	72.2%	1507	53.3%
Pulses	No	375	13.3%	276	9.8%
	weekly	244	8.6%	343	12.1%
	2-3 time in a week	676	23.9%	977	34.5%
	Daily	1535	54.2%	1234	43.6%
Non-veg	No	516	18.2%	647	22.9%
	weekly	1415	50.0%	1614	57.0%
	2-3 time in a week	643	22.7%	433	15.3%
	Daily	256	9.0%	136	4.8%
Vegetable and Fruits	No	398	14.1%	276	9.8%
	weekly	664	23.5%	1060	37.5%
	2-3 time in a week	1084	38.3%	1059	37.4%
	Daily	684	24.2%	435	15.4%

ANALYSIS 2: IMPACT OF THE COVID-19 PANDEMIC ON HOUSEHOLD'S FCS

Table-3 illustrates the results of a paired-sample t-test conducted to evaluate the impact of the COVID-19 pandemic on household's food consumption score (FCS) before (2018-19) and during (2020) the pandemic.

Table- 4 shows the impact of COVID-19 pandemic on households' major food groups consumption in before (2018-19) and during (2020) pandemic. The results clearly reveal a significant decrease in household's starch staples consumption before (M = 4.53, SD = 2.900) to after (M = 4.03, SD = 2.803), t = 9.902, p <.001, household's dairy products consumption before (M = 5.25, SD = 2.853) to after (M = 4.29, SD = 2.959), t = 16.819, p <.001, household's pulses consumption before (M = 4.36, SD = 2.934) to after (M = 3.86, SD = 2.818), t = 9.087, p <.001, household's non-veg consumption before (M = 1.59, SD = 1.823) to after (M = 1.21, SD = 1.438), t = 9.961, p <.001, and household's vegetable and fruits consumption before (M = 2.69, SD = 2.522) to after (M = 2.20, SD = 2.138), t = 11.546, p <.001). The means decrease in all the tests scores and confidence intervals present in the table.

RESULTS

The results show a significant decrease in the household's FCS between the two time periods (in 2018-19: M = 55.76, SD = 27.754, in 2020: M = 49.11, SD = 23.467), t = 13.027, p <.001 (two-tailed). The mean decrease in the test scores was 6.652 with a 95% confidence interval ranging from 5.650 to 7.653. The results also clearly reveal a significant decrease in household's starch staples, dairy products and meat and other non-vegetarian food consumption before and after COVID-19.

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Table 3. Paired sample t. test for impact of COVID-19 pandemic on household's FCS in 2018-19 and 2020

	Mean	Std. Deviation	Paired Differences					t	df	Sig. (2-tailed)
			Mean	Std. Deviation	Std. Error Mean	95% CI of the Difference				
						Lower	Upper			
FCS 2018-19	55.76	27.754	6.652	27.164	.511	5.650	7.653	13.027	2829	.000
FCS 2020	49.11	23.467								

Table 4. Paired sample t. test for impact of COVID-19 pandemic on households' major food groups consumption in 2018-19 and 2020

		Mean	Std. Deviation	Paired Differences					t	df	Sig. (2-tailed)
				Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
							Lower	Upper			
Pair 1	Starch staples (2018-19)	4.53	2.900	.493	2.646	.050	.395	.590	9.902	2829	.000
	Starch staples (2020)	4.03	2.803								
Pair 2	Dairy (2018-19)	5.25	2.853	.964	3.048	.057	.851	1.076	16.819	2829	.000
	Dairy (2020)	4.29	2.959								
Pair 3	Pulses (2018-19)	4.36	2.934	.497	2.908	.055	.390	.604	9.087	2829	.000
	Pulses (2020)	3.86	2.818								
Pair 4	Nonveg (2018-19)	1.59	1.823	.375	2.002	.038	.301	.449	9.961	2829	.000
	Nonveg (2020)	1.21	1.438								
Pair 5	Vegetable-Fruits (2018-19)	2.69	2.522	.494	2.274	.043	.410	.577	11.546	2829	.000
	Vegetable-Fruits (2020)	2.20	2.138								

ANALYSIS 3: ASSOCIATION BETWEEN FOOD SUPPORTS VARIABLES

We employed Chi-Squared tests in order to verify the relationship among food supports variables. Figure. 1 describes the association between different food support mechanism such as donation form private people, donation from government, by ration no/without card, and bought themselves (participants).

