

Cross-sectional Study: User satisfaction related of Chilean Government's food hampers for Covid-19

Estudio transversal: Satisfacción de usuarios del programa Cajas de alimentos del Gobierno de Chile por Covid-19

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Abstract

The COVID-19 pandemic identified in December 2019 has not only negatively impacted people's health, but also global economies. Chile has implemented a series of measures to combat the economic crisis resulting from the health emergency, one of them is food aid. **Objective:** Determine the user satisfaction related to the supply of food boxes distributed by the Government in Chile as a result of the Covid-19 pandemic. **Materials and methods:** Descriptive observational cross-sectional study. 485 (365 women and 120 men) inhabitants of Santiago de Chile were recruited. An online questionnaire consisting of five items was designed. **Results:** The food box received an average acceptability of 5.1 out of 7 points rated as "good". 85.5% of the participants consider that the food contained in the boxes is a basic necessity. 31.9% fully agreed that the food delivered is a support to the households. At least a quarter of users (20.7%) consider that the food box helped them go to the supermarket less frequently. While only 14.2% declared they totally agree that the boxes cover nutritional needs. **Conclusions:** Knowing the beneficiaries' perception of food aid as part of a government program provides timely information that allows them to be improved in the face of future health, environmental and / or economic crises.

Keyword: food, food boxes, customer satisfaction, Covid-19.

Resumen

La pandemia del COVID-19 identificada en diciembre del 2019 no solo ha impactado negativamente en la salud de las personas, sino que además a las economías mundiales. Chile ha puesto en marcha una serie de medidas para combatir la crisis económica producto de la emergencia sanitaria, una de ellas es ayuda alimentaria. **Objetivo:** Conocer la percepción de satisfacción de usuarios relacionada al suministro de cajas alimentarias distribuidas por el Gobierno en Chile producto de la pandemia del Covid-19. **Metodología:** Estudio transversal descriptivo observacional. Se reclutaron 485 (365 mujeres y 120 hombres) habitantes de Santiago de Chile. Se diseñó un cuestionario online constituido por cinco ítems. **Resultados:** La caja de alimentos recibió una aceptabilidad promedio de un 5,1 de 7 puntos calificado como "bueno". El 85,5% de los participantes considera que los alimentos que contienen las cajas son de primera necesidad. El 31,9% estuvo totalmente de acuerdo que los alimentos entregados son un apoyo a los hogares. Al menos un cuarto de los usuarios (20,7%) considera que la caja de alimentos los ayudó a ir con menor frecuencia al supermercado. Mientras que solo el 14,2% declaró estar totalmente de acuerdo respecto a que las cajas cubren las necesidades nutricionales. **Conclusiones:** El conocer la percepción de los beneficiarios sobre la ayuda alimentaria como parte de un programa de Gobierno proporciona información oportuna que permite mejorarlas frente a futuras crisis sanitarias, ambientales y/o económicas.

Palabras clave: alimentos, cajas alimentarias, satisfacción usuaria, Covid-19.

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Reception date: January 15, 2021

Approval date: May 22, 2021

Quote as: Rodríguez-Pallares X, Baltierra-Reyes J, González-Muñoz J. Estudio transversal: Satisfacción de usuarios del programa Cajas de alimentos del Gobierno de Chile por Covid-19. Rev. Peru. Investig. Salud. [Internet]; 5(3): 165-172. Available from: <http://revistas.unheval.edu.pe/index.php/repis/article/view/919>

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Introduction

In December 2019, a new coronavirus SARS-CoV-2 emerged in Wuhan, China, causing the severe acute respiratory syndrome known as COVID-19. This coronavirus spread rapidly around the world with Italy being the first European country to report the first case of Covid 19, where the Lombardy region was the most affected. Given this situation, the World Health Organization declared COVID-19 a pandemic (1). In Chile, the first case of coronavirus was confirmed on March 3, 2020, from a doctor from the southern part of the country who had traveled to Southeast Asia. To face the arrival of viruses in the country, the Government of Chile restricts mass events, suspension of classes in kindergartens and public and private schools, border closures and a curfew is declared from 10:00

p.m. to 5:00 p.m. : 00 hrs (2).

