Reviewer's report

Title: Feasibility of HIV vaccination among rural, high-risk drug users in the United States: A cross-sectional study

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Reviewer: Peter A Newman

Reviewer's report:

This is a clearly written manuscript focused on correlates of acceptability of a hypothetical HIV vaccine among drugs users located in Central Appalachia. As the authors indicate, this is an understudied population for HIV vaccine acceptability and one for which issues of acceptability and access might be expected to prove important. A few clarifications in the methods section would be helpful. Most importantly, the results need to be discussed and contextualized in light of past research on HIV vaccine acceptability; this would increase the usefulness of the study for the field.

Major Compulsory Revisions

How were the HIV vaccine characteristics tested identified? As previous studies have employed many of these, it would be helpful to so indicate.

Why were some characteristics that have been identified in previous research as correlated with HIV vaccine acceptability not included (e.g., side effects, duration of protection, route of administration, number of doses)? This should be noted as a further study limitation.

It would be helpful in the methods section to justify the different cut-offs used for dichotomization of the psychosocial attitudes included in the models of HIV vaccine acceptability.

In general, the authors cite a number of publications on HIV vaccine acceptability in their introduction, including a systematic review. However beyond merely using these to indicate the novelty of the population they are studying, it would help to constructively build on existing evidence from these studies and the systematic review to address and contextualize their own findings.

Several findings from this study are similar to correlates of HIV vaccine acceptability identified in previous research (including the systematic review) and these should be identified and differences discussed. As it stands, only 3 studies are referenced in the discussion, with no reference to the 9 studies of HIV vaccine acceptability (2-10) cited in the introduction.

As one of the main correlates of HIV vaccine acceptability identified is gender, it would be helpful to discuss this in reference to a previous study that identified different attitudinal correlates of acceptability by gender (Kakinami et al., 2008).
This same study, as well as several others cited by the authors (e.g., 4,5), also identifies the same implication stated in the first paragraph of the discussion re: "a one-size-fits-all approach to HIV vaccine promotion", a statement that should be referenced. Indeed this is part of the benefit of conjoint analysis techniques, that they help to specifically target social marketing approaches.

Additionally, it might be helpful to speculate on why gender might have emerged as a significant correlate of acceptability in this study, but not in Kakinami or the previously published meta-analysis.

The authors identify some of the important study limitations. They should also note limitations of asking respondents about individual characteristics of a hypothetical product, such as an HIV vaccine, in contrast to previous research that has employed approaches such as conjoint analysis (e.g., 4,5) and discrete choice experiments (Cameron et al. 2013--see below). The latter have many advantages in that they may more accurately estimate acceptability; and in that end users evaluate trade-offs among different features of hypothetical vaccines, which enable estimation of relative valuations of different characteristics, including in terms of their cost (willingness to pay). In the discussion, the authors' comparison to previous research in terms of the impact of out-of-pocket cost in the present sample, while an important point, neglects to address that some of these other studies report the impact of cost relative to other vaccine characteristics. Furthermore, the systematic review (2) clearly identifies vaccine cost subsidies as a key intervention to promote uptake; this too should be cited here. The meta-analysis (2) also identifies the association of pragmatic obstacles, vaccine attitudes and perceived risk with acceptability, which should be discussed in the context of the present findings on attitudinal and other correlates of acceptability.

Finally, a recent publication (see below), while the outcome is not HIV vaccine acceptability but endorsement of mandatory HIV vaccination policy, would be relevant to address in that it identifies significantly lower endorsement among people who inject drugs (as well as the role of perceived risk and vaccine attitudes). This in part supports the importance of the present study in identifying correlates of acceptability among PWID.

Minor Essential Revisions

The word feasibility is used in the title, but I don't recall it being defined or discussed in the manuscript; consider changing the title. Additionally, "United States" in the title should be changed to something more apropos of the specific population and/or geography studied.

Additional studies of relevance:


**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests.