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# No association between perception of family functioning and treatment modality for chronic renal disease secondary to diabetes mellitus

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**Introduction:** This work was undertaken with the aim of studying the association between perception of family functioning and mode of medical treatment in Mexicans between 40 and 65 years who suffer from chronic kidney disease.

**Material and methods:** Participants 37 patients, 22 men, 40 to 65 years of age with chronic renal disease secondary to diabetes mellitus. Patients were assigned to three groups, diet, diet + dialysis and diet + hemodialysis, they responded to four self-administered questionnaires, a demographic questionnaire and three questionnaires to assess family functioning, the Apgar family test, the family functioning perception test, and the scale of Garcia et al.

**Results:** There was no relationship between perception of family functioning of patients with chronic kidney disease secondary to diabetes mellitus and type of medical treatment.

**Conclusions:** The perception of family functioning was not associated with the type of medical treatment of adults with chronic renal failure secondary to diabetes mellitus. The use of various instruments to explore family functioning is important to identify areas to address the psychotherapeutic management of the family.

**Key words:** Family functioning, Diabetes mellitus type 2, Chronic renal disease, Middle adulthood.

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**No asociación entre percepción del funcionamiento familiar y modalidad de tratamiento de la enfermedad renal crónica secundaria a diabetes mellitus**

**Introducción:** Este trabajo se hizo con el objetivo de estudiar si existe relación entre percepción del funcionamiento familiar y modalidad de tratamiento médico en mexicanos entre 40 y 65 años con enfermedad renal crónica.

**Material y métodos:** Participaron 37 pacientes, 22 hombres, entre 40 y 65 años de edad con enfermedad renal crónica secundaria a Diabetes Mellitus. Los pacientes fueron asignados a tres grupos, uno dieta, otro dieta + diálisis y otro dieta + hemodiálisis, estos respondieron a cuatro cuestionarios autoaplicados, uno sociodemográfico y otros tres para estimar funcionamiento familiar, el apgar familiar, la prueba de percepción del funcionamiento familiar FF-SIL y la escala de funcionamiento familiar de García y colaboradores.

**Resultados:** No hubo relación entre percepción del funcionamiento familiar de pacientes con enfermedad renal crónica secundaria a Diabetes mellitus y modalidad de tratamiento médico.

**Conclusiones:** La percepción del funcionamiento familiar no estuvo asociada con el tipo de tratamiento médico de adultos con insuficiencia renal crónica secundaria a Diabetes Mellitus. El uso de varios instrumentos para explorar funcionamiento familiar permite identificar áreas a las que dirigir prioritariamente el manejo psicoterapéutico de estas familias.

**Palabras clave:** Funcionamiento familiar, Diabetes mellitus tipo 2, Enfermedad renal crónica, Adultez intermedia.

## INTRODUCTION

Intermediate adulthood is the stage of life ranging from 40 to 65 years of age. In this stage, there is a reintegration and renewal of the person and the person accepts that which occurs as something necessary. The greatest prevalence of chronic kidney disease secondary to diabetes mellitus is found in our setting in this age range.

On the other hand, evaluation of functioning of the families in which a member has a chronic disease makes it possible to characterize the psychotherapeutic strategies to manage these diseases in the family setting.

There are several instruments to evaluate family functioning, one of best known being the family Apgar. This has the advantage of being self-applied, understandable by persons with limited education. It takes very little time to fill out and it is useful to identify families at risk based on the evaluation of the perception of the systemic functioning of the family by one of its members. The family Apgar<sup>1</sup> was elaborated using five basic components of family functioning: adaptation, partnership, growth, affectation and resolve. Assessment of family functioning is more complete when evaluation of the family Apgar is complemented with other instruments that make it possible to characterize the relationships between the family members and to identify areas of opportunity for the health care team to orient the family psychotherapy. Two of these instruments are the family functioning perception test, FF-SIL,<sup>2</sup> and the Garcia et al.<sup>3</sup> Family Functioning Scale. The first one of these instruments contains 14 items divided into 7 areas: cohesion, harmony, communication, permeability, affectivity, roles and adaptability. Each question has five response options that are assigned a score as follows: almost never (one point), few times (two points), sometimes (three points), often (four points) and almost always (five points). The resulting global score of the sum of the response of the 14 items makes it possible to classify family functioning into: functional family (70 to 57 points, moderately functional family (56 to 46 points), dysfunctional family (42 to 28 points and severely dysfunctional family (27 to 14 points).

