

## Characterization of chronic renal disease in elderly adults

### Caracterización de la enfermedad renal crónica en adultos mayores

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#### Abstract

**Introduction:** chronic kidney disease generates numerous health expenses and is highly prevalent in the elderly.

**Objective:** to characterize elderly patients with chronic kidney disease resident in the Consolación del Sur municipality, from May 2014 to September 2014.

**Methodological design:** observational, descriptive and cross-sectional study, in the Doctor's and Family Nurse's offices 13, 14 and 42 in the Popular Council of Drivers Connection. The universe was of 389 patients and the sample of 109, fulfilling the inclusion criteria. The following variables were analyzed: age, sex, skin color, schooling, socioeconomic status, classification of chronic kidney disease and family and social support networks. The abbreviated MDRD formula was used to determine the degree of chronic kidney disease. To make an exit, descriptive statistics were used (absolute and relative frequencies, X<sup>2</sup> test for Regression, X<sup>2</sup> Bartholomew). Informed consent was taken into account.

**Results:** stage 2 prevails, with 51 patients (46.8%) and whites 82 (75.2%), in the 70-79 age group, 56.9% belonged, there was a predominance of men with 71 (65.1%). 63.3% have barely reached the primary level or did not finish it. There was a predominance of a low socioeconomic level (68.8%) and most had support networks (96, for 88.1%).

**Conclusions:** the characterization of the chronic kidney disease from the sociodemographic approach has an important role in the integral approach of the disease in the primary level of health.

**Key words:** renal insufficiency, chronic, aged, primary health care, health promotion.

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#### Resumen

**Introducción:** la enfermedad renal crónica (ERC) genera numerosos gastos sanitarios y es altamente prevalente en ancianos.

**Objetivo:** caracterizar pacientes adultos mayores con ERC residentes en el municipio Consolación del Sur, Cuba, en el período comprendido entre mayo y septiembre de 2014.

**Materiales y métodos:** estudio observacional, descriptivo y transversal realizado en los consultorios del Programa Médico y Enfermera de la Familia 13, 14 y 42 en el Consejo Popular Entronque de Pilotos. El universo fue de 389 pacientes y la muestra final de 109. Se analizaron las variables edad, sexo, color de piel, escolaridad, nivel socioeconómico, clasificación de la ERC y redes de apoyo familiar y social. Se utilizó la fórmula Modification of Diet in Renal Disease abreviada para determinar el grado de la enfermedad. Para darle salida se utilizó la estadística descriptiva (frecuencias absolutas y relativas, prueba chi-cuadrado (X<sup>2</sup>) para la regresión y X<sup>2</sup> Bartholomew). Se tuvo en cuenta el consentimiento informado.

**Resultados:** prevalece el estadio 2 de la enfermedad, con 51 pacientes (46,8%) y la raza blanca con 82 (75,2%); el 56,9% se encontró en el grupo de edad de 70-79 años y 71 participantes eran hombres (65,1%). El 63,3% apenas había alcanzado la primaria o no la concluyó, hubo un predominio de un nivel socioeconómico bajo (68,8%) y la mayoría tenía redes de apoyo (88,1%).

**Conclusiones:** la caracterización de la ERC desde el enfoque sociodemográfico tiene un papel importante en el abordaje integral de la misma en el nivel primario de salud.

**Palabras clave:** enfermedad renal crónica, adulto mayor, atención primaria de salud, promoción de la salud.

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## Introduction

Currently, worldwide, it is possible to find several realities that from the field of medical sciences should be evaluated: an ageing population that increases considerably, an increase of these patients with chronic diseases at the expense of diabetes mellitus (DM) and arterial hypertension, the presence of more than one disease in the same patient, the sustained increase of patients with chronic kidney disease (CKD)—many of them requiring dialysis treatments or renal transplant—and an underreporting of this disease, situation of which Cuba does not escape.

