

ORIGINAL ARTICLE

Socio-economic Status, Food Security Status and its Coping Strategies among 'The Lost Food Project' (TLFP) Recipients in Klang Valley during COVID-19 Pandemic

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ABSTRACT

Introduction: The Lost Food Project (TLFP) is a non-profit organization who continuously working on their strategic plan in combating the food insecurity problem by distributing food surplus to low income households within Klang Valley. This cross-sectional study aims to determine the socioeconomic status, food security status and its coping strategies among TLFP recipients in Klang Valley during COVID-19 pandemic. **Methods:** This study was conducted from April to June 2021. There were 88 respondents recruited through convenience sampling. A set of questionnaires regarding food assistance, nutrition knowledge, food security and its coping strategies was prepared, and the respondents were interviewed either by phone, face-to-face or self-administered questionnaire. **Results:** The prevalence of food insecurity among households in this study was 59.1%. Most of them have moderate (37.5%) to good (27.5%) nutrition knowledge. The coping strategy that most of the respondents applied was 'using less expensive food' (58.3%) with at least once per week within the past one month. Food insecure households tend to adopt more coping strategies compared to those food secure households ($p < 0.001$). Moreover, households who rent their house ($p < 0.01$), low household income ($p < 0.05$) and high monthly food and drinks expenditure ($p < 0.01$) were associated with the food insecurity among TLFP recipients. **Conclusion:** The study concluded that lower household income, higher food and drinks expenditure and those who rent the house have negative impacts on household's food security status. Thus, the situation forced them to apply more food-related coping strategies in their daily life. Further research should be conducted on the effectiveness of TLFP in helping them to improve Malaysian's food security status. *Malaysian Journal of Medicine and Health Sciences* (2023) 19(1):80-88. doi:10.47836/mjmhs19.1.12

Keywords: Food security status, Coping strategies, Low income households, Food assistance, Nutrition knowledge

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INTRODUCTION

Food security can be defined as "a situation that exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preference for a healthy and active life" (1). There are four dimensions of food security which are availability, accessibility, utilization and stability. All of these four dimensions need to be fulfilled to ensure that an individual has access to healthy and nutritious food. The food insecurity is a worldwide problem, in both developed and developing countries, and it has become one of the greatest concerns, especially when the COVID-19

pandemic strikes in the world and further cause the disruption in food system (2).

From the global perspective, the moderate and severe food insecurity problem have been found to be increased progressively from 22.6% in 2014 to 26.6% in 2019 and 30.4% in 2020 (3). With an increase of 320 million people experiencing inadequate food in just one year and 148 million more people were severely food insecure in 2020 than in 2019, this shows that the aim to achieve Zero Hunger in 2030 can be seen to be dilatory. As in 2020, among 768 million people who were undernourished in the world, 418 million of them live in Asia, 282 million live in Africa, 60 million live in Latin America and the Caribbean and 3 million live in Oceania (3). Moreover, Southern Asia has been projected to have the steepest slope on the increment of number of undernourished people in 2020 compared to 2019 (3).

Meanwhile, within Malaysian population, there are about 24.95% of Malaysian adults ever experienced food quantity insufficiency due to the financial constraints in the past 12 months and 39.24% of them are from East Malaysia compared to 21.13% in Peninsular Malaysia (4). Another local study reported that 50.6% of Chinese households in PPR Air Panas, Kuala Lumpur were in food insecurity status either household insecure, individual insecure or child hunger before the COVID-19 pandemic strikes the world (5).

The COVID-19 pandemic have driven to the economic downturn and it dramatically affects the affordability of healthy foods (6,7). Being unaffordable to buy nutritious and healthy food will give impact towards one's dietary consumption. This situation will lead to the increase demand of food assistance programme to obtain food for their family and prevent food insecurity problem within that particular household.

Several organizations such as The Lost Food Project (TLFP) have taken the initiative to reduce the problem of food insecurity in Malaysian population. The TLFP is a non-profit organization that was founded in 2016 to tackle the problem of food waste, environmental sustainability and hunger. TLFP rescues quality, nutritious food that would otherwise end up in the landfill and redistributes this food and other essential items to those who are in need regardless of religion, gender, age, disability or ethnic group. TLFP includes redistributing quality surplus food from several supermarket chains and food manufacturers such as fruits and vegetables to selected People's Housing Project (PPR). Through this food redistribution, TLFP aims to help families with low income to redirect their limited resources to other essentials such as health care and education. A total of 7510 families living in PPR receive the redistribution of foods from TLFP with 564,467 kg of surplus food being rescued from 12 food donors participated in TLFP (8). Besides, involving in TLFP can also be one of the coping strategies adopted by the households to reduce the impact of food insecurity.