To stop the coronavirus pandemic, measures such as education in frequent hand washing, use of mandatory face masks, physical distancing and mandatory quarantines in cities, the latter one of the most drastic measures that the different governments of the world have chosen. (3, 4). The extensive quarantines and mobility restrictions that countries have imposed have caused unprecedented economic crisis (5), such as the loss of jobs at a rate that had not been seen since the Great Depression of the 1930s, in addition to the fact that around 500 million people would fall into poverty as a result of the pandemic (6). The sectors hardest hit by this crisis are tourism, entertainment and hotels, given their nature of presence and contact with customers (7).

However, it has been suggested that the economic effects of COVID-19 could be worse in developing countries such as Latin America (8). In Chile, the effects of this pandemic were reflected in economic activity, since according to data from the Central Bank during the second quarter of 2020 this was reduced 14.1% compared to the same period of the previous year, considered the worst record since the 1982 economic crisis (9). For the third quarter of 2020, the contraction in economic activity was less than that observed in the second quarter of 2020, but in the same way it fell to 9.1% compared to the same period in 2019 (10).

This fall in economic activity translates into an increase in the unemployment rate, which according to data from the National Institute of Statistics (INE) during the February-April period of 2020 reached a figure of 9%, increasing by 1, 9 percentage points compared to the same period in 2019 (11). For the period between June and August 2020, the increase in the unemployment rate was even greater, reaching 12.9%, which meant an increase of 5.3 percentage points compared to the same quarter of the previous year (12).

Given the growing unemployment and impact on the economy, the Chilean government has implemented a series of measures, such as the Emergency Economic Plan and the Emergency Plan for the Protection of Family Income and the Economic and Employment Reactivation (13). In relation to this, the Government launched a campaign to supply food boxes called "Food for Chile".

The "Food for Chile" plan helps the households most affected by the pandemic, which were selected according to the CENSUS data (Estimates and Projections of the Population of Chile) of the year 2017 and the multidimensional poverty file, thus assigning a number of boxes for each commune of the country (14). The delivery of food baskets began on May 22 ending on July 4, 2020 with 2.6 million boxes delivered throughout Chile. A second delivery was announced on July 12 of the same year, which would deliver 3 million food boxes for the entire country (15).

The boxes contained non-perishable food mainly noodles, rice, flour, canned tuna, legumes, instant mashed potatoes, canned fruit, powdered soup, powdered milk, oil, tea, coffee, sugar and salt. It also included cleaning products such as detergent and soap. For the second installment, feminine pads and condoms were added. These foods and hygiene products are a complement to the families' economy, considering a duration of 15 days for a family of 4 members (16). The total disbursement for the food baskets in the two deliveries was US \$ 254 million, so the average cost of each box was US \$ 47. Mention that, of the total food boxes granted to families throughout the country, 60% are concentrated in the Metropolitan Region (17).

Given the above, the objective of this research is to know the perception of user satisfaction related to the supply of food boxes distributed by the Government in Chile as a result of the COVID-19 pandemic.

Materials and methods

A cross-sectional, descriptive, observational study was carried out in a random sample. The subjects evaluated in this project were 485 people from 18 to 65 years of age of both sexes (365 women and 120 men) residing in the Metropolitan Region of Chile, who were evaluated during the months of October and November of the year 2020. As for According to the inclusion criteria, they were residents of the Metropolitan Region of Chile and who have benefited from the delivery of food boxes by the Government. People who did not complete the survey in its entirety and those who did not have the technological means to complete the questionnaire were excluded.

The data collection was through an online questionnaire prepared for study, being validated by three nutritionists from the School of Nutrition and Dietetics of the Bernardo O'Higgins University and later applied to a group of 15 people with similar characteristics as the target audience, obtaining the final instrument.

This questionnaire consisted of five items with different response methods for each one. The first item consisted of a closed question whose objective was to find out if the respondent agreed to participate voluntarily in the study and provide their consent. The second item dealt with personal questions to find out the characteristics of the study subjects such as age, sex and commune of residence. As a third item, there were the following four statements: "The food contained in the box is a basic necessity for my home"; "The box has food that meets the nutritional needs of my family"; "Delivering the box helped me go to the supermarket less frequently, thus reducing exposure to COVID-19" and finally "The food contained in the box was a complementary support to the household economy." The responses to each statement were arranged on a Likert scale to identify how much the participants agreed or disagreed with the statements made. The fourth item refers to the food that the beneficiaries had eliminated and added to the food box delivered, which could respond to more than one option. Finally, the fifth item was the evaluation of the food box by users with a score from 1 to 7, with 7 being the maximum score. Note 1 is classified as "Bad"; Note 2 corresponds to "Deficient"; Note 3 is classified as "Less than enough"; note 4 is "Sufficient"; note 5 equals "Good"; Note 6 is considered "Very Good" and Note 7 is "Outstanding". The questionnaire was published on the Google Form platform, which was disseminated

through social networks.