CKD is a relative common condition (1 out of 10 people suffer from it) that is usually asymptomatic; frequently, its progress to stage 6 goes unnoticed, so its prevention and detection in early stages is vital.<sup>1,2</sup>

International data indicate an increase in the prevalence and incidence of CKD of more than 10 % in the adult population<sup>2,4</sup> and of 20 % in people older than 60 years.<sup>2,5</sup>

In Cuba, some epidemiological studies on nephropathies have been conducted, which have become important because they are a way to know them better in order to be able to control them; however, no studies from the primary health level and aimed at older adults with socio-demographic risk factors for suffering from CKD are evidenced.

In 1970 the Dialysis and Kidney Transplant Program was started, and in 1996 the CKD Prevention Program, which share the preventive actions of the National Program for the Prevention of Non-Communicable Diseases.<sup>2</sup>

The famous epidemiologic iceberg, where emerges a third, which is the known and visible, but two thirds remain hidden, perfectly corresponds to this situation, giving rise to an unsustainable paradoxical scenario: most of the scientific and technological resources are dedicated to dialysis treatment and transplantation, important options but inferior from all points of view compared to the promotion and prevention measures in the first stages

of the disease. It is always better a patient that achieves to stabilize or improve his situation with medical treatment and preventive measures (many patients benefit from this strategy) than one who has to go to a health center several times a week to receive dialysis treatment or who undergoes a transplant.

CKD generates numerous health expenses and it is difficult to estimate these costs at early stages, since the vast majority of studies are referenced in subjects under replacement therapy or transplanted. In addition, this pathology has a great impact on people, their families and society, associated with a high cardiovascular morbidity and mortality that increases healthcare costs and expenses.

The role of the primary health care, as the axis of attention proposed in the strategies of care for patients with chronic diseases, should be understood as the reference in the approach and follow-up of patients with CKD, arbitrating all actions of coordination with other healthcare settings and assuring the referral of the patient to specialized care when appropriate; the integral vision of the person, the continuity of care, the close contact with the patient and family and the knowledge of the community environment become key elements in the control and treatment of the chronic patient in stages 1-3 in a stable situation.

In this context, the role of family and social support networks in the care of patients with chronic disease stands out. González<sup>6</sup> defines the support network as “everything that can provide support to the individual, to solve or deal with his problems” and that “The couple, the family, the study, religious groups, specific activities, etc. are elements that are part of the concept of network”. In fact, he mentions a powerful relationship between having support networks and the perception of happiness of human beings, which is why it is worth strengthening them. In the same way, Cárdenas and Botia<sup>7</sup> mention the different concepts of network that had been used:

- Bott (1955): network is a social configuration in which some external units that compose it maintain relations with each other.

- Lopata (1975): informal network is an integrated primary support system to give and receive objects, services and social and emotional support; this is considered as important by the receiver and the provider.
- Cobb (1976): social network is the mediator instance by which emotional, informational and sentimental support is provided.
- Walker et al. (1977): social networks are the series or personal contacts through which the individual maintains his social identity and receives emotional support, material help, services and information.
- Maguire (1980): networks as “preventive forces” that assist the individuals in case of stress, physical and emotional problems.
- Gottlieb (1983): networks as interactions that have emotional benefits and effects on the behavior of individuals.

On the other hand, Cárdenas and Botia<sup>7</sup> refer to assume the postulate of Sirlin, who mentions that «the support networks constitute the base on which the aids that the people require are given; social roles are structured and made meaningful; contribute to the feeling of belonging and generate social integration. Their criteria coincide with those of the author of this research; in advanced ages they avoid isolation, and affect and gain importance in the quality of life of the elderly”.<sup>7</sup>

While the cohabitation with the family is one of the most common networks of support for the elderly, it is foreseen that in the future this support will be diminished by the socio-demographic changes that society is experiencing regarding the size of the families (fewer potential members to take care of the elderly) due to the role that women are assuming in the economy and their tendency to independence (support is basically based on the female’s help), among others.<sup>7</sup>