Along the six years of being implemented, there has been limited study involving food security status among food assistance recipients especially among TLFP recipients and their coping strategies to mitigate with the food insecurity problem. Thus, this study aims to determine the socioeconomic status, food security status and its coping strategies among TLFP recipients in Klang Valley during COVID-19 pandemic.

MATERIALS AND METHODS

Study population and design

This cross-sectional study was conducted among 88 residents from seven low-cost public housing areas in Klang Valley, which were selected by using convenience sampling. The required sample size of this study was

118 respondents involving adults aged 18 years old and above, with household income less than RM6960 (B40), staying in low cost public housing area and their household had received TLFP products (i.e. rice, bread, flour, cooking oil, sugar, etc.) within the past 12 months. Respondents with dementia were excluded from this study.

Instruments

A set of structured questionnaires in Malay language was used to obtain information on demographic and socioeconomic background, food assistance, nutrition knowledge, household food security, and coping strategies towards food security. Respondent's demographic and socioeconomic background included in the study were age, marital status, education level, employment status, number of children, household size, monthly household income, home-ownership status and food and drink expenditure. Four-items on food assistance were self-developed to assess the overall satisfaction on the TLFP products received by the respondents in terms of household's food supply, the significance level of the food assistance towards themselves and their households and the type of items received from any donor or food assistance program and its frequency within 12 months. Moreover, a validated questionnaire, developed by the Malaysian Technical Working Group on Research (TWR-G), was used to assess the level of nutrition knowledge of the respondents (9). This questionnaire comprised 20 items on nutrition knowledge were further categorized into five domains: food selection, nutrition function, energy of food, nutrient insufficiency and nutrient availability. Each correct answer was given one mark and the cumulative score was classified into poor (0-10), moderate (11-14) and good (15-20).

Food security status of the respondents was assessed using the Malay-version U.S. Household Food Security Survey Module: Six-Item Short Form Survey (10). The total score was classified into three categories which were high (0-1), low (2-4) and very low (5-6) food security level as proposed by USDA (11). Meanwhile, only 12 food-related items from the Malaysian Coping Strategies Instruments (MCSI) were included in this study to assess the coping strategies among the respondents (12). Each question was asked about the relative frequency per day, per week, per month and never. Each coping strategy had a different level of perceived severity; less severe, quite severe, severe and very severe (12).

Due to the Movement Control Order (MCO) during COVID-19 pandemic, the data were collected by using various techniques such as face-to-face interview, phone interview and self-administered questionnaire. Each of the respondents involved in this study was given a token of appreciation from TLFP in the form of food.

The ethical approval was obtained from the Ethics

Committee for Research Involving Human Subjects of Universiti Putra Malaysia (JKEUPM-2020-455) prior data collection. Further permissions were obtained from Kuala Lumpur City Hall (DBKL) and the management of the selected PPR before approaching the respondents.

Statistical analysis

Data were analyzed by using IBM SPSS Version 25.0. The categorical data were presented as number (n) and percentage (%), while continuous data were presented as mean (M) and standard deviation (SD). An independent samples t-test was used to compare the mean of coping strategies scores between food secure and food-insecure households. Meanwhile, chi-square was used to determine the association between socioeconomic background, nutrition knowledge and food security status of households who received TLFP products. The significance value was set at $p < 0.05$.

RESULTS

Demographic and socioeconomic background

Out of 160 TLFP recipients, 88 of them participated in this study (55%) with the response rate of 74.6%. Detailed socioeconomic background of the respondents are presented in Table I. The majority of the respondents were 41 years old and above (77.0%), Malay (86.4%), and married (64.8%). More than half of the respondents have secondary education level (74.4%). A greater number of respondents rent their house (67.8%) and the rest (32.2%) owns them. More than half of the respondents reported to be unemployed (58.6%), with a monthly household income of less than RM2000 (76.5%) and a household size ranging from three to five person (54.7%).

Food assistance

The majority of them satisfied with the food assistance received from TLFP (72.7%). The respondents were mostly thought that the food assistance was helpful in providing the food supply for their household (88.7%) and important (86.4%) in maintaining the food security status of their households. Most of the respondents reported that they received noodles (83.0%), rice (81.8%) and sugar (80.7%). Meanwhile, the least food or food never received by the respondents were fruits (93.2%), ready-to-eat food (90.9%) and flavoured drinks (88.6%).

