

Chronic kidney disease in sub-Saharan Africa: Hypothesis for research demand

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Dear Sir,

The world's disease profile is changing and chronic diseases are now considerably the leading cause of morbidity and mortality in the world, accounts for 60% of all deaths. One of the chronic diseases of a worldwide public health problem is chronic kidney disease (CKD), which recently has an increased prevalence in sub-Saharan Africa. Epidemiological and clinical evidences have shown an increased risk for CKD among individuals with diabetes, hypertension, obesity and infections and low economic situations. Owing to limited published reports available so far on the prevalence of CKD patients in the region, this review suggested a research need for CKD screening.

The world's disease profile is changing and chronic diseases are now considerably the leading cause of morbidity and mortality in the world, accounts for 60% of all deaths.^[1,2] This imperceptible epidemic is an underrated cause of poverty and hampers the economic growth of many countries. Contrary to the common perception, 80% of chronic disease deaths occur in low- and middle-income countries.^[2,3]

One of the chronic disease of a worldwide public health problem is chronic kidney disease (CKD),^[4] which recently has an increased prevalence in sub-Saharan Africa.^[5] CKD is defined according to the presence or absence of kidney damage and level of kidney function—irrespective of the type of kidney disease (diagnosis)^[6]

Disease distribution

The disease is now recognized as a global public

health problem. While the disease magnitude has been better characterized in developed countries; increasing evidence shows developing countries to receive even the greater burden. CKD and, to a greater extent, end-stage renal disease (ESRD), contribute substantially to the disparate burden of illness, disability and premature death across sex, age, race/ethnicity, socioeconomic status, and geographic boundaries.^[7]

Epidemiological and clinical evidences have shown an increased risk for CKD among individuals with certain clinical and socio-demographic characteristics.^[6] Cohort studies identified hypertension, diabetes, hyperlipidemia, obesity, and smoking as risk factors or markers in the general population for the development of CKD.^[8,9] However, in some places in Sri Lanka and Nicaragua, the conventional risk factors were not associated with the disease prevalence.^[10,11]

According to an extensive review made by Barsoum 2006,^[12] chronic glomerulonephritis and interstitial nephritis are currently the principal causes of CKD in developing countries, reflecting the high prevalence of bacterial, viral, and parasitic infections that affect the kidneys.^[13]

Diabetic nephropathy is estimated to be prevalent in South Africa (14.5–16.7%), Zambia (23.8%), Egypt (12.4%), Sudan (8.9–9.2%), and Ethiopia (6.1%).^[14] In addition, it was estimated that by the year 2030, more than 70% of patients with ESRD will be residents of developing countries demanding organizational and financial resources for the prevention and early detection of CKD.^[13]

This substantial burden on healthcare resources is as a result of the progressive nature of CKD and the ensuing ESRD. A research identifying the feature of this rapidly increasing disease in a particular geography has fundamental academic, clinical and epidemiological importance, which helps in the recognition of specific risk factors and subsequent planning for adequate prevention.^[8,12]

Basis for research intervention

Prevalence of CKD particularly ESRD patient

population is on rise worldwide. It remains under-diagnosed and under-treated since in its early stages the disease is often asymptomatic, making individuals with the disease and also their health-care providers unaware of its silence yet threatening presence.^[15]

The disease epidemiology in sub-Saharan Africa is markedly different from other regions. Although middle-aged and elderly populations are predominantly affected in developed countries; in sub-Saharan Africa, CKD mainly affects economically productive young society between the ages of 20 and 50 years with HTN, diabetes and infections.^[5,16]

According to a research done in Congo by Sumaili *et al.*, the prevalence of CKD among the study subjects was 36%.^[17] Similarly a study in Nigeria indicated the high prevalence of the disease.^[18] A retrospective study in Dakar showed that 243 in-patients of chronic renal failure were managed in Dakar University Hospital Internal Medicine Department during a three-year period where the majorities were young and about a third was in ESRD.^[5] Several associations have been made to explain the causal associations between CKD and environmental factors.^[19]

Is CKD prevalent in most sub-Saharan African countries due to low economic and environmental condition?^[6,18] Does the gradual increase in prevalence of diabetes,^[20] HTN,^[21] and infections in sub-Saharan Africa put the people at higher risk for CKD?^[8,9] Understanding the pattern of CKD incidence is important for designing preventive strategies in most cost effective ways to slow down the progression of the disease;^[6] however, limited published reports are available so far on the prevalence of CKD patients in the region.

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