foods contained in the food boxes, they are presented in Table 1:

Regarding the nutritional characteristics of the

Table 1: total amount of energy, carbohydrates, protein, fat and sodium of the foods contained in the food box

Food	Calories in 100 grams of food	Carbohydrates in 100 grams of food	Proteins in 100 grams of food	Fat in 100 grams of food	Sodium in 100 grams of food
Noodles	338 calories	69 grs.	11 grs.	2 grs.	5 mg.
Rice	325 calories	73 grs.	6,2 grs.	0,8 grs.	1,2 mg.
Flour	359 calories	75 grs.	11 grs.	1,7 grs.	2,0 mg.
Vegetable Oil (*In 100 ml)	828 calories	0	0	92 grs.	0
Canned tuna	186 calories	0 grs.	26,5 grs.	8,1 grs.	400 mg.
Legumes (Lentil)	278 calories	39,7 grs.	24,6 grs.	2,3 grs.	1,7 mg.
Instant pot Mashed	70 calories	11,2 grs.	2,2 grs.	1,8 grs.	238 mg.
Canned fruit (Pineapple)	64 calories	16 grs.	0	0	10 mg.
Soup powder	375 calories	78 grs.	7,4 grs.	3,7 grs.	4615 mg.
Skim milk powder	408 calories	45 grs.	30 grs.	12 grs.	440 mg
Tea	107 calories	2 grs.	24,3 grs.	0,2 grs.	5,0 mg.
Coffe	261 calories	48,5 grs.	16,4 grs.	0,2 grs.	100 mg.
Sugar	399 calories	99,5 grs.	0,3 grs.	0	1,0 mg.

*Own elaboration from food packaging.

Data are presented in percentage frequency measures. SPSS version 25 statistical software was used for data analysis.

Ethical aspects:

Each participant signed an informed consent. This study was approved by the Ethical Review Committee of the Faculty of Health Sciences of the Bernardo O'Higgins University. The approval certificate of the Ethics Review Committee was No. 03.

Results

Table 2 shows the responses to the four statements made regarding the food box delivered to the beneficiaries.

More than 80% of those surveyed fully agree and agree that the foods contained in the boxes are essential. Those who neither agree nor disagree with the statement correspond to 12.2% and 2.3% disagree that the foods contained in the baskets are

Table 2: Responses to the statements regarding the food box of 485 beneficiaries of the Metropolitan Region of Chile during the months of October and November of the year 2020

Affirmation	Totally agree	Agree	Neither agree nor disagree	In disagreement	Strongly disagree
"The food in the box is a basic necessity for my home"	38,1% (185)	47,4% (230)	12,2% (59)	2,3% (11)	0
"The box has food that meets the nutritional needs of my family"	14,2% (69)	38,7% (188)	23,5% (114)	19,0% (92)	4,6% (22)
"Delivering the box helped me go to the supermarket less frequently, thus reducing exposure to COVID-19"	20,7% (100)	28,4% (138)	23,6% (114)	19,3% (94)	0.08 (39)
"The food contained in the box was a complementary support to the household economy"	31,9% (155)	41,8% (203)	19,7% (96)	5,2% (25)	1,4% (6)

essential.

Regarding that, if the box covers the nutritional needs, 14.2% declared to be in complete agreement; 38.7% indicated they agree; 23.5% did not agree or disagree. Less than a quarter of those surveyed disagreed with the statement.

Half of the beneficiaries stated that they fully agreed and agreed that the cash register helped them to go to the supermarket less frequently. 23.6% expressed neither agreement nor disagreement with the statement. 27.3% demonstrated to be in disagreement and in total disagreement regarding the fact that the contribution of the food box favored them to attend the supermarket less frequently.

As for whether the food delivered by the Government was a support to households given the

economic crisis caused by the pandemic, 31.9% fully agreed and 41.8% indicated they agree with this support. 19.7% stated that they neither agreed nor disagreed. Less than 10% of the respondents expressed disagreement and totally disagree with this statement.

The foods that the beneficiaries would eliminate from the food boxes are presented in Figure 1. About 50% of those evaluated would eliminate instant mashed potatoes and legumes. One third of users would like to eliminate canned tuna and noodles. Tea and coffee would have been discarded by 23% of those surveyed; 19% would have eliminated powdered milk; 18% of the participants would eliminate the powdered soup, as well as 15% the rice. Less than 10% of beneficiaries would exclude cans of canned fruit along with salt and sugar.

