Reviewer's report

Title: Influence network linkages across treatment conditions in randomized controlled trials

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Reviewer: Jan-Willem Weenink

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This is an interesting study that investigates influence networks of participants in a RCT and linkages across treatment conditions. It gives clear visualizations of the networks and provides quantitative measures such as out-degree centrality and betweenness.

Major compulsory revisions

- Networks are constructed based on semi-structured interviews. It needs to be clarified which criteria were used to construct a linkage between nodes/representatives (e.g. all persons that are mentioned by the participant, or only specific collaborations).

- A motivation or objective for investigating networks without representatives outside the RCT should be included. Furthermore, the results of these networks (figure 3 and 4) could be elaborated on more extensively in the results and discussion section; the added value of figures 3 and 4 is now unclear.

- The conclusion of the paper is that the integrity of the RCT was not compromised, since there are very few direct ties across conditions. The current networks are likely conservative estimations, since they are based on information of only 38 of the 176 nodes in the network. Most individuals have indirect ties with individuals of the opposite treatment condition (75.9% within 4 steps), and authors mention that it would not be surprising if system leaders of child public service systems would go to each other for advice. With this in mind, the current conclusion seems to be too much said.

- Authors mention that it is important to take the role of influence networks into consideration in both design and analysis of RCTs. It should be explained more extensively how other researchers can implement this method in their own study and what to do with or how to interpret possible outcomes of such a network study.

Minor essential revisions

- Setting and study population should be mentioned in the title of the paper.

- A typo in the abstract (‘46.7.0%’ in results paragraph).
- % missing for bay-area participants (n=18; 47.4) on page 11.
- It is mentioned that over two-thirds of participants were directors, though this is only 31.6% (page 11).

Discretionary revisions

- Some information mentioned in the interviews such as nature of the collaboration/reasons for communication, remains unmentioned in the results. Though it might be beyond the scope of this study, it would be interesting to use this information for linkage characteristics (e.g. apply strength of linkages). Authors could mention how nature/content of relations between individuals could be processed and what they mean for interpreting influence networks.

- Results are mentioned in the methods paragraph (data analysis). These include ‘This matrix consisted of all 176 nodes, including the 39 nodes that were not randomized to either treatment or standard conditions…’, and ‘Indeed among the 38 organizations, 1 had a direct tie to an organization in a different treatment condition…’. I would only include results in the methods paragraph if they are essential in explaining the used methods.

- Significance of differences between CDT and non-treatment may be added in table 2.

**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