It is posed that the family is recognized as the closest and most easily accessible social support network for the individuals. Likewise, its protective and mitigating function in the stressful situations of its members is recognized; in addition, although the existence of family and partner relationships and their adequate functioning contribute to well-being and health, its absence generates discomfort and

vulnerability. For this reason, Montes<sup>8</sup> also refers to the community networks as a fundamental link and states that “the community constitutes the social referent closest to the individual and the geographic referent in which the everyday life takes place. It has enormous potential for the more or less structured and regular support of the elderly adults according to their needs”.<sup>8</sup>

Montes<sup>8</sup> also explains that “community networks are different from other social networks because they speak about collectivities and not of individuals or families. The community networks are conceived through groups organized in a territorial and identitarian space”, that is, with groups of elderly adults with whom the geographical location and the activities are shared.

The community networks should be addressed to the prevention, detection and follow-up of the disease and to the promotion of the adequate management of the disease by the patient; starting from the exposed scenario, the objective of the present investigation was to characterize the elderly patients with CKD resident in the Consolación del Sur municipality during the period between May and September, 2014.

## Materials and methods

An observational, descriptive cross-sectional study was conducted between May and September, 2014, which included the research of groups at risk for CKD in the Doctor’s and Family Nurse’s offices (CMF, by its acronym in Spanish) numbers 13, 14 and 42 in the *Consejo Popular Entronque de Pilotos* (Popular Council of Drivers Connection), Consolación del Sur municipality, Province of Pinar del Río, Cuba.

## Population

The universe of the study was consisted of the 389 older adults with risk factors for developing a CKD belonging to the CMFs 13, 14 and 42 of the Popular Council of Drivers Connection, Basic Working Group No. 2, in the health area “5 de Septiembre” and who met the following criteria:

## Inclusion criteria

- Age greater than or equal to 60 years
- Patients considered at risk to suffer from CKD
- Adequate mental and cognitive state.

## Exclusion criteria

- Patients who did not cooperate in the realization of the complementary tests or did not attend some of the consultations scheduled in the study
- Patients who did not give their consent to participate in the study.

## Sample

The study sample consisted of 109 patients who, in addition to fulfilling the established criteria, were diagnosed with some degree of CKD based on the criteria of the Kidney Disease Outcomes Quality Initiative Guidelines<sup>9</sup> and the KDIGO guidelines.<sup>10</sup>

The classification of CKD, age, gender, skin color, schooling, socioeconomic level and family support networks were used as variables.

To register the presence of CKD in older adult individuals with risk factors, we proceeded to identify, from the records of dispensarization and analysis of the health situation of the family doctor, the patients with a history of arterial hypertension, using what is established by the North American Heart Association; patients with DM; patients with antecedents of chronic glomerular diseases, renal lithiasis or recurrent upper urinary tract infection, obstructive lower urinary tract symptoms in men or individuals with antecedents of hereditary or congenital renal diseases; older adults with edemas, anemia or obstructive low urinary tract symptoms: post-micturition dribble, bifurcation of the urine stream, urine retention, urinary frequency, nocturia, stress urinary incontinence, burning and pain when urinating, feeling of incomplete emptying and patients with known oncological diseases.

For the registration of CKD in older adults we also proceeded to explain to all patients classified

as at risk how would be the research and complementary tests were performed in order to determine the baseline glomerular filtration level. Then, the elderly were evaluated three months later to make the diagnosis of the disease as established in the guidelines for management of the disease.

## Tools

The glomerular filtration rate was estimated with the formula CKD-EPI and the statistical analysis was performed with the SPSS program version 21. To release it we used descriptive statistics (absolute and relative frequencies,  $X^2$  test for the regression,  $X^2$  Bartholomeus). The corresponding flow charts contained in the diagnostic and therapeutic protocols existing in Cuba were made for all patients with diagnosis of CKD. Likewise, all the necessary doubts regarding the study carried out from the primary health level were clarified and the patients were not coerced with a view to the acceptance therein. After assuring the confidentiality of the study to each participant, the voluntariness and the informed consent were collected to be included in it.

