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Understanding mother's knowledge about complementary feeding and the anthropometric assessment of infants

Análise do conhecimento das mães sobre alimentação complementar e avaliação antropométrica de crianças em aleitamento materno

Análisis de los conocimientos de las madres sobre la alimentación complementaria y la evaluación antropométrica de niños lactantes

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Findings highlight the urgent need for culturally sensitive, context-aware educational strategies to address persistent misinformation and improve maternal trust in public health nutrition guidance.
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The study reveals understudied divergences between biomedical recommendations and everyday maternal knowledge, exposing how informal sources reshape complementary feeding practices.

ABSTRACT

Introduction: Complementary feeding (CF) is a process in which the infant goes from being fed exclusively breast milk to consuming liquid or solid foods. During this stage, parents are the ones who choose food, therefore, they must have adequate knowledge to avoid eating habits that are harmful to the health and future of the child. **Objective:** Determine the relationship between the level of knowledge of mothers about complementary feeding and anthropometric evaluation of breastfeeding children. **Methods:** This work has a quantitative approach, non-experimental design, cross-sectional and descriptive scope. The sample was 28 mothers who came with their children between 6-24 months to the Mulalillo Child Development Center (CDI), in Ecuador, to whom the surveys were applied and the children had anthropometric measurements taken, finally the data were analyzed in SPSS. **Results:** There is a moderate correlation between the mothers' level of knowledge about CF and the nutritional status of the infants, with a Spearman's Rho of 0.483 and a statistically significant relationship with a value of 0.009. **Conclusions:** There is a relationship between the mothers' level of knowledge about CF with the socioeconomic level, family risk and the nutritional status of the infants. Poor knowledge about CF is linked to a higher risk of suffering from malnutrition, being overweight or obesity.

Keywords: Infant nutrition, breastfeeding and complementary feeding, anthropometry, weaning, growth and development.

RESUMO

Introdução: A alimentação complementar (AC) é um processo no qual o bebê deixa de ser amamentado exclusivamente no peito e passa a consumir alimentos líquidos ou sólidos. Nessa fase, são os pais que escolhem os alimentos e, portanto, eles devem ter conhecimento adequado para evitar hábitos alimentares prejudiciais à saúde e ao futuro da criança. **Objetivo**: Determinar a relação entre o nível de conhecimento das mães sobre alimentação complementar e a avaliação antropométrica dos bebês. **Métodos**: Este é um estudo quantitativo, não experimental, transversal e descritivo. A amostra foi composta por 28 mães que frequentam o Centro de Desenvolvimento Infantil (CDI) Mulalillo com seus filhos de 6 a 24 meses de idade, às quais foram aplicados os questionários e tomadas as medidas antropométricas das crianças. Por fim, os dados foram analisados no SPSS. **Resultados**: Há uma correlação moderada entre o nível de conhecimento das mães sobre AC e o estado nutricional dos bebês, com um Spearman's Rho de 0,483 e uma relação estatisticamente significativa com um valor de 0,009. **Conclusões**: Existe uma relação entre o nível de conhecimento das mães sobre AC com o status socioeconômico, o risco familiar e o estado nutricional dos bebês. O conhecimento insuficiente sobre AC está associado a um risco maior de subnutrição, sobrepeso ou obesidade.

Palavras-chave: Nutrição infantil, amamentação complementar, antropometria, desmame, crescimento e desenvolvimento.