Nutrition knowledge

Overall, the respondents scored significantly higher in questions that focused on the effects of excessive energy (92.0% and 90.0%) and sugar intake (90.9%), followed by knowledge on food preparation (87.5%) and the importance of exercise (75.0%). In contrast, most respondents answered wrongly on questions regarding the food pyramid, i.e. nutrient with the highest energy (77.2%), foods high in cholesterol (72.8%) and food to be consumed moderately (70.4%). Questions regarding

Table I: Socioeconomic background of respondents (n =88)

Variable	n	Percentage (%)
Age (n=87)		
≤19 years old	3	3.4
20-40 years old	17	19.6
≥ 41 years old	67	77.0
Gender		
Male	18	20.5
Female	70	79.5
Ethnicity		
Malay	76	86.4
Chinese	3	3.4
Indian	9	10.2
Religion		
Islam	78	88.6
Buddha	2	2.3
Hindu	8	9.1
Marital status		
Married	57	64.8
Divorced	24	27.3
Single	7	8.0
Education level (respondents) (n=86)		
Never attended school	3	3.5
Primary	11	12.8
Secondary	64	74.4
Tertiary	8	9.3
Education level (partners) (n=70)		
Never attended school	1	1.4
Primary	7	10.0
Secondary	24	34.3
Tertiary	7	10.0
Irrelevant*	31	44.3
Type of house (n=87)		
Rent	59	67.8
Owned	28	32.2
Occupation (respondents) (n=87)		
Employed	36	41.4
Unemployed	51	58.6
Occupation (partners)		
Employed	29	33.3
Unemployed	18	20.5
Irrelevant**	41	46.6
Number of households (n=86)		
≤ 2 persons	10	11.6
3-5 persons	47	54.7
6-8 persons	26	30.2
≥ 9 persons	3	3.5
≤ 5 persons	57	66.3
≥ 6 persons	29	33.0
Number of households who is working (n=81)		
≤ 2 persons	71	87.7
≥ 3 persons	10	12.3
Number of households who still studying (n=85)		
None	29	34.1
1-2 persons	37	43.5
≥ 3 persons	19	22.4
Presence of household with chronic diseases (n=85)		
Yes	59	69.4
No	26	30.6
Household income (n=85)		
≤ RM2000	65	76.5
>RM2000	20	23.5
Monthly food and drinks expenditure (n=86)		
≤RM500	33	38.4
RM501-RM1000	39	45.3
≥RM1001	14	16.3

* 'Education level (partners): Irrelevant' is referred to those who single/divorced.

** 'Occupation (partners): Irrelevant' is referred to those who single/divorced and unemployed.

Body Mass Index (BMI) (35.2%) and foods high in salt (22.7%) appeared to be the least known among the respondents.

The mean of nutrition knowledge questions was 11.66 ± 3.91, ranging from 2 to 18. The majority of the respondents were in poor (35.2%) or moderate (37.5%) nutrition knowledge levels (Table II).

Table II: The level of nutrition knowledge among households who received TLFP products (n =88)

Nutrition knowledge level	n	Percentage (%)	Mean	SD	Min value	Max value
Poor	31	35.2	11.66	3.910	2	18
Moderate	33	37.5				
Good	24	27.3				

Food security status

In terms of food security status, the majority of the respondents experienced low (40.9%) and very low (18.2%) food security status (Table III). Meanwhile, 40.9% of the respondents were in high food security status.

Table III: The prevalence of food insecurity among household who received TLFP products (n =88)

Food security status*	n	Percentage (%)
High food security	36	40.9
Low food security	36	40.9
Very low food security	16	18.2

*Reference: USDA, 2012

Food related coping strategies

This study presented that using less expensive food (6.9%), using less preferred food (3.4%), allocating money to buy staple and less preferred food (9.1%), reducing the number of meals eaten in a day (4.6%), favouring certain household members over the others

(21.8%) and cutting down the portion size or a number of dishes for meals (14.9%) were the variables that were applied by respondents every day in the past one month (Table IV). The result also showed that 19 respondents were favouring certain household members over the others every day in the past one month (21.8%) as one of the coping strategies adopted in the households, which is the highest compared to other coping strategies. Furthermore, it can be seen from the results that there was a higher percentage of respondents who never send their children to eat with mothers/ siblings/ at neighbours' houses (94.3%), followed by skipping meals the whole day (91.9%) and purchase food on credit (84.1%). Overall, the mean MCSI score of the respondents was 20.40 ± 19.82.

