



EATING DISORDERS IN UNDER 5 YEARS OLD AND THEIR RELATIONSHIP WITH FAMILY FUNCTIONALITY

TRASTORNOS ALIMENTARIOS EN MENORES DE 5 AÑOS Y SU RELACIÓN CON LA FUNCIONALIDAD FAMILIAR

Arturo García-Galicia^{1,ab}, Álvaro José Montiel-Jarquín^{1,b,c}, Blanca Paola Rivera-Zúñiga^{1,d},
Diego Torres-Santiago^{2,e}, Alejandra Aréchiga-Santamaría^{3,f},
Akihiki Mizuki González- López^{4,g}, Carlos Alberto López-Bernal^{1,h}

ABSTRACT

Introduction: Eating disorders in children under 5 years of age can cause alterations in development and growth. They can be associated with disorders of family functionality. **Objectives:** To describe non-organic eating disorders in children under 5 years of age and their association with family functionality in a second-level hospital in Puebla, Mexico. **Methods:** Descriptive and cross-sectional study, in which children under 5 years of age with non-organic eating disorders were included. Parents who previously signed informed consent were given the IMFED tool to study eating disorders and FACES III to describe family functionality. Descriptive statistics and Spearman's coefficient were used. **Results:** 105 patients were evaluated, of which 57 were men and 48 women. The mean age was 30.42 months minimum 2, maximum 60, \pm 16.68 months. The predominant age group was 12-23 months. 45.71% of parents reported chaotic family adaptability, and 39.04% related cohesion. The most common eating disorder was sensory food aversions. More than 60% had two or more eating disorders. The correlation between family and eating disorders adaptability was 0.248 ($p = 0.011$), and cohesion between familiar and eating disorder was 0,87 ($p = 0,38$). **Conclusions:** The most frequent eating disorders were sensory aversion to food and infantile anorexia. They are slightly correlated with family adaptability. They are more frequent in families with chaotic adaptability. Children under 5 years of age with two or more eating disorders are the most frequent.

Key words: Non-organic eating disorders; Family problems, family functionality; Sensation disorders (source: MeSH NLM).

RESUMEN

Introducción: Los trastornos alimentarios en menores de 5 años pueden causar alteraciones en el desarrollo y crecimiento. Pueden asociarse con trastornos de la funcionalidad familiar. **Objetivos:** Describir los trastornos de alimentación de tipo no orgánico en menores de 5 años y su asociación con la funcionalidad familiar en un hospital de segundo nivel en Puebla. **Métodos:** Estudio descriptivo y transversal, en el que se incluyeron niños menores de 5 años con trastornos alimentarios no orgánicos. A los padres que previamente firmaron el consentimiento informado se les aplicó la herramienta IMFED para estudio de los trastornos alimenticios, y FACES III para describir la funcionalidad familiar. Se utilizó estadística descriptiva y coeficiente de Spearman. **Resultados:** Se evaluaron 105 pacientes de los cuales 57 fueron hombres y 48 mujeres. La edad media fue 30,42 mínimo 2, máximo 60, \pm 16,68 meses. El grupo etario predominante fue de 12-23 meses. 45,71% de los padres reportaron adaptabilidad familiar caótica y 39,04% cohesión relacionada. El trastorno de alimentación más frecuente fue aversiones sensoriales al alimento. Más del 60% presentaron dos o más trastornos de alimentación. La correlación entre adaptabilidad familiar y trastornos de alimentación fue 0,248 ($p=0.011$), y entre cohesión familiar y trastornos de alimentación 0,87 ($p=0,38$). **Conclusión:** Los trastornos de alimentación más frecuentes fueron aversión sensorial al alimento y anorexia infantil. Se correlacionan levemente con adaptabilidad familiar. Son más frecuentes en familias con adaptabilidad caótica. Los menores de 5 años con dos o más trastornos alimentarios son los más frecuentes.

Palabras clave: Desórdenes alimenticios no orgánicos; Problemas familiares; Funcionalidad familiar; Trastornos de la sensación (fuente: DeCS BIREME).

