

*ENHANCING SOCIAL INTERACTIONS AND ACTIVITY  
AMONG THE ELDERLY THROUGH STIMULUS CONTROL*

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The present study investigated the effectiveness of a stimulus control procedure (access to free coffee and cookies) in increasing attendance and interactions among elderly in a lounge area of a nursing home. Following a baseline period, residents were provided access to coffee and cookies. The results showed that the refreshments were effective in increasing attendance and interactions and in decreasing television watching. In addition, attendance and participation during a subsequent activity session increased. Attendance, interactions, and participation decreased during a return to baseline period, and increased again with reimplementation of treatment.

DESCRIPTORS: social interactions, stimulus control, activity participation, nursing home residents

The fact that a large proportion of elderly residents in nursing homes remain in their rooms rather than participate in available activity programs is a serious problem, particularly because meaningful and active participation is critical to mental and physical well being (Havighurst, 1969). Activity among the elderly might be positively affected by human engineering techniques (Chapanis, 1974) and behavioral procedures (Hoyer, Mishara, & Riebel, 1975). Along these lines, manipulation of nursing home environmental variables has effectively raised activity levels and morale of residents (Schwartz & Propp, 1970). For example, McClannahan and Risley (1974) found that the use of announcements raised resident participation and social interactions. A need exists to develop and to investigate relatively simple but effective stimulus control techniques that foster activity and social interaction among the elderly.

A recent study by Luis (1977) found increases in attendance at therapy sessions following introduction of coffee breaks. The findings from this study are not conclusive because a rigorous experimental design was not em-

ployed. Still, coffee represents an attractive reinforcer which might increase attendance at particular behavior settings as well as facilitate social interactions. The present study investigated the effectiveness of an environmental change procedure (access to free decaffeinated coffee and cookies) on attendance, interactions, and participation among elderly in a nursing home.

## METHOD

### *Participants and Settings*

The site of the study was a 130-bed capacity nursing home. Ages of the 20 male and 79 female residents ranged from 55 to 97; the average was 81 years. Fifty-six of the residents were assessed as able to participate in the activity program (to be described below). The remaining individuals were unable to participate due to incapacitating physical problems.<sup>1</sup>

Observations were made three mornings each week (Mondays, Wednesdays, and Fridays), in

<sup>1</sup>Two independent observers rated each resident on this dimension and agreed on 94 out of 99 residents (95% agreement). Each of the five residents in which the two raters disagreed were placed in the nonparticipation category. In the study none of these residents did participate in the activity.

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a lounge area in the nursing home. In this behavior setting, there were eight chairs, two couches, three tables, and a television set. The dimensions of the lounge were 6.4 m by 4.8 m. Following breakfast, residents could enter the lounge at 8:45 and talk with each other, watch television, or sit alone. From 10:00 to 11:00 in the lounge, an exercise session was initiated. Residents could opt to participate, not to participate, or leave the lounge area. During the exercise session, residents, sitting in chairs, were informed of the benefit of each exercise and were encouraged and praised following each exercise. Exercises throughout this period were kept constant. For example, during arm exercises, patients lifted their arms following requests by the activity therapist. During marching exercises, residents in their seats lifted their feet up and down. Finger dexterity exercises involved opening and closing their hands.

### *Observations*

During each day of data collection, two sets of observations were made. The first observations were made from 9:45 to 9:47 when an observer entered the lounge area and recorded the number of residents present (to be counted, the resident had to be in the lounge for the entire two minutes), the number who were watching television (defined as the residents attending to the television set, eyes open and in the direction of the set for the entire two minutes of observations), and the number interacting. Interactions were defined as a resident communicating to another resident one or more times, verbally (i.e., in a conversation), or non-verbally (i.e., two residents playing checkers or other games).

At 10:30 a.m. an observer counted the number of residents in the lounge. At the end of the exercise session, residents were classified by an observer and the activity therapist as having not participated, marginally participated or actively participated from 10:00 to 11:00. Residents not participating merely sat in the lounge and did not try any exercises. Those who marginally participated made some effort to participate, although they were not actively following the exercises throughout the entire period (i.e., a resident might have decided not to participate in one or more of the exercises, provided at least the resident participated in one exercise). Active participation was defined as participation in all exercises.