## Results

**Table 1** shows the information relative to the variables age groups and classification of CKD. In the 109 patients investigated, a predominance of stages 2 with 51 patients (46.8 %) and 3A, with 44 (40.4 %) is evidenced, while the remaining 14 classified in an equitable way between stages 1 and 3B, while there were no patients in stages 4 and 5. When relating the classification of CKD with age, it can be seen that the greatest contributions or relative inputs of population effective are concentrated in the age group of 70 to 79 years, to which 56.9% of the studied patients belonged; in this, also predominated the patients consigned in stage 3A, which constitutes 30.3% of the total. However, the  $X^2$  test for the regression performed was not significant ( $p > 0.05$ ), so there are not enough evidence to suggest an association between age and the evolution of the disease, with a reliability of 95% in this sample.

**Table 1.** Distribution of chronic renal patients according to age groups and classification of the CKD: Consolación del Sur. 2014-2015.

Age groups	Classification of the CKD								Total					
	No.	1	%	No.	2	%	No.	3A	%	No.	3B	%	No.	%
60-69	1		0.9	19		17.4	10		9.2	0		0.0	30	27.5
70-79	6		5.5	19		17.4	33		30.3	4		3.7	62	56.9
>80	0		0.0	13		11.9	1		0.9	3		2.8	17	15.6
Total	7		6.4	51		46.8	44		40.4	7		6.4	109	100.0

X<sup>2</sup>Reg=0.72 p=0.397

It is worth highlighting that 51 patients (46.8 %) already had a CKD at the time of the study, which obscures their prognosis and requires their referral to the secondary care level for a specialized management, with the consequent increase in the costs of the services and repercussions on the quality of life of the patient and the functioning of the families with whom they reside.

In the sample, there was a predominance of men with 71 subjects (65.1 %), who also constitute the majority of those who were consigned in the more advanced stages; thus, in stage 3A — predominant in men— classify 36, for the 33.0 % of the total studied, while women were only 8 (7.3 %), being stage 2 the predominant among them with 22, for 20.2 % of the total of older adults studied. The significant test conducted (X<sup>2</sup> Barth=11.248)

produced significant differences between genders p<0,05) in the sample investigated, being the male gender the most affected.

The classification of CKD in the older adult population studied in relation to schooling is presented in Table 2. 63.3% of the patients studied have barely reached the primary level or did not complete it, while only 14.6% reached the pre-university or the higher level. However, the distribution of the disease according to its severity is not associated with schooling (p = 0.172).

A predominance of the white race was observed in the sample with 82 subjects (75.2%), followed by the mestizos with 22 (20.2%), that when compared with the absolute and relative distribution of the older adult population of Pinar del Río, does not correspond

**Table 2.** Distribution of chronic renal patients according to socio-economic level and classification of the CKD.

Socioeconomic level	Classification of the CKD								Total					
	No.	1	%	No.	2	%	No.	3A	%	No.	3B	%	No.	%
Low	5		4.6	33		30.3	34		31.2	3		2,8	75	68.8
Normal or high	2		1.8	18		16.5	10		9.2	4		3.7	34	31.2
Total	7		6.4	51		46.8	44		40.4	7		6,4	109	100.0

X<sup>2</sup> Barth=4.088 ..p>0.05

**Table 3.** Distribution of chronic renal patients according to the presence of support networks and classification of the CKD.

Support network	Classification of the CKD								Total						
	No.	1	%	No.	2	%	No.	3A	%	No.	3B	%	No.	%	
Present	7		6.4	44		40.4	39		35.8	6		5.5	96		88.1
Absent	0		0.0	7		6.4	5		4.6	1		0.9	13		11.9
Total	7		6.4	51		46.8	44		40.4	7		6.4	109		100.0

$X^2$  Barth=1.155p>0.05

with what was found. The significance test carried out showed a significant association ( $p = 0.000$ ) between the classification of the disease and the color of the skin in the sample.

