

Food access and dietary diversity of families with children of both sexes under 6 years of age living in the canton 201 Alajuela, 2022

Abstract

General objective: To compare access to food with food diversity at the household level according to the FAO guide, in families with children of both sexes under 6 years of age, living in the central canton of Alajuela 2022.

Materials and methods: A survey was conducted among parents of children living in the canton of Alajuela and who agreed to participate in the research, applying Fisher's exact test with a significance level of 5%.

Results: 85% of the families have good access to food and 15% have regular access. Fifty-nine percent had high food diversity, 26% medium-high, and the remaining 14% medium and low in equal parts. Fifty-nine percent of the families are made up of four people; two adults and two minors, with only one provider.

Conclusions: The families have a high diversity due to the fact that access to food is good, which is not synonymous to the fact that nutritionally the families have a balanced and nutritionally appropriate diet.

Keywords: access to food, access to healthy food, food security children, preschool (source: DECS- BIREME.2022).¹

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Introduction

For human beings, food is an essential need and therefore a human right, therefore access to food is essential, not only because families have the economic resources to buy or produce it in their gardens, but because there are foods close to where they live, as is the commercial chain that allows freshness and adequate and safe quality. With the economic contraction that was accentuated by the current Covid-19 pandemic, it is to be expected that access to food will suffer reductions, especially in those households with only one provider or head of household with low educational level and with access to unskilled jobs. On the other hand, a daily diet with the presence of a diversity of foods from the different groups allows the supply of different nutrients necessary for a healthy life. While it is true that this dietary diversity is presumably associated with habits, customs and nutritional education, it is also necessary to identify whether it is associated with access to such food diversity. In order to answer the question about the relationship between dietary diversity and access to food in families with children of both sexes under 6 years of age, the present investigation arises.

Families with preschool children are responsible for the protection, education, habit formation and healthy nutrition of minors, since what happens in the first years of life will have repercussions in their adult life, mainly in the first thousand days of life "This period is the critical window in the development of the child, it implies transcendental changes for health and provides a unique opportunity for children to obtain nutritional and immunological benefits that they will need for the rest of their lives".² Therefore, comparing food access and food diversity in the daily diet is of great relevance for Public Health. In addition, the low-cost methodology used shows validity, so it can be applied in other geographic areas with the same objective or in other populations, in favor of the construction of scientifically ordered information for the formation of critical thinking and the formulation of evidence-based public policy.

Materials

The research has a quantitative, observational, cross-sectional, analytical correlational approach, using families with children under 6 years of age of both sexes in the canton of Alajuela as the unit of analysis. With a probabilistic sample of 97 families. The data collection will be done by means of a virtual questionnaire through the Google Forms platform directed to parents or head of household, who meet the selection criteria and who agree with the informed consent, prior to the verification of these aspects they are sent the link to fill out the questionnaire, all data were collected during January 2022, the application of the instrument lasts approximately 30 minutes per family.

To analyze the data associated with access to food, the data of 15 variables are recoded dichotomously, assigning one point to healthy behavior and zero points to unhealthy behavior. Families are classified into two categories: those that obtain 7 or more points with good access and those that obtain less than 7 points with fair access. The measurement of diversity is oriented with the Food Guide for Measuring Food Diversity at the Individual and Household Level according to FAO, which asks if any member of the family consumed on the day before the survey any food from ten food groups, in each group examples are given of foods typical of the usual diet of the population of Alajuela. The groups used are: cereals, tubers, vegetables, fruits, meats, offal, eggs/fish/seafood/dairy, legumes/nuts/seeds, fats/oils, spices/condiments/drinks. One point is assigned if any member of the family consumed any food from the group and zero points if not consumed.³ Families are then ranked according to the following criteria. Statistical comparison was performed by means of Fisher's exact test and bivariate crossover.

Results

Regarding the characteristics of the head of household, all parents of children under 6 years of age are predominantly young adults aged

26 to 35 years (n=47) with 48%, followed by 36 to 45 years (n=32) for 33%, with incomplete secondary school (n=24) and complete primary school (n=23) for 25% and 24% respectively. Seventy-three percent (n=74) live in the same house as their child under 6 years of age. 77% (n=75) work full time, 62% (n=60) do unskilled work, 65% (n=63) work in the private sector with an employer and 26% (n=25) are self-employed, 51% (n=49) are directly insured with an employer, 8% (n=8) are self-insured.