¹ Unidad Médica de Alta Especialidad Hospital de Especialidades, Centro Médico Nacional "Gral. de Div. Manuel Ávila Camacho", Instituto Mexicano del Seguro Social, Puebla-México.

² Instituto Mexicano del Seguro Social, Hospital General de Zona no. 20, Servicio de Pediatría, Delegación Puebla-México.

³ Centro de Atención Integral GARE, Servicio de Psicología Infantil, Puebla-México.

⁴ Instituto Mexicano del Seguro Social, Unidad de Medicina Familiar N° 6, Delegación Puebla, Puebla-México.

^a Specialist in Pediatrics, ^b Master in Medical Sciences and Research, ^c Specialist in General Surgery, ^d General Medicine.

^e Specialist in Child and Adult Medicine for Rural Health Services, ^f Specialist Psychologist in Child Neuropsychology, ^g Specialist in Family Medicine, ^h Specialist in Coloproctological Surgery.

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INTRODUCTION

Eating disorders in infancy and preschool age represent a challenge with a high demand for attention in the pediatric office. These children are characterized by eating slowly, insufficient quantities, and being very selective with the foods^(1,2). The Mental Illness Manual 5th Edition (DSM 5) defines them as persistent failure to eat properly, leading to significant failure to gain weight or lose weight in at least one month. Due to the characteristics of the age group, they fall into the category of "avoidance/restriction of food intake disorder". These are not attributable to a concurrent medical condition or to another mental disorder; these disorders can cause alterations in the nutritional status and development of patients⁽³⁾; thus, those disorders whose onset is associated with other pathological entities of organic origin would be excluded.

Chatoor et al. in 2002 proposed a categorization of these disorders in children under and equal to 5 years of age, classifying them as 1. Regulatory state disorders, 2. Reciprocity or bonding disorders, 3. Infantile anorexia, 4. Sensory aversion to food, 5. Associated with specific medical conditions, and 6. Post-traumatic. These categories are not exclusive and are still in force⁽¹⁾. Obviously, the DSM 5 definition does not include Chatoor's category 5, but it does include the others.

Regulatory disorders are defined as the difficulty of maintaining a calm, alert state when feeding. They can be very sleepy or very agitated, or very stressed, which causes problems feeding properly. Reciprocal or bonding disorders identify problems in the relationship between the child and their caregiver, resulting in poor nutrition. Infantile anorexia is characterized by the child's lack of interest in food but great attention to exploring and interacting with the environment. It expresses problems in the external regulation of eating, generally mediated by emotional experiences and not by the sensation of hunger. In sensory aversion disorders, the infant rejects certain foods because of their appearance, taste, texture, or smell, only ingesting foods of their preference or already known. In disorders associated with a concurrent medical condition, it is believed that it causes stress in the child who refuses to continue eating when he has started. Post-eating traumatic disorders occurred when children had negative experiences such as choking or choking on certain foods, causing an aversion to eating^(1,2). These disorders affect 20% to 80% of children with family

problems associated with their development^(1,2).

FACES III is a scale for evaluating family cohesion and adaptability and integrates family therapy concepts based on three main variables that define the construct of cohesion, flexibility, and communication. The last two variables are grouped in adaptability. It is made up of 20 items, 10 of which assess cohesion and another 10 assess adaptability using a five-point Likert-type scale (4 Ponce-Rosas). Its validity has been widely documented in Spanish in various Spanish-speaking countries, including Mexico⁽⁴⁻⁶⁾.

The IMFeD tool has been used effectively in 11 countries to identify eating disorders in children and subsequently offer nutritional management. Pediatricians have reported it as a very easy-to-use tool⁽⁷⁻⁹⁾.

METHODS

Design and study

Descriptive, cross-sectional study that was carried out in the pediatric service of a second level of care of Instituto Mexicano del Seguro Social (IMSS) in Puebla, México.

Population and sample

Children under 5 years of age with non-organic eating disorders were recruited, whose parents agreed to answer the scales, also signing the informed consent.

