Reviewer's report

Title: Understanding recruitment: outcomes associated with alternate methods for seed selection in respondent driven sampling

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Reviewer: Anneli Uuskula

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This is a potentially interesting contribution to the specific research topic (analyzing RDS as a recruitment methodology and validity of the population estimates made on RDS data).

Major Compulsory Revisions

The paper would benefit from clearer and more detail methods presentation:

1) Without clear and justified study inclusion criteria it is very hard to capture and interpret the results/discussion.

Currently, the information provided is limited and scattered throughout the text: requesting age to meet the minimum age requirement of 14 (page 8/line 7), people at risk for STBBI, including people/seeds based on their “their interconnectedness with other members of the target populations” (page 7/ line 9)?? It is really hard to understand to what population group the results can be generalized??;

2) It seems that comparison meeting the set aims should be conducted between Arm 1 and Arm 2 recruits (excluding seeds). It is not clear to this reviewer whether these 2 groups (Arm 1 and Arm 2 recruits) are actually comparable: Arm 1 with the mean recruitment of 8.9 per seed, and Arm 2 with mean recruitment 2.4 per seed. In the paper one can read that there was a preset sample size, and currently there is a doubt that recruitment to the Arm 2 was stopped ‘artificially’ at the targeted study sample size. Thou the recruitment chains in Arm 2 might be significantly shorter, and one can expect differences in sample / population proportions related to this fact only. Information on rules on recruitment cessation in the study and data that would enable assessing comparability of the Arm 1 and Arm 2 recruits should be presented;

3) Study / data collection site – Was this a research center? A public health service (harm reduction, HIV testing, counseling) center known to the target group? Else?

This information is needed for better contextualization of the results (i.e. whom the self presenting seeds represent – service clients?; more/less marginalized group of people – someone who know that the study is ongoing but to whom the study participants will not render the recruitment coupon … because they are not considered to be ‘like themselves’?);
4) The information presented on data collection is conflicting. At page 6/line 16 authors write “Recruitment, interviewing and specimen collection was conducted by one research nurse”; at page 8/line 17-18 one can read “A variety of interview sites from which participants could freely choose had been established prior to study implementation within local clinics or resource centres”?

5) In their justification for the selected recruitment methodology authors highlight the potential to study how bridge individuals link diverse groups of people (page 8/lines 9-10). However, none of this analysis is presented?

6) In the Table 3 it is not clear whether the Ps calculations include the seeds or not?? (should not);

7) The information on homophily (pages 14/15) is better placed in the Methods section;

8) Authors used a personal egocentric network measure (probably also in the RDS analysis). Has this measure been validated against ‘traditional RDS network measure’?

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'