Author's response to reviews

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

Authors:

   Kumiko Morita (morita.phn@tmd.ac.jp)
   Minako Kobayashi (m-kobayashi@kameda.ac.jp)

Version: 4 Date: 4 September 2013

Author's response to reviews: see over
September 4, 2013

Professor Irene Pala
Executive Editor
*BMC Geriatrics*

Dear Professor Pala:

We appreciate the reviewers for their thorough review and constructive suggestions on our manuscript entitled “Interactive Programs with Preschool Children Bring Smiles and Conversation to Elders: Time-Sampling Study (The term of “Older Adults” is changed to “Elders”).” Since this was our first attempt to submit our manuscript to the Western journal, it was our honor to have the opportunity to revise it, and all the comments were very helpful.

We look forward to receiving your favorable reply.

Sincerely yours,

Kumiko Morita, RN, PhD, PHN

Associate Professor
Department of Health Education
Division of Comprehensive Health Nursing Sciences
Tokyo Medical and Dental University, Graduate School of Health Care Sciences
1-5-45, Yushima, Bunkyo-ku, Tokyo, 113-8519, Japan
TEL/FAX +81-3-5803-5337
e-mail morita.phn@tmd.ac.jp
Response to the Reviewers’ Comments

Reviewer 1: Jill Chonody
Thank you very much for your valuable comments and suggestions. Since this was our first attempt to submit our manuscript to the Western journal, it was our honor to have the opportunity to revise it, and all the comments were very helpful. According to your advice, we revised our manuscript as outlined below.

Discretionary Revisions

1. The introduction could use a bit more development regarding the studies that have been completed on intergenerational programs and make a more convincing argument why those types of programs may be essential (which is done more so in the discussion instead).

   We moved some sentences from the Discussion section to the Introduction section, and revised it. Also, we added the recent trends of IG programs with literature.

   “Elders are at risk of being socially isolated due to poor health, low morale, and communication difficulties [1].”

   “Intergenerational programs provide contact and communication between children and elders. Communication enables elders to help others by listening, reflecting and offering advice [8], and serves critical roles in the lives of elders, including maintaining a sense of identity, and relieving loneliness, depression or anxiety [9]. The literature suggests that intergenerational programs benefit both elders and children. For elders, the effects of programs include increased self-esteem, improved well-being [10-12], increased social contact [10], decrease distress [13, 14], and gratification for their contribution to the community [15], while positive attitudes towards the elderly [16-19], and understanding of the aging process [11, 15] have been reported for children.”

   “In Japan, it was observed that healthy elders can lead the interaction (e.g., help children with their studies and teach regional culture [21], and also read picture books to children [22]. These elder-led programs, which motivate elders to participate in society, are still few. According to a recent study of adult day services in Tokyo, more than 80% of the day centres reported that the frequency of intergenerational programs with elementary school children was “a few time a year” [23].”

2. While the methods are appropriately described, rationale for the choice of methodology and operationalization would have strengthened this section. Perhaps some of the information in the discussion section could be moved here (re: types of smiles).
• We used Likert scale for weighted positive facial expression as follows:
   “Smile 1 = smiling/interest with change in mouth angle and eyes only. Smile 2 = smiling with mouth open indicating joy or surprise. Smile 3 = laughter, change in eyes with vocalization to accompany smile.”

• We added the following sentence for conversation.
   “We counted conversation only between the elderly adult and the child, and did not include conversation between individuals of the same generation.

• We described the example of the observation form in the Table 1.

3. In the analyses section, it isn’t clear why 2 reviewers were used instead of all. Further information regarding this decision should be added.

   Of three reviewers who made the video observation to assess Kappa coefficients, two (authors) observed the actual day program, and one was not involved in the actual program but only made the video observation. We planned to re-examine the method if the results of observation were different by the involvement of the actual program. However, the interrater reliability was confirmed in the subsample, therefore, only the authors observed the rest.