Figure 1: Food that had been eliminated by the 485 beneficiaries of the Metropolitan Region of Chile during the months of October and November of the year 2020

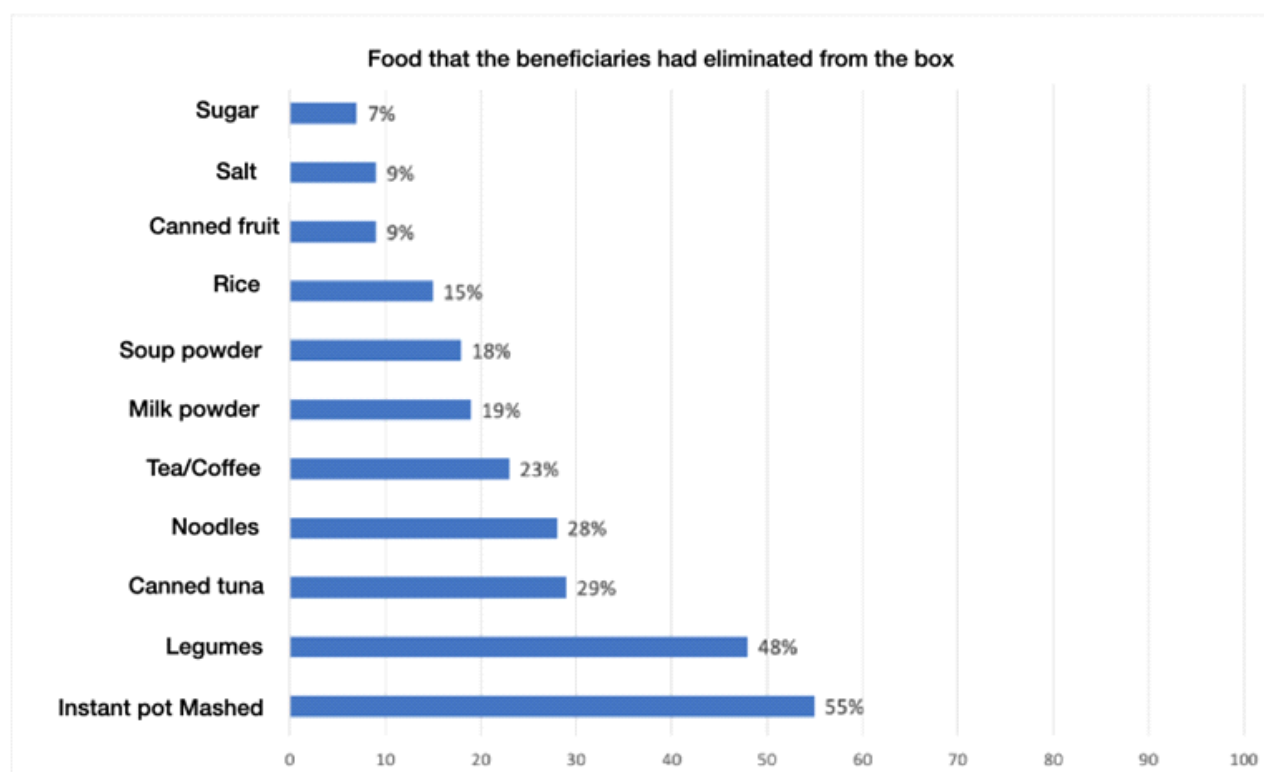


Figure 2 presents the foods that the beneficiaries would like to see presented in future food boxes, where our findings indicate that more than 70% of the individuals would like vegetables and a greater variety of legumes to be incorporated. Regarding other foods such as dairy, meat and eggs, 40%, 37% and 23% respectively of the participants would include these products in the food box. Other foods that were mentioned to be incorporated were nuts indicated by 21% of those surveyed, as well as soy meat by 16%.

The food box received an average score of 5.1 ± 1.1 (Table 3). Regarding the rating of the food box, 1% of the participants rated the box with marks 1 and 2. 4.8% rated the box with marks 3 and 18.6% of those evaluated with marks. More than 60% of those evaluated rated the food basket with grades 5 and 6, and no more than 10% rated it with the highest grade (grade 7).

