

*Original article*

**Cultural factors associated with the nutritional status of children under 5 years of age in rural villages of the Municipality of Tacuba, Ahuachapán**

*Factores culturales involucrados en el estado nutricional de los menores de 5 años de caseríos del municipio de Tacuba, Ahuachapán*

*Fatores culturais envolvidos no estado nutricional dos menores de 5 anos de comunidades no município de Tacuba, Ahuachapán.*

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**Abstract**

Malnutrition is a situation that has a great burden on child mortality worldwide. The objective of this study was to identify the cultural factors associated with the nutritional status of children under

5 years of age in the municipality of Tacuba, Ahuachapán, El Salvador. The research approach was quantitative, and descriptive, with cross-sectional data collection, a non-experimental approach, and a non-probabilistic sample that included 53 children under 5 years and 44 parents. Socioeconomic and cultural factors were found to have some influence on the phenomenon, with parents having a good level of knowledge about a balanced diet for their children's age. Conclusions: Lack of education or training in nutrition was not an important factor in this group of parents, so the nutrition issues identified are mainly addressed to the scarce availability of some foods, mainly due to the economic level of the individuals.

**Keywords:** nutritional status, proper nutrition, malnutrition, cultural pattern, eating habits.

## Resumen

La desnutrición es una situación que genera una carga de morbimortalidad infantil importante a nivel mundial. La presente investigación tuvo como finalidad identificar los factores culturales asociados al estado nutricional de los menores de 5 años, en el municipio de Tacuba, Ahuachapán, El Salvador. El abordaje de la investigación fue de tipo cuantitativo, descriptivo, con una recolección de datos transversal, abordaje no experimental y una muestra no probabilística; la cual contó con 53 menores de 5 años y 44 padres de familia. Se identificó que lo socioeconómico y cultural generan cierto efecto en el fenómeno, pues educativamente los padres de familia poseen un buen nivel de conocimiento sobre la alimentación balanceada para la edad de los niños. Conclusiones: la falta de educación o capacitación en temas de nutrición no fue una constante importante en este grupo de padres, por lo cual, los problemas de nutrición identificados están orientados principalmente a la falta de acceso de algunos alimentos, principalmente por el nivel económico de los individuos.

**Palabras claves:** estado nutricional, alimentación adecuada, desnutrición, patrón cultural, hábitos alimenticios.

## Resumo

A desnutrição é uma situação que gera uma carga de morbimortalidade infantil importante em todo o mundo. O objetivo desta pesquisa foi identificar os fatores culturais associados ao estado nutricional de crianças menores de 5 anos, no município de Tacuba, Ahuachapán, El Salvador. A abordagem da pesquisa foi do tipo quantitativo, descritivo, com coleta de dados transversal, abordagem não experimental e amostra não probabilística; que incluiu 53 crianças menores de 5 anos e 44 pais de família. Foi identificado que os fatores socioeconômicos e culturais geram certo efeito sobre o fenômeno, porque educacionalmente os pais têm um bom nível de conhecimento sobre nutrição balanceada para a idade das crianças. Conclusões: a falta de educação ou treinamento em questões de nutrição não era uma grande constante no grupo de pais participantes; portanto, os problemas nutricionais identificados são orientados principalmente pela falta de acesso a alguns alimentos, relacionado ao nível econômico dos indivíduos.

**Palavras-chave:** estado nutricional, nutrição adequada, desnutrição, padrão cultural, hábitos alimentares.

## Introduction

Nutrition is a fundamental right enshrined in the *Universal Declaration of Human Rights* since 1948. This is because nutritional status affects the health and well-being of individuals and an essential factor in physical growth and the development of psychomotor skills, which manifest themselves in the preschool years during the first five years of life.

In Latin America and the Caribbean, food insecurity and obesity are common among children under 5 years of age. Poor access to healthy food is one of the main causes of malnutrition, whether due to deficiency or absence of micronutrients or because of overweight and obesity, not only among children (Food and Agriculture Organization of the United Nations, 2023).

The Economic Commission for Latin America and the Caribbean, in collaboration with the World Food Program, has studied the main factors that explain the main causes of malnutrition and their relationship with hunger and undernutrition among children in the region. These factors, in turn, can be used to identify the different situations in each country.