Procedures

The IMFeD tool and the FACES III scale were applied to the parents of these children. Children whose parents did not complete the response to the questionnaires were removed from the study.

Non-organic eating disorders were considered any persistent failure to eat properly leading to significant failure to gain weight or weight loss in at least one month, unrelated to gastrointestinal problems or lack of food⁽²⁾.

Statistic analysis

The data analysis was carried out with descriptive statistics. The correlation between family functionality and eating disorders was performed with the Spearman coefficient; A figure of $p = 0.05$ or less was considered significant.

Ethical aspects

The IMSS Local Committee approved this study for Research and Ethics in Health Research 2102. At all

times, the confidentiality of the data of each patient and their guardians was secure.

RESULTS

105 patients under 5 years of age were recruited

carriers of non-organic eating disorders. The mean age was 30.42 months (minimum 2, maximum 60 months, \pm 16.68 months). The distribution by age group is described in Table 1. Regarding the distribution by gender, 57 patients (54.3%) were boys, and 48 (45.7%) were girls.

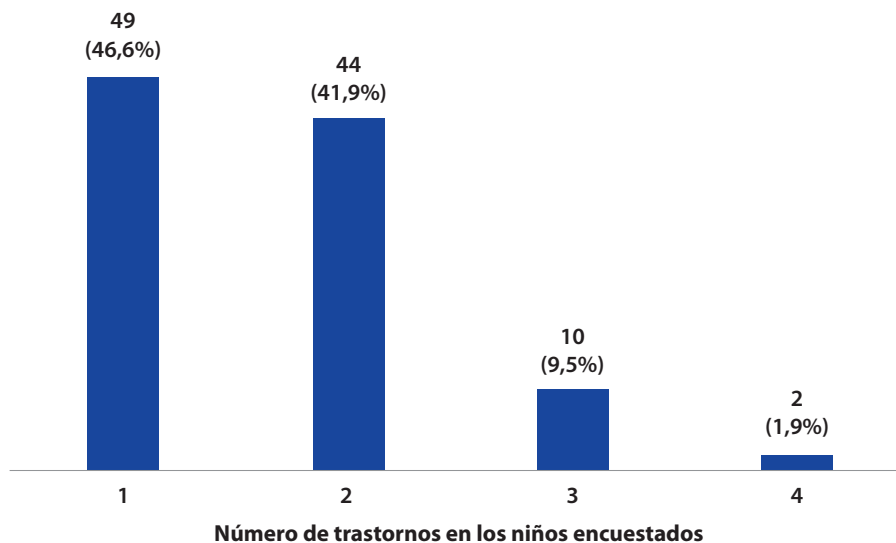
Table 1. Age distribution.

Age	Frequency	Percentage
Less than 1 years old	14	13.3
From 12 to 23 months	26	24.8
From 24 to 35 months	20	19.0
From 36 to 47 months	22	21.0
From 48 to 59 months	23	21.9
Total	105	100.0

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Of the eating disorders found, the most prevalent corresponded to sensory aversions to food (61 patients, 58%), followed by infantile anorexia (56 children, 53.3%), regulation disorders (39, 37.1%), and finally post-traumatic disorders (19 patients, 18%).

Although the highest percentage corresponds to children who had only one eating disorder, the most frequent was that children reported two or more eating disorders (56 patients, 53.3%) (Figure 1).



Graphic 1. The number of disorders per patient.



Regarding the evaluation of family functionality by the FACES III scale, it was found that in the domain of family adaptability, of the total of children surveyed, 50 patients with chaotic families (47.6%) were identified, 27 children (25.7%) with flexible families, 16 (15.3%) with structured and 12 (11.4%) with rigid adaptability families.

According to family cohesion, 41 children (39%) belonged to related families, 25 patients (23.8%) to semi-related families, 21 (20%) to agglutinated families, and 18 children (17%) corresponded to unrelated families. The association of eating disorders with family adaptability and family cohesion is illustrated in Table 2.

Table 2. Association between eating disorders in children under 5 years of age and the types of family adaptability and family cohesion.

