

Reply to comment on “Causes of visual disability among Central Africans with diabetes mellitus”.

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We thank Mwanza JC for interest and comments.¹ on our article recently published by African Health Sciences.² Figure 1 demonstrated a significant increase in the rate of visual disability by more than 10% per decade, whereas Figure 2 showed decreasing rate of disability by more than 20%. From this information, Mwanza JC concluded that the fast rate in our study was questionable. He was possibly unaware of the controversies, conflicting views, and contradictory results concerning effects of duration (long or short) of diabetes mellitus (DM) on prevalence and causes of visual disability.¹⁻¹⁵

To interpret the inverse association between DM duration and visual disability presence, the discussion of our article² explained it as follows: “Oxidative stress may accelerate diabetic retinopathy and visual disability in these young patients with DM”. Therefore, we provided epidemiologic, pathophysiological, genetic/ethnic, nutritional, and molecular aspects related to DM and ocular complications in the general population.³⁻⁸ As reported in Poland⁹ and Northern Ethiopia¹⁰, we confirmed high proportion of late DM characteristics diagnosed before 10 years of DM duration, while diabetic retinopathy in developed countries occurs after 15-20 years of DM duration.^{11,12} In Nigeria, unilateral and bilateral blindness and bilateral visual impairment distributions increased with aging, while unilateral impairment distribution decreased with aging.¹³ Classically, aging and longer DM duration (actual chronologic age - age of DM onset), aging reduces the levels of nutrients (antioxidants) and the eyes’ capability to remove free radicals. Indeed, no intake of fruits, vegetables, migration, oxidative stress (elevated 8-isoprostane, gamma GT, oxidized LDL, and 8-OH-

dg), hypertension, metabolic syndrome, early-onset type 2 DM, lack of insulin therapy in poor countries facing sanitary (epidemiologic, demographic, and nutritional) transition, poor control of glucose, one component of cardio-metabolic risk, shorter DM duration (confounding factor) and high early mortality are at higher risk of developing premature diabetic ocular complications^{3-11,13-15}

Our team is now involved in studies of the effects of anticipation phenomenon (genetic and intergenerational) and Niche theory on premature non-communicable diseases in Central Africa. In conclusion, this stimulating discussion suggested interactions between genetic (non modifiable: age, female gender, duration, and African Bantu) and environmental factors such as lack of control of diabetic retinopathy (imbalance of oxidant/antioxidant status and inappropriate diet) in premature onset of visual disability.

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