


Social Determinants of Kidney Health

Focus on Poverty

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Introduction

Poverty is arguably one of the most significant social conditions of the 21st century. For the first time in over 20 years, global extreme poverty is expected to increase in the year 2020. Fueled by the coronavirus disease 2019 pandemic, preliminary estimates for 2020 project that an additional 88 million to 115 million people worldwide will be pushed into extreme poverty, bringing the total to above 700 million people (1).

Poverty is one of the largest domains of the social determinants of health (SDoH) and undergirds the confluence of adverse social disadvantage. The SDoH include a range of factors apart from medical care that can be influenced by social policies that can significantly shape health and health outcomes (e.g., health insurance and access to care, low educational attainment, housing insecurity, and unemployment). The effect of historical and persistent inequities is reflected in the marked social gradient in the incidence of chronic diseases, such as CKD, CKD risk factors (e.g., hypertension, diabetes, obesity, and cardiovascular disease), and CKD outcomes (2). These inequities have been further highlighted by coronavirus disease 2019 and the disproportionately high rates of infection, hospitalization, and mortality in communities burdened by the direct and indirect effect of adverse SDoH (3). The purpose of this commentary is to highlight the significant influence of poverty on the prevention, progression, and treatment of CKD and to encourage the nephrology community to broaden the utilization of community partners as part of building a more socially aware health care workforce to improve patient well-being.

In 2019, the federal poverty level was defined as an annual household income below \$25,750 for a family of four. However, poverty is more than just low income. Poverty is typically characterized in three different ways: (1) economic well-being most often linked to income; (2) capability to navigate society as a function of an individual's education or health status; or (3) social exclusion as a result of institutional behaviors, practices, and policies (4). Thus, relevant to health, a state of poverty is characterized not only by limited access to health care, but also one's worldview and how one navigates in society (4). Moreover, the additional chronic stress associated with navigating basic needs in a state of poverty can limit cognitive processing and the ability to perform implementation

tasks (5), such as following provider recommendations. Thus, the impact of poverty on both the physical and psychologic aspects of a person can play an important role in the many dimensions associated with the development and progression of CKD (Figure 1) (4,6).

Within the health care system, several federal and state initiatives have been launched to focus on social needs. Models under the Centers for Medicare & Medicaid Services Innovation, Medicaid delivery system and payment reform initiatives support patient screening and provide referrals for social needs. Directly engaging and partnering with social service agencies and community-based organizations that are long-standing trusted members of local communities may also serve as an effective channel to expand the health-related workforce to be uniquely positioned to improve CKD outcomes.

The Association of Poverty and CKD

Studies have noted a strong association of poverty with CKD prevalence and outcomes. Persons living at or below 125%–200% of the federal poverty level have been linked to a higher prevalence of CKD, including microalbuminuria alone (2,7,8). A 4-year follow-up of over 61,000 participants with CKD from the Kidney Early Evaluation Program (KEEP) found a 20% greater adjusted relative risk of death for those who did not graduate from high school compared with those who did graduate (7). Another KEEP analysis of participants under 65 years without insurance compared with those with private insurance found a much higher relative risk of death (82%) and kidney failure (72%) after adjusting for age, race, ethnicity, education level, and smoking status, highlighting the importance of health insurance (7). Further, Daumit *et al.* (8) found disparities by race and sex in receipt of coronary catheterization or revascularization procedures in a cohort of 4987 patients with advanced CKD prior to being on dialysis when insurance coverage is dependent on patients' ability to pay. However, those disparities in care were eliminated after patients started dialysis when health care is covered by Medicare insurance, a form of a single-payer system. Finally, states with broader Medicaid coverage, which provides access to care for low-income patients, had smaller insurance-related gaps in access to health care