		Eating disorders				
		Anorexia child	Sensory Aversion	Disorder regulation	Posttraumatic	Total
Adaptability	Rigid	10	22	6	3	21
	Structured	10	10	3	0	23
	Flexible	10	19	12	1	42
	Chaotic	26	30	18	15	89
	Total	56	61	39	19	175
Cohesion	Unrelated	11	8	9	4	32
	Semi-related	13	15	7	7	42
	Related	19	23	15	4	61
	Agglutinated	13	15	8	4	40
	Total	56	61	39	19	175

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By integrating both domains of adaptability and cohesion, a comprehensive evaluation of family

functionality is obtained, as illustrated in Table 3.

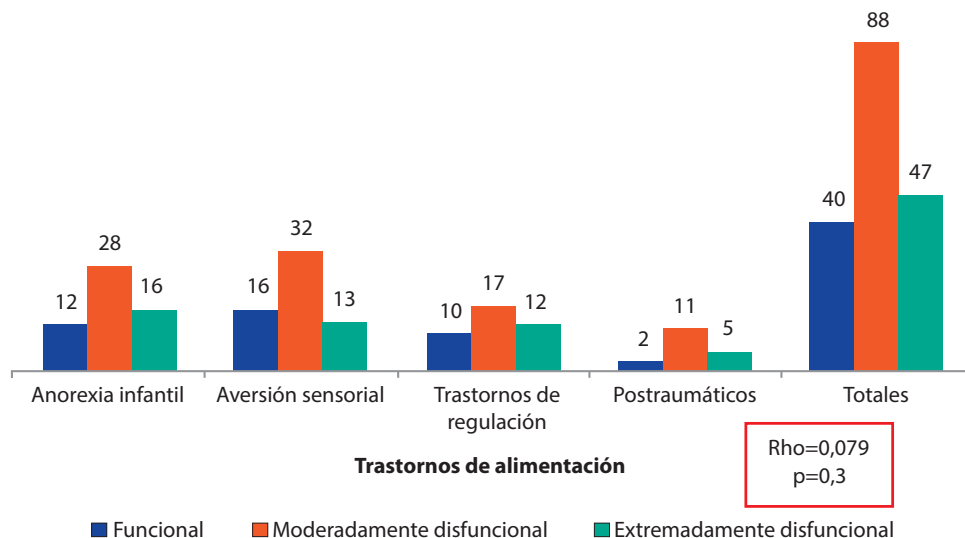
Table 3. Familiar functionality.

		Adaptability				
		Rigid	Structured	Flexible	Chaotic	Total
Cohesion	Unrelated	9	4	5	14	32
	Semi-related	3	5	7	27	42
	Related	3	6	22	30	61
	bonded	6	8	8	18	40
	Total	21	23	42	89	175

The correlation of family adaptability and eating disorders recorded a Spearman correlation figure of 0.248 (p = 0.011). The correlation between family cohesion and eating disorders was 0.87 (p = 0.38).

reported belonging to moderately dysfunctional families, both in total values and their distribution by the disorders found (Figure 2). The correlation between family functionality and eating disorders was 0.079 (p = 0.30).

The vast majority of the patients in this sample



Graphic 2. Family functionality in eating disorders in children under 5 years of age.

DISCUSSION

When talking about eating disorders in childhood, it usually refers to those presented in school age and adolescence. However, eating disorders in children under 5 years of age persist as a poorly explored but with a high frequency in demand for pediatric care⁽¹⁰⁾. The reported incidence ranges from 20 to 80% and does not present a predominance of gender^(2,9,10). In the present study, the frequency was very similar between males and females; there was no significant predominance of any age group.

After the work by Chatoor et al., Kerzner et al. elaborates another proposal to address these disorders, aimed explicitly at identification in initial care. Based on the parental perception of the diet, they define the child's 3 categories (children with a poor appetite, selective intake, and fear of eating). Each category considers the possibility of parental misperceptions. Thus, it also requires evaluating 4 styles of feeding established by the caregiver: responsible, controlling, indulgent and negligent^(9, 11). These styles were not evaluated in this study. The classification proposed by Chatoor et al. was used, which is more focused on the experience of children^(1,9,11).