Problem 1: To identify the association between food donation from private people and food donation from government. *Hypothesis 1*: There is a significant association between the food donation from private people and food donation from government. The result indicates there is an insignificant relationship at 5% significance level between the food donation from private people and food donation from government ($X^2 = .336$, df = 1, p = .562). Hence, H1 was not supported.

Problem 2: To identify the association between received food by ration without card and food donation from government. *Hypothesis 2*: There is a significant association between received food by ration without card and food donation from government. The result implies there is an insignificant relationship at 5% significance level between received food by ration without card and food donation from government ($X^2 = .409$, df = 1, p = .523). Hence, H2 was not supported.

Problem 3: To identify the association between bought food by myself and food donation from government. *Hypothesis 3*: There is a significant association between bought food by myself and food donation from government. The result shows there is an insignificant relationship at 5% significance level between bought food by myself and food donation from government ($X^2 = .187$, df = 1, p = .666). Hence, H3 was not supported.

Problem 4: To identify the association between food donation from private people and bough food by myself. *Hypothesis 4*: There is a significant association between food donation from private people and bough food by myself. The results depict there is a significant relationship at 5% significance level between the food donation from private people and bough food by myself ($X^2 = 4.714$, df = 1, p = .030). Hence, H4 was supported.

Problem 5: To identify the association between food donation from private people and received food by ration without card. *Hypothesis 5*: There is a significant association between food donation from private people and received food by ration without card. The result reveals there is a significant relationship at 5% significance level between food

donation from private people and received food by ration without card (X^2 = 633.911, df = 1, p = <.001). Hence, H5 was supported.

Problem 6: To identify the association between bought food by myself and received food by ration without card. *Hypothesis 6*: There is a significant association between bought food by myself and received food by ration without card. Lastly, the result show there is a significant relationship at 5% significance level between bought food by myself and received food by ration without card (X^2 = 387.661, df = 1, p = <.001). Hence, H5 was supported.

Table-4 describes the logarithmic association between various food support mechanisms and the FCS during pandemic. Interestingly, the results show, not receiving food by ration without card significantly increases the likelihood of poor FCS (p-value < 0.01, 95% CI 2.949 – 5.573), and borderline FCS (p-value < 0.01, 95% CI 1.244 – 2.033), at household level.

Moreover, the results depict that the households who did not purchase food by themselves (p-value <.021, 95% CI 1.055 – 1.937), and households who did not receive food donation from private people (p-value <.028, 95% CI 1.031 – 1.695) significantly contributes to rise the probability of borderline FCS among them.

RESULTS

The figure shows two interesting results. First, the higher proportion of people whose received food by ration without card, have not received donation from government as well as donation from private people. Second, the higher proportion of people who did not buy food by themselves, have not received food donation from government and donation private people. Third, the higher proportion of people who did not bought food by themselves, received food by ration without card. Table 5 reveals the Chi-square statistics used to examine association between categorical food support variables.

