Reviewer's report

Title: Individual and Contextual Factors of Influence on Adherence to Antiretrovirals Among People Attending Public Clinics in Rio de Janeiro, Brazil

Version: 1 Date: 5 March 2013

Reviewer: Michael Scanlon

Reviewer's report:

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MAJOR COMPULSORY REVISIONS

Introduction
None

Methods
1. In paragraph 1, you state that this analysis is part of a larger study. Please include who is directing this research, funding the research and whether any previous publications have resulted from the study.

2. In paragraph 3, a few points deserve attention:
   a. You state that a pilot test was conducted to ensure clarity. What methods were used? Cognitive interviewing? Focus groups?
   b. Please clarify that the methods described in the rest of the paragraph apply to the pilot study, main study or both? It is confusing and as it reads now sounds like the paragraph is describing the methods of the pilot study.

Measures
None

Analytic strategy
None

Results
None

Discussion
1. In paragraph 6, you discuss the concept of social capital but don’t provide any citations. Please provide relevant sources. Additionally, a small body of research does exist on the relationship between HIV and social capital in resource-limited settings. Please consider including some of these references in your discussion.

Tables
MINOR ESSENTIAL REVISIONS

Introduction

1. In paragraph 2, the following sentences are a bit misleading:

   “While almost perfect adherence to the complex regimen is required to maintain viral suppression, the average rate of adherence to ARVs is only 70 percent in developed countries. (12,13) A recent meta-analysis found an average rate of adherence to ARVS at 62% worldwide.”(14)

   Earlier you state that adherence levels have been found to be similar in resource-poor and resource-rich settings, however, the two sentences quoted above make it appear resource-limited settings have significantly less adherence. Given the sources, I would suggest combining these sentences or just referring to the meta-analysis (14), since it is 10 years more recent than the other studies (12,13) and adherence often declines over time.

2. In paragraph 2, you state the following:

   “Adherence to ARVS has become an important area of research because it is a strong predictor for progression to AIDS; furthermore, adherence can be improved through carefully planned interventions.”(3,13)

   This statement seems too strong given the body of evidence on improving adherence to ARVs through interventions. True, there are a few studies that show improvements in adherence with interventions (eg adherence education/counseling, reminders like SMS), but the body of evidence is often conflicting and inconsistent, especially for interventions in low and middle-income settings. I would consider revising this sentence to more accurately reflect the available data on adherence interventions and their limitations. (See Scanlon, ML and Vreeman, RC “Current strategies for improving access and adherence to ARVS in resource-limited settings.”

3. In paragraph 3, you state the following:

   “Sociodemographic variables have not been shown to consistently predict ARV or other medication adherence; (18,19) though being male, white, older, having higher income and higher literacy have been associated with better adherence.”(20)

   First, these two statements are contradictory. Second, are the associated factors (being male, white, older, having higher income and literacy) you cite consistently associated with adherence? In what settings? You only cite one study to support this statement. I would provide more evidence, clarify what setting and reword this sentence to not be contradictory.

Methods
1. It would be very helpful to further define a “public health clinic” from which your sample is drawn. You say these are run by the Rio de Janeiro Health Secretariat, so they are government run. Are these HIV care specific clinics? Are they primary care clinics? Are services provided for free? Insurance required? Are ARVs provided for free? Are all clinics within Rio proper? Urban/rural? Largest vs smallest caseload included (to better explain the heterogeneous inclusion). Answering a few more of these questions would provide readers a better idea of where the sample accesses treatment and services provided.

Measures

1. Under socio-demographic and background variables – please clarify what you mean by “main partner status?” Does this mean married, single? HIV status?

Results

None

Discussion

1. In paragraph 2, the vulnerability of women to HIV and negative HIV-related outcomes is discussed. I would consider addressing issues of challenges/barriers in access to ARVs in female populations here as well, as you don’t mention this point.

2. In paragraph 4 discussing the pattern of the HIV epidemic in Brazil, it is not clear why you are able to draw the conclusion that HIV starts in higher income populations and disseminates into poorer populations. Your examples supporting this claim are not clear. If there is strong evidence to support this claim that account for different demographic and risk factors in southeastern versus northeastern populations, please clarify.

3. Nowhere in your discussion do you mention the concept and impact of HIV related stigma. There is a lot of research on how stigma may impact adherence to ARVs, especially in resource-limited settings. It may be appropriate to mention the potential impact of HIV stigma on adherence, perhaps especially relevant for women. A small discussion of HIV stigma may be most relevant in paragraph 5 when you discuss social support, as HIV stigma can greatly reduce the options for accessing support networks.

Limitations

1. Please consider also including a brief discussion on generalizability of these results in Brazil and other resource-limited settings. Might there be some important differences in the sample population compared to other key populations of interest?

Tables

1. Table 1. Please correct the symbol under “Number of children” from >=2 to the standard #2

2. Table 2. Please revise this table to increase clarity and simplicity. I would
suggest the univariate analyses to the left and multivariate analyses on the right-most column. I do not see a need for the unadjusted OR if you only cite adjusted OR in the manuscript.

DISCRETIONARY REVISIONS

Introduction

1. Consider reorganizing the introduction section to create a more logical flow. To do this, I recommend first discussing ARVs and the research on factors of adherence. Then go into your discussion of Brazil as a case study and specific research on populations in Brazil. As written, the introduction is choppy and bounces back and forth between Brazil and more general topics.

2. In paragraph 4, you state the following:
   “The variables found to be important are similar to those previously discussed, including a combination of patient, medication and clinic level factors”
   Nowhere previously are medication and clinic level factors discussed in the manuscript, only patient level factors, so this statement is a bit confusing.

3. In paragraph 4, you status the following:
   “Another study in Rio had high self-reported adherence at 82 percent, with self-efficacy, sexual orientation, loss of appetite and the doctor-patient relationship found to be significantly associated with adherence.”(7)
   It would increase clarity to note what sexual orientation and aspects of doctor-patient relationship were associated with adherence in this study.

Methods

1. In paragraph 2, you state the following:
   “These six facilities provide care for approximately 60 percent of the over 14,000 patients living with HIV/AIDS under follow-up”
   Please consider clarify what you mean by “under follow-up.” Under follow-up by the public health clinics?

Results

1. In paragraph 1, you use the term “superior level.” I would refrain from using this term and simply use “university level or higher” for clarity.

2. In paragraph 1, you state that the monthly income ranged from 0 to 4,790 USD with a mean of 530 USD. Given the range and low mean, I would suggest using the median value here instead of mean to give a more accurate representation of monthly income.

3. In paragraph 2, you state the “only 17% missed a dose on the weekend.” Is this 17% of the entire sample reported missing a dose on the weekend? Is this 17% of the nonadherent sample that reported missing a dose on the weekend? I would clarify this finding.
4. In paragraph 3, you state that gender was associated with adherence in bivariate analysis. I would suggest stating what association was found – “Being a male was associated with adherence.” Even though you do this in your multivariate discussion, I would also do it here.

Discussion
None

Limitations
None

Tables
1. Table 1. I would consider using different terminology to describe “Non-white.” You describe “Non-white” as “black, brown, yellow and indigenous.” I understand that this is the official terminology of the Brazilian Institute of Geography and Statistics, but to some this language might seem odd and out of date. It is also unclear to me why you only classified race between white and non-white, instead of white, black and brown.

2. Table 1. I would consider using different terminology to describe the highest education level. I would substitute the phrase “superior or more” to “university level or more” if this accurately reflects your classification.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.