



Maternal knowledge of child malnutrition at the John F. Kennedy Educational Unit, Santo Domingo, 2024

Conocimientos maternos sobre desnutrición infantil en la Unidad Educativa John F. Kennedy, Santo Domingo, 2024

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ABSTRACT

The objective of this research was to determine the level of maternal knowledge about child malnutrition in the Unidad Educativa John F. Kennedy, Santo Domingo, 2024. This project was applied on a quantitative approach and its design was non-experimental, which allowed the application of a form that provided valuable information on the objective presented. A total of 102 mothers with children enrolled in the aforementioned educational institution were taken as the population sample, the instrument used in this work was the test of knowledge about healthy eating. The most relevant results showed a low level of maternal knowledge about child malnutrition with 71.6%, presenting a satisfactory level in two dimensions corresponding to general knowledge (57.8%) and food selection (65.7%), but an unsatisfactory level in the other dimensions referring to preparation (79.4%), consumption (95.1%) and impact of feeding (56.9%). In summary, mothers have shown a low level of knowledge regarding the subject of this research, with a satisfactory level in only two of the five dimensions of the instrument applied.

Keywords: Food Consumption; Food Preparation; Food Selection; Healthy Eating; Maternal Knowledge.

RESUMEN

El objetivo de esta investigación fue determinar el nivel de conocimientos maternos sobre la desnutrición infantil en la Unidad Educativa John F. Kennedy, Santo Domingo, 2024. Este proyecto se aplicó en un enfoque cuantitativo y su diseño fue no experimental lo que permitió aplicar un formulario que brindó información valiosa sobre el objetivo presentado. Se utilizó el muestreo no probabilístico por conveniencia, de modo que se pudo seleccionar a personas que brindaron acceso y presentaron predisposición para la resolución de la encuesta. Como muestra poblacional se tomó a un total de 102 madres de familia con hijos matriculados en la institución educativa mencionada anteriormente. El instrumento utilizado en este trabajo fue el test de conocimiento sobre alimentación saludable. En cuanto a los resultados más relevantes se obtuvo un nivel bajo de conocimientos maternos sobre desnutrición infantil con el 71,6%, presentando un nivel satisfactorio en dos dimensiones correspondientes a conocimientos generales (57,8%) y selección de alimentos (65,7%), pero un nivel no satisfactorio en las demás dimensiones referentes a preparación (79,4%), consumo (95,1%) y repercusión sobre alimentación (56,9%). En resumen, las madres de familia han reflejado un bajo nivel de conocimientos respecto al tema de esta investigación, con un nivel satisfactorio sólo en dos de las cinco dimensiones planteadas en el instrumento aplicado.

Palabras clave: Alimentación Saludable; Conocimientos Maternos; Consumo de Alimentos; Preparación de Alimentos; Selección de Alimentos.

INTRODUCTION

The United Nations Children's Fund (UNICEF) (undated) revealed in its report "Levels and trends in child malnutrition" relevant data showing that 13 800 children under the age of 5 die every day, mainly due to malnutrition, which affects their immune system and leaves them defenseless against other diseases that end up being the main determining factor in their death. Globally, approximately 148 million children under the age of 5 are stunted due to malnutrition. Furthermore, 45 million children suffer from severe acute malnutrition, and more than 340 million children under the age of 5 have a micronutrient deficiency. In addition, figures and data from the World Health Organization (WHO) estimated that in 2022 approximately 149 million children under the age of 5 will be stunted, meaning they will be very small for their age, while 45 million will be very thin for their height. It also revealed that approximately 50 % of deaths among children under 5 are related to malnutrition, with undernutrition being the most significant factor in these deaths. These deaths were mainly evident in low- and middle-income countries with limited resources.(1,2,3,4,5)

Likewise, the report by the Development Bank of Latin America and the Caribbean revealed that the rate of chronic malnutrition in children under 5 in the region decreased from 16,7 % to 9 %, reflecting a significant reduction in the problem. However, there is still a high level of child malnutrition, with 4,8 million children under the age of 5 who are short for their age, which shows the progress made but also the need to redouble efforts to completely eradicate chronic malnutrition in early childhood in Latin America, where, although implemented effective policies and programs, gaps and inequalities in food and nutritional security still represent a major challenge at the regional level.(6,7,8)

