Evaluating the Impact of Intergenerational Activities on Elders’ Engagement and Expressiveness Levels in Two Settings

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ABSTRACT. This study evaluated the impact of intergenerational activities on elders’ engagement and expressiveness levels in two settings. Study 1 was conducted with 22 well elders at a senior center and approximately 15 children from a nearby grade school. Data were collected using a momentary time sampling procedure, and inter-observer reliability averaged 88% (ranging from 78% to 97%). Elders were significantly more engaged ($t(85) = 4.60, p > .001$) and expressive ($t(85) = 5.55, p > .001$) in the treatment condition than the control condition. Study 2 was conducted with 25 older adults diagnosed with dementia, living in a special care unit. Twenty-eight second-graders were in the experimental group and 32 second-graders were in the comparison group. A momentary time sampling procedure was used to observe engagement, expressiveness, and inappropriate behavior levels. Inter-observer agreement averaged 94% (ranged from 85% to 100%). Elders were significantly more engaged in the structured activities with children than the structured activities without children, and significantly more engaged in structured activities without children than the no-activity condition, $F(1) = 60.1; p > .01$. Elders were also significantly more expressive in structured activities with children than the structured activities without
children, and significantly more expressive in the structured activities without children than the no-activity condition, $F(1) = 26.5; p = .01$. Further, there was no significant increase in inappropriate behaviors between any condition, $F(1) = .322; p = .57$. The analysis of variance regarding children’s attitudes towards the elderly showed no significant differences whether they did or did not participate in the intergenerational activities ($F 3.5, p < .05$), with both groups maintaining positive attitudes of elders. These results reflect the importance of offering intergenerational activities to well and institutionalized elders as well as to children.

KEYWORDS. Intergenerational, behavioral, aging, children, engagement

Activities involving children with elders have been offered in a variety of settings for decades (Newman, 1989). Proponents of this type of intergenerational activity (e.g., Poole & Gooding, 1993; Cohon, 1989) suggest that elders who participate are more likely to experience increases in life satisfaction and socially desirable behaviors. They are similarly believed to show decreased rates of maladaptive behavior and negative attitudes toward youth. Increased engagement has also been correlated with improved health, subsequent reductions in medical expenses, increased happiness, and improved quality of life (Keeler, Manning, Newhouse, Sloss, & Wasserman, 1989; Green & Reid, 1996; Green, Gardner, & Reid, 1997). In sum, proponents suggest that intergenerational activities add many important dimensions to elders’ lives.

Proponents also suggest that these programs have value for participating youth, including decreased fear of aging, reduced negative attitudes toward the elderly, improved social skills, and reductions in ageism (Kaplan, 1997; Cohon, 1989; Pinquart, Wenzel, & Sorensen, 2000; Burke, 1981; Thomas & Yamamoto, 1975). Few of these benefits for elders or children, however, have been empirically tested.

Most studies of intergenerational activities have focused exclusively on children’s attitudes toward the elderly (Corbin, Kagan, & Metal-Corbin, 1987; Couper, Sheehan, & Thomas, 1991; McCullum & Shreeve, 1994;
Dellman-Jenkins, Lambert, & Fruit, 1991; Chapman & Neal, 1990; Dooley & Frankel, 1990; Kocarnik & Ponzetti, 1986; Pinquart, Wenzel, & Sorensen, 2000). The “Children’s Perceptions of Aging and the Elderly” scale (Rich, Myrick, & Campbell, 1983) is a widely used scale that lists 20 adjective, some positive and some negative, about aging and the elderly (Aday, Aday, Arnold, & Bendix, 1996; Aday, McDuffie, & Sims, 1995; Aday, Sims, & Evans, 1991). This Likert-type scale has been used to identify changes in children’s attitudes toward the elderly after participating in intergenerational programs. A few studies have also assessed elders’ attitudes using a variety of different measures (Saltz, 1989; Glanz, 1989; Newman, Karip, & Faux, 1995; Lowenthal & Egan, 1991; Nishi-Strattner & Myers, 1983; Proller, 1989; Pinquart, Wenzel, & Sorensen, 2000).

Attitudes or internal states are particularly difficult to measure, however, among persons with cognitive disabilities (Green & Reid, 1999). Persons with cognitive impairments, such as Alzheimer’s disease, often lack the communication skills necessary to reliably report their happiness. Smiling is an indication of the internal state of happiness that has been used in several studies conducted with persons with profound mental deficits (Green & Reid, 1999; Green, Gardner, & Reid, 1997; Reid, Everson, & Green, 1999; Green & Reid, 1996). This same measure of happiness might be used with elders with dementia, to determine whether they enjoy interacting with the children or not.