RESUMEN

Introducción: La alimentación complementaria (AC) es un proceso en el que el lactante pasa de ser alimentado de manera exclusiva con leche materna a consumir alimentos líquidos o sólidos. Durante esta etapa los padres son quienes eligen los alimentos, por ende, deben tener un conocimiento adecuado, para evitar hábitos alimenticios nocivos para la salud y el futuro del niño. **Objetivo:** Determinar la relación entre el nivel de conocimientos de las madres sobre alimentación complementaria y evaluación antropométrica de niños lactantes. **Métodos:** El presente trabajo es de enfoque cuantitativo, de diseño no experimental, de corte transversal y de alcance descriptivo. La muestra fue de 28 madres que acuden con sus hijos entre 6-24 meses al Centro de Desarrollo Infantil (CDI) Mulalillo, a quienes se les aplicó las encuestas y a los niños se les tomó las medidas antropométricas, finalmente los datos fueron analizados en SPSS. **Resultados:** Existe una correlación modera entre el nivel de conocimientos de las madres sobre AC y el estado nutricional de los lactantes, con un Rho de Spearman de 0,483 y una relación estadísticamente significativa con un valor de 0,009. **Conclusiones:** Existe una relación entre el nivel de conocimientos de las madres sobre AC con el nivel socioeconómico, el riesgo familiar y el estado nutricional de los lactantes. Un conocimiento deficiente sobre AC se vincula a un mayor riesgo de padecer desnutrición, sobrepeso u obesidad.

Palabras clave: Nutrición del lactante, lactancia materna complementaria, antropometría, destete, crecimiento y desarrollo.

INTRODUCTION

Complementary feeding (CF) is a process in which the infant goes from being exclusively breastfed to consuming liquid or solid foods in order to meet nutritional requirements (Montoya and Salina, 2023). It starts from 6 months of age because the infant has reached the development of digestive, renal and neurological function in an adequate manner and is administered until 24 months of age, because the child is already able to feed on the family diet (Santana, 2021). It is essential to implement healthy foods so that physical, emotional, cognitive and social development is adequate; foods containing gluten, light products, artificial sweeteners and sugary drinks should be avoided (Ramirez et al., 2022).

Anthropometric assessment is a process by which data such as weight and height are collected to determine whether the child's nutritional status is within the normal range for his or her age and to prevent or treat disorders due to food deficit or excess, such as malnutrition and obesity (Ramos et al., 2020).

Worldwide, early weaning is considered a public health problem; it is estimated that only 41% of children under 6 months are exclusively breastfed, representing a value lower than that established by the WHO, which predicts that the value should be 50% in 2025 (Alves et al., 2023). Early weaning is caused because mothers start complementary feeding early and decrease the administration of breast milk, causing the infant to suffer from malnutrition as a result of biochemical and anthropometric alterations. According to the WHO, malnutrition continues to be a global health problem because it causes mortality among children in developing countries (Fernandez et al., 2022).

According to a narrative review, it was determined that in Latin America most of the studies show an intermediate level of knowledge about CF and in Colombia less than half of the mothers have adequate feeding practices, because the onset of CF is early and with a low amount of nutrients (Sierra et al., 2017). In this continent, there are a large number of nutritional problems such as malnutrition, overweight and obesity in children under 5 years of age, the most frequent being malnutrition and micronutrient deficiency because they do not have adequate complementary feeding and eating habits vary in each area according to their sociocultural characteristics. During the first years of life, malnutrition can cause irreversible physical and cognitive changes, increasing the probability of suffering chronic diseases and learning difficulties (Ladino et al., 2022).

In Ecuador, incorrect breastfeeding and complementary feeding practices combined with high levels of infectious diseases lead to malnutrition in children under 2 years of age. About 371,000 children under 5 years of age suffer from chronic malnutrition, of which 90,000 suffer from severe malnutrition. The most affected population is the indigenous population; 10% of children in the country belong to this group and represent 20% of those with chronic malnutrition and 28% of children have severe chronic malnutrition. The effects of these problems are evident in the delay of growth and development, increasing the risk of morbidity and mortality, and may also be related to disorders, low academic performance and limitations in the workplace (Albán, 2023).

During the CF stage, parents are the ones who choose the food, therefore, they must have adequate knowledge about food practices, because misconceptions, economic status or culture can lead to eating habits that are harmful to the health and future of the child (Martin, 2022). The incorporation of food is a process that does not only consist of knowing what and how to give it, aspects such as the ideal moment, type of food, varied diet, the creation of an environment of trust and changes in food textures should be considered for the development of organs used in speech, pronunciation and chewing (Vázquez at al., 2023). For this reason, the research aims to determine the relationship between the level of knowledge of mothers about complementary feeding and anthropometric assessment of infants.