The Technical Secretariat Ecuador Grows Without Child Malnutrition announced that Ecuador has reduced the rate of chronic child malnutrition to 20,1 %, emphasizing that this goal has been achieved thanks to public policy that has placed an emphasis on care for pregnant women and children under two years of age, giving greater importance to the fight against chronic child malnutrition. The data showed that by reducing the chronic child malnutrition score by 3,5, approximately 20 000 children were reached. The Sierra is the region with the highest percentage of this problem in the country, at 27,7 %. On the other hand, the provinces with the highest percentage of chronic child malnutrition were Chimborazo with 35,1 %, Bolívar with 30,3 %, and Santa Elena with 29,8 %.(9,10,11,12)

The Manabí Magazine(1) presented data showing that Santo Domingo de los Tsáchilas is one of the five provinces with the lowest percentages of chronic child malnutrition, with a score below the national indicator of 4,5 percentage points, with 15,6 % of chronic child malnutrition in young children. In the same place, the REDNI Foundation, in conjunction with the Pronaca livestock industry, carried out a project in which care was provided to 74 mothers and 59 children. working with 51 beneficiaries, including 45 children and 6 pregnant mothers. The activity focused on prenatal and pediatric medical care, as well as providing talks and nutritional care. Home visits were made to improve their diet and maintain a healthy lifestyle.(15,16,17,18,19)

It is vital that mothers have adequate knowledge on the subject of child malnutrition, because this reduces the negative impact on their children's health and development. According to UNICEF, socioeconomic factors and low level of knowledge among mothers about proper nutrition and healthy childcare practices can affect children's development and growth, causing a negative impact on academic performance, as well as significantly increasing exposure to other diseases such as diarrhea, pneumonia, measles, and malaria, among others. Given this problem, the following question arises for this research: What is the level of maternal knowledge about child malnutrition at the John F. Kennedy Educational Unit, Santo Domingo, 2024?

General Objective

To determine the level of maternal knowledge about child malnutrition at the John F. Kennedy Educational Unit, Santo Domingo, 2024.

METHODS

Type and Design of the Research

This study used a quantitative approach, as it was based on conducting surveys to collect results and numerical data that could answer the research questions through numerical calculation, counting, and statistics. The object of study was the level of knowledge about child malnutrition

among mothers of children at the John F. Kennedy Educational Unit.(2) The basic purpose of the research was to acquire new insights through knowledge about child malnutrition at the Educational Unit that did not involve the implementation of other practical activities, which led to the determination of new methods to strengthen and achieve a productive scope of the objective.(3) The research was descriptive in nature, as it focused on collecting detailed information through forms on the levels of knowledge that mothers have about child malnutrition among the student population.(4)

The design was non-experimental, since it is not possible to influence the strategies. For this reason, a survey method was implemented on the events that reveal the level of maternal knowledge about child malnutrition in this educational institution, so that they could be analyzed later.(5) Data collection was prospective, and the figures needed for the investigation were intentionally requested in order to verify measurement biases and establish the main foundations. The research collected information from a group of mothers with children enrolled in the selected educational institution.(6) It was cross-sectional, as the data were obtained at a specific time at the John F. Kennedy Educational Unit. A survey was also conducted to collect data using a form, as the aim was to identify the mothers' level of knowledge.(7)

Population and sample

Population

The population was a group of people who presented similar descriptions and were the basis of the research. In this case, 654 mothers with children enrolled at the John F. Kennedy Educational Unit in Santo Domingo, The parish effort, were chosen as the population, as important and specific characteristics were observed in this group of people. Based on this evidence, we wanted to study the level of maternal knowledge and adequate nutrition for young children, as well as to determine the level of knowledge of the mothers in this population regarding the issue of child malnutrition.(8)

Sample

Non-probability sampling was selected for convenience, as it allows for the selection of components that are accessible and available for research, reducing costs by choosing only one available group. Therefore, 102 mothers were chosen, representing children in middle school, which includes fifth, sixth, and seventh grades, to determine, through the use of a questionnaire, their level of knowledge about proper nutrition for children in that educational institution, which will provide valid and necessary information encompassing this part of the population.(9)