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### *Experimental Conditions*

There were four days within each of the four phases of this reversal design.

*Baseline.* Regular procedures were followed during this phase.

*Refreshments.* Each day during this phase, at 9:30 a.m., an announcement on a public address system was made indicating that coffee and cookies were available to residents in the lounge. Refreshments were only available from 9:30 to 9:55 a.m. The estimated costs for refreshments were \$1.50 per day.

*Baseline.* Regular procedures were reinstated.

*Refreshments.* Announcements concerning the availability of coffee and cookies were again made.

## RESULTS

### *Reliability*

Interrater reliability was 100% for number of residents in the lounge at 9:45 a.m., number interacting, and number watching television. Interrater reliability was 100% for residents in the lounge at 10:30 a.m. and 98% for the type of participation (range 67% to 100%).

### *Lounge*

Figure 1 displays the observed frequency of attendance, television watching, and interactions

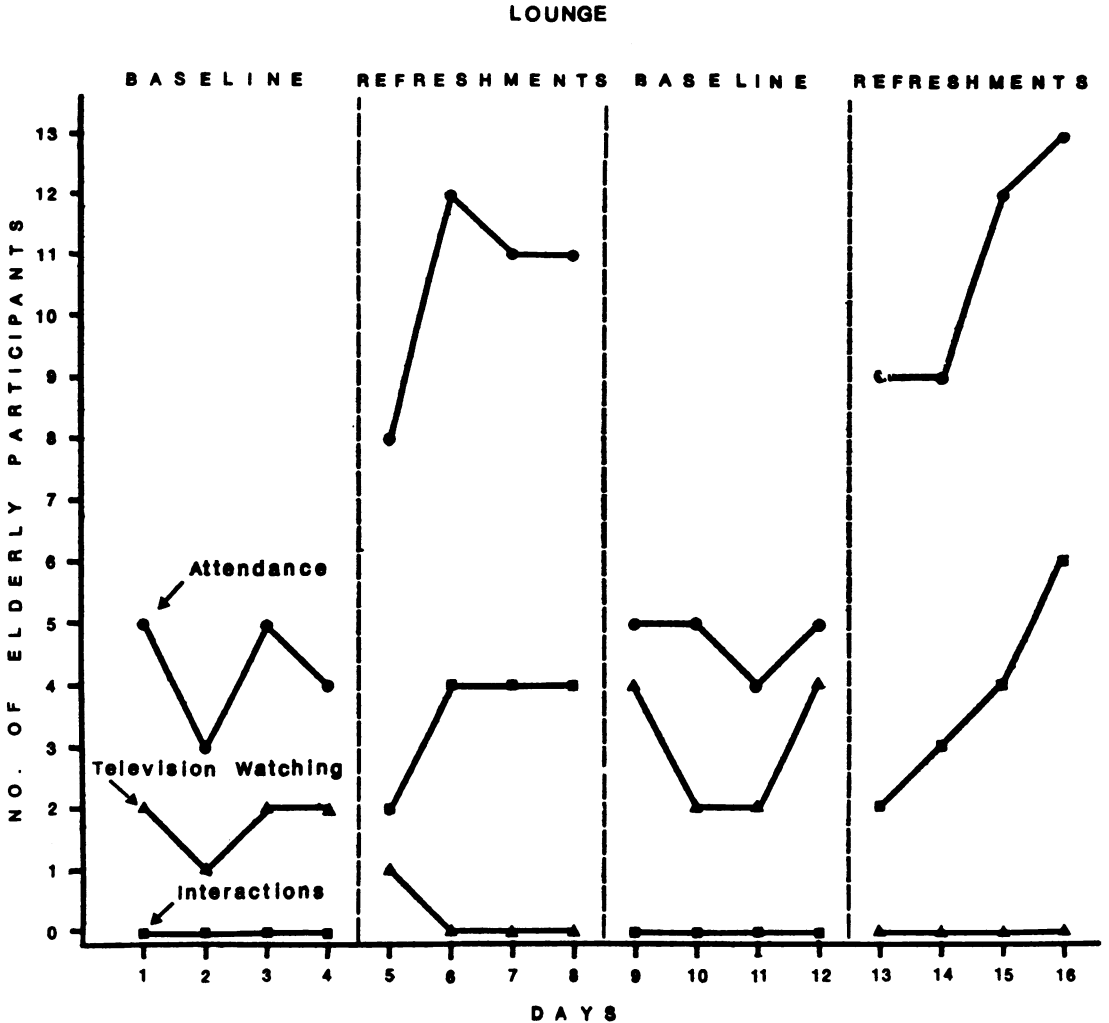


Fig. 1. Attendance, television watching, and social interactions during baseline and refreshment phases in the lounge.