Few intergenerational evaluations directly observe participants of intergenerational programs (Kuehne & Collins, 1997; Seefeldt, 1987). Further, little has been reported about the behavior of persons participating in intergenerational activities. Therefore, observational studies of older adults’ behaviors in intergenerational activities would provide meaningful data to the intergenerational literature.

Two studies were designed to investigate the effect of intergenerational activities on older adult participant’s level of engagement and expressiveness. Study 1 was conducted with well elders at a multipurpose senior center. Study 2 was conducted with older adults diagnosed with dementia, living in a special care unit within a nursing facility. This research was designed to compare levels of engagement and levels of expressiveness of older adults during activities with and without children.
STUDY 1

Method

Participants

Twenty-two older adults who frequented a multipurpose senior center agreed to participate in the study. These were all the elders observed to attend the lounge during the observation sessions. The elders ranged in age from 67 to 100 years of age. Twenty were female and two were male. While no formal test of cognitive status was given, they all appeared healthy, frequented the center by their own accord, were ambulatory, and lived independently in the community. Informed consent was obtained from all elders.

The children ranged in age from six to ten, and came from a nearby private grade school. Teachers from the school selected students to attend and, on average, approximately 15 children participated in each intergenerational activity. While nearly equal numbers of female and male students attended each intergenerational session, demographic details regarding the children were not recorded.

Setting

Observation sessions were conducted on Friday mornings between 11:00 a.m. and noon. Twelve observation sessions were on days that the children were not present. These observations took place in the senior center lounge. This room was 20' by 18', and included a large table with four chairs, lounge chairs, a sofa, a television, and an open space for activities.

On the five days that children were present, observations took place in a 30' by 20' room that included a large table that could easily seat 12, lounge chairs, a sofa, a television, and a large open space. The multipurpose senior center was located one-half block away from the private school. The single intergenerational activity conducted at the school took place in a 36' by 18' classroom that included chairs, tables, and bookshelves.

Observation Procedures

Data were collected, using a momentary time sampling procedure for 30 minutes in each observation session. Each session was divided into
15, two-minute intervals. Before the session began, the observer would identify the name of each older adult participant that had completed an informed statement.

Engagement and expressiveness served as the two primary dependent variables observed in this study. Engagement was observed as an indicator of elders’ appropriate interaction with their environment. Appropriate engagement was scored as an occurrence whenever a participant was present and participating in an activity. Examples of appropriate activities included walking, reading a magazine or book, drawing or painting, knitting, watching television, putting together a puzzle, conversing intelligibly or singing, or reading with eyes moving. Engagement was scored as a nonoccurrence whenever a participant was present and sleeping, staring blankly, or engaged in any form of self-stimulatory behavior.

Expressiveness was observed as an indicator of the elders’ affect. Expressiveness was scored as an occurrence whenever any of the following behaviors occurred: smiling, laughing, nodding head, or leaning forward with another member of the group (that was contextually appropriate). Expressiveness was scored as a nonoccurrence whenever the participant demonstrated a lack of affect by staring ahead with a blank expression or looking down.

At the beginning of each two-minute interval, the observer would look at the first person on the checklist and record whether that person was engaged and whether they were expressive. After scoring the first person on the checklist, the observer would read the name of the second person on the checklist, look up at that person, and score both engagement and expressiveness. This procedure was followed until each participant on the checklist was observed and scored. The observer would then wait until the beginning of the next two-minute interval and repeat the process in the same order.

At the end of each observation session, data were summarized for individuals, as well as for the group. The number of “engaged” observations were divided by the total number of observations to determine the percentage of time samples participants were engaged. This sum was multiplied by 100. The number of “expressive” observations were divided by the total number of observations to determine the percentage of time samples participants were expressive. This sum was also multiplied by 100.

Interobserver Agreement

A second observer was present at six of eighteen weekly 30-minute sessions (33%). The second observer sat near the primary observer.
Neither observer could see the others’ data sheet, yet they both had similar views of the participants. At the beginning of each two-minute interval, the primary observer would look at the secondary observer and nod her head to indicate that a new two-minute interval was about to begin. Inter-observer reliability was calculated by dividing the number of times both observers agreed on an individual’s engagement or expressiveness by the total number of agreements plus disagreements during an observation session and then multiplying by 100. Reliability between the observers averaged 88% (ranging from 78% to 97%).

Intergenerational Activities

Intergenerational activities included individual and group activities that involved discussions, crafts, and recreational activities. The six activities included celebrating Kansas Day, celebrating Valentine’s Day, celebrating May Day, an ice cream social, a visit to the children’s school, and celebrating Thanksgiving Day. Activities were determined by senior center staff, teachers of the youth participants, and researchers for this study. Typically, the activities were organized by offering some sort of child presentation to the entire group at the beginning followed by a smaller group activities. The leader of the activity made a point to combine elders and youth in each of the smaller groups. Because of the similarity in the intergenerational activities, data regarding individual intergenerational activities are not reported.

No Structured Activities

The multipurpose senior center has a lounge where older adults often gather before and after the congregate meal every weekday. Elders’ engagement levels were also observed during no-activities conditions, typically three times a month. These observations were conducted at a time when no structured activities were led. Elders who had gathered in a lounge, prior to the congregate meal, where observed while they knit, solved crossword puzzles, talked, watched television, read books, or sat doing nothing.

Experimental Design

An alternating-treatments design was used to evaluate the effects of intergenerational activities on engagement and expressiveness (Ulman & Sulzer-Azaroff, 1975). This design allows for an initial baseline, which
in this case was the absence of structured activities with children, to alternate between the intervention and the baseline condition.

RESULTS

Data on participant engagement levels are presented in the top panel of Figure 1. There were six observation sessions conducted during the treatment condition (closed squares labeled “Intergenerational Activities”), with a mean of seven elders that attended each session. During these sessions, structured intergenerational activities were conducted with children. Elders were observed as engaged 90% of these treatment condition observations. There were 12 observation sessions conducted in the control condition (open circles labeled “No Structured Activity”), with a mean of four elders that attended each session. Children were not present during any of these sessions. Elders were observed as engaged in 65% of the control condition observations. A t-test showed a significant difference between groups ($t(85) = 4.60, p > .001$) on engagement of senior center participants.

Data on participant expressiveness levels are presented in the lower panel of Figure 1. The closed squares (Intergenerational Activities) represent the mean percentage of observations during which participants were expressive during the treatment condition. Elders were observed to be expressive in 52% of the treatment condition observations. The open circles (No Structured Activity) show overall group expressiveness levels during the control condition. Elders were observed to be expressive in 20% of the control condition observations. A t-test showed a significant difference between groups ($t(85) = 5.55, p > .001$) on expressiveness of senior center participants.

DISCUSSION

Results suggest that elders were significantly more engaged and expressive during the structured intergenerational activities than they were during the control condition. This intervention suggests that intergenerational activities may represent a promising strategy for increasing the levels of engagement and expressiveness on community-dwelling older adults. The necessary components of activities, the effect of structured activities without children, the effect of facilitators prompting and encouraging these behaviors, the effect of the activities
on the interactions between elders and children, and the effects of these activities on more socially isolated elders (e.g., institutionalized, home-bound) are not evaluated in this study. In particular, it is impossible to determine whether structured activities without children could also produce difference in elder’s behaviors. A second study was conducted to address this question.
STUDY 2

Method

Participants

Twenty-five residents of a nursing home Special Care Unit for persons with dementia participated in at least one observation session over the course of 18 weeks. The elders ranged from 75 to 98 years of age and were all diagnosed with probable Alzheimer’s disease. All elders in the special care unit were asked to participate in the study and informed consent was obtained.

Sixty children from four different second grade classes in a nearby public grade school also participated in this study. Teachers at their school selected two of the classes to attend the intergenerational activities (experimental group) and two classes to serve as an untreated control group who would not attend any intergenerational activities at the nursing home. Thirty-two children, 13 males and 19 females, were in the control group. Twenty-eight children, 12 males and 16 females, were in the experimental group. On average, nine children participated in each intergenerational activity with elders in the special care unit, with all of the children in the experimental group participating in at least one activity with elders in the special care unit. Informed consent was obtained from the families of all children and elders before the study began.

Setting

All observation sessions were conducted in the lounge area of the special care unit. The lounge areas had several tables, each with four chairs around them and a television, sofa, and lounge chair in the corner of the room. In another corner of the room was a nurse’s station.