Four of the six eating disorders identified by Chatoor were found. When using the DSM 5 criteria, disorders called "associated with specific medical conditions" were not considered^(1,2). No patient reported criteria coinciding with caregiver-child reciprocity disorders. This may be due to bias in the parents' report due to fear of third-party evaluation of their quality as guardians.

Sensory Aversion Disorder was the most reported in this population (55%); these patients are often referred to as "choosy eaters"⁽¹²⁾. These infants may have other sensory problems^(1,9). This disorder can be an early indicator of the so-called "sensory disintegration," which would make it necessary to rule out some neurobehavioral pathologies⁽¹³⁾. The application of the "finger foods" technique allows the child to explore and manipulate food, favoring the acceptance of a greater variety and early self-feeding. The progression of textures in infants and preschoolers should be gradual according to the oral motor development of each child. Inadequate texture during the introduction of complementary feeding can lead to the rejection of new foods. It is advisable to test chewing^(3,9,13,14).

The second most common Chatoor nomenclature disorder in this series was infantile anorexia. This disorder occurs in children of 6 months to 3 years of age. In it, children confuse hunger with emotional situations. It is common for them to apprehend the activity of eating associated with boredom, a feeling of loneliness, frustration, or anger. The aforementioned affects the regulation of hunger and food intake in general, causing in some cases weight stagnation and even cognitive development alterations^(1,9,10). In the sample of this study, more than half of the patients reported this entity.

To reprogram the food intake, limiting the consumption of liquid calories avoids suppressing the appetite and favors a more varied solid diet. Some authors suggest controlling the consumption of juices or any liquid and offering the drinks at the



end of the meal. It is also recommended to avoid intermediate meals ("snacks"), "a la carte menus" and to establish limits and regular hours^(9,14,15).

Disorders associated with regulatory states also reported a high frequency in this population. This generally infers problems in upbringing, such as in the introduction of eating habits such as schedules, sensory stimuli not related to eating, etc. For these disorders, management focused on education and behavior modification with a psychosocial, environmental, and family counseling approach is helpful. The most effective behavioral therapies are mild aversion or negative reinforcement with greater attention from parents towards children. It is important to promote the relationship between the caregiver, who is usually the mother, and the child^(1,2,9,11).

The diagnostic criteria for post-traumatic eating disorders are the rejection of food after a traumatic event related to the esophagus or oropharynx, events with intense stress, stress against eating, resistance to being fed⁽¹⁾. Only one-tenth of this series reported this entity.

Some reports have shown that children learn to accept certain foods by direct observation of close people^(8,9,11); This reinforces the idea that parenting plays a predominant role in the presence of these disorders.

Food education in the family is an important factor in the formation of food practices. It is recommended that the child participates in the family table, where they should have the opportunity to interact with their parents and siblings. In this way, the family can lead healthy eating habits^(9,11,14-16).

Vázquez-Garibay et al. show that family dysfunction was a risk factor associated with the height-for-age deficit as an expression of chronic malnutrition⁽¹⁵⁾.

It is essential to identify the functionality of family dynamics because children are dependent on other people⁽⁹⁻¹¹⁾; however, there are no studies that associate eating disorders with alterations in family functionality.

But it is also for the same reason that children from chaotic families have a higher risk of presenting these disorders. Families with chaotic adaptability were the most frequent in this series, almost half of the cases (Table 2). The association of family adaptability with eating disorders was mild to regular in this series.

In this work, related and semi-related families

were the most frequent; both categories together reported more than 60% of the cases (Table 2). This factor would act as a protector if it intervened to favor the timely detection of eating disorders⁽¹⁵⁻¹⁸⁾.

An almost perfect but not significant correlation between family cohesion and eating disorders was found; a larger sample could clarify this point. However, when integrating the evaluation of family functionality with the 2 domains of FACES III, the correlation with eating disorders was very weak and not significant. In this work, FACES III was only applied to the father who accompanied the patient to the consultation. The application to 2 or more family members has been suggested to optimize the evaluation of the functionality of the family system⁽⁵⁾, and this could improve the correlation with the child's eating disorders.

