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Authors' response

We are pleased to note that our article[1] on factors associated with adherence to anti-retroviral therapy (ART) has been read with interest and appreciated[2]. The query has been raised about non-inclusion of variables such as 'education', 'gender' and 'employment' in regression analysis. At the time of conducting univariate analyses, we did not find association of any of these factors with poor adherence (cut-off at <90%) in our study participants (poorly adherent 29 and well adherent 99). While 21 per cent (22/103) of those ever attending school, 28 per cent (13/46) of the male participants and 21 per cent (15/72) of those employed in income generation activities were poorly adherent to ART, proportions well-adherent in these three groups were 79 per cent (81/103), 72 per cent (33/46) and 79 per cent (57/72), respectively. Lack of associations also held true while we raised the cut-off to a stringent level (patients having <95% adherence being defined as poorly-adherent). Sarna *et al*[3] in support of the claim of association of the three aforementioned factors to ART adherence also did not report so about 'gender' in univariate analysis - a finding similar to what we observed. Neither 'employment' nor 'education' stood out to be independently associated with adherence in multivariate analysis carried out by the investigators of this research study. They reported, "on multivariate analysis patients receiving free ARVs were 4.4 times more likely to report lower adherence than patients paying out-of-pocket for ART. Patients with severe depression were 4 times more likely to report lower adherence than patients with minimal depression"[3].

Questions posed by us - 'did you ever discontinue taking anti-HIV medicines' and 'if so why' were not specifically linked to recent (the last month or last week) intake of anti-retrovirals. We appreciate that 'ART medicine stock-out', coming out as one of the reasons for ever discontinuing medication, is one of the important programme issues as is the reported 'occasional bad behaviour from health care workers'. Well designed qualitative studies will be better suited to understand such issues in-depth and we maintain that innovative stigma reduction approach in and out of treatment setting is yet sorely lacking in the country and particularly in low HIV prevalence settings[4].

Lastly, a different grouping scheme for the variable - 'duration of ART-intake' has been suggested. We grouped this interval-variable based on our understanding that most of our patients received ART from free government clinic and at a lower level of CD4 count (surrogate for advanced HIV-disease) and, therefore, had chance of experiencing adverse drug events within the first few months of initiation of therapy. We wished to explore what happened while this initial tide was over and in the process our focus was on the last six months of the 'first year of ART-medication'. It is important to appreciate in this context that the most common factor contributing to poor or intermittent adherence in early era of ART was 'poor instruction given to the patient regarding the regimen'[5]. We have reasons to believe that it holds true even in today's busy world of achieving programme targets of high coverage and could negatively impinge upon adherence within as short as one year period and beyond. Hence, we underscored the importance of ongoing adherence counselling in our conclusions.

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