Observation Procedures

The same momentary time sampling procedure used in study 1 was used to observe engagement and expressiveness. As in the previous study, each observation session lasted thirty minutes. However, in this study engagement was recorded as an “E” if the person was engaged appropriately in the activity, an “N” if the person was not engaged, or an “I” if the person was engaged inappropriately. Expressiveness was only scored if the participant was engaged appropriately, and this informa-
tion was recorded by circling the “E.” Participants needed a minimum of ten sequential minutes (33% of the observation session) of observations to be included in the summarized data.

As in the previous study, engagement was defined as when a participant was present and participating appropriately in an activity. Not engaged was similarly recorded whenever a person was present, but not participating in the activity. Not being engaged included sleeping, sitting, staring or standing while doing nothing. However, in this setting we also recorded instances of inappropriate engagement.

Inappropriate engagement was recorded if the person being observed was engaged in aberrant behaviors that might have interfered with, or reduced independence, happiness, or quality of life. Such aberrant behaviors included aggression, self-injury, yelling, swearing, perseverative or incoherent speech, wandering, or disoriented walking. If inappropriate behavior occurred simultaneously with appropriate behavior, inappropriate behavior was scored.

Expressiveness, a qualitative measure, was scored whenever any or all of the following behaviors occurred: smiling, laughing, nodding head, holding hands, or placing a child in lap. It was scored as present or absent only if the participant was appropriately engaged.

In addition, a pre-test/post-test, repeated-measures design was used to evaluate the effects of the intergenerational program on children’s attitudes toward the elderly. The experimental group participated in intergenerational activities with elders. The control group did not. All the children were given the “Children’s Perceptions of Aging and the Elderly” (Rich, Myrick, & Campbell, 1983) both before and after the study. This instrument is a 20-item measure that asks children to identify positive and negative attributes of older adults on a Likert-type scale.

After the first session with children and elders in the special care unit, the investigator added an education and modeling component to the intergenerational program. The education component included providing written materials to second grade teachers and students regarding normal aging and Alzheimer’s Disease, information in advance regarding the type of activities they were to participate in, and presentations by the nursing home staff on what it is like to work with older adults in their facility. The presentations ended with the nursing home staff modeling ways to interact with older adults with dementia. Activity directors at the nursing home were encouraged to facilitate conversations between children and older adults. Furthermore, the activity sessions were modified so that both the second graders and the nursing home staff could determine which crafts to do during the intergenerational
program. Finally, the next craft activity session was used as a training session, and the teachers and activity director’s modeled behaviors for the second-grade students. These behaviors included introducing themselves and others to the older adults, smiling at the older adult, looking them in the eye, and asking the older adult questions such as their name. Informed consent was obtained from all of the children.

**Interobserver Agreement**

During 26% (five of the nineteen sessions) of the observation sessions a second person independently scored participant engagement and expressiveness. Inter-observer agreement averaged 94% (ranged from 85% to 100%).

**Intergenerational Activities**

Intergenerational activities were offered semi-monthly. Intergenerational activities included individual and group activities that involved discussions, crafts, and recreational activities. All five structured activities involved creating crafts. These sessions were led by nursing home staff or elementary school teachers. Comparable to Study 1, because of the similarity in the intergenerational activities, data regarding individual intergenerational activities are not reported.

**Other Structured Activities**

Activities without children were also offered semi-monthly. These activities included discussions, crafts, and recreational activities. All seven structured activities involved creating crafts. These sessions were led by nursing home staff.

**No Structured Activities**

A no activity control condition was also conducted semi-monthly. During these occasions, no structured activities were offered. Observations during this condition were conducted at approximately the same time of day as the intergenerational activities and other structured activity conditions.

**Experimental Design**

An alternating treatment design was also used to evaluate the effects of these experimental conditions on participant engagement and expressiveness.
RESULTS

The top panel of Figure 2 shows results of three experimental conditions on resident engagement. The data collected represents the percentage of time samples during which participants were engaged or expressive in three different conditions. The first treatment condition involved structured intergenerational activities (closed squares). Elders were engaged 66% of all observations in this condition. The second treatment condition involved other structured activities without children (closed diamonds). Elders were engaged in 49% of all observations in this condition. The control condition was a structured activity condition in which children were not present (open circles). Elders were engaged in 25% of observations in this condition. Data are shown for the overall group of elders in attendance. An omnibus test of differences between the three means (analysis of variance) shows a significant contrast within subjects effects, $F(1) = 60.1; p > .01$. This suggests that we can reject the null hypothesis that the three means are the same. Further, protected t-tests were run to identify the points of difference, and found $t = 2.895$ between the Intergenerational Activity condition and the Other Structured Activity condition; $t = 7.307$ between the Other Structured Activity condition and the No Structured Activity condition; and $t = 8.231$ between the Intergenerational Activity condition and the No Structured Activity condition.