The families are composed of 3 or 4 persons in 59% (n= 57), followed by 5 to 6 persons 27%

(n= 26), those with 7 or more members represent 10% (n= 10), families of 2 persons are 3%, which shows little presence of single women with a child under 6 years old in the participating population. According to the inclusion criteria of the study, 100% (n= 97) of the families had one or more members under 6 years of age, 71% (n=69) of the families had only one child under 6 years of age, followed by those with two children under 6 years 25% (n= 24), the remaining 4% (n=4) had 3 or 4 children under 6 years of age. Regarding the age composition of the families, the group of people between 25 and 45 years old predominates with 25% (n=24), followed by people from 7 to 12 years old (n=23) for 24%, those from 13 to 18 years old with 23% (n=22) and those from 19 to 24 years old with 22% (n=21). The mothers who were not reported as the head of household are mostly 45% (n=44) aged 26 to 35 years, followed by those aged 36 to 45 years with 36% (n=35), mothers younger than 25 years are 10% (n=10) and those older than 45 years are 4% (n=4). Twenty-eight percent (n=27) have incomplete university studies, followed by 21% (n=20) with incomplete secondary school, 18% (n=17) with complete university studies and 16% (n=16) with complete primary school studies.

Spending on food is from ¢51,000 to ¢100,000 (\$86.26 to \$169.13) in 25% (n=24) and more than one hundred thousand colones, but less than ¢150,000 (\$253.69) in another 25% (n=25), considering the size of the families, most of which are 4 persons, half of the families invest an amount lower than the cost of the basic food basket per person, which at the time of data collection was ¢54 thousand (\$91.33) per person. The 25% of the population that invests the least in food only manages to cover 24% to 43% of the cost per person of the basic food basket, the other 25% covers 43% to 69% of the cost of the basic food basket. Sixteen percent (n=16) report spending more than ¢201,000 (\$339.95) on food, which covers the cost of the basic food basket per month. As for the comparison of food access and dietary diversity on the day before the survey was conducted, Fisher's exact test was used with the result shown in Table 1. With a significance level of 5%, there is sufficient statistical evidence to determine that there are differences in access to food according to dietary diversity among the people interviewed. However, in order to determine and understand these differences, the crosstabulation of variables is shown in Table 2.

Table 1 Results of fisher's exact test in the comparison of food access according to dietary diversity of the study population 2022

Variable	P-value	Interpretation
Food diversity	0,0409	There are significant differences

Table 2 Access to food according to dietary diversity of the interviewees 2022

Food diversity	Access to food	
	Regular	Good
Download		5
Media		
High average	5	
High	5	52

The results show that a large majority of those with good access to food have medium-high or high diversity. While those who have regular access to food tend to have at least a third low or medium diversity, those who have good access to food tend to have low or medium diversity.

Discussion

According to the results of the study, the families conserve their classic structure with fathers as head of household and sole provider, which coincides with the findings of Ibarra 2019 where he indicates that it can be determined in households that the male paternal figure is the provider, head of household, thus giving certain economic stability, as women get older they prefer to form old-fashioned households where the man is the head of household, they raise the children while they are the ones who contribute economically.⁴ The head of household who has only primary or secondary education will have an income well below those who have a university degree, the age at the time of conceiving a child may overlap with educational attainment and will influence household income.⁵ Starting from the fact that the minor lives with both parents under the same roof in a suitable environment could guarantee the child's formation in values, personality and also give him/her the right to live with the family and have the necessary care, provided by both parents, as well as that they cover the basic needs.⁶ The presence of both parents in the process of child growth and development is undoubtedly relevant in the formation of roles, and parenting between two adults is an improvement not only for the adults but also for the children.

Work is a fundamental or important basis since it is associated with the economic part which in turn allows the person, in this case the father, to have the authority to fulfill the role of head of household and father in turn to provide the home, fathers now want to be involved in raising their children so they feel pressured to want to be providers and caregivers in turn, want to have a successful career to be a good provider and achieve that nothing is lacking in the home and in turn comply in responsible parenting and be involved in the growth of the child, generally determined as a good provider depending on the environment in which it develops, and in the labor market is appreciated those who do not have a family.⁷ The working day is understood as the time in which people dedicate to work being at the disposal of the employer, according to the agreed contract the maximum working day is eight hours a day and 48 hours a week for a period of seven days and one day of rest for mental rest and to regain strength; In the case of our research, dedicating time to the family for a worker to find a balance between work and family, which depends on factors such as time to dedicate to the family, at the same time for rest, level of commitment between family and work, personal resources such as optimism, self-esteem, self-efficacy, commitment, as well as control of situations, having a good relationship with the employer and feeling at ease at work, is a factor that helps the same balance. The participating families have an adult with a full-time job and an employer, which gives stability to the income and helps in the adequate access to food.⁸