Data collection instruments

The instrument used was one of three instruments integrated into the research conducted by Segundo Tenorio(10). This standard questionnaire was based on assessing the level of knowledge about healthy eating. The interpretation of the instrument was measured for each dimension with a satisfactory and unsatisfactory level for a subsequent general measurement of low, medium, and high levels of maternal knowledge. It showed an internal consistency $\alpha = 0,60$, resulting in a average reliability. It consisted of a total of 15 questions divided into 5 dimensions, the first referring to "general knowledge" and consisting of 7 questions, the second dimension dealt with "food selection" and included 2 questions, the third was on "preparation" and consisted of 2 questions, the fourth section referred to "consumption" and consisted of 2 questions, and the last dimension dealt with "impact" and consisted of 2 questions. The response option for each of the questions was a simple multiple-choice scale with one correct answer and the others incorrect.

Finally, Aiken's V coefficient showed a content analysis of the mothers' level of knowledge about child malnutrition with a value of 0,73. In the section on difficult questions contained in the test, a score of 1 was obtained, representing a very high level. With regard to the difficult words included in the test, a score of 1 was obtained, equivalent to a very high level. A score of 0,8 was obtained with regard to whether the items correspond to the dimension to which they belong, which is equal to a high level. The correct form of application and structure scored 0,6, representing a moderate level. The order of the questions scored 0,6, representing a moderate level, and the relevant and sufficiently graded answer options scored 0,4, representing a low level.

Data processing and analysis plan

Once the survey was administered using Google Forms, the sociodemographic data and all of the data obtained were collected and analyzed. The information was then coded into numbers using the Excel database, analyzed using the SPSS version 25 data processor, and frequency tables were obtained to help describe the data obtained by interpreting all the results, proposing percentages based on the findings in each dimension. thus revealing the mothers' levels of knowledge regarding malnutrition and child nutrition. Each result was analyzed based on each objective set for the dimensions arranged, this led to conclusions that assessed and determined the knowledge of mothers with children who studied at the John F. Kennedy Educational Unit.(11)

Ethical aspects

According to Article 6 of the Universal Declaration on Bioethics and Human Rights, incorporated into Ministerial Agreement 5316(12), informed consent must be obtained prior to any intervention. Therefore, before the survey began, participants were informed about the topic to be addressed and the procedure to be carried out on the other hand, the Organic Law on Citizen Participation (13) established regulations that included the right to free participation by citizens. Thanks to this, participants were given the option to determine whether or not they wished to participate in the survey, so that no obligation or undue influence was imposed that would lead people to participate in the procedure without agreeing to it, giving them the freedom to decide whether or not to take part in the questionnaire, thus supporting their right to free choice.(14)

RESULTS

Sociodemographic data

The sociodemographic data of the participants are shown in figures 1 and 2. This section was divided into seven sections. In the first section, referring to age, it was found that the most prevalent age group was between 31 and 40 years old, accounting for 42,2 %.

Figure 1. Descriptive data of the participants

	Variable	n	%
Edad	18-20 años	13	12,7
	21-30 años	26	25,5
	31-40 años	43	42,2
	41-50 años	15	14,7
	51 años o más	5	4,9

With regard to educational level, 40,2 % had completed secondary education. In the marital status section, 47,1 % were single, which was the most prevalent category. On the other hand, the most common place of residence was rural areas, with 74,5 %. The socioeconomic level was mainly low, with 50 %. Regarding the mother's occupation, the majority (67,6 %) were housewives. Finally, it was found that 91,2 % of participants had access to public health services.

General data

Figure 3 shows the overall results obtained regarding the level of maternal knowledge for each variable. This section presented 73 participants with a low level of knowledge (71,6 %), 28 participants with a medium level (27,5 %), and finally, one participant with a high level (2,4 %) participants with a low level of knowledge, representing 71,6 %. Twenty-eight participants were identified as having an average level, representing 27,5 %. Finally, one participant was found to have a high level, representing 1 %. As a final result, a total of 102 people were surveyed, and it was found that the majority of participants had a low level of maternal knowledge about healthy eating.