The family functioning scale of Garcia et al. is made up of 45 items, 23 of which are useful to evaluate negative aspects of the family interrelations and 22 having positive aspects of these. These items are grouped into four factors, which makes it possible to discriminate positive and negative patterns of relationships of family functioning. These factors are positive family environment, cohesion/rules, hostility/avoidance of conflict and lead/problems in the expression of feelings. The Garcia et. al scale makes it possible to describe the relationships between family members and on the contrary to the previous ones do not categorize the families according to a score. Thus the analysis is based on qualitative criteria of the intra-family relationships. This work has been performed in order to study

if there is an association between perception of family functioning and treatment of chronic renal disease in adults aged 40 to 45 years with the diagnosis of chronic kidney disease secondary to diabetes mellitus.

## MATERIAL AND METHODS

A cross-sectional study was conducted in the Hospital General of Area No. 1 of the Instituto Mexicano of the Social Security, Morelia, Mexico. The study included the period from September 15, 2007 to October 15, 2008. Sample size was calculated for a finite population. A total of 37 patients with chronic kidney disease (CKD) secondary to type II diabetes mellitus, ages 40 to 65 years, participated in the study. The patients were assigned to three treatment groups (diet: n=9, dialysis+diet: n=16, and hemodialysis+diet: n=12). The patients answered 4 instruments. The first was an interview to know sociodemographic data and the three others were three questionnaires to evaluate family functioning. These were family Apgar,<sup>1</sup> perception of family functioning test (FF-SIL)<sup>2</sup> and the family functioning scale of Garcia et al.<sup>3</sup> These questionnaires have been validated in populations similar to ours. The instruments used were previously validated in their internal consistency with the calculation of Cronbach's alpha and the Spearman Brown split half test (table 1). The ANOVA and contingency tables were used for the analysis between groups and p<0.05 was accepted as significance level in the measurements proposed.

## RESULTS

The most representative gender was male (22), males representing 59.5% of the cases, age 58±11.2 years, married civil status (32). Of the subjects, 86.5% had primary and 81.1% had secondary schooling (30) (81.1%). Professions of 40.6% (15 cases) were as follows: worker, farmer and mason. On the other hand, among the women (12), 32.4% mainly did home activities. Regarding the life cycle development stage, 81.1% of the families were in a re-encounter stage, and had 4 or 5 children (27), 72.9%.

Tabla 1

Evaluation of the internal consistency of the instruments used to evaluate family functioning

Instrument	No. of domains	Cronbach's alpha	Spearman Brown
Apgar	5	0.858	0.898
FF-SIL	7	0.874	0.867
Garcia et al. functioning scale	4	0.730	0.771

<b>Table 2</b>			
<b>Comparison between groups of medical treatment of family functioning calculated with the family Apgar questionnaire</b>			
Family Apgar	GI	F	P
Global score	2	0.028	0.972

The treatment groups were compared with the ANOVA (diet, n=9, dialysis +diet, n=16 and hemodialysis +diet, n=12)

<b>Table 3</b>			
<b>Comparison between groups of medical treatment of family functioning calculated with the FF-SIL questionnaire</b>			
FF-SIL (areas)	GI	F	P
Cohesion	2	0.685	0.512
Harmony	2	0.814	0.452
Communication	2	0.298	0.745
Permeability	2	0.773	0.471
Affectiveness	2	0.060	0.942
Roles	2	0.542	0.587
Adaptability	2	0.204	0.817

