Reviewer’s report

Title: The Association between a Detectable HIV Viral Load and Non-Communicable Diseases Comorbidity in HIV positive adults on antiretroviral therapy in Western Cape, South Africa

Version: 0 Date: 22 Jan 2018

Reviewer: Mark Kuniholm

Reviewer's report:

Abstract:

Author: The lack of systematic screening of non-communicable disease in largely vertical HIV clinics contributes to under diagnosis of NCDs in the HIV-infected population.

Comment: This conclusion is not supported by the results presented in the abstract. The authors observed higher prevalence of hypertension as compared to patient self-report or noted in the clinic folder. Site characteristics should be presented in the methods rather than in the discussion - i.e., that the clinics were part of a vertical health system.

Author: The discrepancy between this study and past findings may be due to this, and highlights the importance of the integration of HIV and primary care systems to facilitate routine monitoring for non-communicable diseases and their risk factors in HIV-infected patients.

Comment: It is unclear what discrepancy the authors are referring to - they present a (null) association between NCDs and detectable HIV, correlates of detectable HIV and relation of self-reported and measured hypertension.

Introduction:

Author: The rising prevalence of non-communicable diseases (NCDs) in SSA, combined with high levels of chronic infectious diseases is resulting in a different pattern of multimorbidity than is seen in high-income countries.(3)

Comment: I am unclear what chronic infectious diseases the authors are referring to.

Author: Low-income groups in South Africa (SA) have seen a dramatic increase in prevalence of NCDs and have the highest burden of infectious disease resulting in concurrent epidemics.(7)

Comment: Again, the authors should specify which infectious diseases they are referring to.
Author: In the Western Cape province, primary care clinics are organised into disease-specific clubs, with a focus on four diseases (based on prevalence and importance): diabetes, hypertension, asthma/chronic obstructive pulmonary disease, and epilepsy.

Comment: The authors should clarify what is meant by importance. Is this mortality rate? Disability-adjusted life years (DALYs)? Something else?

Author: Yet, despite the increasing co-morbidity with HIV, and the potential for co-morbidity to impact outcomes, there is little known about the association between HIV and these diseases.

Comment: It is unclear what prior data the authors are referring to here.

Author: The objective of this study was therefore to examine the association between common NCDs (hypertension, diabetes, epilepsy or chronic respiratory disease (CRD) and a current detectable HIV viral load.

Comment: The authors should be precise with their terminology. In the text above these NCDs were foci of clinical care because of "prevalence and importance".

Author: Once those eligible has participated, the next available ten folders were screened, this system was continued until the sample size was reached.

Comment: Grammatical error.

Author: These NCDs were selected as a priority due to their high prevalence in this population.

Comment: Again, the authors should be precise. It appears from the text above that these conditions were prioritized by the government health system based on "prevalence and importance".

Author: The diagnosis of these NCDs is in line with guidelines set out by the South African government for primary care.(12)

Comment: Since these NCDs are the primary phenotypes of interest in the paper, the authors should describe specifically how they are diagnosed in their setting.

Author: Four indicators of comorbidity (hypertension, diabetes, CRD and/or epilepsy) were created: i) comorbidity reported in clinic folder; ii) self-reported comorbidity on interview; iii) comorbidity reported in clinic folder OR on interview, and iv) comorbidity indicator (iii) plus measured hypertension (diastolic ≥90mmHg or a systolic ≥140mmHg in line with SAGE, NIDS and SANHANES-1 studies (14, 15)) on the day of interview.

Comment: It is unclear what "iv) comorbidity indicator" refers to.
Author: In the multivariable model exploring the association between a detectable viral load and comorbidity, indicator iv) was used as the measure of comorbidity as it incorporated those with undiagnosed hypertension and so was the most comprehensive measure of comorbidity.

Comment: I find this text confusing.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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