Reviewer's report

Title: Interactive Programs with Preschool Children Bring Smiles and Conversation to Older Adults: Time-Sampling Study

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Reviewer: Shannon Jarrott

Reviewer's report:

1. The authors aim to conduct an observational analysis of elders during different types of non-familial intergenerational (IG) programming. The inclusion of older adults is appropriate, albeit good IG programming should be beneficial to elders and children alike (the authors acknowledge that). As a first reviewer of a revised manuscript, I hope to be able to offer feedback that builds upon what previous reviewers have offered.

2. The topic is of interest and has potential to inform future research. Explanation of observational data collection needs to be made clearer for an English reading audience. A weakness of this study is that the data appear to represent comparison of single sets of observations of different adults in intergenerational settings. Such cross-sectional research lacks context of how frequently this type of programming may be joined by the subjects and makes it difficult to interpret the results.

Major Compulsory Revisions

3. The use of the terms “child-led” and “interactive interaction” patterns is confusing. The explanation offered on p. 6 does not help and is not a conventional explanation of different categories of IG programming, e.g., those offered by Newman and colleagues in 1999. If the authors will maintain these categories, greater context needs to be provided. I see important distinctions that need to be made. The first category seems to imply involvement of independent elders (and is not part of the study); the second category seems exclusive to young children, but could it also involve youth serving elders in some other capacity, and the third category implies that interaction cannot and does not take place in the first two categories. The study offered by the authors focuses on performance style IG programming, which does not lend itself to interaction, and shared programming, which has greater potential to support interaction. I suggest the authors more clearly delineate the differences between these observed categories of activities and how they differ on the key feature of opportunity for structured or spontaneous interaction between the generations. Perhaps “performance-based IG programming” and “social-oriented IG programming” would be better terms.

4. Clarify on page 7 whether the day care center referred to as an elder day program or a childcare center. It is common to have elders supporting children as volunteers or mentors at childcare centers. This may not be the case in Japan.
and could be clarified in addition to the citation offered, even simply adding at the end of the sentence “in Tokyo.” Further reading reveals that the day program is an elder care program. This needs to be made explicit early in the manuscript.

5. In paragraph 2, page 7, the authors indicate there are advantages and disadvantages of each type of target program but only disadvantages are described. What are the potential advantages of each type?

6. Provide more detail on exclusion criteria of “serious dementia” (p. 8). Were these individuals who were unable to engage effectively with children? Perhaps a cognitive test score cutoff was used to determine eligibility.

7. Also related to smiles, the authors reference spontaneous smiles and deliberate smiles in the discussion (p. 14), but these terms are not used earlier, adding to the confusion of how smiles and laughter were coded. It seems inappropriate to introduce this distinction so late in the paper if it was not distinguished in the observations. I would also take issue with the statement that laughter only occurs when someone is truly enjoying him or herself. Perhaps there are cultural differences, but laughter may result from nervousness or embarrassment and inappropriate laughter is common in persons with cognitive impairment.

8. Important information related to the outcomes of IG programming includes the frequency and regularity with which the children and elders have the chance to interact and whether the same adults participated in each activity. Please, provide this information; it is very difficult to use the findings as they are reported without knowing whether the elders and children had regular opportunities to interact with each other.

Minor Essential Revisions

9. The use of a structured research method is a strength in the IG research field. Selecting a 5-minute period in the middle of the activity is alright. Translating the IEAS into an observational scale is an interesting approach to noting response to programming. The description of the weighted scale for smiling has not translated very well into English with the mid-point being laughing and the high point being laughter. The terms are too similar; I wonder if a Likert type scale of smiling/laughing would make more sense to an English reading audience without having to change the researchers’ analyses. E.g., 1 = smiling/interest with change in mouth angle and eyes only, 2 = smiling with mouth open indicating joy or surprise, and 3 = laughter, change in eyes with vocalization to accompany smile. A visual scale (e.g., a line-drawn face with a slight smile, an open-mouth smile, and one indicating laughter and movement) could also likely be provided by the authors to indicate the guidelines observers used to distinguish between the different categories.

