

Association between food security and family functionality in primary care

Abstract

Introduction: Food insecurity, a multi-factor issue linked to nutritional status, is an indicator of poverty. Likewise, family functionality is influenced by the basic family functions, including socioeconomic status.

Objective: To determine the relationship between food security and family functionality in primary care.

Materials and methods: Cross-sectional study where the relationship between food safety and family functionality was assessed in 385 patients. The instruments to collect data were the 2012 Mexican Food Security Scale (EMSA) and family APGAR; descriptive statistics and Chi squared were used with the statistical program SPSSv21.

Results: Family functionality was identified in 80.5% patients, whereas moderate and severe dysfunctions were present in 15.3% and 4.2% respectively. Meanwhile, 51.2% had food security and 48.8% food insecurity (in which 22.1% had mild, 9.1% moderate and 17.7% severe insecurity). The correlation between food security and family functionality was statistically significant (Chi squared 37.86, $p < 0.000$).

Conclusion: Mild and severe food insecurity were higher than what was previously reported at a national level. There is an association between food safety and family functionality.

Keywords: food security, food insecurity, family functionality

Volume 3 Issue 2 - 2019

Mateo Quiñones Mexia,¹ María Elena Haro Acosta,² Joan Dautt Silva³

¹Family physician, IMSS Family Medicine Unite No. 16, México

²Sc.D., Pediatrician and Coordinator in Health Research at IMSS Delegación Baja California, México

³Medical Intern, IMSS Hospital Gineco-Pediatría y Medicina Familiar No.31, México

Correspondence: María Elena Haro Acosta, Sc.D., Pediatrician and Coordinator in Health Research at IMSS Delegación Baja California, Mexicali, BC, Calzada Cuauhtémoc 300, Colonia Aviación, Mexicali, Baja California, 21230, México, Tel 011 52 (686) 543 3759, Emails maria.hara@imss.gob.mx, lenahar@live.com.mx

Received: January 29, 2019 | **Published:** March 18, 2019

Introduction

Food security is the condition in which a person has, at all times, physical and economical means to access sufficient, safe and nutritious food to meet their dietary needs to lead an active and healthy life. Food insecurity is the restraint or uncertain availability of nutritionally adequate and safe foods, or the imitation of acquiring such food in socially acceptable ways.¹⁻³ In Mexico, the 2012 National Health and Nutrition Survey (ENSANUT) reported that approximately one out of every three households suffers from food insecurity in its moderate or severe form. It was associated with the coexistence of malnutrition in children, along with diabetes, overweight and obesity in adults, which in turn prevent the physical and intellectual development of the individual.¹⁻⁴ The degree of family functionality, defined as the ability to face and overcome each one of the stages of the life cycle and the crises that it goes through, is determined by various factors, which include: communication, individuality, decision making and reaction to critical events.⁵⁻⁷ In 2013, the Food and Agriculture Organization of the United Nations (FAO) stated that, worldwide, more than 840 million people suffer from chronic undernourishment due to the fact that dietary energy requirements is inadequate to cover the minimum necessities to achieve an acceptable lifestyle. In Mexico, the prevalence undernourishment was 5% in 2010 and in Latin American and the Caribbean, hunger affects 49 million people.^{8,9} The relevant socio-demographic and health characteristics of Mexican homes with food insecurity can be attributed to low parental educational levels, lack of economical resources from social programs, among others.⁹ A study conducted in 50,528 Mexican households noted that the prevalence of food insecurity was 70.6%; the majority of individuals had low economical status, lack of education and a higher probability of obesity.¹⁰ The states with a higher proportion of either moderate or severe food insecurity are: (49%), Guerrero (44%), and Chiapas (38.9%). In houses where parents speak an indigenous language,

food insecurity escalates to 42.2%.¹¹ According to national statistics, in Mexico, 7 out of every 10 households show some degree of food insecurity: 41.6% is mild, 17.7% moderate and 10.5% severe.^{12,13} There are few publications, either national or worldwide, that show an association between food security and family functionality, which is why the objective of this study is to determine if there is one in a primary care setting.