Differences between the mean of MCSI score of food secure and food insecure households

The results in Table V showed that there was a significant difference between the mean MCSI score between those who were food secure and food insecure (t= -3.904, p<0.001). The mean of MCSI scores of those food insecure was significantly higher (M=26.95, SD=22.13) compared to those who were food secure (M=11.29, SD=11.06).

Association between socioeconomic background, nutrition knowledge and food security status

Table VI presents a significant association between home ownership status and food security status (χ²= 7.593, p<0.05). More respondents in the food insecure

Table V: Mean MCSI score between food secure and food insecure (n = 86)

Group	n	Mean	SD	t	p
Food secure	36	11.29	11.06	-3.904	<0.001
Food insecure	50	26.95	22.13		

Table IV: Food related coping strategies adopted by the households (n=87)

Variables	n (%)				
	Everyday	3-6 times per week	1-2 times per week	Less than 1 times per week	Never
Using less expensive food	6 (6.9)	23 (26.4)	22 (25.0)	23 (26.4)	13 (14.9)
Using less preferred food	3 (3.4)	1 (1.1)	10 (11.5)	15 (17.2)	58 (66.7)
Consuming whatever food is available around the house		6 (6.9)	6 (6.9)	5 (5.7)	70 (80.5)
Receiving food assistance from agencies/ neighbours/ siblings/ individuals/ employer		1 (1.1)	17 (19.3)	34 (38.6)	35 (39.8)
Borrowing money to buy food from employer/ friends/ neighbours/ siblings		1 (1.1)	4 (4.5)	11 (12.5)	71 (80.7)
Purchasing food on credit		3 (3.4)	2 (2.3)	8 (9.1)	74 (84.1)
Sending children to eat with mothers/ siblings/ at neighbours' houses		2 (2.3)	1 (1.1)	2 (2.3)	82 (94.3)
Allocating money to buy staple and less preferred food	8 (9.1)	21 (24.1)	17 (19.3)	23 (26.1)	18 (20.5)
Reducing the number of meals eaten in a day	4 (4.6)	5 (5.7)	17 (19.5)	15 (17.2)	46 (52.3)
Favouring certain household members over the others	19 (21.8)	4 (4.6)	9 (10.3)	7 (8.0)	48 (55.2)
Skipping meals the whole day (n=86)			3 (3.5)	4 (4.7)	79 (91.9)
Cutting down the portion size or number of dishes for meals	13 (14.9)	7 (8.0)	11 (12.6)	9 (10.3)	47 (54.0)

Table VI: Association between socioeconomic background and nutrition knowledge with food security status (n =88)

Variable	Food security status, n(%)		χ^2	p
	Secure (n=36)	Insecure (n=52)		
Age ¹				
≤ 40 years old	4(11.1)	16(31.4)	3.816	0.051
≥ 41 years old	32(88.9)	35(68.6)		
Gender ¹				
Male	8(22.2)	10(19.2)	0.005	0.942
Female	28(77.8)	42(80.8)		
Ethnicity ²				
Malay	31(86.1)	45(86.5)	5.005	0.066
Chinese	3(8.3)	0(0.0)		
Indian	2(5.6)	7(13.5)		
Religion ²				
Islam	32(88.9)	46(88.5)	3.193	0.151
Buddha	2(5.6)	0(0.0)		
Hindu	2(5.6)	6(11.5)		
Marital status ²				
Married/Divorced	34(94.4)	47(90.4)	0.696	
Single	2(5.6)	5(9.6)		
Education level (respondent) ²				
Never attended school or primary	7(19.4)	7(14.0)	2.316	0.328
Secondary	24(66.7)	40(80.0)		
Tertiary	5(13.9)	3(6.0)		
Education level (partner) ²				
Never attended school or primary	3(13.0)	5(31.3)	2.151	0.344
Secondary	16(69.6)	8(50.0)		
Tertiary	4(17.4)	3(18.8)		
Home ownership status ¹				
Rent	18(50.0)	41(80.4)	7.593	0.006*
Owned	18(50.0)	10(19.6)		
Occupation (respondent) ¹				
Employed	15(41.7)	24(47.1)	0.078	0.780
Unemployed	21(58.3)	27(52.9)		
Occupation (partner) ¹				
Employed	13(56.5)	16(66.7)	0.512	0.678
Unemployed	11(43.5)	8(33.3)		
Number of household ¹				
≤ 2 person	3(8.6)	7(13.7)	1.665	0.435
3-5 person	22(62.9)	25(49.0)		
≥ 6 person	10(28.6)	19(37.3)		
Number of household who working ²				
≤ 2 person	25(80.6)	46(92.0)	0.170	
≥ 3 person	6(19.4)	4(8.0)		
Number of household who still studying ¹				
None	12(34.3)	17(34.0)	1.071	0.586
1-2 person	17(48.6)	20(40.0)		
≥ 3 person	6(17.1)	13(26.0)		
Presence of chronic diseases ¹				
Yes	25(71.4)	34(68.0)	0.010	0.922
No	10(28.6)	16(32.0)		
Household income ¹				
≤ RM2000	22(62.9)	43(86.0)	4.910	0.027*
>RM2000	13(37.1)	7(14.0)		
Monthly food and drinks expenditure ¹				
≤RM500	18(51.4)	15(29.4)	9.208	0.011*
RM501-RM1000	9(25.7)	30(58.8)		
≥RM1001 and above	8(22.9)	6(11.8)		
Nutrition knowledge ¹				
Poor	9(25.0)	22(42.3)	2.086	0.149
Moderate or Good	27(75.0)	30(57.7)		

