Multimodal Database of Retina Images for Africa: The First Open Access Digital Repository for Retina Images in Sub Saharan Africa

Authors : Simon Arunga, Teddy Kwaga, Rita Kageni, Michael Gichangi, Nyawira Mwangi, Fred Kagwa, Rogers Mwavu, Amos Baryashaba, Luis F. Nakayama, Katharine Morley, Michael Morley, Leo A. Celi, Jessica Haberer, Celestino Obua

Abstract : Purpose: The main aim for creating the Multimodal Database of Retinal Images for Africa (MoDRIA) was to provide a publicly available repository of retinal images for responsible researchers to conduct algorithm development in a bid to curb the challenges of ophthalmic artificial intelligence (AI) in Africa. Methods: Data and retina images were ethically sourced from sites in Uganda and Kenya. Data on medical history, visual acuity, ocular examination, blood pressure, and blood sugar were collected. Retina images were captured using fundus cameras (Foru3-nethra and Canon CR-Mark-1). Images were stored on a secure online database. Results: The database consists of 7,859 retinal images in portable network graphics format from 1,988 participants. Images from patients with human immunodeficiency virus were 18.9%, 18.2% of images were from hypertensive patients, 12.8% from diabetic patients, and the rest from normal' participants. Conclusion: Publicly available data repositories are a valuable asset in the development of AI technology. Therefore, is a need for the expansion of MoDRIA so as to provide larger datasets that are more representative of Sub-Saharan data.

Keywords : retina images, MoDRIA, image repository, African database

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