The children surveyed were recruited from outpatient care of a 2nd level care hospital. As already mentioned when adapting the Chatoor definition with the DSM 5 criteria, disorders associated with pathological entities were not considered in this series^(1,2). In these children, the approach will also depend on the underlying pathology^(9,11). This background is very important since such frequent gastroesophageal reflux, anemia, and others can present eating disorders. This may be one of the mechanisms by which it is associated with reduced growth, as has been shown^(9,11,14,17).

It is striking that the most common in this series is that children have two or more eating disorders, up to 53%. This frequency is very similar to that of children with only one disorder (Figure 1) and this can be explained by the multiple causal factors of eating disorders. Therefore, the primary care physicians and second tier are in position to detect early problems and initiate therapeutic approaches⁽¹⁸⁻²⁰⁾.

In light of the present findings, a couple of facts can be inferred. Firstly, many disorders present in children under 5 years of age were omitted as they were associated with specific diseases; therefore, the frequency in the first-level unit of attention could be much higher. Second, it is not usual for an interdisciplinary group to exist to manage these disorders in children under 5 years of age, which is frequently necessary^(1,9-11). Initially, the lack of culture to detect and treat them could be a factor for the development of more than one disorder in the same patient, so it is essential to assess strategies for timely detection and interdisciplinary management of children under 5 years of age with some disorder of

the feeding^(11,20). In a study with a larger population, data on reciprocity disorders could be obtained.

Although Chatoor et al. reported this classification in 2002, in Mexico this field is little studied; This opens a window of opportunities for its adequate diagnosis, study, and treatment for the Mexican population.

CONCLUSION

According to the results of the present study, it is

concluded that the most frequent non-organic eating disorders in children under 5 years of age are sensory aversion and infantile anorexia. The cases are slightly correlated with family adaptability. They occur more frequently in children who belong to families with chaotic adaptability. The correlation with family cohesion and integrated family functionality was not verified. It is very common to identify two or more eating disorders in children under 5 years of age.

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Correspondence: Álvaro Jose Montiel Jarouin