in the lounge. During the four baseline sessions, there were an average of 4.3 residents (7.6% of those in the home able to attend), none interacted with each other, and an average of 1.8 watched television. With introduction of treatment, more residents came to the lounge (mean = 10.5; 18.8% of the residents considered able to attend), interactions among the elderly increased (mean = 3.5), and television watching decreased (mean = .25). With reintroduction of the baseline phase, attendance and interactions decreased and television watching increased. The last treatment phase again effectively increased

attendance and interactions, and decreased television watching.

*Activity Period*

Figure 2 shows the frequency of attendance, and active and marginal participation during the activity period. During the first baseline period there were an average of 12.5 residents attending the activity period (22.3% of the elderly able to attend), an average of 4.8 actively participated, and 3.5 marginally participated. With introduction of treatment, the average number of residents present increased to 19.3 (34.4% of

the elderly able to attend), 11.3 actively and 7.0 marginally participated. During the second baseline condition, attendance and participation decreased, whereas increases were again noted with reimplementa-tion of treatment.

During the first baseline condition an average of 66% (8.3/12.5) of those residents present during the activity period participated either marginally or actively, whereas 95% (18.3/19.3) participated during the first treatment. Total participation was 91% (11.8/13.0) during the second baseline and 96% (19.0/19.8) during the second treatment phase.

DISCUSSION

The study's principal contribution was evaluating the efficacy of a relatively simple stimulus control technique in increasing attendance, interaction, and participation in a nursing home. The results indicate that important dimensions of some residents' involvement in a nursing home can be influenced by engineering in strategic environmental facilitators and supports.

More than likely, the availability of free reinforcers (coffee and cookies) motivated some of the residents to enter the lounge, thereby in-

