

Factors Associated with Severe Acute Malnutrition in Children from 0 to 5 Years Old in the Municipality of Palmira Year 2018

Isabela Giraldo Granada¹, Mónica Isabel Martínez Agudelo¹ and Juan Fernando Bedoya Sandoval^{2*}

¹*Estudiantes Programa de Enfermería, Departamento del Valle del Cauca, Universidad Santiago de Cali Seccional Palmira, Colombia*

²*Docente Programa de Enfermería, Departamento del Valle del Cauca, Universidad Santiago de Cali Seccional Palmira, Colombia*

***Corresponding Author:** Juan Fernando Bedoya Sandoval, Docente Programa de Enfermería, Departamento del Valle del Cauca, Universidad Santiago de Cali Seccional Palmira, Colombia.

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Abstract

Malnutrition is a pathology caused by lack of food, deficient nutritional requirements, little or no access to drinking water and unhealthy sanitation. Some criteria in which this condition is reflected are smaller in size, less weight for height and less weight. The purpose of this work is to determine the factors associated with malnutrition in children under 0 to 5 years old. The present study is of a quantitative, non-experimental, descriptive, cross-sectional type. The sample will be probabilistic through simple random sampling. The units of analysis will be the Acute, moderate and severe malnutrition in under-fives (INS Code 113) of the National Public Health Surveillance System (SIVIGLIA). Through these, the factors that lead to malnutrition in children under 5 years of age were determined in the municipality of Palmira-Valle del Cauca in 2018, among which those with the greatest impact, such as socioeconomic status, are highlighted. and the health system to which the families of these children belong, appearing mostly in the subsidized regime with 56% and in socioeconomic stratum 2. On the other hand, there are predisposing factors for the onset of malnutrition, such as the exclusive breastfeeding time found that 39% received it after 7 months of life, while 33.3% received less than one month of life; Another important factor is the initiation of complementary feeding, where 67% began between the third and sixth month of life.

It was concluded that weight and height at birth could indicate that children, although they are born with an appropriate weight and height, as time passes, their nutritional and health status deteriorates due to multiple related factors such as, for example, the consumption of breastfeeding exclusively for a short time and the inadequate initiation of complementary feeding.

Keywords: Risk Factors; Malnutrition; Protein-Energy Malnutrition; Child Development

Introduction

Throughout history, one of the main problems faced by the population worldwide is malnutrition. This term covers not only deficiencies, but also excesses and imbalances in terms of caloric and nutrient intakes required by the body for the proper development and performance of its physiological functions. According to the World Health Organization (WHO) [1] this alteration is classified into 3 different groups of conditions: one is malnutrition caused by the lack or excess of micronutrients (vitamins or minerals); In a second group we find the reference to overweight, obesity and non-communicable diseases that are related to eating habits, finding here diabetes, some heart disease and cancers; Finally, the alterations called malnutrition are framed, a topic on which the present work is based and which consists of the low or reduced intake of foods that are evidenced in the low weight for height, low weight for age and other variables that they influence the adequate bio-psycho-motor development of people, and they mainly affect children between 0 and 5 years old [1].

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Data from the United Nations International Emergency Fund for Children (UNICEF) [2], establish that malnutrition takes the lives of 8,000 children per day, which translates into almost 3 million deaths worldwide each year. A child with malnutrition has not had enough food and has not received the necessary nutrients for their development. Likewise, little attention influences or suffer infectious diseases. This accumulation of situations can end the life of a child. Of the main risks that a child with malnutrition can suffer is what is called as wasting. According to WHO, three criteria must be met for this diagnosis: first, the weight it presents is insufficient with respect to its size; second, there is stunting because the size is not appropriate for their age; and, third, weight insufficiency consisting of insufficient weight for age. In addition, the lack of vitamins and minerals. For all the above, children who are malnourished are more vulnerable to disease and death [1]. Malnutrition has a devastating impact on children's lives in the short, medium and long term. The health effects are obvious because they considerably increase the chances of having diseases such as pneumonia, diarrhea and infections. A child suffering from severe malnutrition is 9 times more likely to die than one in a normal nutritional state.

Other data from the WHO (2018), it is estimated that there are approximately 52 million children under 5 years old with wasting in the world, of these it is estimated that around 17 million have a severe level of wasting, on the other hand, 155 million suffer growth retardation; In addition to this, it is estimated that around 45% of deaths of children between the ages of 0 and 5 are related to malnutrition; with greater report in low and middle-income countries [1].