METHODS

This study is quantitative, because it allows the analysis of numerical data through various techniques to ensure the obtaining and reliability of the results, non-experimental design because the variable is not manipulated, cross-sectional because the data collection was performed once, and descriptive in scope because the variables are detailed (Niño, 2019).

Population and sample:

The population of this study was mothers who have children between 6-24 months of age. The sample size was 28 mothers who come with their children to the Mulalillo Child Development Center (CDI) belonging to the parish of Mulalillo, located in the Salcedo canton, province of Cotopaxi, Ecuador, and was obtained by census sampling, because the sample is equal to the population.

Inclusion criteria:

- Mothers who have children between 6-24 months.
- Mothers attending CDI Mulalillo.
- Mothers who have passed Secondary Basic Education.

Exclusion criteria:

- Mothers who have children older than 24 months.
- Mothers who have children with a congenital disease.
- Mothers who suffer from any mental alteration.
- Underage mothers.

Method of data collection

Data collection was by means of a survey, for which a questionnaire created in Colombia adapted to the Ecuadorian population was applied. It contains 6 items on sociodemographic data and 14 items on knowledge of complementary feeding, the results are considered as good knowledge with 12-14 correct answers, regular with 10-12 correct answers or bad with 1-9 correct answers. The internal consistency of the instrument was moderate (Cronbach's alpha: 0.60) and the intraobserver reliability acceptable (k: 0.21-0.40), obtaining a satisfactory validity and being adequate to measure objectively the knowledge of CF in mothers (Sierra et al., 2020; Holguin and Sierra, 2018).

In the anthropometric evaluation, the weight and height of children under two years of age were taken using the anthropometry and blood pressure determination procedure manual created by the Ministry of Public Health (MSP, 2012) of Ecuador and their data were assessed according to the growth patterns for the nutritional evaluation of children, children and adolescents from birth to 19 years of age created by the Ministry of Health (MINSAL, 2018) of Chile, to determine whether the infant has malnutrition, risk of malnutrition, is normal or eutrophic, overweight or obese.

Table1 . Nutritional qualification

Nutritional qualification	< 12 months	Between 12 and 24 months
Malnutrition	P/E ≤ -2DE	P/T ≤ -2DE
Risk of malnutrition	P/E ≤ -1DE y > -2DE	P/T ≤ -1DE y > -2DE
Normal or eutrophic	P/E > -1DE and < +1DE	P/T > -1DE and < +1DE
Overweight	P/T ≥ +1DE and < +2DE	P/T ≥ +1DE and < +2DE
Obesity	P/T ≥ +2DE	P/T ≥ +2DE

Note. P (weight), E(age), T(height) and DE (standard deviation) (Ministerio de Salud de Chile, 2018).

The socioeconomic level of the mother was assessed through a Socioeconomic Level Stratification Survey created by the National Institute of Statistics and Census (INEC, 2011) in order to know the stratum to which she belongs and how it can influence food consumption. It is divided into six categories: housing characteristics, access to technology, possession of goods, consumption habits, level of education and economic activity of the household. According to the results, it will be known if you belong to a high socioeconomic level (A) (from 845.1 to 1000 points), medium-high (B) (from 696.1 to 845 points), typical medium (C+) (from 535.1 to 696 points), medium-low (C-) (from 316.1 to 535 points) and low (D) (from 0 to 316 points).

In addition, the MSP family record was used, which is a document used to collect data on the family, assess their health status, their needs and allows to know about the reality of the environment in which the child develops. By means of the cards, the family risk was determined by assessing the biological, health and socioeconomic risks that may influence infant feeding, it consists of 18 items which were valued between 0 to 4 points according to the exposure of the family, then it was added and evaluated if the level of risk is: no risk (0 points), low risk (1-14 points), medium risk (15-34 points) or high risk (35-72 points) (Ministry of Public Health of Ecuador, 2018).

Finally, the data collected were analyzed in the statistical platform SPSS, version 25, which is a software used to perform statistical analyses, such as the generation of frequency tables.