Material and methods

A descriptive, analytical, transversal and prospective study was carried out in the Family Medicine Unit No. 16 of the Mexican Institute of Social Security (IMSS) in Mexicali, Baja California. Patients that attended medical consultation during September to November 2017 were included through consecutive sampling. Inclusion criteria included being ≥ 18 years of age and have at least one family member aged < 18 years. Both the Mexican Food Security Scale (EMSA)⁴ and the family APGAR test¹⁴ for family functionality were applied to each patient. The objective of the EMSA survey is to capture the perception of access to varied, nutritious and sufficient food; it consists of 12 items that measure food security severity and categorizes it in four levels of: food security and mild, moderate or severe food insecurity. The APGAR test measures the perception of the functioning of the family unit in a global way and classifies the family as a functional family, mild dysfunction and moderate dysfunction. This study was conducted in accordance with the ethical principles of the Helsinki Declaration and our institution's Local Research Committee. Additionally, written consent was solicited to the participants and all data pertaining patient confidentiality was kept. Descriptive statistics were used: measures of central tendency for quantitative variables, frequencies and percentages for qualitative variables and Chi squared test to determine association between scales (food security and family functionality). The information was collected and analyzed in the statistical program SPSS version 21.

Results

The universe of patients assigned to the FMU No. 16 of IMSS was 64,469 patients during the study, of which 385 patients ended up participating and conforming our cohort. According to the family APGAR test, 80.5% of families were functional, while 15.3% and 4.2% had moderate and severe dysfunctionality (Figure 1). Regarding food security, according to the EMSA scale, 51.2% of patients had

food security and 48.8% had some degree of food insecurity (Figure 2). Food security was observed in 180 functional families and 17 households with some sort of family dysfunction. On the other hand, food insecurity was present in 77% of dysfunctional families and 41.93% of functional families (Table 1). As a result of the independence test between the two criteria (food safety and family functionality), an association was observed results between the two (Chi-square of 37.86, p=0.000).

Table 1 Association of family functionality and food security

Family functionality	Food security				Total (n, %)
	FS	MFI	MOFI	SFI	
Functional family	180	61	19	50	310, 80.52%
Moderate dysfunction	15	18	13	13	59, 15.32%
Severe dysfunction	2	6	3	5	16, 4.16%
Total (n, %)	197, 51.17%	85, 22.08%	35, 9.09%	68, 17.66%	385, 100%

FS, food security; MFI, mild food insecurity; MOFI, moderate food insecurity; SFI, severe food insecurity

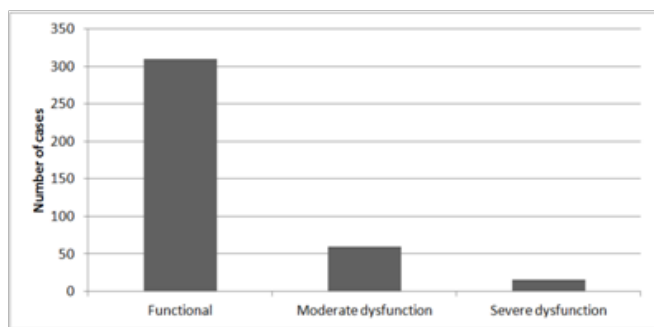


Figure 1 frequency of family functionality.

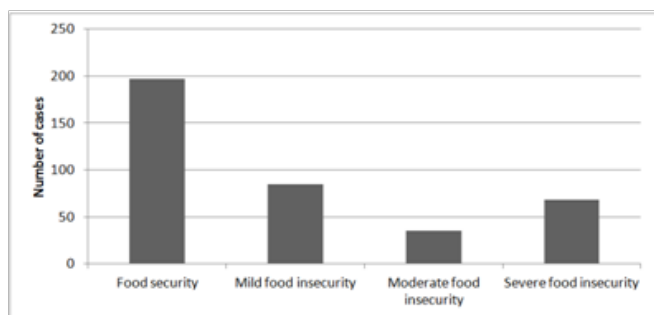


Figure 2 Frequency of food security.