a. Regarding the observation of conversation, it could be important to distinguish between observation of conversation between elder and child and conversation with a peer or other. If only conversation between elder and child were noted, the authors should provide this distinction.
10. Could the authors include a copy of the observation form? Writing about observational data collection is difficult; I cannot tell, for example if the observer could note all of the visual attention, conversation, and engagement indicators that occurred in a 15-second interval or only the one that lasted longest. Because the categories do not seem mutually exclusive (someone could be laughing while engaging in conversation or attention to a child), the hierarchy of coding needs to be explained.

11. Why were data from only two of three observers used (p. 13?)?

12. Regarding the results, does the higher rate of IG attention in the child-led interaction group reflect the lower levels of constructive behavior (e.g., because the categories are treated as mutually exclusive behaviors by coders?). Perhaps not – I remain confused about the coding of the observations.

13. The authors combined observations of the 2nd and 3rd activities so can they appropriately assert that the traditional games Karuta and Fuku-warai were “the most beneficial intergenerational programs.”? They have the potential to achieve positive developmental benefits for youth, but this seems more speculation.

Discretionary Revisions

14. It is easy to detect, but the authors should specify which of the observed activities were child-led and which were shared interaction. How many participants (children and elder) joined each activity? With 25 subjects, does that mean 25 elders were in attendance at each of the IG activities? Based on information provided on page 11, it appears that they were not all observed in the same setting. Therefore, there are important points to address with whether the adults in these different groups differed from each other (e.g., in cognitive function); the authors address gender and age differences and differences in rate of attendance at the day care but not level of function or level of participation in IG activities.

15. The finding that smiles weren’t different but other behaviors were merits close attention in the discussion. Many practitioners in the field continue to advocate for the benefits of passively observing IG programming from the sidelines when elders won’t or can’t join actively in IG programming. However, the significant differences observed in interaction, constructive behavior, and conversation in the present study, are important outcomes to achieve that overshadow smile ratings. Exploration of the health benefits of these observed differences is key.

a. I think as well that the interpretation of the statistical difference in IG attention to the child-led programming can be tempered as one considers the clinical significance of a difference of 80% for interactive activities compared to 100% for performance-oriented activities. While observation during performance-oriented activities may have been statistically higher than in the interactive sessions, achieving 80% intergenerational attention during the interactive sessions is note-worthy, and I would encourage authors to address this point rather than leave readers to conclude that watching children perform is really that much better for keeping attention than programming that involves interaction.
16. Newer references to benefits of IG for elder and child participants can be offered than citations 7-10, though these are appropriate references. E.g., Jarrott & Smith, 2011; George, Whitehouse & Whitehouse, 2011

17. Regarding the statement that it’s “important to select themes which both older adults and children share particularly in the child-led interaction programs” (p. 16), the authors should substantiate this claim. I’m not familiar with the concept and also understand that children can teach new things to elders effectively; they need not both know the content of the programming.

a. It appears implicit that the interactive programs involved elders appropriately in a mentoring role, but this is not always the case. An anecdote to portray how elders served in mentoring roles would be a strong addition to the paper.

18. I agree that IG programs can help elders serve critical roles, but achievement of this depends on how the program is implemented. Further, elders who are attending day care are alleviating some of their isolation by attending the program. All of us IG researchers and practitioners are challenged to explain why IG programming is as good as other types of social contact and how it can achieve outcomes that single generation contact cannot. Inclusion of citations to research and theory on the value of interactive programming are valuable in a paper such as this.

19. A number of references can be provided to address the authors’ well made points about staff providing support to encourage interactions (e.g., Jarrott’s Tried & True, Epstein & Boisvert’s Let’s do Something Together, and even Camp’s Montessori handbook (though not intergenerational).

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

**Quality of written English:** Needs some language corrections before being published

**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