It is estimated that in Colombia, 1 in 10 children have malnutrition [3], the population belonging to Guajira is more prevalent, and according to the weekly epidemiological bulletin carried out by the National Institute of Health [4], 4,258 cases of malnutrition and 107 cases of infant mortality due to malnutrition have been reported in children under 5 years of age, during the past year. Figures that when compared with those of the previous two years, show us that this problem is increasing instead of decreasing, and on the other hand that only 3 departments, such as San Andrés, Barranquilla and Cartagena have managed to reduce these statistics.

Materials and Methods

The methodology implemented for the development of this research is quantitative, retrospective, non-experimental, descriptive, cross-sectional. The sample will be probabilistic through simple random sampling. The units of analysis will be the records of acute, moderate and severe malnutrition in children under five years old (INS Code 113) of the National Public Health Surveillance System (SIVIGLIA) [5], Through them the factors that lead to malnutrition will be determined of children under 5 years old in the municipality of Palmira-Valle del Cauca between 2017 and 2018.

Results and Discussion

The present study shows the risk factors associated with malnutrition in children under 5 in the municipality of Palmira, through the report generated by the IPS (Healthcare Institute) to the secretary of health through the Core 113 file of the SIVIGLIA, the number of cases reported in 2018 was 18 minors in a state of malnutrition.

In this study called "Factors associated with malnutrition in children from 0 to 5 years in the municipality of Palmira in 2018". It was found that the most affected age group was between 1 and 2 years with 44%, followed by the group between 2 and 3 years with 33% and finally children between birth and 1 year with 22%. Concerning this variable, this work is similar to the study called "risk factors for severe acute malnutrition in children under 5 years", in Bolivia in 2012, where it is evident that the age of greatest prevalence for malnutrition is between 12 and 23 months old [6].

Analyzing the gender variable, a higher rate of malnutrition was found in females than in males, with 56% and 44% respectively. When comparing this variable with the findings of the study "Nutritional status in children under 5 years in a Babahoyo office" in Ecuador in 2009, where the same prevalence behavior is found in girls [7]. In this same text, we find that there is a difference in the variable of the

area of occurrence where the highest number of cases of malnutrition of this study occurs in the rural area, while the municipality of Palmira the area of greatest occurrence It is presented in the municipal seat corresponding to 100% of the cases reported. Regarding the mother's schooling variable, this study also allows us to establish that, the lower the level of schooling by the mother, the greater the number of cases of malnutrition reported.

Concerning birth weight, we find a contradiction regarding the results obtained by the secretary of health of the municipality of Palmira and the article called "Factors associated with chronic child malnutrition in Peru: an application of multilevel models", Peru in The year 2010 is found in this article that they have greater malnutrition in rural areas [8].

Regarding breastfeeding, it is found that the majority of children received breast milk more than 7 months in 39%, less than one month 33%, between 5 and 7 months 22% and between 2 and 5 months 6%, regarding the text "Nutritional status in children under 5 years in a clinic in Babahoyo (Republic of Ecuador)" [7] says that 77.1 of the children received breastfeeding. In the same way it is found in this same article that in 97.1% children find their complete vaccination scheme for age, in Regarding the municipality of Palmira, we found that 77% of children have vaccines according to their age, 6% do not have the complete vaccination schedule and 22% do not report having a complete or incomplete vaccination schedule.

Complementary feeding was initiated in the majority of cases between 3 and 6 months with 67%, less than 3 months 22%, and greater than 7 months 11% show discrepancy with the article "Risk factors for severe acute malnutrition in children under 5 years" [6] since there is evidence that the late onset of complementary feeding predisposes to malnutrition.

In addition, a comparison is made of the determining factors that lead to undernutrition of children under 5 in the municipality of Palmira concerning the same factors at the national level published in "the report of the event of moderate and severe acute malnutrition in children under five years. Colombia semester 2018" [9] where it is found that the greatest predominance is found in the male gender while in the city Palmira is the female sex, they agree that the largest area of occurrence is in the municipal capital, nationally and in the municipality of Palmyra most cases belong to the subsidized health regime; As for the socioeconomic stratum, it is located at the national level in stratum 1 and in the municipality of Palmira it is in stratum 2. The educational level of the mother, both at the national and municipal levels, is secondary schooling.