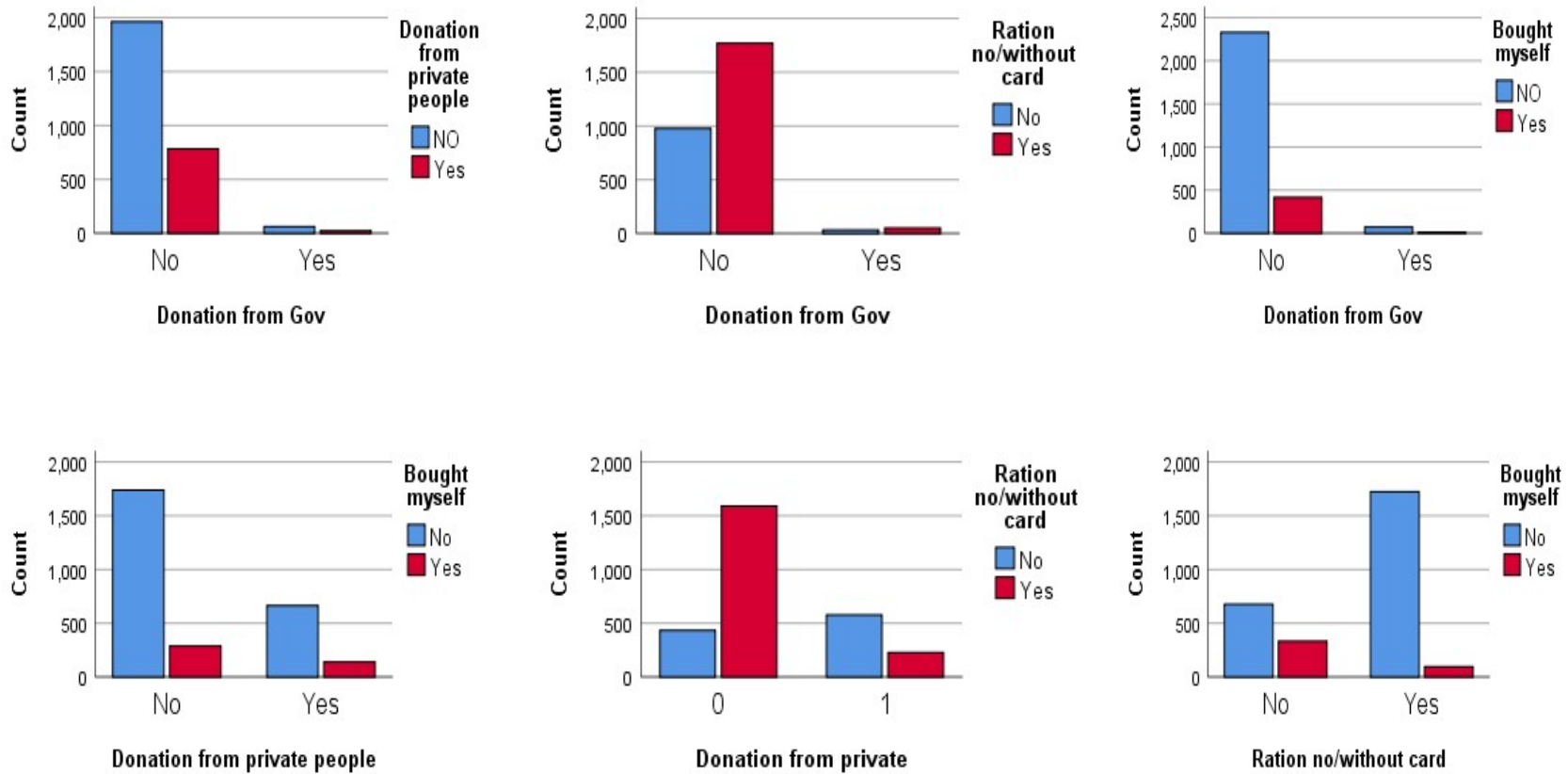**Figure 1. Descriptive statistic of Chi-Square Tests**

Table 5. Chi-Square Tests

Pairs	Pearson Chi-Square	df	Asymptotic Significance (2-sided)
Where did you get food during lockdown?	Value		
Donation from Government - Donation from private people	.336	1	.562
Donation from Government - Ration no/without card	.409	1	.523
Donation from Government - Bought myself	.187	1	.666
Donation from private people - Bought myself	4.714	1	.030
Donation from private people - Ration no/without card	633.911	1	.000
Ration no/without card - Bought myself	387.661	1	.000

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is greater than 5 among all the results.
b. Computed only for a 2x2 table

Table 6. Regression Analysis for impact of different food supports FCS during pandemic (2020)

