We therefore conclude that global surveillance of diabetes risk should not employ HbA1c, at least until the technology used to measure it and the knowledge concerning its non-glycemic influences has progressed.

Abstract #: 02NCD011

Developing a culturally-adapted intervention for depression and poor adherence to art in Zimbabwe: The Tendai study

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Background: Depression increases the risk of poor adherence to antiretroviral therapy in people living with HIV/AIDS. However, there has been little research on the lived experiences of HIV-positive people with co-morbid depression and suboptimal adherence to antiretroviral therapy in sub-Saharan Africa. We use data from this study to develop a combined intervention for depression and adherence in HIV-positive adults in Zimbabwe.

Methods: In-depth qualitative interviews were conducted with HIV-positive adults (n=47) who scored above the cut-point on a locally-validated scale for depression and who were identified via purposive sampling to have suboptimal adherence to antiretroviral therapy. Six (n=6) further key informant interviews were conducted with health-care workers. Data were collected and analysed using rigorous grounded theory methods.

Findings: Local expressions of depression, such as "kufungisisa" (thinking too much) and "moyo unorwadza" (burdened heart) had a significant negative impact on adherence to ART (Table 1). Participants perceived their minds to be so full that they forgot to take medications or could not hear reminder alarms. Additional stressors such as poverty, stigma, and marital problems worsened the depressive cycle for participants and were further barriers to adherence.

Interpretation: This is the first study to identify thinking too much as a major barrier to antiretroviral therapy adherence among HIV-positive adults with depression. Better understanding of the local expression of mental disorders and of underlying stressors has informed the development of a new, culturally-appropriate intervention for adherence and depression that is currently being tested in a clinical trial.

Abstract #: 02NCD012

Implementation of low-cost, point-of-care cardiovascular diagnostics by non-healthcare professionals in rural Uganda

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Background: Non-communicable diseases (NCDs) account for the majority of adult deaths worldwide, and 80% of these deaths occur in low and middle-income countries (LMICs). The burden of NCDs in LMICs is predicted to grow with improvements in sanitation and infectious disease control, and will be altered by local diet, smoking rates, and HIV co-infection. There is a critical need to identify and implement low-cost, well-validated diagnostic tests to elucidate the epidemiology of NCDs, and enable diagnostic monitoring and therapeutic interventions. Moreover, tests that enable non-healthcare professionals to lead care provision will augment the scalability of this strategy. We recently completed implementation and evaluation of a bundle of point-of-care, low-cost diagnostics for NCD measurement in rural Uganda.

Methods: We performed a cross-sectional cohort study in rural, southwestern Uganda of HIV-infected persons on antiretroviral therapy at the Mbarara Regional Referral Hospital and a control group of HIV-uninfected persons from the clinic catchment area. Three non-healthcare professional Ugandan staff completed a two-week intensive course to perform a series of point-of-care cardiovascular assessments, including portable electrocardiogram (EKG), ankle-brachial index (ABI), hemoglobin A1c testing (HbA1c), automated blood pressure, and anthropometric measurements. An American medical student was trained through the University of Wisconsin Atherosclerosis Imaging Research Program to perform measurement of carotid intima-media thickness (CIMT). We assessed the quality and feasibility of each measurement by: 1) proportion of valid hemoglobin A1c results; 2) proportion of interpretable carotid ultrasound images as graded by a board-certified vascular cardiologist using the University of Wisconsin CIMT image quality assessment scale; and 3) correlation between brachial blood pressure measurements and automated systolic blood pressure measurements. The study received ethics approval from the Mbarara University of Science & Technology and Partners Healthcare. All participants provided written informed consent.

Findings: 105 HIV-infected and 90 HIV-uninfected individuals were enrolled in the study. None of the HbA1c tests were invalid (0/195). Of the 96 CIMT images reviewed, 86 (90%) were found to be of adequate quality, and 10 (10.4%) were not suitable for measurement. The right and left brachial blood pressure measurements had coefficients of determination of 0.79 and 0.72, respectively, with the automated systolic blood pressure measurements. Based on an estimate patient volume of 1,000 patients per year and measurement for 3 years, the cost for this array of tests, including capital equipment, would be approximately $28 per patient.

Interpretation: Low-cost, portable, and well-validated point-of-care tests can be implemented by non-medical professionals in LMICs. Implementation evaluations should be pursued to assess the large-scale feasibility, scalability, and impact of this strategy.

Abstract #: 02NCD013

Cognitive performance in Early Head Start interventions among infants 0-3 years: The impact of early childhood risk factors

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Background: Early child development is a critical component of many Millennium Development Goals. The home environment plays an impactful role in providing a supportive atmosphere for stimulation and learning opportunities. Maternal depression, a risk factor for responsive caregiving from the mother or primary caregiver, is also crucial for development. This study was done to build on the