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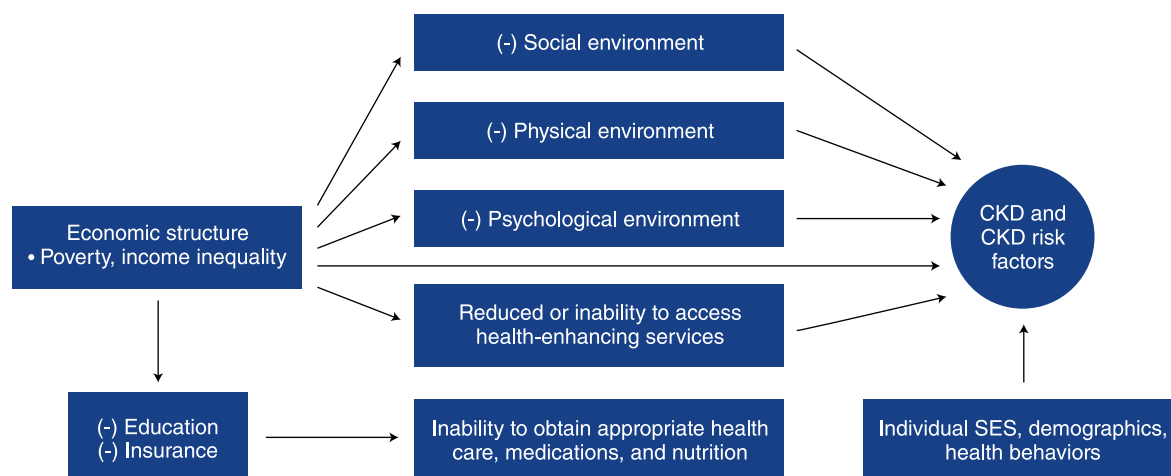


Figure 1. | Poverty and CKD. SES, socioeconomic status. Adapted from ref. 6, with permission.

and a lower incidence of kidney failure (7). Whether the United States will continue to expand health care coverage in an attempt to create a system of more universal care like most highly developed countries have or eliminate the Affordable Care Act as proposed by the present administration and now under consideration in the court systems will have a major effect on CKD care.

Workforce Innovations to Address Social Determinants of Health

Independent of health insurance and access to care and even socioeconomic status, the other SDoH can strongly influence the development and progression of CKD. The World Health Organization (WHO) recommends three major strategies to improving the overall conditions of life. These include (1) developing a workforce trained in and able to promote public awareness about the SDoH; (2) tackling the inequitable distribution of power, money, and resources; and (3) improving the conditions of daily life (9).

One strategy to address these recommendations is to create and expand partnerships with social service agencies and community-based organizations to provide direct referrals for patients with CKD to obtain social and navigation services from community experts around the SDoH (10,11). These community partners can also engage in community-academic partnered educational efforts (10) to help create a new generation of clinicians and nephrology scientists with greater insights into the nuances of the SDoH and their effect on patient beliefs, behaviors, practices, and, ultimately, the ability of patients to follow provider health recommendations. This enhanced provider awareness of the role of SDoH on the outcomes of their patients may prompt providers to be more active at a societal level in supporting not just increased access to care but more equity in the SDoH.

What Might Be the Way Forward?

As Don Berwick has stated, “every system is perfectly designed to achieve the results it gets.” Our society has many active systems that perpetuate the conditions that

lead to and maintain poverty for many millions of people. Traditionally, addressing social policies and structures that affect patient health has been outside the purview of health care providers and organizations. However, strategies, such as the WHO’s “health-in-all-policies” framework, provide an avenue for direct and indirect patient advocacy through a range of community partnerships (11). As the wealth gap in our nation increases, we need to examine new approaches to medical education to better understand the needs and challenges of patients beset with poverty beyond access to care. Creating a new generation of nephrologists with unique insights, direct connections with community experts and resources, and dedication to ameliorate the many social factors that conspire to affect CKD and CKD risk factors can be an important step toward the profession being at the forefront of chronic disease care. A better understanding of the SDoH can enhance the effect of our treatment plan and hopefully lead to improved outcomes for the patients with CKD and CKD risk factors that we care for each and every day.

Disclosures

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See related Perspectives, “Social Determinants of Health in People with Kidney Disease: An Introduction,” “The Pathogenesis of Race and Ethnic Disparities: Targets for Achieving Health Equity,” “Reducing the Burden of CKD among Latinx: A Community-Based Approach,” “Personal Experiences of Patients in the Interaction of Culture and Kidney Disease,” and “The Seen and the Unseen: Race and Social Inequities Affecting Kidney Care,” on pages xxx–xxx, xxx–xxx, xxx–xxx, xxx–xxx and xxx–xxx, respectively.