This research considered the ethical aspects according to the Declaration of Helsinki, which is a draft code of ethics

on human experimentation, used to conduct research responsibly and with the commitment to protect the physical and emotional health of the research subjects (Aguilera et al., 2020). In addition, it refers to the implementation of voluntary consent to participate in the research, keeping absolute confidentiality on the data provided by the participants as part of the Research Project: "Characterization of immunometabolism as a predictive parameter of the complications of malnutrition". The present study was approved by the Committee on Ethics of Research in Human Subjects - UTA (CEISH - UTA) with the code: 068-CEISH-UTA-2024.

RESULTS AND DISCUSSION

Demographic information: Of the 28 mothers participating in the complementary feeding study, the minimum age was 18 years, the maximum age was 46 years, the mean was 28.6 years, and the standard deviation was 7.8 years. Table 2 describes the sociodemographic variables.

Table 2. Sociodemographic information

Variables	Categories	Frequency	Percentage
Marital status	Single	6	21.4
	Married	12	42.9
	Free union	8	28.6
	Separated	1	3.6
	Widower	1	3.6
	Total	28	100.0
Level of study	None	1	3.6
	School	8	28.6
	Baccalaureate	16	57.1
	Third level	2	7.1
	Fourth level	1	3.6
	Total	28	100.0
Occupation	Agriculture	7	25.0
	Housewife	8	28.6
	Private employee	11	39.3
	Student	2	7.1
	Total	28	100.0
Breastfeeding counseling	No	3	10.7
	Yes	25	89.3
	Total	28	100.0
Information on complementary feeding	Through some technological means of information	2	7.1
	Through a health entity	11	39.3
	Through a family member	12	42.9
	I have not received any information	3	10.7
	Total	28	100.0

Source: Author's development based on the research data

Table3 . Knowledge level

Level	Frequency	Percentage
Good	3	10.7
Fair	5	17.9
Poor	20	71.4
Total	28	100.0

Source: Author's development based on the research data
Note. Good (12-14 correct answers), fair (10-12 correct answers) and poor (1-9 correct answers).

Table 3 describes the frequency and percentage of the level of knowledge that mothers have about complementary feeding and shows that 71.4% of the participants have a poor knowledge of the subject, followed by 17.9% of mothers who have a fair knowledge and 10.7% who have a good knowledge.

Table 4 . Correct answers on complementary feeding

Question	Correct answer	Frequency	Percentage (%)
1. What is complementary feeding?	Initiation of solid and liquid foods other than breast milk	11	39.3
2. Until what age should the child be breastfed as the only food?	Up to 6 months	11	39.3
3. How many times a day should a child starting complementary feeding eat foods other than breast milk?	2 to 3 times a day	15	53.6
4. With which food group should complementary feeding be initiated?	Fruits and vegetables only	7	25.0
5. At what age can the child eat the foods consumed by the whole family?	From 12 months of age	10	35.7
6. Who should be given nutritional supplements or multivitamins	When indicated by health personnel	12	42.9
7. What should be the consistency of the child's food according to his or her months of age?	In puree, porridge or chunks from 6 months onwards	17	60.7
8. What is the proper way to provide foods other than breast milk?	Spoon, cup or let it do it on its own	20	71.4
9. Where should the child be fed?	In the dining room	24	85.7
10. What foods prevent a child from becoming anemic?	Meat and offal	13	46.4
What is the benefit of adequate complementary feeding to the child?	That he/she has adequate weight and height gain	18	64.3
12. At what age does the child stop complementary feeding?	24 months	14	50.0
13. What is the proper way to give complementary foods?	Allow him to eat alone and experiment with different combinations and flavors.	18	64.3
14. What is the number of complementary foods that should be given at 12 months?	One cup per meal (250 ml)	8	28.6

Source: Author's development based on the research data

From the results shown in Table 4 of the survey applied to the mothers to measure the level of knowledge about complementary feeding, it is highlighted that 85.7% knew that the place to feed infants is in the dining room and 71.4% responded correctly that the proper way to provide complementary feeding is with a spoon, cup or letting the infant do it by himself/herself. On the other hand, the participants had less knowledge about the food group with which CF should be started, since only 25% responded that it is started with fruits and vegetables, only 28.6% knew that the amount of complementary foods that should be provided at 12 months is one cup per feeding (250 ml), 35.7% answered correctly that from 12 months the child can eat foods consumed by the whole family, 39.3% knew that complementary feeding is the beginning of solid and liquid foods other than breast milk and only 39.3% knew that until 6 months of age breast milk should be given to children as the only food.