In this context, the family model of food consumption in the first years of life plays an important role. As noted by Molina *et al.* (2021), "the family can influence household food consumption practices, the transmission of habits between generations, and the interactions and contributions between parents, children, and other members of the family group that shape child nutrition" (p. 2). During the first five years of life, the role of parents is critical, as they are responsible for preparing the child's meals and providing him or her with the nutrients and calories needed to develop motor skills and other growth functions.

Since it is a phenomenon that affects a significant proportion of the child population, child malnutrition must be studied to identify its multiple causes and address them with specific interventions tailored to the needs of each population. It is important to consider that social, cultural, and economic context of each family determines nutrition and affects the growth and development of family members.

Some authors, such as Cuenca and Meza (2020), describe in their research that in the Latin American region the problem of child malnutrition is urgent. In the first three years of life, the causes are associated with cultural family aspects, since the primary dependence on nutrition lies with the parents, and if they do not have healthy eating behaviors or habits, the children will imitate them and fall into the dynamics of malnutrition.

According to Córdova (2021), in addition to the influence that control levels may have on children's eating habits, other issues such as low food intake, disinterest, specific preferences, or rejection of certain foods can also affect their eating habits. This impacts the search for family strategies to ensure that children eat in quantities they consider appropriate, even if these strategies may be incorrect or not consistent with appropriate dietary development and the child's capacity for self-regulation in food intake.

In El Salvador there are people who live in poverty, for whom hunger is a daily or frequent reality. Others have sufficient resources to feed themselves adequately, but do not do so and suffer the consequences of poor nutrition. The various socio-cultural factors that prevail in the country are fundamental factors in the nutritional problems of the child population.

The low or insufficient level of education in many communities is related to the level of poverty and malnutrition. The lack of education directly affects eating habits and customs. In families, "mothers are mainly responsible for nutritional care and play a key role in nutritional problems in the family environment" (Rodríguez, 2021, p. 72).

However, several studies show that the more educated a mother is, the more likely she is to feed her children better. In a way, it is the mothers who decide and determine these eating habits at home, depending on factors such as purchasing power, time to prepare and buy food, selection of the best products in terms of nutritional content, and cooking. In addition, their knowledge of which foods are necessary for children's growth and development and which foods should be excluded from the diet because they are harmful to health plays a crucial role.

Given this situation, the objective of this study was to determine the influence of cultural factors on the nutritional status of children under 5 years of age in the communities of Tacuba, Ahuachapán, El Salvador, to design and develop strategies to improve their nutritional status.

## Materials and Methods

The present study was conducted using a quantitative approach, with a descriptive typology, cross-sectional data collection, and a non-experimental approach to the variables.

The study population consisted of all mothers with children under 5 years old in the villages of El Chagüite, Chagüite Centro, and Llano Grande in Tacuba, Ahuachapán.

The entire identified population of children under 5 years old was included in the study, resulting in a sample of 53 infants, including 36 boys and 17 girls, along with their respective mothers. It is important to mention that there were households with more than two children under 5 years old.

For this study, a guided survey was used in which the participating mothers were asked questions and were able to select the possible response options based on what they thought was correct. A structured questionnaire was used with questions specific to the research topics. In addition, the

weight and height assessment charts of the Ministry of Health of El Salvador were used to assess the nutritional status of the participating children.

Similarly, an observation guide was used to look for signs and symptoms of malnutrition and was used by the medical staff involved in the data collection.

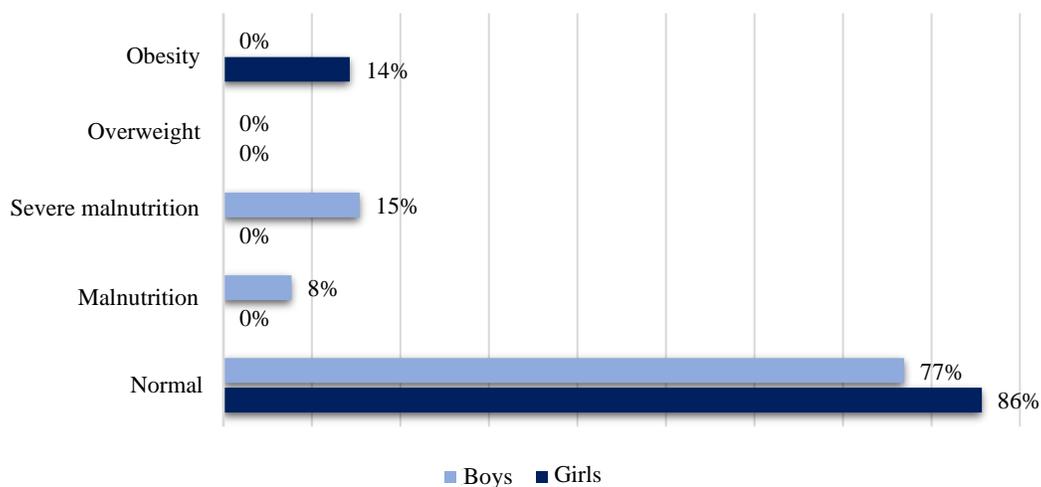
The data collection process used a set of electronic devices (tablets) that contained the tool in a virtual format to minimize the environmental footprint by eliminating paper printouts. The research team controlled this instrument. The open-source software Kobo Collect was used, which allows working with data without an Internet connection. This choice was made due to the characteristics of the area where the data was collected, where Internet access was limited.