Participant nonengagement was also recorded. Elders were not engaged in 29% of the observations during the Intergenerational Activity condition; 43% of the observations during the Other Structured Activity condition; and 70% of the observations during the No Structured Activity condition. An omnibus test of differences between the three means (analysis of variance) shows a significant contrast within subjects, $F(1) = 64.4; p > .01$. This means we can reject the null hypothesis that the three means are the same. Further, protected t-tests were run to evaluate where the differences were, and found $t = -2.741$ between the Intergenerational Activity condition and the Other Structured Activity condition; $t = -5.438$ between the Other Structured Activity condition and the No Structured Activity condition; and $t = -8.629$ between the Intergenerational Activity condition and the No Structured Activity condition.

Participant inappropriate engagement was also recorded. Elders were inappropriately engaged in 5% of the observations during the Intergenerational Activity condition; 7% of the observations during the Other Structured Activity condition; and 8% of the observations during
the No Structured Activity condition. An omnibus test of differences between the three means (analysis of variance) shows no significant contrast within subjects effects, \( F(1) = .322; p = .57 \). Thus, inappropriate behaviors were infrequent, but were just as likely to occur in any of the three observation conditions.

Participant expressiveness is presented in the lower portion of Figure 2. The closed squares represent the mean percentage of observations (13%) during which participants were expressive during the Intergenerational Activity condition. The closed diamonds represent the mean percentage of observations (2%) during the Other Structured Activity condition. The open circles show overall group expressiveness levels (1%) during the No Structured Activity condition. An omnibus test of differences between the three means (analysis of variance) shows a significant contrast within subjects effects, \( F(1) = 26.5; p = .01 \). This means we can reject the null hypothesis that the three means are the same. Further, protected t-tests were run to evaluate where the differences were, and found \( t = 4.652 \) between the Intergenerational Activity condition and the Other Structured Activity condition; \( t = 6.674 \) between the Other Structured Activity condition and the No Structured Activity condition; and \( t = 5.655 \) between the Intergenerational Activity condition and the No Structured Activity condition.

Table 1 shows the mean “Children’s Perception of Aging and the Elderly” pre-test and post-test scores for the experimental and control groups. An analysis of variance (ANCOVA) shows that pre-test scores were a significant predictor of post-test scores (\( F 3.5, p < .05 \)).

**DISCUSSION**

This intervention represents a promising strategy for increasing the levels of engagement and expressiveness of institutionalized older adults with probable Alzheimer’s Disease, in intergenerational activities. The effect of structured activities with children had a significant impact on levels of engagement and expressiveness. Elders were most engaged and expressive during the Intergenerational Activity condition. They were also more engaged and expressive during the Other Structured Activity condition than the No Structured Activities condition. Differences in inappropriate engagement were indiscriminate and insignificant. Of particular interest is the magnitude of difference between expressiveness for the Intergenerational Activity condition and the No Structured Activity condition.
Another important finding from this study is the data regarding children’s attitudes of the elderly. An initial fear by some of the people participating during the planning phase of this study was that exposing children to elders with dementia might persuade the children to think more poorly of the older generation. In fact, it was that fear that prompted the measurement of “Children’s Perception of Aging and the
Elderly” in this second study. However, the results show no decrements in their attitudes. Further, while there was no statistically significant difference between the experimental and control groups, scores remained fairly high both before and after exposure to intergenerational activities. These positive ratings may have been influenced by the fact that children rotated during their experience at the continuum of care community, only spending part of their visits in the special care unit, while on other visits, interacted with well elders that lived elsewhere in that community.

Future research is still needed to better understand several aspects of intergenerational activities. For example, a closer look at the behavior of children in intergenerational activities is yet to be explored. Furthermore, an exploration of the behavioral interactions between the generations might prove interesting and important. Finally, understanding the effects of prompts and praise will lend depth to understanding the function of behaviors in intergenerational relationships. While there is a plethora of research attesting to the influence of prompts and praise on behavior, these studies did not evaluate the effects of those influences on elders’ behaviors. With the advent of aging societies and subsequent impact on interactions between generations, it behooves not only the scientific community, but the community at-large, to clearly understand the function and impact of intergenerational relationships (Ng, 1998).

**REFERENCES**


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