Figure 2: Food that would have been added by the 485 beneficiaries of the Metropolitan Region of Chile during the months of October and November of the year 2020

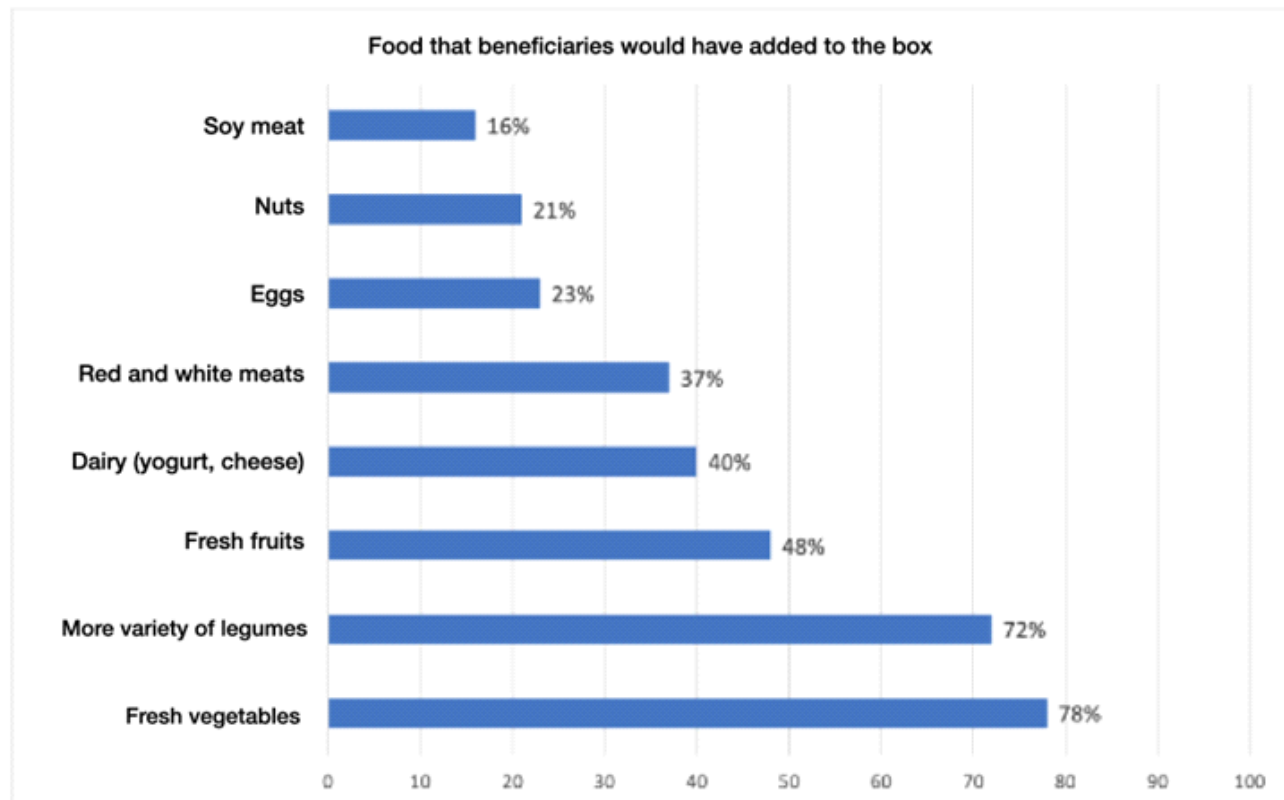


Table 3: Evaluation of the food box by the 485 beneficiaries of the Metropolitan Region of Chile during the months of October and November of the year 2020

Note	Percentage / N°
1	1,0% (5)
2	1,0% (5)
3	4,8% (23)
4	18,6% (91)
5	33,7% (163)
6	31,6% (153)
7	9,3% (45)
Average score	5,1 ± 1,1

Discussion

The "Food for Chile" plan has been one of the many measures promoted by the Government whose objective is to assist the most affected families with basic food and hygiene products.

One of the reasons for the supply of these boxes of food and cleaning products was to favor the most vulnerable and middle-class families in the country, which represents 70% of the Chilean population. Therefore, the results obtained in this research agree with this reason, because more than 70% of the beneficiaries commented that they fully agree

that the food contained in the boxes was a complementary support to the household economy (18).

A second reason for delivering these food baskets was to take care of people's health, preventing them from leaving their homes to purchase the products, so the delivery was directly to their residences. However, when analyzing the results, only half of the respondents said they totally agree or agree that the delivery of the food box helped them to go to the supermarket less frequently, thus reducing exposure to COVID-19 (18).