## Results

Regarding weight-for-age in children aged 0 to 24 months, 14% of them were found to be obese, while 14% showed stunted growth in length-for-age (Figure 1).

**Figure 1**

*Weight/age in children aged 0 to 24 years*



In the case of children between 2 and 5 years of age, the majority had a normal weight for their age, as shown in Figure 2.

**Figure 2**

*Weight/age in children aged 2 to 5 years*

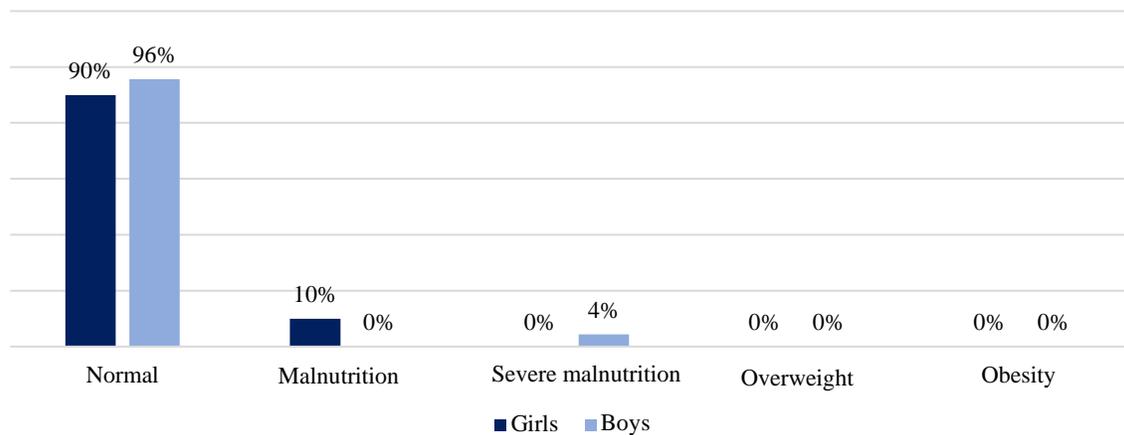
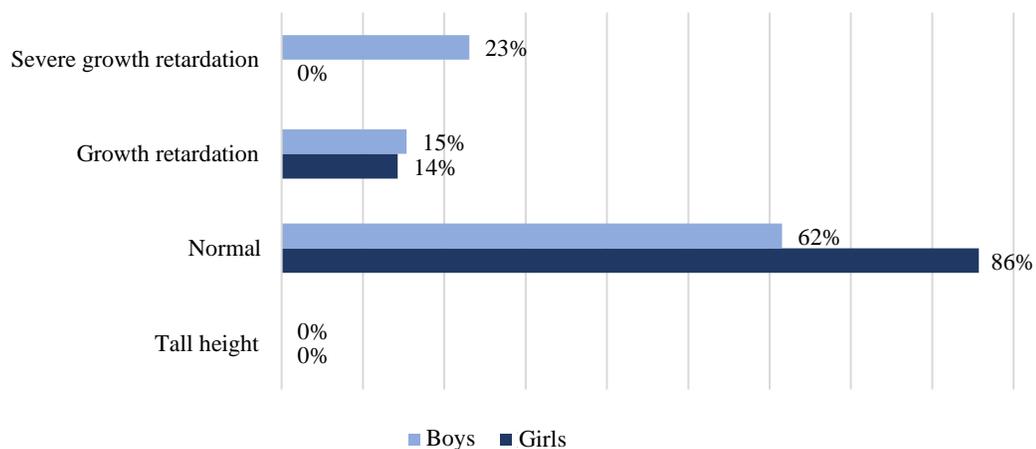


Figure 3 shows the results of the height assessment in children under 2 years of age, mostly normal for their age.