Regarding the socioeconomic level and the classification of CKD among the elderly adults (Table 3), it is observed that although there was a predominance of a low level (68.8%), this was not associated with the stages of the disease ( $p > 0.05$ ), that is, there is not enough evidence to suggest that the socioeconomic level is associated with the CKD.

The distribution of the elderly adults investigated according to the presence of support networks and classification of the CKD is presented in Table 3. Thus, the majority had support networks (96, for 88.1%). However, no significant association was found between these variables ( $p > 0.05$ ).

## Discussion

What is observed in Table 1 supports the idea that it is necessary to conduct population-based screening studies for CKD, as this entity is characterized by being asymptomatic until advanced stages. This would allow to make a diagnosis in the initial stages of the disease, which would contribute to better evolution and prognosis; At the same time, it would direct the attention from a preventive-promotional perspective, which could go from primordial prevention, in the case of absence of risk factors and from primary prevention, by

controlling risk factors, these two being fundamental in the primary level. In case these actions do not result, then secondary prevention would be carried out through interconsultations with specialists of secondary level or rehabilitation through substitute therapies (dialysis methods or kidney transplantation) specific of the secondary and tertiary levels.

A publication of Lucio ensures that 1 out of 10 individuals in the world suffers from a CKD, although up to three quarters of those affected are unaware of suffering this gradual loss of function of their kidneys;<sup>11</sup> this coincides with the results of the sample studied in the present research.

The Global Kidney Health Atlas shows important differences in the estimated prevalence of CKD; thus, among the developed countries, Belgium and Saudi Arabia have the highest figures, followed by Poland, Germany and the United Kingdom. Netherlands has the lowest prevalence. In Cuba the data speak of 13 %, a figure that is in line with the European average.<sup>11</sup>

It is estimated that by the year 2020, Cuba will become the country of Latin America with the highest proportion of elderly adults, with a quarter of the population aged 60 years and over, coupled with an increase in non-communicable chronic diseases,<sup>12,13</sup> which influences the presence of CKD.

The results in terms of the distribution of patients according to the stages of the CKD reported by

Martínez-Pérez *et al.*,<sup>14</sup> Terazón-Miclín *et al.*<sup>15</sup> and Calvo-Vázquez *et al.*<sup>16</sup> agree with those of this series, identifying, using the Cockcroft-Gault equation, that the predominant CKD is grade 2.

Contrary to the present research, the Framework Document on CKD within the approach strategy for chronicity in the National Health System<sup>17</sup> finds a higher prevalence of stages 3B, 4 and 5 of this pathology. Meanwhile, Regueira-Betancourt *et al.*<sup>18</sup> found results that exceed the present series in stages 3A, 3B and 4, but coincided in stages 1 and 2.

The results do not agree with the III National Survey of Risk Factors,<sup>19</sup> conducted throughout Cuba in 2011, in which there is higher prevalence of patients in stage 1. But they do coincide with those reported in several investigations<sup>20-24</sup> with similar results in terms of the estimated percentages of patients with CKD and the age groups.

Other studies<sup>25,26</sup> observe that there is a clear trend of increasing the risk of CKD with age. Specifically, Silveira *et al.*,<sup>27</sup> in the research developed in the Service of Nephrology of the University Hospital Manuel Ascunce Domenech of Camagüey, found a greater number of patients aged between 61 and 70 years. This phenomenon could be attributed to the characteristics of the Cuban population, fundamentally very longevous.

