to 3.2 in Syria). Average pediatric kidney transplant share was about 8.5% of total kidney transplants (ranging from 3.2 in Iraq to 20% in Algeria). The deceased kidney transplant program is currently available in only 8 of the 18 Middle Eastern countries included in this study. However, a deceased program is active in some Middle East countries (ie, Iran, Turkey, Kingdom of Saudi Arabia, Kuwait, and United Arab Emirates). Of note, Turkey had the highest kidney transplant rate per million populations per year (39.7), Syria had the highest pediatric kidney transplant rate per million populations per year (3.2), and Iran had the highest deceased donor kidney transplant percent of the total kidney transplants (64.2%). In the Middle East, Iran alone performed 63.5% (888/1399) of all deceased donor kidney transplants and 63.9% (106/166) of all deceased donor pediatric kidney transplants. Algeria had the highest pediatric kidney transplant share of the total transplants (20%). Low health spending, poorly developed infrastructures, delayed referral of children with chronic kidney disease, comorbidities, lack of technical expertise, inadequate pediatric dialysis programs, extended dialysis time, organ shortage, commercial transplantation, and posttransplant infections are the main pre- and posttransplant challenges. The community-government partnership model from the Sindh Institute of Urology and Transplantation in Karachi Pakistan showed that pediatric renal replacement therapy and transplant can be successfully established in a developing country.

Conclusion: Although pediatric kidney transplant is active in many parts of the Middle East, it is still inactive in others, mostly relying on living donors. The lack of deceased donor programs in most Middle Eastern countries is a main issue to be addressed to adequately responding to the increasing demand for organs.

I have no potential conflict of interest to disclose.

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WCN26-181

HEAT STROKE AND KIDNEY INJURY: A GROWING CONCERN AMIDST CLIMATE CHANGE

(Article No. 105987)

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Introduction: Rising global temperatures are contributing to a growing public health crisis, with heat-related illnesses emerging as significant threats beyond cardiovascular and respiratory systems. Notably, the association between heat stroke and acute kidney injury (AKI) is gaining recognition as a serious yet underappreciated consequence of climate change.

Methods: This synthesis draws on recent clinical evidence and epidemiological data to examine the impact of heat stress on kidney function, mechanisms of injury including hypoperfusion, rhabdomyolysis, and systemic inflammation, and explores the socio-environmental factors that exacerbate risk.

Results: Heat stroke disrupts thermoregulation and renal perfusion, leading to significant AKI incidence—affecting up to one-third of hospitalized patients. High-risk groups include the elderly, laborers, individuals with chronic diseases, and those in low-resource settings. Recurrent or severe episodes of heat-related AKI are linked to progression to chronic kidney disease (CKD), compounding the global kidney disease burden. Evidence supports public health interventions such as hydration campaigns, heat warning systems, and workplace safety regulations, alongside clinical vigilance and early management.

Conclusion: As climate change accelerates, so does the threat of heat-induced kidney injury. Urgent multi-sectoral action is needed—through research, clinical preparedness, and policy integration—to safeguard kidney health in a warming world.

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WCN26-432

RELATIONSHIP BETWEEN SOCIAL VULNERABILITY AND EVOLUTION OF GLOMERULAR FILTRATION RATE IN PATIENTS WITH POLYCYSTIC KIDNEY DISEASE

(Article No. 105988)

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Introduction: Polycystic kidney disease (PCD) is the main hereditary kidney disease worldwide (1). It is characterized by the progressive formation of multiple renal cysts, which increase renal volume and replace the functional parenchyma, hypertension also occurs (2). Over time, glomerular destruction impairs filtration, leading to chronic kidney disease and the need for renal replacement therapy in certain cases (3).

In terms of pathophysiology, PKD is mainly associated with mutations in the PKD1 and PKD2 genes, with autosomal dominant inheritance predominating. However, there are cases without mutations in these genes, affecting other loci conditioning an earlier and more severe presentation of the disease (4).