**Figure 3**

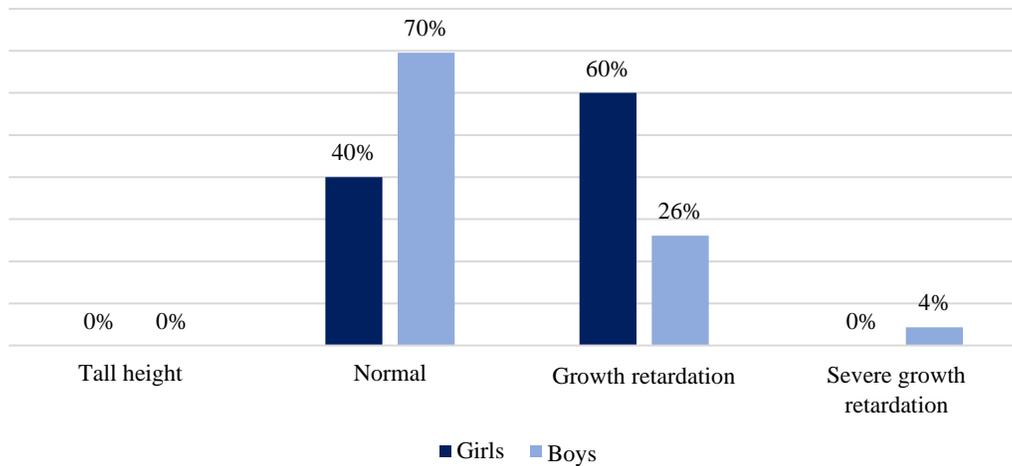
*Length-for-age of children from 0 to 24 months*



Most of the children between 2 and 5 years of age had a normal height for their age (Figure 4), although growth retardation was observed mainly in girls.

**Figure 4**

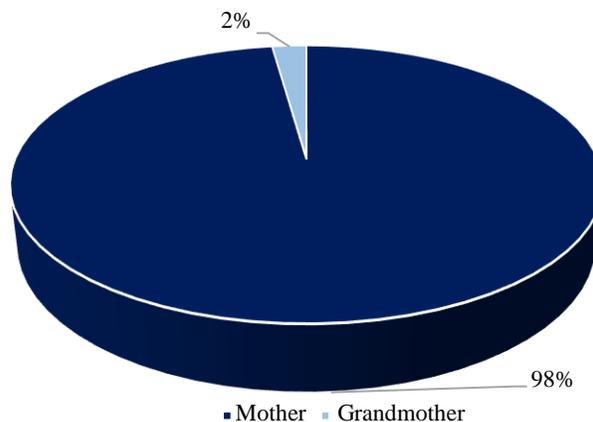
*Height-for-age in children between 2 and 4 years of age*



In most of the family groups it was found that it is the mother who is in charge of preparing meals for the children (Figure 5).

**Figure 5**

*In charge of preparing food at home*



## Discussion

No pathological backgrounds that could have caused specific malnutrition were observed in the participating boys and girls. The problems observed in the infants arose during the growth and development phase and were related to their nutritional status. Of this group, 60 % were between 2 and 5 years old, while 40 % were between 0 and 2 years old.

These findings are similar to those of a study conducted by Álvarez (2019) in Peru, which focused on the prevalence of malnutrition in children in the province of Huánuco. In this study, the percentage of malnourished children was 22.11 % for 1-year-olds, 21.24 % for 2-year-olds, and 8.68 % for 3-year-olds.

As part of the development of this research, it was considered important not only to question the parents about the type of diet their children receive but also to conduct a physical evaluation of the participating minors to determine physical signs suggestive of issues related to child malnutrition: skin, hair, nails, mouth, and eyes.

Among them, some children showed specific signs, especially in their hair, as changes were noted when comparing the groups of 0 to 2 years and 2 to 5 years. In the first group, depigmentation, thinness, scarcity, and opacity occurred more frequently compared to the older children.

Some symptoms of malnutrition in children are not limited to growth retardation, edema, changes in skin pigmentation or hair discoloration, but also reflect a lack of protein in the children's diet or the presence of diseases such as kwashiorkor (Naranjo *et al.*, 2020).