Specific data

Figure 4 shows the data for the first dimension on general knowledge of healthy eating and complementary feeding. The information obtained was evaluated in a general context, yielding the following results: 59 participants had a satisfactory level of general knowledge, representing 57,8 %, while 43 people showed an unsatisfactory level of general knowledge, representing 42,2 %.

Figure 2. Descriptive data of participants

	Variable	n	%
Nivel educativo	Primaria	33	32,4
	Secundaria	41	40,2
	Preparatoria	18	17,6
	Universidad	10	9,8
Estado civil	Soltero/a	48	47,1
	Casado/a	19	18,6
	Divorciado/a	5	4,9
	Viudo/a	2	2
Lugar de residencia	Unión libre	28	27,5
	Rural	76	74,5
	Urbano	26	25,5
Nivel socioeconómico	Bajo	51	50
	Medio	50	49
	Alto	1	1
Ocupación de la madre	Trabaja	33	32,4
	Ama de casa	69	67,6
Acceso a servicios de salud	Pública	93	91,2
	Privada	9	8,8

Figure 3. Maternal knowledge

Nivel de conocimientos maternos	n	%
Bajo	73	71,6
Medio	28	27,5
Elevado	1	1
Total	102	100

Figure 4. First dimension: General knowledge

Conocimientos generales	n	%
Satisfactorio	59	57,8
No satisfactorio	43	42,2
Total	102	100

On the other hand, the data for the second dimension, corresponding to the selection of healthy and unhealthy foods, shown in figure 5, revealed the following: a satisfactory level of knowledge regarding food selection was identified in 67 participants, representing 65,7 %, while an unsatisfactory level of knowledge regarding food selection was identified in which was shown by a total of 35 people, equivalent to 34,3 %.

Figure 5. Second dimension: Food selection

Selección de alimentos	n	%
Satisfactorio	67	65,7
No satisfactorio	35	34,3
Total	102	100

Figure 6 shows the results obtained for the third dimension, referring to food preparation and healthy eating. Based on the data obtained, it was established that 21 participants had a satisfactory level, corresponding to 20,6 %. In contrast, 81 people were identified as having an unsatisfactory level in this dimension, resulting in 79,4 %.

Figure 6. Third dimension: Preparation

Preparación	n	%
Satisfactorio	21	20,6
No satisfactorio	81	79,4
Total	102	100

Figure 7, which covers the fourth dimension associated with consumption, shows that 97 people, or 95,1 %, showed an unsatisfactory level, representing the majority of respondents. On the other hand, only 5 people, equivalent to 4,9 % of the total number of respondents, demonstrated a satisfactory level of knowledge about food consumption.

Figure 7. Fourth dimension: Consumption

Consumo	n	%
Satisfactorio	5	4,9
No satisfactorio	97	95,1
Total	102	100

When analyzing the data in figure 8, which contains the fifth dimension on the impact of poor nutrition, it was found that a total of 58 mothers, or 56,9 %, showed an unsatisfactory level, compared to 44 mothers, or 43,1 %, who showed a satisfactory level regarding the impact of poor nutrition and its consequences on children's lives.

Figure 8. Fifth dimension: Impact

Repercusión	n	%
Satisfactorio	44	43,1
No satisfactorio	58	56,9
Total	102	100

DISCUSSION

According to the purpose of the research, which was to determine the level of maternal knowledge about child malnutrition at the John F. Kennedy Educational Unit, Santo Domingo, 2024. It was found that most of the mothers surveyed had low knowledge (71,6 %), which meant that most dimensions, such as food preparation and healthy eating, food and water consumption, and the impact of poor nutrition, were at an unsatisfactory level. On the other hand, only two of the five dimensions related to general knowledge and the selection of healthy and unhealthy foods were at a satisfactory level.(20,21,22,23,24)The results obtained are consistent with other studies that have presented similar data to those recorded in the project, such as the work carried out by Escobar(15), which found a low level of knowledge among caregivers regarding the process of feeding and nutrition in children, highlighting that the lack of knowledge is present not only among mothers but also among those responsible for caring for young children.