   We revised the Method section as follows:
   “Kappa coefficients among the 3 reviewers were assessed for 6 participants (25% of all the subjects). Of the three reviewers, two (authors) observed the actual day programs in person, and the third did not attend the programs using only video observation. Lombard et al. [36] recommended 10% as the minimally, acceptable subsample to use for interrater reliability coding. The kappa coefficients of change in visual attention, facial expression, engagement/behaviour, and conversation were 0.78, 0.80, 0.76, and 0.79, respectively. We planned to re-examine the method if the results of observation were different by the attendance at the programs. However, the interrater reliability was confirmed in the subsample, and therefore, only the two authors observed the rest of the participants.”

4. The last statement of the second paragraph in the discussion should be moved to the introduction as this wasn’t measured in your study and seems somewhat misplaced.

   We deleted the sentence of “Spontaneous smiles were positively related to laughter, while deliberate smiles were not [30]”.

5. The limitations section needs significant development. No limitations are outlined. Also some note on how data triangulation can be utilized to improve limitations in other methods may be
better point to make then to say that reliability and validity of surveys cannot be achieved.

We revised the Limitation section as follows:

“Since the present study was a cross-sectional research design to compare a single set of observations of different adults in intergenerational programs, the effect of continuity of the IG programs was not determined. In addition, the participants in the performance-based IG program and the social-oriented IG program were different, and thus the effect of subject characteristics (e.g., how to express one’s emotion) cannot be ruled out. To eliminate the effect of subject characteristics, the same persons should participate in both the performance-based and social-oriented IG programs in a cross-over research approach. Also, we need to determine whether the same effects can be expected for elders with severe dementia and whether the contents of intergenerational programs involving elementary school or junior high school children should be the same as those involving preschool children aged 5 to 6.”

6. The discussion regarding implications needs further development. For example, what might it mean that you found differences in facial expressions?
With further research, could this information be used in some way in the development of intergenerational programs? What would you like the reader to take away from your findings?

We added the following in the Discussion section. In addition, we revised the Discussion section substantially.

“Given the limited number of such programs at present, we need to develop new programs which attract the participation of both elders and children, with natural smiling and laughter. There are a variety of potential interactions including the pairing of elders with children.”
“Future plans for intergenerational programs should be more research-based, and the principles of contact theory (support from authority, common goals, cooperation, equal group status, and opportunity for friendship) are essential for intergenerational programs [41, 42]. Future research – practice interactions may generate successful programs.”

We changed to the term of “older adults” to “elders”.
**Reviewer 2**: Shannon Jarrott

Thank you very much for your thorough review and constructive suggestions. Since this was our first attempt to submit our manuscript to the Western journal, it was our honor to have the opportunity to revise it, and all the comments were very helpful. According to your advice, we revised our manuscript as outlined below.

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.

   As the Editor kindly reminded us of the requirement, we added the clinical trial number and informed consent details in the Method section to our revised manuscript.

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.

   We revised the Limitation section as follows:

   “Since the present study was a cross-sectional research design to compare a single set of observations of different adults in intergenerational programs, the effect of continuity of the IG programs was not determined. In addition, the participants in the performance-based IG program and the social-oriented IG program were different, and thus the effect of subject characteristics (e.g., how to express one’s emotion) cannot be ruled out. To eliminate the effect of subject characteristics, the same persons should participate in both the performance-based and social-oriented IG programs in a cross-over research approach. Also, we need to determine whether the same effects can be expected for elders with severe dementia and whether the contents of intergenerational programs involving elementary school or junior high school children should be the same as those involving preschool children aged 5 to 6.”

**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.

Thank you for your suggestion. Since the present study focused on the performance style of IG program in day service, we decided to use the terms of “performance-based IG programming” and “social-oriented IG programming” as you suggested.

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.

We explained the programs in Japan as follows:

“In Japan, it was observed that healthy elders can lead the interaction (e.g., help children with their studies and teach regional culture [21], and also read picture books to children [22]. These elder-led programs, which motivate elders to participate in society, are still few. According to a recent study of adult day services in Tokyo, more than 80% of the day centres reported that the frequency of intergenerational programs with elementary school children was “a few time a year” [23].”