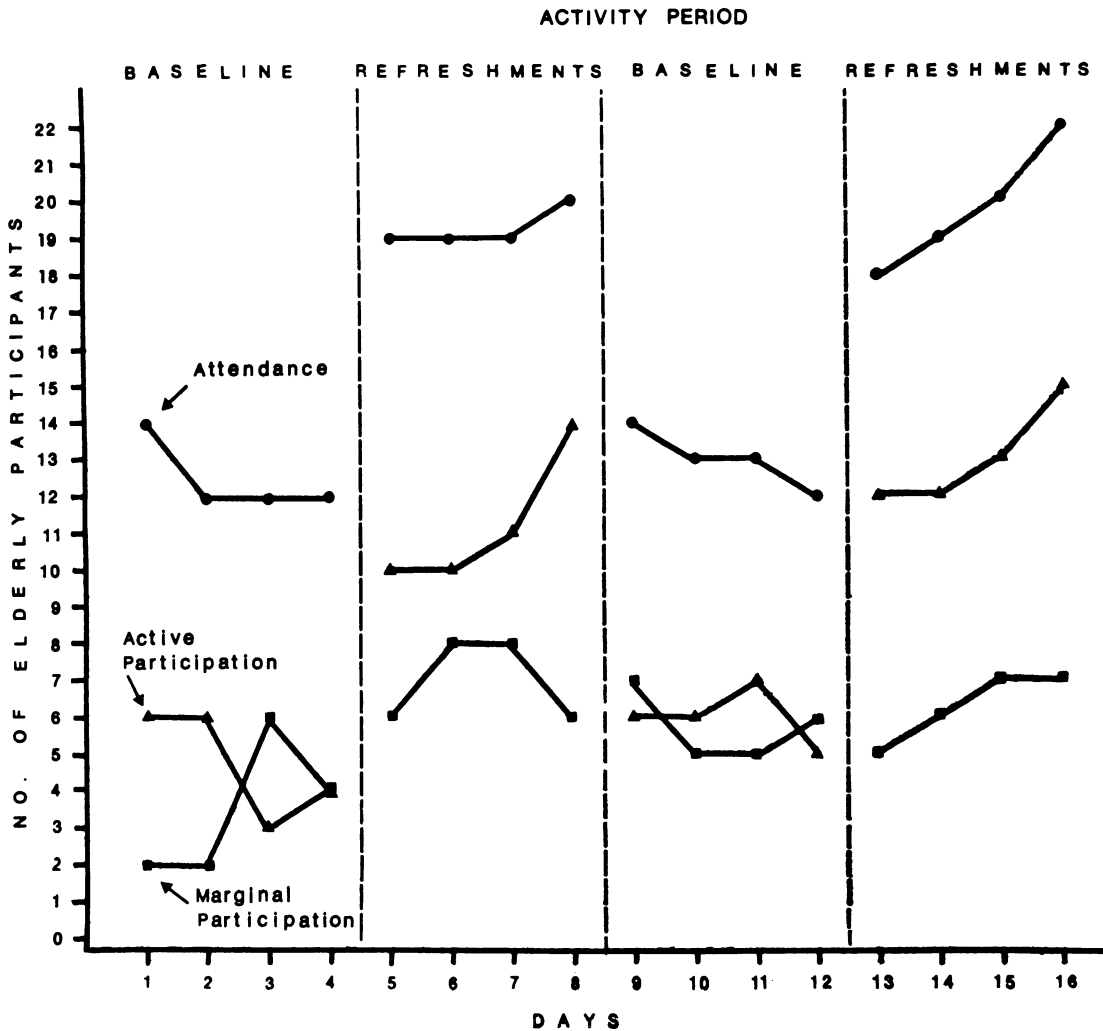


Fig. 2. Attendance and participation in exercise period during baseline and refreshment phases.

creasing attendance. The refreshments also provided a catalyst for improving the psychological sense of community (Sarason, 1974). Several residents mentioned that they enjoyed being in the lounge even though they did not drink any coffee or eat cookies. One woman mentioned that although she did not drink coffee, she held a half-filled cup in order to be part of the group. Several other women began serving those residents who were physically unable to serve themselves. One particular woman resident who greatly enjoyed helping others frequently walked to the nursing station and informed the aides of the good time she had, especially serving the men coffee. These observations suggest that the provision of refreshments represented an environmental support facilitating social activities and altruistic behaviors.

Positive generalization effects, increases in attendance and participation during the activity period, were also observed with introduction of the treatment phase. Attendance increases are understandable, given the larger number of residents in the lounge prior to the beginning of the activity period. Increases in total participation, from 66% to 95%, are more difficult to explain. Several residents were quite pleased that attendance and participation had increased, and proceeded to count the number attending the session and inform the others. This suggests that a group spirit among residents was developing, and this might have precipitated more participation. Alternatively, more residents might have become involved in exercises as an expression of gratitude for the free refreshments. When refreshments were terminated during the

second baseline, fewer residents came to the lounge; however, total levels of participation remained high.

There were several methodological flaws in the experiments. For example, the study would have profited from more sensitive measures of social interactions and participation (e.g., continuous interval or more frequent momentary time samples). In addition, brevity of experimental phases makes it difficult to preclude the possibility that the effects were due to novelty. However, four months after the study ended, the staff informed the investigators that refreshment procedures were still being implemented, and residents continued to respond positively.

#### REFERENCES

- Chapanis, A. Human engineering environments for the aged. *The Gerontologist*, 1974, **14**, 228-235.
- Havighurst, R. J. The status of research in applied social gerontology. *The Gerontologist*, 1969, **9**, 1-90.
- Hoyer, W. J., Mishara, B. L., & Riebel, R. G. Applications with elderly individuals. *The Gerontologist*, 1975, **15**, 452-456.
- Luis, R. S. How the coffee break can help withdrawn patients. *Geriatric Care*, 1977, **9**, 3-4.
- McClannahan, L. E., & Risley, T. R. Design of living environments for nursing home residents; recruiting attendance at activities. *The Gerontologist*, 1974, **14**, 236-240.
- Sarason, S. B. *The psychological sense of community*. San Francisco: Jossey-Bass, 1974.
- Schwartz, A. N., & Propp, H. G. Toward person/environment transactional research in aging. *The Gerontologist*, 1970, **10**, 228-232.

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