However, closely associated with their educational level, most of them work in unskilled occupations, in accordance with new technologies and new developments in processes and industries, with increases in productivity, which implies the income of skilled and unskilled workers, which in turn is due to changes in the labor structure. In Mexico, according to studies, the manufacturing industry is one of the most abundant and important and is considered unskilled labor; as for the U.S.A., it is unskilled labor and low wages even though they have highly qualified personnel, since they do not get

jobs, due to the establishment of transnational companies.⁹ Social security or being insured is a guarantee that workers must have, in this case an employer's responsibility regardless of the sector, for occupational risks, security and social welfare, and this will also generate that families in turn are insured and are provided with this welfare, The insurance for occupational hazards, illnesses and maternity contemplate these benefits in money, which at some point will be used by the employee, as well as in non- monetary form there is the disability, old age and death, the pension is of utmost importance social security in families in our research, most indicated to be insured by the private employer.⁸ In addition, having a job where one is insured reflects a degree of quality of that job insofar as the legislation on the matter is respected, since it implies the payment of minimum wages or higher according to the reported occupation, in the case of this research, most families do not have these social guarantees.

Maternal schooling is one of the main socio-demographic and socioeconomic indicators that influence the stability of the household and of the children, as well as allowing them to have a better role in society and influencing the upbringing of their children.¹⁰ The age of the mothers as well as the fathers or heads of household is between 26 and 35 years old, being the young adult population we are dealing with in this research. Having their mother at home all day long facilitates the healthy preparation of food, however, perpetuates the role of housewife, which is socially undervalued. What is striking in the study group is the higher educational level than usual in women with the role of housewife, which may be associated with the impossibility of paying for childcare in order to work, the lack of real access, due to location, schedules, lack of continuity of free state childcare services, and the national goal of the female bonus as a measure to delay the demographic winter.

Regarding access to food, it is relevant to indicate that the majority of people responded that they did not lack food in the last three months, regarding this issue we can say that nutritionally adequate food must be stipulated by the state and it must be ensured; people cannot be deprived of food, in one way or another, by some means the citizen's food must be guaranteed.¹¹ This despite the fact that only a small percentage covers the cost of the basic food basket.

Access to food was affected by the global health crisis Covid-19, this could affect the child population from the nutritional point of view, not having a balanced and balanced diet "Faced with the panorama of social uncertainty, access to a balanced diet is essential, taking into account that the trend of economic recession, which further aggravates the situation of social groups in socioeconomic vulnerability, mainly by people who have lost their jobs as a result of Covid-19, a weakness is evident, in the axis of physical and economic access to food exposing this population to situations of hunger, which could produce malnutrition over time as a result of the pandemic".¹²

Despite the fact that only a minority of families cover the cost of the basic food basket per capita, the majority report three meal times financed by their own income, which reflects that hunger is satisfied, but possibly not with nutritional quality, which can be the subject of another investigation when considering diversity not only by the presence of food groups as in this investigation but also the amount of colors present in the daily diet, which is associated with the variety of nutrients, which is a limitation of the present study. The colors of fruits and vegetables are due to chemical compounds called pigments, a food may have a predominance of one pigment or a combination of several that gives it its characteristic color. There are three main groups of pigments: chlorophylls (green), carotenoids (red-yellow), and anthocyanins (blue-violet).¹³ Apart from an adequate diet with

sufficient calories, an adequate diversity of nutrients necessary for a healthy life is also important for an adequate amount of nutrients, an aspect that is often overlooked.¹⁴

Encouraging the measurement of food diversity not only based on food groups as suggested by FAO, but adding the presence of different colors in the daily diet that allows strengthening a varied and healthy diet in the population, "should emphasize the effectiveness of receiving throughout life food and nutrition education, enhancing or modifying eating habits, including children, parents, teachers and authorities, as they will be decisive and of paramount importance in making decisions in the choice of food consumption".¹⁵ According to FAO, the Guide indicates that "to measure dietary diversity in the household, it seeks to reflect, in an immediate way, the economic capacity of a household to access a variety of foods, thanks to this, different studies in which it has been applied have shown that there is a correlation between dietary diversification, socioeconomic status and food security".¹⁶ It is valuable as a Public Health tool at the national level and as a basis for the formulation of public policies for the nutrition of people with lower incomes and less developed areas. Diversity measured by food groups shows a close relationship with food access, it is impossible to have diverse food if it is not available in the home kitchen, the results of this study are consistent with those of Gil, Giraldo and Estrada, 2017 who found that daily consumption of food groups could be determined by socioeconomic status, being better in those of middle stratum, secure households and with economic income.¹⁷

However, the amount spent on food is not enough to cover the cost of the basic food basket. The same results were found by Claros de Alvarenga who, after comparing the income reported in the household surveys and the amount of minimum wages, seems to indicate that non-compliance with this labor right represents a problem of access to food, since only in Costa Rica would it be enough to cover the Basic Food Basket (CBA).¹⁸

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Conflicts of interests

The authors declare there are no conflicts of interest.

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