“The IG programs in current elder day services in Japan include a “performance-based IG program” (children sing songs and dance) and a “social-oriented IG program” (elders and children play games together). Depending on the available exchange time, either program or a combination of both programs is implemented.”
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?

   We added the advantages.

   “In the performance-based IG program, even physically vulnerable elders (e.g., those using a wheel chair) can participate in the program.”

   “The social-oriented IG program generates conversation among individuals with different generations.”

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.

   Regarding cognitive function, we used the national criteria of dementia assessed by the level of communication difficulty and behavioral symptoms. Cognitive tests such as Mini-Mental State Examination (MMSE) were not available due to no physicians at the day centre. We added the following sentence regarding the exclusion criteria in the Method section.

   “We excluded elders who needed some assistance to complete their daily activities due to severe cognitive decline using the national criteria of dementia.”

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.

   We deleted the sentence of “Spontaneous smiles were positively related to laughter, while deliberate smiles were not [30].”

   It is right that inappropriate laughter is common in persons with cognitive impairment but persons with serious dementia were excluded in the present study. We changed an expression as follows:

   “In general, social smiles sometimes occur, but laughter often breaks out when an individual is really enjoying something.”
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.

Continuous exchanges are important. Some pioneering efforts are seen in Japan including a nursery center at an institution for elders, however, a majority of day services have a single intergenerational exchange at seasonal events. The day centre in this study has regular contacts with three nursery centers and kindergartens. These efforts may be reflected in the results, but the effect of continuity was not determined in this study which we described in the Limitation section.

We added the following in the Discussion section.

“Close interaction and repeated contact make self-disclosure and other friendship-developing mechanisms possible [42]. It is very difficult to interpret the present findings without knowing whether the elders and children had regular opportunities to interact with each other. The children participating in this study had visited the day centre on a regular basis since April 2011, and they were thus familiar faces among the elders at the time of the survey in the winter of 2011. This sense of intimacy may have contributed to the generation of smiles in the results.”

**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.

- We used Likert scale for weighted positive facial expression as follows:

  “Smile 1 = smiling/interest with change in mouth angle and eyes only. Smile 2 = smiling with mouth open indicating joy or surprise. Smile 3 = laughter, change in eyes with vocalization to accompany smile.”

- We added the following sentence for conversation.

  “We counted conversation only between the elderly adult and the child, and did not include conversation between people in the same generation.

9. 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.

We revised Table 1 as an observation form. As you pointed out, it is difficult to check all the items for 15 seconds. We used the video recording in this study so that we could observe facial expressions and then behaviors of the participants for coding by rewinding the video.

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

Of three reviewers who made the video observation to assess Kappa coefficients, two (authors) observed the actual day program, and one was not involved in the actual program but only made the video observation. We planned to re-examine the method if the results of observation were different by the involvement of the actual program. However, the interrater reliability was confirmed in the subsample, therefore, only the authors observed the rest. To improve the accuracy of observation record form, it is necessary to examine whether the same results can be obtained when more observers are required.

We revised the Method section as follows:

“Kappa coefficients among the 3 reviewers were assessed for 6 participants (25% of all the subjects). Of the three reviewers, two (authors) observed the actual day programs in person, and the third did not attend the programs using only video observation. Lombard et al. [36] recommended 10% as the minimally acceptable subsample to use for interrater reliability coding. The kappa coefficients of change in visual attention, facial expression, engagement/behaviour, and conversation were 0.78, 0.80, 0.76, and 0.79, respectively. We
planned to re-examine the method if the results of observation were different by the attendance at the programs. However, the interrater reliability was confirmed in the subsample, and therefore, only the two authors observed the rest of the participants.”

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.