Similarly, Velásquez(16), in his research at the San Antonio health center in Chiclayo, found that 51,8 % of mothers had poor knowledge about feeding children aged 6 months to 2 years. This has an impact on poor development, in addition to children being more prone to disease due to a weak immune system. These data are similar to the results obtained on low levels of maternal knowledge regarding child malnutrition in this project. However, a study conducted by Tarazona(17) found that 47 % of mothers had a good level of knowledge about healthy eating. This shows that maintaining good knowledge is related to proper nutritional status for children, since the knowledge presented by the mothers coincided with normal weight for age, weight for height, and height for age in children.

The findings regarding the dimensions that formed part of the study's objectives are explained below:

According to the first specific objective, it was identified that the mothers' prior knowledge is satisfactory at 57,8 %, which shows that characteristics such as healthy eating, complementary feeding, benefits, and nutrition do not present major difficulties in the representatives' knowledge. (25,26,27,28,29) Similarly, Asto(18) found that 56,3 % of participants had a high level of knowledge about healthy eating in infants who drink milk, although 43,8 % had an average level of knowledge. No participants had a low level of knowledge, which is consistent with the satisfactory results obtained in this dimension. Similarly, the study conducted by Llanos et al.(19) obtained satisfactory results that highlight a high level of maternal knowledge about healthy eating based on the dimension of general aspects, representing 41 % of the members, in addition to presenting the highest values in the sections on importance and benefits. In turn, Coca(20) presented positive data in his work, which included the majority of participants with high levels of knowledge about child nutrition and the nutritional status of preschoolers with 76 % (38 out of 50 parents), in relation to 84 % of children who showed optimal nutritional status. These figures are similar to the first dimension on general knowledge related to the first objective.

In relation to the second specific objective concerning the characteristics of an adequate selection of healthy and harmful foods, a total percentage of 65,7 % was obtained, representing a satisfactory level of maternal knowledge.(30,31,32,33,34) These results are similar to the data obtained in the research by Llanos(21), which explored knowledge about healthy and unhealthy eating patterns, showing that mothers understand the relationship between a diverse, sustainable, and complete diet, recognizing that foods such as fruits and vegetables are part of a healthy diet. In addition, it reveals that excessive consumption of fried foods and sweets is part of an unhealthy diet, but that weekly consumption of these foods does not cause harm, even though they are more popular among young people and children. Similarly, the study by Lima et al.(22) reveals that, according to behavioral attributes related to the food choices of 1200 families distributed among 24 small Brazilian cities, the variable with the highest score was eating fruits and vegetables, with an average of 4,3, while the second highest scoring variable was eating a colorful and varied plate, representing an average of 4,0. This coincides with the results obtained in terms of healthy food selection, emphasizing that a good diet should be varied. In contrast, Barrera(23) reported that 52,7 % of mothers had an intermediate level of knowledge regarding nutrition related to the nutritional status of children, which allowed for the identification of shortcomings regarding the correct frequency of food provision to obtain greater benefits in the development of young children (10 out of 15 questions had more than 50 % incorrect answers). This indicates that even mothers with an average level of knowledge have difficulties in specific aspects related to selecting an adequate diet.(35,36,37,38,39)

Regarding the third specific objective, it was found that mothers' knowledge of food preparation is unsatisfactory, with 79,4 % of mothers demonstrating a very low level of knowledge on topics such as how to prepare food for children over one year of age. It should be noted that research conducted by Encalada et al.(24) in Zamora shows that 80 % of mothers do not know the proper way to prepare foods that lead to better nutrition for children, which is a high and quite significant percentage to take into account. Similarly, the research work of Bohórquez (25) shows that mothers have 32 % knowledge about food preparation, which is a low result. On the other hand, research conducted by Calderón (26) at the Huariaca Health Center found that 66 % of mothers have an adequate level of knowledge regarding the consistency of food that should be offered to children under one year of age, which is a different and satisfactory percentage.