Address: Calle 2 norte # 2004. Colonia Centro. CP 72000. Puebla, Puebla-México

Telephone: +521 2222384907

Email: dralmoja@hotmail.com



BIBLIOGRAPHIC REFERENCES

1. Chatoor I. Feeding Disorders in Infants and toddlers: diagnosis and Treatment. *Child Adolesc Psychiatr Clin N Am* 2002;11(2):163-83. DOI: 10.1016/s1056-4993(01)00002-5.
2. Bravo P, Hodgson MI. Trastornos alimentarios del lactante y preescolar. *Rev. Chil Pediatr* 2011; 82 (2):82-87. DOI: <http://dx.doi.org/10.4067/S0370-41062011000200002>
3. American Psychiatric Association. Manual diagnóstico y estadístico de los trastornos mentales (DSM-5) (Quinta edición) 2014. Madrid: Editorial Médica Panamericana. ISBN 978-8-4983-5810-0.
4. Schmidt V, Barreyro JP, Maglio AL. Escala de evaluación del funcionamiento familiar FACES III: ¿Modelo de dos o tres factores? *Eswritos de psicología* 2010; 3(2): 30-36. En: <https://scielo.isciii.es/pdf/ep/v3n2/art04.pdf>. Consultado el 22 de abril de 2021
5. Bazo-Alvarez JC, Bazo-Alvarez OA, Aguila J, Peralta F, Mormontoy W, Bennett IM. Propiedades psicométricas de la escala de funcionalidad familiar FACES III: un estudio en adolescentes peruanos. *Rev Peru Med Exp Salud Publica* 2016; 33(3): 462-470. DOI: 10.17843/rpmesp.2016.333.2299
6. Ponce-Rosas ER, Gómez-Clavelina FJ, Terán-Trillo M, Irigoyen-Coria AE, Landgrave-Ibañez S. Validez de constructo del cuestionario FACES III en español (México). *Aten Primaria* 2002; 30(10): 624-530. En: <https://core.ac.uk/download/pdf/82221609.pdf>. Consultado el 21 de abril de 2021
7. Lin CC, Ni YH, Lin LH, Lau BH, Chao HC, Lee HC. Effectiveness of the IMFeD tool for the Identification and Management of Feeding Difficulties in Taiwanese children. *Pediatr Neonatol*. 2018 Oct;59(5):507-514. doi: 10.1016/j.pedneo.2018.01.001. Epub 2018 Jan 13. PMID: 29422246.
8. Garg P, Williams JA, Satyavrat V. A pilot study to assess the utility and perceived effectiveness of a tool for diagnosing feeding difficulties in children. *Asia Pac Fam Med* 2015;14:7. DOI 10.1186/s12930-015-0024-5.
9. Campuzano-Martín SH. Trastornos de la conducta alimentaria e4n el niño pequeño. *Pediatr Integral* 2020;24(2): 108-114. En: https://www.pediatriaintegral.es/wp-content/uploads/2020/xxiv02/05/n2-108-114_Campuzano.pdf. Consultado el 22 de abril de 2021
10. Damasco-Ávila E, Velasco-Hidalgo L, Zapata-Terrés M, Cárdenas-Cardos R, Rivera-Luna R. Feeding difficulties and eating disorders in pediatric patients with cáncer. *Bol Med Hosp Infant Mex* 2019; 76:113-119. DOI: 10.24875/MNHIM.19000072
11. Kerzner B, Milano K, MacLean WCBerall G, Stuart S, Chatoor I. A practical approach to classifying and managing feeding difficulties. *Pediatrics* 2015; 135(2): 344-353. DOI: 10.1542/peds.2014-1630
12. Carruth BR, Ziegler PJ, Gordon A, Barr SI: Prevalence of picky eater among infants and toddlers and their caregivers; decisions about offering a new food. *Journal of the American Dietetic Association* 2004; 104 (S1): S57-S64.
13. Erazo-Santander OA. Dificultades en integración sensorial, afectividad y conducta en estudiantes de una escuela pública. *Praxis & Saber* 2018; 9(20): 143-165. DOI: 10.19053/22160159.v9.n20.2018.5884
14. Almenara-Vargas C. Trastornos de la alimentación en la infancia. *Persona* [Internet] 2005; 8: 187-201. Recuperado de: <https://www.redalyc.org/articulo.oa?id=147112816008>
15. Vásquez Garibay E. M, González Rico J. L, Romero Velarde E, Sánchez-Talamanates E, Navarro Lozano E, Nápoles Rodríguez F. Consideraciones sobre la dinámica familiar y el síndrome de la mala nutrición en niños mexicanos. *Gac Med Mex*. 2015; 151:788-97
16. Ruiz-Martínez AO, Vázquez-Arévalo R, Mancilla-Díaz JM, Viladrich-i-Segués C, Halley-Castillo ME. Factores familiares asociados a los Trastornos Alimentarios: una revisión. *Rev. Mex. Trastor. Aliment* 2013,4(1): 45-57. Disponible en: http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2007-15232013000100006&lng=es.
17. Jiménez-Ortega AI, Martínez-García RM, Velasco-Rodríguez-Belvis M, Ruiz-Herrero J. De lactante a niño. Alimentación en diferentes etapas. *Nutr Hosp* 2017;34(4) 3-7. DOI:10.20960.nh.1563
18. Birch LI: Effects of peers' models food choices and eating behaviors on preschooler' food preferences. *Child Development* 1980; 51: 489-96. DOI: 10.2307/1129283
19. Cordella P, Aedo K, Ramirez V. Riesgos Asociados a los hijos de mujeres con trastornos alimentarios. *ARS MEDICA Revista de Ciencias Médicas*. 2018; 43:719-1855. DOI: 10.11565
20. Vio F, Salinas J. Promoción de salud y calidad de vida en Chile: una política con nuevos desafíos. *Rev Chil Nutr* 2006; 33: 11-20. DOI: 10.4067

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