Variables of Interest	FCS-Poor (2020)					FCS-Borderline (2020)				
	B	Sig.	Exp(B)	95% CI for Exp(B) Lower Bound	Upper Bound	B	Sig.	Exp(B)	95% CI for Exp(B) Lower Bound	Upper Bound
Intercept	-2.287	.000				-1.780	.000			
Where did you get food during lockdown (Ration no/without card) (No - Yes ᵃ)	1.400***	< 0.01	4.054	2.949	5.573	.464***	< 0.01	1.590	1.244	2.033
Where did you get food during lockdown (Bought myself) (No - Yes ᵃ)	.023	.894	1.023	.732	1.431	.357**	.021	1.429	1.055	1.937
Where did you get food during lockdown (Donation from private people) (No - Yes ᵃ)	.024	.876	1.024	.758	1.384	.279**	.028	1.322	1.031	1.695
Where did you get food during lockdown - Donation from Government (No - Yes ᵃ)	-.371	.288	.690	.348	1.369	-.164	.559	.849	.491	1.469

a Represents reference level; CI indicates confidence interval; Significance determined at p <0.1; ***p<0.01, **p<0.05, *p<0.1.
The reference category is: FCS-Acceptable (2020).

ANALYSIS 5: IMPACT OF COVID-19 FOOD CONSUMPTION ON CHILD SCHOOL DROPOUT

Table 4 describes the logarithmic association between child school dropout and household's food consumption during COVID-19 pandemic.

Not sleeping hungry during lockdown is significant contributor to less likelihood of children school dropout (p-value <0.01, 95% CI .322– .478), confirming the literature evidence on food crisis looms as more than 39 billion in-school meals missed since start of pandemic and limited access to free meal from vulnerable populations (UNICEF and WFP 2021). Hence, child drop out school and focusing on essential survival needs such as food has been gaining attention in vulnerable households.

Interestingly, as compared to acceptable FCS, the borderline FCS during pandemic significantly reduce the likelihood of child school dropout (p-value <0.01, 95% CI .450– .773). The borderline threshold of household's food consumption status represents the average food security and caloric sufficiency as per the WFP guideline. Earlier research show food security effect on physical growth and health of children, their intellectual development, school attendance and academic performance (Belachew et al. 2011).

Lastly, consumption of a smaller number of meals per day (p-value <0.050, 95% CI 1.001–. 3.333), and two per day per day (p-value <0.0, 95% CI 1.211– 3.468), increase the probability of children school dropout. Confirming earlier literature on consumption of insufficient quantities of food (e.g., number of meals per day) is exhibiting with unavailability of food and further led to children school dropout due to lack of essential foods and food insecurity (Rozaki 2021).

RESULTS

Not sleeping hungry during lockdown is significant contributor to less likelihood of children school dropout. As compared to acceptable FCS, the borderline FCS during pandemic significantly reduce the likelihood of child school dropout. Lastly, consumption of a smaller number of meals per day and two per day per day (versus normal 3 meals per day) increased the probability of children school dropout.

Table 7. Regression Analysis – Impact of food consumption on child dropout school

Variables of Interest	B	Sig.	Exp(B)	95% CI for Exp(B) Lower Bound	Upper Bound
Did your family sleep hungry any time during the lockdown (No - Yes [a])	-.935	.000	.393	.322	.478
FCS-2020 (Poor – Acceptable [a])	-.048	.759	.953	.702	1.294
FCS-2020 (Borderline – Acceptable [a])	-.528	.000	.590	.450	.773
No of meals per day (Less – Four meals [a])	.603	.050	1.827	1.001	3.333
No of meals per day (Same – Four meals [a])	.938	.159	2.555	.693	9.426
No of meals per day (Two meals – Four meals [a])	.717	.008	2.049	1.211	3.468
No of meals per day (Three meals – Four meals [a])	.054	.846	1.055	.615	1.811

a Represents reference level; CI indicates confidence interval; Significance determined at $p < 0.1$; ***$p<0.01$, **$p<0.05$, *$p<0.1$. The reference category is: Children not dropped school

DISCUSSION

The current study sought to understand the determinants impact of COVID-19 pandemic on food and nutrition consumption of gig economy Indian households. In addition, we attempt to understand the food supports determinants of food consumption and find the association between the food support mechanisms. Adding to earlier research, changes in food consumption score and shifts in major food groups in before and during pandemic in vulnerable households were explored. Furthermore, the importance of food supports in determining the food consumption score and the association between the different food supports were studied.