The prevalence of CKD increases with age in all populations, mostly starting at age 70; this is attributed in part to the comorbidities related to this pathology, especially the cardiovascular. Such association is consistent with the higher prevalence of elderly individuals in renal replacement therapies (RRT).<sup>20</sup>

For their part, Albuquerque *et al.*<sup>28</sup> refer that the age correlates directly with the risk and the staging of CKD, which indicates that the time of disease of the patients is related to the risk of suffer from it. This is similar to what is reported in the international literature, where it is described that in people older than 60 years the risk of CKD is two or three-fold higher.<sup>29</sup>

The frequencies observed coincide with the demographic data reported by the Health Statistical Yearbook 2014,<sup>30</sup> which reports that in the province where the research was developed the average population in the age groups from 60 to 69, from 70 to 79 and of more than 80 years has been growing, with a greater percentage in the group of 70 to 79, followed by the group of 60 to 69 and slower growth in those over 80 years. This same publication states that the trend is to the growth of new patients who initiate the dialysis procedures of RRT, incident with average rates that have been surpassed in Latin America by Cuba; there is also a global increase of the rates of older incident patients where the country holds the third place of prevalence in America, only surpassed by the United States and Argentina.<sup>30</sup>

In terms of gender, this finding does not correspond to what was expected, since in the general population there is a discrete predominance of women, which reinforces the idea that in the municipality of reference the male gender is being more affected.

The results of the series are opposed to the studies of Terazón-Miclín *et al.*,<sup>15</sup> Regueira Betancourt *et al.*,<sup>18</sup> Pérez.<sup>20</sup> Silveira *et al.*<sup>27</sup> and Albuquerque *et al.*<sup>28</sup> specifically Terazón-Miclín *et al.*<sup>15</sup> and Silveira *et al.*<sup>27</sup> found that in stage 2 of CKD the female gender predominated.

Pérez<sup>20</sup> outlines an association between the prevalence of CKD and the gender, usually with a higher prevalence in women, and reports that stage 3B was more prevalent in women, which does not coincide with the present study sample, contrary to what was reported in stage 3A, which was more frequent in men.

The III National Survey of Risk Factors<sup>19</sup> coincides with the present research, with a higher prevalence in women only in stage 1.

In Cuba the prevalence has been increasing, with a tendency to increase in elderly male patients.<sup>31</sup> It has been found that men are more likely to develop CKD throughout their lives. It is good to know that

the gender implies greater risk, something out of control, since if the individual can have a healthy lifestyle, the tendency or predisposition would be counteracted.<sup>32</sup>

In the literature reviewed is addressed that the well-being of the population and of the elderly in particular, depends to a large extent on their level of education, since it has a close relationship with the activity they develop, as well as with the attitudes and values that are acquired thanks to that level.<sup>32</sup> This specific study reports that the information about the literacy of the older adult population, coming from the household surveys of the Latin American countries, reveals three important aspects: a) a large proportion of older adults is illiterate, b) the female population is at an educational disadvantage compared with the male population and c) the young population, regardless of gender, is more literate than the older adult population.

The Latin American and Caribbean Demographic Centre<sup>32</sup> notes that the formal educational levels, measured in terms of the average number of years of study in Latin America and the Caribbean, are quite low. The great majority of older adults living in urban areas did not complete even six years of study; only in Argentina, Chile and Panama the averages exceed this threshold. In all cases analyzed, the older adult women show average number of years of study lower than those registered by their male counterparts. However, the expansion of primary education has made possible that the educational levels of young women exceed that of their male peers. It is expected that gender differences will be reduced in the future and that the educational level of older adults will improve.

These results do not coincide with those found in the present research, based on the fact that this area of work has been one of the conquests of the Cuban revolutionary process, which since the early years was able to improve the educational level of the population, beginning with the Literacy Campaign and reaching the implementation of the Universities for the Elderly, which in this population has as limitation the residence in rural areas.

The results of the present study do not coincide with those reported by Terazón-Miclín *et al.*<sup>15</sup> regarding the prevalence of the disease in black skin and mestizo patients. This matches with the ethnic characteristics of the population under study. In this same case, Blass *et al.*<sup>33</sup> state that black people are twice as likely to suffer from the disease than white individuals. However, RegueiraBetancourt *et al.*<sup>18</sup> report a higher prevalence in the white race, which coincides with the results of the present series.