The treatment groups were compared with the ANOVA (diet, n=9, dialysis+diet, n=16 and hemodialysis +diet, n=12)

<b>Table 4</b>			
<b>Comparison between groups of medical treatment of family functioning calculated with the Garcia et al. Family Functioning Scale</b>			
Garcia et al. Family Functioning Scale (areas)	GI	F	P
Positive family environment	2	0.603	0.553
Hostility /avoidance of conflict	2	0.360	0.701
Lead/problems in the expression of feeling	2	0.795	0.461
Cohesion/rules	2	1.267	0.296

The treatment groups were compared with the ANOVA (diet, n=9, dialysis +diet, n=16 and hemodialysis +diet, n=12)

In regards to the evaluation of family functioning with the family Apgar instrument, it was found that 29 (78.4%) were highly functional, 2, (5.4%) were moderately functional and 6 (16.2%) were strongly dysfunctional. When the families were evaluated with the FF-SIL instrument, it was found that 18 families (48.6%) were functional, 15 (40.5%) were moderately functional, 3 (8.1%) were dysfunctional and 1 (2.7%) was severely dysfunctional.

No differences were found in reference to the perception of family functioning by the patient with CKD when the

responses to the three instruments that were used to calculate family functioning were evaluated. (Tables 2, 3 and 4).

No significant differences were found with the FF-SIL ( $p=0.035$ ) and the family Apgar ( $p=0.330$ ) for the gender of the patient who evaluated the family functioning. No statistically significant differences were found with the FF-SIL tasks ( $p=0.153$ ) and family Apgar ( $p=0.388$ ) regarding the civil status of the patient who evaluated the family. However, there was a tendency to perceive better family functioning by those who were married. There were also no differences between groups regarding time of diagnosis of the diabetes mellitus, family Apgar ( $p=0.566$ ) and FF-SIL ( $p=0.864$ ) and time of the diagnosis of the CKD, family Apgar ( $p=0.266$ ) and FF-SIL ( $p=0.443$ ).

Statistically significant differences ( $p=0.002$ ) were found when evaluating the relation between time of medical treatment of the CKD and the perception of family functioning by the patients with the family Apgar. Those with less than five years of diagnosis of CKD perceived better functioning of their families. On the other hand, when this variable was compared between groups with the FF-SIL instrument, no significant differences were found ( $p=0.765$ ).

## DISCUSSION

In families with a tendency towards disintegration, the presence of a disease may lead to better family functioning because families generally exert a centripetal tendency (cohesive force) on the system.<sup>4</sup> Family crises in intermediate adulthood include coping of the family with chronic diseases. This sample included patients with several years of evolution of diabetes mellitus, so that the crisis caused by the diagnosis of this disease had generally been overcome by the family on the contrary to the burden caused when diagnosis of CKD is more recent. The latter causes greater reorganizing of the intra-family relations due to the implications that this disease with a grim prognosis has.

In accordance with that reported by other authors in studies conducted in populations similar to ours, it was more frequent to find patients with low schooling level.<sup>5,6</sup> This may be related with variables such as level of knowledge on the disease, access to medications, specifically to the choice of the most current therapeutic modalities and especially new drugs and late diagnoses. Married persons tend to perceive the functioning of their families better although this difference was not statistically significant. This is related to the existence and consolidation of family support networks.<sup>7</sup>

It has been reported that in Mexican patients, the type of peritoneal dialysis does not affect the perception of family functioning.<sup>8</sup> In accordance with Slaikou and Miles (mentioned in Velasco and Sinibaldi<sup>4</sup>) distinction must be made between the effects that the chronic disease have on the individual and

the family and the psychological effects of the emotional reaction of the individual in the face of the disease. Additional studies aimed at knowing the role played by other factors (different to the type of treatment) on the perception of family functioning by subjects with CKD are required. Although in this study no significant statistical differences were found between the study groups regarding family functioning, the most affected areas of family functioning and intra-family relations can be determined with the instruments used in order to orient the psychotherapeutic management of these families.

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