PKD is a multisystem pathology with extra-renal cystic and non-cystic manifestations. The former include brain, liver, and gastrointestinal cysts. Non-cystic manifestations include aortic and cerebral aneurysms, heart valve abnormalities, colonic diverticula, and abdominal hernias (5)(6). The most frequent clinical manifestations, related to pathophysiology, are back pain, hematuria, urinary tract infections and lithiasis (7).

Globally, an estimated 12 million people suffer from ERP, with approximately 600,000 cases in the United States (8). In the European Union, prevalence ranges from 2.41 to 3.89 cases per 10,000 population, and about 91.1 cases per million people require replacement therapy due to PKD (9). In Colombia, information is limited; the former Social Security Institute reported a prevalence of 4.6% in patients with stage 4 chronic kidney disease (10).

In the context of chronic kidney disease, social vulnerability acts as a determining factor that significantly increases the risk of clinical decompensation, delay in diagnosis, limited access to appropriate treatments and, consequently, a higher mortality rate (11). The objective of this study was to make a correlation between ERP and the social vulnerability score (SOVI).

Methods: A retrospective, cross-sectional and unicenter study was conducted through the review and analysis of clinical records and existing databases of adult patients diagnosed with PKD in a tertiary referral center in the Colombian Caribbean between 2008 and 2025. The inclusion criteria included patients with a diagnosis of PKD over 18 years of age, and among the exclusion criteria, patients with incomplete information stand out. A total of 75 patient records were obtained, relative and absolute frequency were performed in the analysis of qualitative variables, and for quantitative variables, the Shapiro-Wilk normality test and measures of central tendency (mean, median, standard deviation, interquartile range) were performed. In addition, the correlation between vulnerability score and delta TFG was calculated using Spearman's coefficient using SPSS 23 software. The study has the instructions of the Declaration of Helsinki and approval of the institutional ethics committee.

Results: A study was conducted in 75 patients with polycystic kidney disease to explore the correlation between this pathology and social vulnerability. The sample was composed mostly of individuals of mestizo ethnicity (90.7%), with male predominance (58.7%) and a high concentration in low socioeconomic strata (37.3% in stratum 1). The social vulnerability score showed that 68% of the subjects had a high level of vulnerability, category 3 (greater vulnerability). Clinical variables such as arterial hypertension were found in (68%), type 2 diabetes mellitus (8%). see table 1.

Table 1. Sociodemographic and clinical characteristics

VARIABLES	N = 75 (%)
AGE (Med. Ds.)	59.8 ± 30.1
WEIGHT (Kg)	59.7 ± 30
SIZE (cm)	136 ± 64
BMI (Kg/cm2)	20.8 ± 10.9
BLOOD PRESSURE (mmHg)	126 (± 27)/75 (±13)
SEX	
Male	44 (58,7)
Female	31 (41,3)
RACE	
Mongrel	68 (90,6)
Afro-Colombian	2 (2,6)
Indigenous	5 (6,6)
SCHOOLING	
Primary	16
Bachelor	17
Technician	10
Technologist	3
Student	7
STRATUM	
1	28 (37,7)
2	23 (30,6)
3	18 (24)
4	5 (6,6)
5	1 (1,3)
VULNERABILITY SCORE	
1	6 (8)
2	18 (24)
3	51 (68)
BACKGROUND	
HTA	51 (68)
T2DM	6 (8)
TREATMENT	
RAAS Lock	44 (58)
Tolvaptan	3 (7)

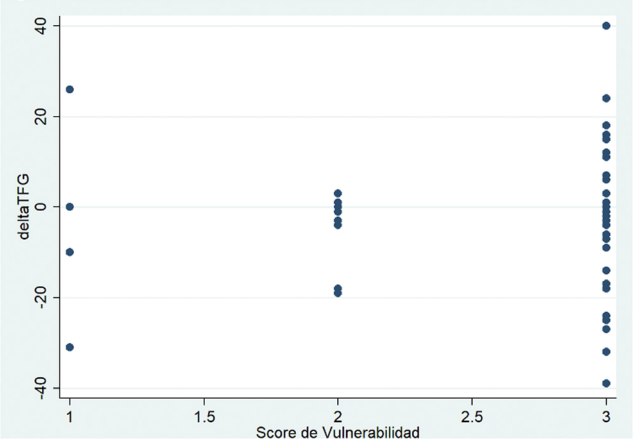
In descriptive analyses, the mean glomerular filtration rate at the beginning of follow-up was 50.8 mL/min/1.73m^2, decreasing on average 2.99 mL/min/1.73m^2 during the period analyzed. The group showed a high prevalence of arterial hypertension (68%) and symptoms associated with the disease (70.7%). The average initial creatinine was 2.81 and the final creatinine was 2.29, other data are shown in Table 2.