*significant value sets at p<0.05

¹ Chi-square test was used

² Fisher exact test was used

group (80.4%) reported to rent a house as compared those in the food secure group (50.0%). The monthly household income ($\chi^2= 4.910$, $p<0.05$) and monthly food and drinks expenditure ($\chi^2=9.208$, $p<0.05$) were also shown significant associations with the food security status. Based on the findings, more respondents in the food insecure group (86.0%) reported to have a monthly household income of RM2000 and below as compared to those in food secure group (62.9%). On the other hand, more respondents in the food secured group (22.9%) RM1001 and above on food and drinks in a month as compared to those in the food insecure group (11.8%).

DISCUSSION

The present study shows that the demographic of the PPR residents were mainly Malay and married households, where it represents the actual demographic background of PPR residents around Malaysia (13). Majority of the respondents were also having income less than RM2000. Thus, this shows that the government have achieve the objective of PPR development where it should provide a property or place for resettlement for the low income household.

According to the TLFP Strategic Plan 2019-2021 (8), TLFP focuses on distributing food mainly, vegetables, to the low cost public housing area such as PPR, however, it contradicted to the current finding where majority of the respondents received noodles, rice and sugar and rarely received fruits and ready-to-eat food. This might be because of the situation of COVID-19 pandemic in the country where TLFP has been mainly received many products from food industries and other agencies such as dry goods and grocery items, and fewer products were coming from markets due to the low production of fruits and vegetables.

More than half of the households (59.1%) had reported to be food insecure with low and very low food security status, in which a slight higher compared to a study conducted before COVID-19 strikes by Yong and Norhasmah (5) (50.6%) but still within the range according to the systematic review by Norhasmah et al. (15): 47.2% to 100%. This percentage increment on the prevalence of food insecurity might be due to the respondents' eligible criteria to participate or receive food assistance from TLFP. According to the management of PPR, those who received the food assistance should be the one that is qualified based on their low monthly income, presence of disabled family members etc. Moreover, the number of food-insecure households is higher in the current study because it was conducted during the COVID-19 pandemic, where most people are unemployed, and some of them are being dismissed from work. This was proved by Chong et al. (16) and the International Labour Organization & Asian Development Bank (17), where it showed that there is a

slight increase (more than 40%) in the unemployment rate, especially from the second quarter of the pandemic in Malaysia. Therefore, it showed that most respondents might lose their sources of income and encounter some financial challenges where they are prone to become food insecure.

The finding also showed that the respondents opted to reduce the food quality by choosing a cheaper food option and food quantity by reducing the number of meals per day in order to mitigate the food insecurity problem within their households. The finding was supported by previous studies (18-20). Hence, reducing the food quality and quantity is the main coping strategy adopted to the insufficiency of food within households in this study. Poor food quantity and quality will subsequently influence nutritional status and health-related quality of life of the households (21).