In Chile, the Basic Food Basket (CAB) was prepared based on the National Socioeconomic Characterization Survey (CASEN) in the late eighties to estimate the cost of meeting basic nutritional needs based on the consumption pattern observed in the population (19). The composition of the basket complies with the nutritional recommendations for energy and proteins of the FAO / WHO / UNU proposed in 1985. These consider the level of urbanization (urban and rural area), the degree of physical activity of the Chilean population and the diversity of body sizes (20).

This basket is made up of more than 50 foods grouped into bread and cereals; meats, fish, dairy products, and eggs; oils; fruits; vegetables; sugar, coffee, tea, sweets and condiments; drinks and food and beverages outside the home (21). Along these lines, more than 85% of the people surveyed stated

that they fully agree and agree that the foods contained in the box are basic necessities, which is consistent with the approval that they were a supplement for the home.

The CAB also considers fresh foods such as vegetables, fruits, dairy products and eggs, so it is not surprising that respondents mentioned that they would like these products to be included in the boxes. The results obtained are similar to those of the study by Campbell et al., Who analyzed the food preferences of beneficiaries of the emergency food program of the Central New York Food Bank, where beneficiaries prefer to receive vegetables and fruits (22). These foods stand out for their great nutritional value since they provide vitamins, minerals, fiber and proteins (23), which is why they are included in the Chilean Dietary Guidelines (24). The importance of the nutritional contribution of these boxes by the beneficiary population is reflected in the results obtained, where around 50% of the subjects evaluated indicated that they do not consider that the food basket delivered has food that meets the nutritional needs of people.

However, it must be emphasized that these boxes are a complement to the families' diet since the Government of Chile has other food programs such as the National Complementary Feeding Program (PNAC) and the Complementary Feeding Program for the Elderly (PACAM) in Primary Health Care (25). For the students of Early Childhood, Basic and Secondary Education in a vulnerable condition belonging to the Municipal and Private Educational Establishments, they are assigned to the School Feeding Programs (PAE) receiving breakfast, lunch, eleven, collation and dinners according to the day of the students. students (26). As a result of the suspension of classes due to COVID-19, the student beneficiaries of the PAE received baskets with breakfast and lunch rations whose duration is 15 working days (27).

In the case of the foods to be eliminated, more than 50% selected the instant mashed potatoes, this could be due to the fact that in Chile the most consumed cereals are bread, rice and noodles (28) due to their low value and easy preparation, unlike instant mashed potatoes that require milk in its preparation, adding an extra cost. Another of the foods that the respondents would eliminate were legumes, this could be explained by their low consumption in the country as a result of the change in eating patterns added to the consumption of processed foods with high energy density (29). However, the beneficiaries expressed that when incorporating legumes it is necessary to consider a greater variety of this food, allowing families to prepare different culinary preparations.

Finally, compared to the average grade (5.1) that the food box received rated as "good". In Dunmire's study of 191 food pantry beneficiaries, about 60% of participants reported being satisfied with the

amount and variety of food they received (30). In the Natural Resources Defense Council (NRDC) and Maryland Food Bank study of more than 1,000 people visiting food pantries and other sources of donated food, 55% of beneficiaries expressed being very satisfied with the quality and quantity of food delivered (31). The results achieved provide essential information to improve the "Food for Chile" plan.

Among the main strengths of this study was the size of the sample, having a survey prepared and validated for this study and being applied online, allowing it to cover a greater number of people. The limitations of this research were the lack of data from other regions of the country and the lack of studies that measure the degree of user satisfaction in relation to food baskets.

Conclusions

The results of this investigation made it possible to determine the degree of satisfaction regarding the boxes granted by the Government of Chile given the COVID-19 pandemic, in Santiago de Chile. The information presented opens an information window on which foods should be incorporated and which should be excluded, in addition to considering a wider variety of foods.

In the same way, these results allow us to visualize the importance that people give to the nutritional value of food, considering the high prevalence of malnutrition due to excess, as well as the low intake of so-called healthy foods in Chile. At the same time, the help of the food box within the basic food basket is key and as it is, it favors the fulfillment of population requirements.

Acknowledgments

We are grateful to all the people who participated in this research.

Funding Source

The authors did not receive funding to carry out the research.

Authors' contributions

All the authors participated in the research process.

Conflicto de Interés

The authors report having no conflicts of interest.

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