Table 2. GFR Delta and Renal Function in Patients with PKD

VARIABLES	N = 75 (%)
Initial Cr (mg/dL)	2.81 ± 3.81
Initial TFG (mL/min/1.73m²)	50.8 ± 35.9
Final Cr (mg/dL)	2.39 ± 3.68
Final TFG (mL/min/1.73m²)	35.5 ± 37.8
Delta TFG (mL/min/1.73m²)	-2.99 ± 12.8
Follow-up time (months)	13,4 (1-108)

The correlation between the social vulnerability score and the glomerular filtration rate (IA) delta was evaluated using Spearman's correlation coefficient, resulting in a coefficient rho=0.0596 with a value p=0.6114, indicating that there is no statistically significant correlation between social vulnerability and the progression of kidney damage measured as a change in GFR in this cohort. See graph 1.

Figure 1. Correlation between SOVI and TFG delta in PKD



Analysis and discussion

PKD is a multi-organ disease whose determining factors in progression include genetic aspects (mutations in PKD1, PKD2) and clinical aspects (blood pressure control, use of RAAS blockers, presence of comorbidities)(15). This study provides evidence that social vulnerability, although elevated in most patients, is not significantly associated with the acceleration of kidney damage as measured by the decrease in GFR. This may be explained by the fact that the vulnerability score used may not capture social factors that directly impact renal function, or that other clinical variables have a greater weight on the progression of ERP. Previous studies indicate that the control of cardiovascular and genetic risks is more decisive in renal evolution than isolated social variables (Chebib & Torres, 2018; Cornec-Le Gall et al., 2019)(16)(17). However, the high prevalence of social vulnerability reflects the need for comprehensive care, considering social determinants that may affect adherence and quality of life (Musso et al., 2024)(11).

In addition, the presence of hypertension in 68% of the sample, a recognized factor for the worsening of ERP, emphasizes the importance of clinical management to slow progression. There may be indirect effects of social vulnerability on the control of these conditions that are not evident in this analysis with delta GFR in the short term.

Most of the patients analyzed presented high social vulnerability. Although a slight average decrease in GFR was observed, the correlation between the vulnerability score and the variation in glomerular filtration rate was not significant. The results suggest that additional factors, such as blood pressure control, use of RAAS blockers or tolvaptan, could influence progression.

The lack of significant correlation between social vulnerability and change in kidney function suggests that, in this sample, social vulnerability is not directly related to the measurable progression of polycystic kidney disease. It is possible that other clinical or genetic factors have a greater weight in progression, or that the vulnerability score used does not adequately capture aspects that directly impact renal function.

Additional analyses including clinical, genetic, and treatment variables are needed to assess their impact on renal progression.

The high proportion of patients in low strata and with high vulnerability highlights the significant social burden faced by these patients, which could affect other aspects of their quality of life and adherence to treatment. A comprehensive approach combining medical care with social interventions to improve outcomes in patients with ERP is suggested.

Conclusion: In this population with PKD in the Colombian Caribbean, social vulnerability did not show a significant association with the progression of renal function measured as a change in glomerular filtration rate. Renal progression seems to be more influenced by biological and clinical factors. Longitudinal studies that include genetic variables, adherence, and therapeutic management are required to delve into the social impact on the evolution of PRD.

The design of multidisciplinary interventions that integrate rigorous clinical control with social support is recommended to improve overall outcomes in patients with polycystic kidney disease.

Analysis based on summary data limits causal interpretation, but provides descriptive evidence on the ERP population.

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