Table 5 . Socioeconomic level

Socioeconomic level	Frequency	Percentage (%)
A (high)	0	0.0
B (upper-middle)	4	14.3
C+ (typical middle)	8	28.6
C- (low middle)	12	42.9
D (low)	4	14.3
Total	28	100,0

Note. High socioeconomic level (A) (from 845.1 to 1000 points), upper middle (B) (from 696.1 to 845 points), typical middle (C+) (from 535.1 to 696 points), low middle (C-) (from 316.1 to 535 points) and low (D) (from 0 to 316 points).

As shown in Table 5, 42.9% of the participants belong to socioeconomic level C- (lower middle), 28.8% to level C+ (typical middle), 14.3% to D (low), 14.3% to B (upper middle) and none belong to level A (high).

Table 6 . Family risk level

Risk level	Frequency	Percentage (%)
No risk	2	7.1
Low risk	11	39.3
Medium risk	15	53.6
High risk	0	0.0
Total	28	100.0

Note. No risk (0 points), low risk (1-14 points), medium risk (15-34 points) and high risk (35-72 points).

Regarding the level of family risk to which the participants belong, it was determined that 53.6% have a medium risk level, 39.3% have a low risk level, 7.1% have no biological, health or socioeconomic risk that could affect the CF of the infant, and 0% of the population studied has a high-risk level.

Table 7 . Nutritional status

Nutritional status	< 12 months	Between 12 and 24 months	Frequency	Percentage (%)
Malnutrition	P/E ≤ -2DE	P/T ≤ -2DE	2	7.1
Risk of malnutrition	P/E ≤ -1DE y > -2DE	P/T ≤ -1DE y > -2DE	5	17.9
Normal or eutrophic	P/E > -1DE and < +1DE	P/T > -1DE and < +1DE	13	46.4
Overweight	P/T ≥ +1DE and < +2DE	P/T ≥ +1DE and < +2DE	6	21.4
Obesity	P/T ≥ +2DE	P/T ≥ +2DE	2	7.1
Total			28	100,0

Source: Author's development based on the research data

As can be seen in Table 7, of the 28 infants who underwent an anthropometric assessment, 13 children (46.4%) had a normal or eutrophic nutritional status and the remaining 15 showed alterations in their nutritional status, 21.4% of the infants were overweight, 17.9% were at risk of malnutrition, 7.1% were malnourished and 7.1% were obese.

In the research, we sought to determine the existence of a statistically significant relationship between the different variables using the Shapiro-Wilk normality test, because the sample is 28 people, obtaining a P value of less than 0.05, which means that the variables are not normal, and statistics with nonparametric tests, such as Spearman, were used to identify the relationship between the variables:

Level of knowledge - Socioeconomic level; Level of knowledge - Family risk; Level of knowledge - Nutritional status.

Table 8 . Relationship between variables

Knowledge level		
Variables	**Spearman's Rho**	
Socioeconomic level	Correlation coefficient	.762**
	Sig. (bilateral)	0.000
	N	28
Family risk	Correlation coefficient	.607**
	Sig. (bilateral)	0.001
	N	28
Nutritional status	Correlation coefficient	.483**
	Sig. (bilateral)	0.009
	N	28

Source: Author's development based on the research data

Table 8 shows that there is a strong positive correlation between the level of knowledge and socioeconomic level with a Spearman's Rho of 0.762 and a statistically significant relationship with a value of 0.000.

