Reviewer's report

Title: Persistent Household Food Insecurity, HIV, and Maternal Stress in Peri-Urban Ghana

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Reviewer: David Himmelgreen

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This study aims to fill the gap in the literature on the psychological factors related to the diagnosis of HIV in mothers. Specifically, the authors examine the independent associations of HIV, persistent household food insecurity, and the synergistic effects of both on maternal stress among Ghanian women recruited from public hospitals that provided voluntary counseling and testing and offered antiretroviral therapy for the prevention of mother-to-child transmission of HIV (vertical transmission). The results suggest that there is a synergy between maternal diagnosis of HIV and household food insecurity. Further, the interactions of these two forces affect maternal stress levels. The authors conclude by issue a call for more intervention studies aimed at reducing maternal stress among HIV-positive women living in persistently food insecure households.

The findings from this study are interesting, help to fill the gap in the literature on this topic, are important theoretically (more needs to be discussed in this regard in the paper), and have implications for interventions that address HIV and food insecurity together (here too more needs to be discussed by the authors). That being said, this paper can be strengthened in several ways before it is acceptable for publication. What follows are major and minor comments for the authors consideration.

Major Comments

1) There is no theoretical framing of the study, yet there is an extensive literature on the HIV/AIDS and food insecurity synergism. For example, the authors might want to ground this study using New Variant Famine Theory (de Wall and Whiteside). More recently, the synergistic effects of HIV status and food insecurity have contextualized using syndemic theory (See Singer; Himmelgreen et al, for example). Thereafter, the authors could discuss how HIV status and food insecurity could ultimately affect maternal stress levels through increased allostatic load.

2) Little is presented at the end of the paper on possible intervention studies. While little has been done with regard to the psychological factors related to the diagnosis of HIV positive mothers, there is a growing call for more multi-dimensional interventions that don’t just address, for example, prevention, treatment, and counseling for HIV and AIDS, but instead focus on the

Minor Comments

Page 4, begin line 77: Need to explain why the prevalence of HIV is so high in the study district as compared to the rest of the country where the national rate is about 1%. What might be responsible for this? Poverty, cultural and religious practices? There is literature on role that religion and ethnicity might have on HIV prevalence that should be discussed here.

Page 5, line 102: Discuss how migration might represent a coping mechanism that has a negative effect on well-being of women and children. For instance, male labor migration has been linked to food security status in Sub-Saharan Africa, especially in places where there is a high level of gender inequality.

Page 7, begin line 172: Need to explain why the HFSSM was used to measure household food security. There are other scales that have used in Africa. Why this one?

Page 7, line 181 onward: Please explain why households had to be food insecure at all points post-partum during the study to be classified as persistent household food insecurity? While I do understand the logic for doing this and the fact that the sample size is relatively small, a household that is food insecure three times out of four might also be at a very high risk. Furthermore, if there is strong seasonality in this part of Gambia, having data that shows more variability in food insecurity might be important in terms of intervention strategies.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I have published with the last author on this paper but do not have any competing interests,