In the literature, the socioeconomic dimension is explained, since these older adults usually do not have sources of income that allow them to satisfy personal needs, except for the basic ones granted by the family and the State; however, despite the efforts made by the government to guarantee a good quality of life for this population, the country's current socio-political and economic conditions do not allow them to live with a high standard of living. Thus, it is difficult to separate the influence of the racial, social, economic, environmental or dietary factors that affect the incidence and evolution of the CKD.<sup>34</sup>

The coverage of the retirement and pension systems in Latin America is very low and with significant differences according to area of residence. In addition, the monthly income generated in the majority of countries is insufficient to meet the basic needs of a couple. Less than half of the urban population aged 60 and over is a beneficiary of social security, compared to a third in rural areas. Only in a few countries (Argentina, Brazil, Cuba, Chile and Uruguay) the coverage serves more than half of the older adults. In many others (Bolivia, Colombia, Ecuador, El Salvador, Honduras, Mexico, Nicaragua, Paraguay, and Dominican Republic) it reaches a quarter of this population.<sup>32</sup>

We coincide with Domínguez-Ardila and GarcíaManrique<sup>35</sup> in that a not less important aspect is the evaluation of the family environment, the support networks and the external resources of the patient, which can play a relevant role in the process of attention and care of the geriatric patient.



Studies conducted suggest that a significant proportion of older adults are deprived of support, and consequently, depend and will continue to depend on their families. This family support takes various forms, ranging from direct monetary assistance to personal care in the case of a sick or partially disabled relative, passing through the emotional support.<sup>6,7,32</sup>

The data show that the co-residence of the older adults with their families continues to be an extended practice; in fact, a definite trend to the reduction of this co-residence is not observed. In Brazil, for example, there is an increase in this practice, while in the last three decades in Colombia and Mexico there is a tendency towards stability in the proportion of elderly adults living alone. About one of every four Latin American households has the presence of at least one older adult among its members.<sup>32</sup>

The authors of the present research agree with González,<sup>6</sup> who mentions that the support network offers material, emotional, informative, esteem and companion help. In addition, he values the implementation of the socio-ecological model and the protective factors for a better management of these concepts from the primary level of healthcare, which is necessary for the comprehensive approach of the older adult with chronic diseases.

The authors of this research consider that social support networks have demonstrated to be a formidable resource for people to optimize their health and well-being status and an important restorative factor when their health is compromised, especially at this stage in which the individual needs to be recognized as a useful and productive human being. It is also important to take into account that as time goes by, the older adult requires assistance that compensates for the chronic limitations of aging and the possible decrease in income. It is a set of aids that do not require specific technical preparation but rather proximity with the older adult. In the case of patients with CKD, the family studies are scarce, so there are very few bibliographic references on their repercussion on the health state of these patients and viceversa;<sup>8</sup> a situation that must be reversed so that its practical usefulness transcends and provide the theoretical

tools for the attention and intervention of those who are affected.

The limitations of the present study are based on the primary records of the CMFs of the studied patients; it was intended to minimize that by performing exhaustive examinations. In addition, the sample is small and its size was not calculated.

## Conclusion

In the studied sample, there was a predominance of male patients suffering from stage 2 CKD, of the age group between 70 and 79 years, with low socio-economic level, who had completed primary school and with the presence of family support networks. The characterization of the CKD from the socio-demographic approach has an important role in the integral approach of the disease in the primary level of healthcare.

## Conflict of interest

The authors declare that there is no conflict of interest.

The authors are part of the multidisciplinary team that was part of the implementation of the Branch Project: Chronic Nephropathy in the Elderly. Comprehensive care at the primary level of healthcare.

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## Ethical responsibilities

### Protection of people and animals

The authors declare that no experiments were performed on human beings or animals for this research.

### Data confidentiality

The authors declare that they have followed the protocols of their workplace on the publication of patient data.

**Right to privacy and informed consent**

The authors declare that patient data do not appear in this article

Claudia Acosta Cruz, Delia Margarita Montes de Oca y Orestes Labrador Mazón: co-authors of the research, assistant in writing and data analysis.

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**Contribution of the authors**

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