With respect to the relationship between the level of knowledge of the 28 participating mothers and their family risk, there is a moderate positive correlation with a Spearman's Rho of 0.607 and a statistically significant relationship with a value of 0.001. Regarding the relationship between the mothers' level of knowledge about CF and the nutritional status of the infants, there was a moderate correlation with a Spearman's Rho of 0.483 and a statistically significant relationship with a value of 0.009. This suggests that a higher level of knowledge is associated with an adequate nutritional status, but a deficient knowledge of complementary feeding is linked to alterations in the anthropometric measurements of the children.

Discussion

CF is the implementation of solid and liquid foods along with breast milk or formula milk so that the infant has all the nutrients necessary for growth and development. It starts at 6 months of age and continues until 24 months, it is considered

an important period because dietary patterns are created and there is risk in growth due to lack of nutrients, delayed cognitive, motor and socioemotional development, overweight and type 2 diabetes. Starting CF before 6 months of age can cause gastrointestinal diseases and doing so after this time can lead to increased risk of allergies to certain foods, nutrient deficits in infants and rejection of new flavors or textures (World Health Organization, 2023).

Parents play an important role in the period of the implementation of CF in infants, because they are responsible for creating good eating habits and there are several elements that can influence it, such as knowledge, skills, attitudes, economic income, ethnicity, education and place of residence. In addition, it has been shown that, despite having a good knowledge about CF, there are other factors that influence the type of diet administered to the infant, due to reduced time for food preparation at home, work and having several children (Hässig et al., 2024).

In this study it was determined that 71.4% of the mothers have a poor level of knowledge regarding complementary feeding, these results are similar to those of Samary and Risco (2022) who established that 63% of the mothers who participated do not know the characteristics or general aspects about CF, because they do not know the consequences of feeding children early, nor identify the foods allowed for the age and 68% had inadequate practices regarding the preparation, hygiene and storage of food. On the other hand, in a research conducted by Jalil et al. (2021) found that 72.5% of mothers had good knowledge regarding CF, participants had a positive attitude and appropriate practice regarding infant feeding, establishing a significant link between knowledge, attitude and practice of mothers with demographic characteristics.

The current study found that only 39.3% of mothers knew that breast milk should be given as the only food for infants up to 6 months of age. These results are in line with research conducted by Gebeyehu and Alemayehu (2021), where they found that 66.1% of the study population initiated complementary feeding in infants at 6 months of age in a timely manner, which is below the percentage recommended by the WHO, which is 80%, The factors that are associated with mothers having initiated complementary feeding in an adequate manner are the educational level because they have more knowledge and better understanding, prenatal care because mothers acquire information about the diet and also mothers who had between 2 and 4 children initiated complementary feeding in a timely manner because when the family was larger the economic status affected feeding.

Sichalwe et al. (2023) in their study found that 56.4% introduced semisolid foods and 64.5% introduced liquid foods before six months of age. Early initiation of CF may result in an increased risk of childhood obesity and risk of food-borne infections; on the other hand, initiation of CF at six months decreases the risk of allergies and food sensitivities. Additionally, in research conducted by Berhanu et al. (2022) showed that there is a significant relationship between the mother's knowledge and the practice of CF, because having good knowledge on the subject allows awareness of the nutritional requirements of infants, so that they receive timely and adequate feeding, reaching their optimal development and avoiding alterations such as malnutrition.

In the present study it was observed that of the 28 infants who underwent anthropometric assessment, 13 children (46.4%) had a normal or eutrophic nutritional status and the remaining 15 had alterations in their nutritional status, 21.4% of the infants were overweight, 17.9% were at risk of malnutrition, 7.1% were undernourished and 7.1% were obese. These results are related to an investigation carried out by Masuke et al. (2021) where they obtained 20.7% of children with growth retardation, 9.7% with underweight and 8.9% with wasting, these conditions were observed among children who were given complementary feeding before 6 months of age, which is the recommended age, in those who did not have dietary diversity or who had a low frequency of meals.

The research shows a significant relationship between the level of knowledge about CF and socioeconomic level with a Spearman's Rho of 0.762, and likewise, there is a significant positive relationship between the level of knowledge about CF and family risk with a Spearman's Rho of 0.607. This is consistent with a study by Paca et al. (2021), where they mention that socioeconomic level is one of the main factors influencing breastfeeding and complementary feeding provided by mothers to their children, other factors such as wage income, educational level, family structure, age of the woman and access to health care are also included.