Meanwhile, the respondents also opted to favouring certain household members over the others in providing the food because emphasizing childcare might be one of the allocation bases and rules adopted by the parents, especially mothers who prepare the food. Based on Attachment Theory (22) and due to the 'maternal altruism', the mothers are instinctively and willingly to sacrifice their own nutritional needs and satiety to protect their children's diet because they are already emotionally attached to their children (23).

Besides that, on the basis of the Consumer Food Choice Model (24), the food price was the most significant factor in choosing the food for the household. The respondents preferred cheaper food with high energy contents without considering the nutrient contents of the food as long as the food can provide energy and make them fill full throughout the day. Choosing cheaper food will also help them to manage the food budget and allocate the extra money for other essential needs such as house rent, bills, school expenditure and others (25).

The mean of MCSI scores of those food insecure had shown to be significantly higher compare to those who were food secure. Higher MCSI scores indicate more food insecure households (26). Most of them applied strategies where they restrict the food consumption in terms of quality and quantity in order to allocate extra money for the other basic necessities, while some of them applied positive coping strategies where they allocate more money to buy food for the household even though it is less preferred food (27).

Findings from this study also showed that there was a significant association between homeownership status and food security status. The finding was consistent with Elsahoryi et al, (28) and McIntyre et al. (29). The plausible reason for this situation might be because when the household owns their house, it could reduce their monthly expenses on house rent, and they can at

least allocate the extra money to purchase more food for their family. Besides, homeownership also indicated that the household has wealth and assets, which protects the owners from transitory income shocks while protecting them from inflationary pressures that renters experienced (29). However, this was contradicted with a study in Pakistan by Akbar et al. (30), where they claimed that homeownership did not appear to have a substantial role in alleviating severe food insecurity because the majority of the households either do not or spend a minimum portion of their income on housing only especially for the poor families that stayed in the urban area, tend to share a house with other families for the purpose of reducing the burden of house rent.

A significant association was found between the household income and monthly food and drinks expenditure with food security status in the present study. These findings are consistent with previous local studies (31,32). High total expenditure, particularly on food and drinks was associated with the food security status of a household (32,33). This is because lower-income households with the greater expenditure on food and drinks were prone to undergo food stress due to the higher food prices available in the market for healthy food (33). Nevertheless, the cost of nutritious food has become a perceived barrier to its accessibility, resulting in food insecurity problems within that particular household.

The contradictory findings were found when compared to the other studies regarding the age (34,35), education level (36), employment status (37) and number of households (38). The present study also revealed that the nutrition knowledge was not significantly associated with food security status in which it indicated that the food security status would not be affected by an individual's nutrition knowledge level. This finding was supported by Agbozo et al. (14), where the authors claimed that the food choices depend on the availability of food and are not necessarily based on nutrition knowledge. Nevertheless, it was contradicted to the other studies in which emphasizing the responsibility of caregivers in providing a variety of food to the children (39,40), understanding of food and nutrition information (41) and utilization of food (42,43). The contradictory results may be due to the study population where a study by Agbozo et al. (14) involved older people aged ranging from 60 to 70 years old; meanwhile, other studies involving adults and children who have no mobility problem to access the food.

There are few limitations that were discovered throughout the study. Firstly, various techniques were used during data collection. Coping strategies can be biased as the statements made by the respondents might not portray the actual condition of their households. They might be overly claimed their condition to keep their family's dignity. Another limitation of this study is that the TLFP

or the residence's representative do not own or keep the record on the list of any food assistance's recipients. Due to this limitation, the recipient can only be traced during the food distribution program and the type of the food received by them within 12 months is not specifically donated by the TLFP as the recipient might also receive food assistance from other agencies.

CONCLUSION

More than half of the respondents in this study were food insecure, and results further showed that home ownership, monthly household income and monthly food and drinks expenditure were significantly associated with the food security status among TLFP recipients. Besides, food-insecure households tend to adopt more coping strategies to mitigate the food insecurity problem compared to those food-secure households. Due to the COVID-19 pandemic, there have been increasing rate of unemployment, possibly decreasing household income and increasing proportion of household food expenditure, in which lead to food insecurity problem within that particular household. Understanding the associations of socioeconomic backgrounds, nutrition knowledge, food assistance with food security status can contribute to government agencies and non-government agencies to manage and control the food insecurity problem in the Malaysian community. Fundamentally, improving the food security status of households will certainly improve their nutritional status, which then leads to the reduction of the disease burden of a country, however, future interventions are necessarily needed especially on food pyramid information in order to improve the level of nutrition knowledge and well-being of low-cost public housing residents.

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