Regarding risk factors, it is observed that 80% nationally presents a complete vaccination scheme for age and in Palmira, the age schemes are complete at 77%; in Colombia it is observed that the feeding would begin early, since globally it occurs between 3 and 6 months of age.

At the national level, children have 9.8% edema, at the municipal level, 11% occur; in Palmira 72% of the children showed signs of thinness, while at the national level 63.6% appeared; it is observed that at the municipal level, children present less skin lesions being 6% while at the national level 21% of children with malnutrition present skin lesions; Finally, it is found that children present at the municipal and national level, 22% and 30.3% respectively.

It is also observed that the national prevalence of moderate and severe acute malnutrition was 0.15%, with territorial entities such as Vaupés, Guaviare, Guainía, Vichada, Amazonas, Casanare and Arauca having the highest prevalence (See table). The Orinoquía and Amazon regions presented a 2-fold risk of having children under five years of age with moderate or severe acute malnutrition, compared to the reference region. The valley of the cauca on the other hand, being department belonging to the Pacific is the department that reports the majority of cases of malnutrition in this with a total of 289 cases of 688 reported in this region of the country [9].

Variable	Value	Frequency (%)
Age	Between Birth - 1 year	22%
	Between 1 - 2 year	44%
	Between 2 - 3 year	33%
Gender	Female	56%
	Male	44%
Case Occurrence Area	Municipal head	100%
Community	Community 1	17%
	Community 2	17%
	Community 3	17%
	Community 4	11%
	Community 6	6%
	Community 7	6%
	No data	28%
Health regimen	Contributory	39%
	Exception	6%
	Subsidized	56%
Socioeconomic Stratum	Stratum 1	6%
	Stratum 2	56%
	No data	39%
Mother's education level	Primary	17%
	High school	44%
	Technique	22%
	University	17%

Table 1: Sociodemographic characteristics.

Variable	Value	Frequency (%)
Size at birth	Between 40 - 45 cm	11%
	Between 45 - 50 cm	44%
	Between 50 - 55 cm	44%
Birth weight	Between 2000 - 2500 gr	17%
	Between 2500 - 3000 gr	17%
	Between 3000 - 3700 gr	67%
Gestational Age (weeks)	36	6%
	38	22%
	39	22%
	40	33%
	41	17%
Time they received breast milk	Less than 1 months	33%
	Between 2 and 5 months	6%
	Between 5 and 7 months	22%
	More than 7 months	39%

Complementary feeding start	Less than 3 months	22%
	Between 3 and 6 months	67%
	More than 7 months	11%
Registered to growth and development	Yes	89%
	No	11%
Complete vaccination schedule for age	Yes	72%
	No	6%
	Unknow	22%
Actual weight	Less than 3 kg	6%
	Between 3 - 4 kg	6%
	Between 5 - 10 kg	72%
	Between 10 - 15 kg	11%
	More than 20 kg	6%
Current size	Between 50 - 70 cm	17%
	Between 70 - 90 cm	61%
	Between 90 - 110 cm	22%
Brachial perimeter	Less than 5 cm	50%
	Between 5 - 10 cm	6%
	Between 10 - 15 cm	33%
	Between 15 - 20 cm	11%
Body mass index	Less than 10	22%
	Between 10 - 12	22%
	Between 12 - 14	44%
	More than 14	11%

Table 2: Related factors from anthropometric elements and background.

Variable	Value	Frequency (%)
Edema	Yes	11%
	No	89%
Malnutrition, wasting or visible thinness	Yes	72%
	No	28%
Dry skin	Yes	6%
	No	94%
Hyperpigmentation	Yes	6%
	No	94%
Hair injuries	Yes	6%
	No	94%
Anemia detected, palmar or mucous paleness	Yes	22%
	No	78%

Table 3: Reported clinical signs.

Variable	Value	Frequency (%)
Type of care provided	Inpatient	89%
	Community	11%
Medical diagnostic	Not specified	89%
	Mild caloric protein malnutrition	6%
	Poor caloric-protein nutrition not specified	6%

Table 4: Service route.

Conclusion

In the study called factors associated with malnutrition in children from 0 to 5 years old in the municipality of Palmira in 2018 through tabulation and analysis of the data obtained by the municipality’s health secretary, it was possible to perform the sociodemographic characterization of the population reported with malnutrition, with this a greater frequency of notification was observed in children aged between 12 - 24 months of life followed by children aged between 24 - 36 months with 44% and 33% respectively.