Regarding the fourth specific objective, it was established that mothers' knowledge of the frequency of consumption of both food and the amount of water that children can drink during the day is unsatisfactory, with 95,1 % demonstrating a high level of ignorance.(46,47,48,49,50) Such is the case in the research by Berrios(27), which shows that 70 % of mothers are unaware of basic concepts such as food, nutrition, the meal times that preschoolers should consume, and the most

important meal times, which reflects a similarity with the results of the present research, rating the aforementioned percentage as deficient.(51,52,53,54,55)In addition, research conducted by Saldaña et al.(28)indicates that of the surveys conducted, 40 % of the parents surveyed indicated that schoolchildren should eat three times a day. However, the research emphasizes that nutrient consumption should be based on a frequency of five times a day, with three main meals and two snacks between each main meal. This shows a certain similarity with the results of this research regarding the unsatisfactory level presented by the mothers. In contrast, Mena(29)reported in his research that 81 % of mothers agree that it is not enough to give children three meals a day, since they are active all the time and expend energy, which they need to recover by eating nutritious foods.

According to the fifth specific objective, which is based on determining the level of knowledge that mothers have about the causes of unhealthy eating and the diseases it generates, a score of 56,9 % was obtained, which represents an unsatisfactory level. In contrast to the research carried out by the WHO(30), which describes malnutrition as the hidden cause of death in children under five years of age, accounting for 45 % of cases, this demonstrates that not providing children with adequate nutrition leads to serious problems that compromise their lives. Finally, it is important to know that inadequate feeding practices lead to diseases in children, as pointed out by González et al.(31), who state that poor nutrition leads to health problems such as respiratory diseases, delayed physical and cognitive development, diarrhea, poor school performance in those who already attend school, and 52,5 % of deaths among children under 5 worldwide, which is a worrying figure.

CONCLUSIONS

In general, it was determined that the level of knowledge that mothers had about child malnutrition at the John F. Kennedy Educational Unit was low, representing 71,6 % of the total of 102 mothers who were surveyed. This reveals that an unsatisfactory level was identified in the dimensions of preparation, consumption, and impact.

The conclusions in relation to each specific objective are detailed below:

The following socio-demographic data of the participants in the sample for this research were identified: an age range of 31 to 40 years old with 42,2 %, a secondary education level with 40,2 %, single marital status with 47,1 %, place of residence in rural areas (74,5 %), low socioeconomic status (50 %), occupation of mothers as housewives (67,6 %), and access to public health services (91,2 %).

Similarly, it was established that 57,8 % of mothers had a satisfactory level of knowledge regarding the first dimension on prior knowledge, food and healthy eating, complementary feeding, benefits, and nutrition, indicating that most mothers have a clear idea and understand the topics covered in the first dimension. However, the percentage obtained was not much higher than the unsatisfactory level, which represented 42,2 %.

Likewise, it was determined that 65,7 % of mothers have a satisfactory level of knowledge in relation to the second dimension concerning food selection, indicating that mothers have a good degree of choice regarding healthy and unhealthy foods for their children's consumption.

On the other hand, it was identified that 79,4 % of mothers showed an unsatisfactory level in the third dimension, which dealt with food preparation for children over one year of age and how to prepare healthy meals for young children.

It was also established that 95,1 % of all mothers surveyed showed an unsatisfactory level in the frequency of food and water consumption during the day for their children, corresponding to the fourth dimension, representing a worrying lack of understanding in this area.

Finally, it was determined that 56,9 % of mothers exhibited an unsatisfactory level in the fifth dimension regarding the causes of inadequate nutrition and the diseases that this problem brings with it.

Recommendations

Conduct applied research in which parents take part in a pre-test, and then develop a program on knowledge, attitudes, and practices related to healthy eating in children; concluding with the measurement of the effect by means of a post-test that covers the knowledge deficiencies found in this research.

Develop a cooking workshop each quarter, where mothers, students, and teachers prepare a healthy dish, explain it, and learn about its benefits. This promotes practical learning about proper food preparation.

Prepare educational talks on the importance of drinking seven glasses of water, involving

mothers and teachers, who are the children's educators at home and at school, to help create a healthy habit.

Invite health professionals such as nutritionists to provide training to teaching staff and those in charge of the cafeteria so that they can control the food and portions they serve to students, with teachers being responsible for supervising that food is prepared correctly.

Create brochures on diseases that develop as a result of poor nutrition, such as anemia, cognitive problems, learning disabilities, and a weakened immune system, which result in malnutrition that, if left untreated, leaves sequelae that compromise the child's overall well-being. These brochures should be given to the mothers of children who attend the school. This will help raise awareness about proper nutrition and what it prevents.

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