Examination of children's oral cavity revealed problems in the group of children aged 2 years and older, such as the presence of dental caries, deterioration of enamel, and cheilitis in some of these children, who already have a more balanced diet, do not depend on the mother's breast and can consume various products that increase the risk of oral problems or malnutrition.

The documentary review that addresses nutritional problems and their impact on children's oral health demonstrates that inadequate nutrition can cause various oral alterations in children.

According to Arévalo *et al.* (2020), a deficiency of certain nutrients not only leads to chronic malnutrition but also to dental caries.

The last parameter with changes in the physical evaluation was the eye area of the children, where a percentage pallor of the conjunctiva was observed in both age groups, indicating possible anemia as a result of malnutrition in the children. No major signs were noted in the studied groups.

In this regard, in the study conducted by Reyes *et al.* (2019) with a group of children under 5 years of age, mild anemia was found in 28.3 % and moderate anemia in 19.7 %. Similarly, 13.4 % were malnourished, and 11.7 % were chronically malnourished.

Growth charts of children aged 0 to 24 months and 2 to 5 years served as the basis for evaluating the weight and height of the groups of children examined in this study. Using these charts, we were able to identify several variations in the nutritional status of the children. Although graded malnutrition and obesity were found, the main problem in both groups was the presence of stunting, in some cases severe and in higher percentages.

Although inadequate or incomplete nutrient intake in childhood may be associated with growth or weight problems, it may also be related to factors that are not necessarily nutritional, such as slow growth or low parental height. Therefore, it is advisable to look at each case individually to determine why these children have a short height for their age despite a normal weight.

Growth retardation in children should be monitored regularly, as it is not necessarily related to poor nutrition and may gradually improve as the child develops. However, in cases where the condition persists, the consumption of essential micronutrients is very helpful in improving slow or inadequate growth for age.

In this sense, Grandy *et al.* (2010) stated in their research that 32 % of children with a nutritional status within the expected, in an urban area, had a zinc deficiency of less than 10  $\mu\text{mol/L}$  in blood, which directly influences the linear delay in the growth of children and their psychomotor and neurobehavioral development. The possible causes of this deficiency are inadequate or insufficient diets, not only in quantity but also in quality.

The surveys conducted with the children's mothers in the present study reflected a broad and accurate knowledge of the feeding practices that should be offered to their children according to their respective ages. This supports the finding that although some children with malnutrition were identified, the prevalence of malnutrition in these communities was low compared to the rest of the group. This suggests that it is not a lack of knowledge that is one of the main causes of the problem, but rather the economic aspect of families living in the area, which limits their access to higher quality food for their families in general.

The results of the parent survey also show a tendency to adhere to traditional family feeding practices, which are considered to be the most appropriate. With regard to breastfeeding, it was found that some mothers believe that it can be continued until the child is five years old or until the child refuses it, which is a deeply held belief by many people who still believe that the child receives essential nutrients by prolonging this practice.

Another eating behavior identified was the preference for organic foods over processed foods, as they are considered of higher quality for children's nutrition and are more affordable and available in the environment where they live.

According to Grandy *et al.* (2010):

Common causes of micronutrient deficiencies and malnutrition in developing countries are inappropriate feeding practices and behaviors, such as failure to promote exclusive breastfeeding and the addition of complementary foods before six months of age. (p. 30)

In line with these criteria, it can be confirmed that the identified causes in the population under study are similar, which have a negative impact on the health and nutrition of children.

## Conclusions

When searching the current nutritional status of the participating girls and boys, no medical conditions were found that could be triggering the identified health issues in them. There were no reports of prematurity, or complications during pregnancy or childbirth, indicating that the

alterations in the children's nutritional status are due to current causes or those developed throughout their growth.

Regarding age-weight, obesity and growth retardation were found in girls and boys aged 0 to 24 months. In the same group of girls, 14% have growth retardation, which is due to inadequate or inappropriate nutrition at this stage of life. Therefore, it is important to encourage parents to offer foods that provide the necessary nutrients to support children's growth and development, such as adequate zinc intake, whether through supplements or specific food groups.

In addition, other factors related to eating patterns or habits of the family were identified. It was found that mothers gradually change their children's diet from an early age by gradually introducing different foods, determining the frequency of their consumption and having regular snacks. It also became clear that a small group of families encourage the consumption of coffee and sweet bread as part of these snacks, sweetened drinks or sweets known for their low nutritional value. These factors counteract the general knowledge about a balanced and healthy diet that the mothers made clear throughout the study.

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## Conflict of interest

The authors declare that they have no conflict of interest.

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