As we replied to your question 10, we checked all the categories. In the performance-based programs, the elders paid attention to the children, but they were only watching so that we put a check mark on passive behavior. As a result, the constructive behavior was rated low.

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.

No, we did not mean that the traditional games were the most beneficial intergenerational programs. We revised the paragraph.

“When elders are given meaningful roles such as the opportunity to nurture and mentor children, their self-esteem increases [11] in association with feeling needed, valued, and a sense of self-worth [10], and elders are reminded of their role in society. In the present study, elders not only responded to children’s questions, but also shared knowledge with children by teaching the rules of games and passing on cultural traditions through play. Traditional games invite conversation. Since Karuta and Fuku-warai are often played around the New Year holiday, playing these games presents a good opportunity for the adults to explain the cultural traditions engaged in at New Year’s. The elders also learned new ways to play from the children regarding the “Cat’s cradle” and “Action Songs”. An intergenerational program is only effective when it supports mutually beneficial interactions [38]. “

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 elders) 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.

We added performance styles of programs and number of subjects we observed in the data
collection section.
“The first program (December 2011) was follows: The “performance-based IG program”
included 11 elders for observation. Each child answered questions about their activities on
Christmas Day at home, while elders sat in chairs and listened to the children talk. The
second program (January 2012): The “social-oriented IG program” included 8 elders for
observation. Children and elders were divided into three groups, and they played “Karuta (a
traditional Japanese playing card game),” “Cat’s cradle,” and “Fuku-warai (a game similar
to ‘pin the tail on the donkey’)” together. The third program (February 2012): The
“social-oriented IG program” included 6 elders for observation. One elder and 3 to 4 children
played “Action Songs” (hand play) as one group.”

Also, we added data on cognitive function in the Result section and Table 3.
“There were 14 elders without cognitive impairment (56.0%).”

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.

We added the following in the Discussion section to emphasize the significance of
programming that involves interaction.
“In the present study, the constructive behaviour rate was very high (90%) in the social-oriented
IG program, and both elders and children engaged in conversation and enjoyed traditional play
together. Both generation groups have much to give and learn through interaction: children have a zest for learning, while elders have a lifetime of experience [19]. These intergenerational interactions never occur in single-generation contacts.”

“Open-ended activities allow participants to make choices consistent with individual interests [37]. Although little development can be expected after the completion of a performance in the performance-based IG program, one activity may trigger various conversation topics in the social-oriented IG program as shown by the results of the present study.”

“Visual attention is also a form of non-verbal communication [39, 40]. In the performance-based IG program group, elders looked at children throughout the 5-minute observation period. Although these performance-based IG programs are adopted in a number of day services, the goal of intergenerational interaction is difficult to achieve with only the quiet watching of a performance [41]. It is rather noteworthy that the intergenerational attention rate was 87.5% in the present social-oriented IG program.”

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.

Thank you for your valuable advice. We added the literature in the Introduction section

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.

We deleted the sentence of “important to select themes which both elders and children share particularly in the child-led interaction programs,” and added the following sentences.

“Although these performance-based IG programs are adopted in a number of day services, the goal of intergenerational interaction is difficult to achieve with only the quiet watching of a performance [41]. It is rather noteworthy that the intergenerational attention rate was 87.5% in the present social-oriented IG program.”

“The elders also learned new ways to play from the children regarding the “Cat’s cradle” and “Action Songs.” An intergenerational program is only effective when it supports mutually beneficial interactions [38].”
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.

We described the interpretation of high constructive behaviour rate in social-oriented IG program, and the importance of interactions, and added the following sentence.

“These intergenerational interactions never occur in single-generation contacts.”

We cited the principles of contact theory.

“Future plans for intergenerational programs should be more research-based, and the principles of contact theory (support from authority, common goals, cooperation, equal group status, and opportunity for friendship) are essential for intergenerational programs [41, 42]. Future research – practice interactions may generate successful programs.”

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).

Thank you for your advice. We cited the suggested literature in the Discussion section.

We changed to the term of “older adults” to “elders”.