Discussion

In the present study, a predominance of family functionality was observed in the surveyed patients, which correlates with a study conducted in Mexico in 2012.¹³ Food security was predominant among patients; food insecurity was observed in 48.8%, lower than that reported in a nationwide study in 2014 where 67% of households had a degree of insecurity.¹⁵ Within the characteristics of a functional family, decision-making process and the reaction to critical events were the most common characteristics present. Families that presented some degree of food insecurity often had adults reduce their food intake to assure and adequate food supply to those less than 18 years of age. This fact was also argued in the Latin American and Caribbean Food Security Scale’s (ELCSA) scientific committee.² Demonstrating a relationship between food security and family functionality helps,

in the context of primary care, to implement preventive measures to improve the nutritional status of beneficiaries. A study conducted in Colombia in 2011 argues that food insecurity and family dynamics affect the nutritional status of household members.¹⁶ This study established a significant relationship between food safety and family functionality. However, in order to know if this relationship predominates at the local or national level, inter-institutional studies be conducted, as there is little evidence of studies pertaining to such matter.

Acknowledgments

None.

Conflicts of interest

We have no conflicts of interest to disclose.

References

- Rosas V, Rivera JA, Shaman T. La magnitud de la inseguridad alimentaria en México: su relación con el estado de nutrición y con factores socioeconómicos. *Salud Publ Mex.* 2014;56:s79–s85.
- Comité Científico de la ELCSA. *Escala Latinoamericana y Caribeña de Seguridad Alimentaria (ELCSA): Manual de uso y aplicaciones.* 2012. p. 1–78.
- González de la Rocha M. *Procesos domésticos y vulnerabilidad. Perspectivas antropológicas de los hogares con Oportunidades.* 2006. p. 1–43.
- Barrios Sánchez K, Carrasco Enríquez B, Hernández López P, et al. Validez estadística de la Escala Mexicana de Seguridad Alimentaria y la Escala Latinoamericana y Caribeña de Seguridad Alimentaria. *Salud Publ Mex.* 2014; 56(1):S5–S11.
- Satir V. *Psicoterapia familiar conjunta. 2da edition.* México: La Prensa Médica Mexicana; 1986.
- Huerta González JL. *La familia en el proceso salud-enfermedad.* México, D.F: Alfil; 2007. p. 1–6.
- Argollo P, Bórquez M, Cerda J, et al. Influencia de la familia como factor protector de conductas de riesgo en escolares chilenos. *Rev Med Chile.* 2008;136:317–324.
- Urquía Fernández N. La seguridad alimentaria en México. *Salud Publ Mex.* 2014;56(1):S92–S98.

9. Méndez-Gómez Humarán I, Mundo Rosas V, Shamah Levy T. Caracterización de los hogares mexicanos en inseguridad alimentaria. *Salud Publ Mex.* 2014;56(1):s12–s20.
10. Melgar Quiñónez H, Méndez-Gómez Humarán I, Morales Ruán MdC, et al. La inseguridad alimentaria está asociada con obesidad en mujeres adultas de México. *Salud Publ Mex.* 2014;56(1):s54–s61.
11. García Chong N, Martínez Rodríguez JC, Noriero Escalante L, et al. Inseguridad alimentaria y vulnerabilidad social en Chiapas: el rostro de la pobreza. *Nutr Hosp.* 2015;31(1):475–481.
12. Hoelscher D, Evans A. Child food insecurity: The economic impact on our nation. *J Appl Reserch Children.* 2012;3(1):1–3.
13. *Encuesta Nacional de Salud y Nutrición, Resultados Nacionales.* 2012.
14. Gómez FJ, Ponce ER. Una nueva propuesta para la interpretación de Family APGAR. *Aten Fam.* 2010;17(4):102–106.
15. Cuevas L, Mundo V, Pérez R, Rivera JA. Inseguridad alimentaria en el hogar y estado de nutrición en personas adultas mayores de México. *Salud Publ Mex.* 2014;56(1):s71–s78.
16. Berbesi DY, Pérez ME, Taborda PA. Funcionalidad familiar, seguridad alimentaria y estado nutricional de niños del Programa Departamental de Complementación Alimentaria de Antioquia. *Rev CES Med.* 2011;25(1):6–19.