Mainly the reported cases were female with 55.56%. The total reported cases were from the municipal seat, that is, from the urban residence area, with the majority of cases belonging to communes 1, 2 and 3 of the municipality, with 17% in each of these, This may be to some extent a protective factor since by belonging to the urban area of the municipality they can count more easily to access health services so that the management and treatment of malnutrition in children can be carried out more quickly reported with this problem.

Next, it was observed that the majority of minors are belonging to socioeconomic stratum 2 with a 56% prevalence, as well as that 56% belonged to the subsidized health system, 39% to the contributory regime and 6% belonging to the Exception or special. These results can be comparable to the current situation worldwide, in which, according to the reports published by the organization of the United Nations in 2017 [10], the social and economic conditions determined by the inequities present in the populations could exert a negative effect that leads to a deterioration in food status, growth and development, and therefore in the health of the child population belonging to these vulnerable societies.

Additionally, this study allowed identifying factors that may contribute negatively to the nutrition of children; Within these we see the birth weight, where we observe that 67% of children diagnosed with malnutrition were born with an average weight between 3,000gr and 3,700gr, 17% with a weight between 2,500gr and 3,000gr, and 17% with a weight between 2,000gr and 2,500gr.

Similarly, it is found in the size that 44% presented a size between 45 cm - 50 cm, the same percentage measured between 50 cm - 55 cm and only 11% presented a size between 40 cm - 50 cm; with all these values previously mentioned we can say that although the children of the municipality are born mostly with adequate weight and height, as time goes by they deteriorate and, therefore, their nutritional and health status.

On the other hand, there are other factors within the diet that greatly influence these two previous ones, such as exclusive breastfeeding and the inadequate initiation of complementary feeding. Regarding these two, it was found that 39% of infants reported with malnutrition had exclusive breastfeeding after the first 7 months of life, followed by 33% belonging to children who received it for less than a month, 22% it had between 5 to 7 months and 5.56% between 2 to 5 months; while the beginning of the feeding occurred as follows: in 67% of the cases the onset occurred between 3 and 6 months of life, 22% started before 3 months and 11% had Started of this after 7 months. These two practices (exclusive breastfeeding and complementary feeding) are indispensable when guaranteeing adequate nutrition in infants since they are proximal determinants to avoid mortality associated with malnutrition. Given this it should be noted that feeding exclusively breast milk is up to 6 months and becomes complementary until two years of life or more, since its benefits exceed the needs of the infant population both short, medium and long term.

Another prevailing factor for this event to be presented is the timely assistance to the growth and development program; the data obtained by the secretary of the municipality showed that 89% of the population reported was enrolled in this program, while 11% were not registered until the date of the report, which indicates that it is important to study both the Assistance to growth and development controls, as well as parents' care and prevention practices to keep their children healthy, also to recognize that growth is an important indicator of the health status of children under 5.

Ensuring food and nutritional needs is an important issue to address in these cases of malnutrition, since, if there is a food deficit, this could trigger a low birth weight, because the mother fails to meet her nutritional requirements or Inadequate diet in quantity and quality will generate not only problems in it but also in the child, becoming a vicious circle. Even so, although food insecurity at the level of households or individuals could increase the risk of developing various forms of malnutrition, other variables such as educational level, lifestyle, environment and eating habits, access to clean water, basic sanitation and quality health services.

It is noteworthy that the educational level of mothers plays an important role, because depending on their position in society this has a direct effect on exclusive breastfeeding, the start of feeding, the type, quality and quantity of food that they offer their children and care during prevalent childhood diseases. In this study it was obtained that 44% of the mothers of the children diagnosed with malnutrition had a level of schooling until secondary, followed by 22% with a technical level and 17% both at the university and primary level.

An inadequate diet can lead to children having a deterioration, evidencing a depletion of macronutrients such as in the case of marasmus caloric protein malnutrition, or severe deficit of calorie intake that could lead to kwashiorkor type malnutrition, or also, a deficiency of micronutrients that can be evidenced by means of clinical signs such as the appearance of the skin, hair and mucous membranes. Some of these aspects were evidenced in the reported cases, where 11% presented edema, 72% had visible wasting or thinness, 6% dry skin, hyperpigmentation and hair injuries, 22% were found with anemia detected, paleness palmar or mucous membranes.

Conclusion

Finally, it is found that, of the 18 cases reported throughout 2018, 89% had activation of the care route for malnutrition management; of these cases, with activation, 89% received hospital care and 11% received community care.

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