Broadly, three interesting findings stand out as significant contributors to food and nutrition at the household level in India.

- The majority of the household's food consumption score (FCS) has shifted from acceptable towards borderline category.
- Extreme reduction in daily consumption of dairy products and fruits/vegetables, and little reduction in consumption of starch staples and daily pulses is evidenced in the survey. Overall, analysis demonstrates the daily consumption of major food groups has reduced, and the frequency of consumption has changed to once a week from 2-3 times in a week consumption.
- Not sleeping hungry during lockdown is significant contributor to less likelihood of children school dropout. Consumption of a smaller number of meals per day and two per day per day (versus normal 3 meals per day) increased the probability of children school dropout.

3.1 Impact of the COVID-19 pandemic on food and nutrition consumption

Significant differences FCS between 2018-19 and 2020 were observed in the paired sample t-test results and descriptive statistics. The comparison between the means shows a statistically significant reduction in the average of household's FCS during pandemic as compared to FCS before pandemic. The result confirms recent literature emphasizing the poor diet diversity and food insecurity among Indian households during the COVID-19 lockdown (Aneesh and Patil 2021).

Furthermore, the findings depict the higher proportion of changes in consumption of dairy products, among all major food groups. Literature on COVID-19 pandemic indicate that the dairy farmers have suffered higher losses mainly due to the impossibility of completely adjusting the supply in accordance with demand (Bhandari and Ravishankar 2020). Our results confirm the same in context of dairy products consumption in Indian households.

3.2 The association between different food supports

The association between diverse food support mechanisms were seen in the Chi-squared test and descriptive statistics. The finding brings out the association between the three major food supports, including, (1) food donation from private people and receiving food by ration without card, (2) food donation from private people and bought myself, and (3) receiving food by ration without card and bought myself, which signify that improving in any of the aforementioned food supports contributes to improving on others. However, the findings show there is no association between food donation from government and other food support variables such as food donation from private sectors, bought by ration without card, and bought myself.

3.3 The food supports determinants of food consumption

The lack of food support (e.g., not receiving ration without card) increase the incidence of poor and borderline FCS at household level. Receiving ration without card contributed to maintain the food consumption in most vulnerable population while tackling the economic impact of the lockdown. In the same way, not receiving ration without card increase the risk of food insecurity among the vulnerable households across time.

Furthermore, not receiving food donation from private and not purchasing food by participants themselves contributes to a higher probability of households' borderline FCS. These results support the inference that the fluctuating food supports adversely impact on dietary diversity and food consumption during pandemic (Bailey 2013; Skalski et al. 2005).

Surprisingly, the findings highlight that the food donation from government has not significantly contributes to FCS during pandemic. Results confirm literature evidence on poor supply of government services such as food availability in families, and limitation of food schemes (e.g., Mid-Day-Meal for school children) during the lockdown took away a free meal form individuals and consequently led to poor food and nutrition consumption particularly among low-income population in India (Gatty and Rathee 2020; N.C. Saxena 2011).

3.4 Impact of household's food consumption on child dropout school during pandemic

The finding highlights the association between hunger, food insecurity, and food unavailability with children school dropout in India. Studies have found that household food insecurity (HFI) is a powerful stressor with important implications for cognitive development, a poorer diet quality and quantity resulting malnutrition and leading to poor school achievement, and high rates of school dropout (Chilton, Chyatte, and Breaux 2007; de Oliveira et al. 2020; Walker et al. 2005).

Although India has nominally reduced malnutrition and hunger over the last decade, and several government programs (such as ICDS and Mid-Day-Meal) are in place, the COVID-19 pandemic has disrupted education systems. The ongoing closure of schools has affected 27 crore children in India and deprived vulnerable children from the free school meal which leads to a massive increase in dropouts.

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