According to Ariyo et al. (2021) adequate CF practices are very scarce in the population due to the mother's income, causing high rates of morbidity and mortality in infants. About 85% of children do not meet the minimum adequate diet because they do not have food diversity or because it is linked to cultural practices, where they are provided with a diluted cereal porridge that contains few nutrients or they are provided with food from the family, being susceptible to malnutrition. For this reason, it is necessary to implement strategies to promote adequate nutrition in infants.

According to the results of the research, knowledge about complementary feeding is related to nutritional status with a Spearman's Rho of 0.483, which is consistent with the results of Rakotomanana et al. (2020) who state that greater maternal knowledge is associated with less chance of underweight; they indicate that, in low and middle-income countries, the lack of economic sources, food insecurity, beliefs, lack of information by health personnel, information provided by older people or

friends of the mothers, time, work and large families affect adequate complementary feeding. Similarly, for Varghese et al. (2023) there is a significant relationship between the educational level of mothers and adequate feeding in children because they received information on CF.

On the other hand, Forth et al. (2022) in their research found that 61.5% of the respondents had medium nutritional knowledge, 32.7% had high knowledge and only 5.8% had low knowledge. Regarding nutritional status they determined that 10% of the children were thin for their height (wasted) and 89.9% were within normal ranges. However, they did not find a significant association between the mother's nutritional knowledge and the nutritional status of her children; however, they found that wasting decreased as nutritional knowledge increased.

Therefore, it is necessary to implement multidisciplinary activities such as campaigns, workshops, home visits or support groups in which mothers are informed about the age of initiation of CF, proper food preparation, the different types of food or offer healthy recipe guides in order to encourage the practice of healthy habits from an early age, reduce nutritional problems and prevent alterations in the growth and development of children. In addition, health professionals could educate mothers about CF from the prenatal stage and then ensure that the mothers go with their children to the nearest health center periodically for weight and height control; also, daycare professionals should be trained to prepare and provide adequate food for children between 6 and 24 months.

Limitations and future research

The limitations of this research are the lack of local studies that study the relationship between the level of knowledge of mothers about CF and the nutritional status of children between 6 and 24 months. On the other hand, Ecuador is an ethnically diverse country, with the coexistence of different languages that make communication difficult when conducting research, being a multiethnic country, cultural practices vary in each place, which may influence mothers' knowledge about CF and the nutritional status of children due to eating habits, beliefs, attitudes and customs of each sector, limiting the ability to apply standardized instruments and generalize the results, therefore, for future studies it is proposed to address the influence of factors such as culture, ethnicity and geographic location on the nutritional status of children.

FINAL REMARKS

The results of this study show that there is a relationship between the mothers' level of knowledge about CF and the socioeconomic level, family risk and nutritional status of the infants. Deficient knowledge about CF is linked to a higher risk of suffering from malnutrition, overweight or obesity, because they do not know the concept, they do not know until what age the child should be given breast milk as the only food, with what foods to start CF, they provide the same foods consumed by the whole family or they do not know the amount of food appropriate for the age, sometimes they provide more than necessary and sometimes less, because the child rejects the food because of its texture and they do not know the techniques to get the child to eat it.

The low knowledge of mothers about CF is linked to the fact that most of them receive information through a family member and not directly from health personnel, so that they let themselves be carried away by family beliefs and customs. In addition, the socioeconomic level influences the type of food consumed by the family, because sometimes they cannot afford to buy the right products, or the mother must work and does not have time to prepare meals at home and resorts to processed foods or foods with low nutrients that prevent the correct growth and development of the infant.

CF from 6 to 24 months should be optimal, varied and healthy because it provides the nutritional requirements for growth and development and even creates the eating habits and health status throughout children's lives, thus highlighting the importance of support, education and guidance to mothers during this stage. Early recognition of mothers' lack of knowledge about complementary feeding allows the implementation of strategies to promote knowledge on the subject.

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C. elaboration of figures and tables:	50%	50%
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