Effects of a Leisure Education Program on Activity Involvement and Social Interaction of Mentally Retarded Persons

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A 9-week leisure education program to increase activity involvement and social interaction of institutionalized mentally retarded adults was investigated. A disproportional stratified (by residential unit) random sampling technique was employed to select 40 subjects from a total population of 243 mentally retarded persons. Subjects were randomly assigned to treatment and control groups. The hypotheses were that there would be no significant increase in activity involvement or social interaction of the subjects who participated in the treatment. Four ANCOVAs were conducted utilizing frequency and duration as the dependent variables for both social interaction and activity involvement. Length of institutionalization was the covariate. The grouping variables were treatment/control and level of retardation. The findings revealed the treatment had a significant effect only on frequency of activity involvement.

Mentally retarded persons in general exhibit difficulty in reaching an optimal level of leisure functioning. Their play behaviors often differ from those of peers their age. Much of this is due to delays in attaining social behaviors generally accepted as normal. Lack of appropriate social skills often leads to isolation and an inability to function successfully (O'Morrow, 1980).

Recognizing the severity of this problem, investigators have studied a variety of methods to enhance the social skills of mentally retarded persons. Whitman, Mercurio, and Caponigri (1970) taught two severely mentally retarded children to pass a ball back and forth using M&M candy as reinforcers. Knapczyk and Yoppi (1975) implemented a sophisticated behavior management program with five mildly mentally retarded children to stimulate cooperative and competitive play behaviors. The researchers were successful in increasing the desired behavior when using a point system, but reverting to pretreatment conditions caused the children to return to the initial level of cooperation and competitive play. Mithaug and Wolfe (1976) used puzzles to investigate social interactions. It was necessary for the subjects to communicate with each other to complete the puzzle. The authors found that as task interdependence increased, level of social interaction and verbalization increased.

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Working with socially withdrawn mentally retarded children, Morris and Dolker (1974) compared three approaches to the development of cooperative play. Subjects were grouped by pairing high and low interactive children, low and low interactive children, and a no-treatment group. They found that pairing a high interactive and low interactive child, using shaping procedures and immediate reinforcement of modeling behavior, produced the highest frequency of cooperative play. Quilitch and Risley (1973) investigated the effect of various toys on the social play of children. The investigators found that certain toys were social in nature and increased social play while others were isolate, decreasing social play. Mayhew, Enyart, and Anderson (1978) found that if staff members in the dayroom of an institution for mentally retarded persons encouraged and reinforced social behavior each time it was observed, the social behavior increased. The researchers concluded that social behavior can be facilitated by manipulating environmental contingencies.

Clearly the literature reflects a diversity of methods to aid in development, improvement, and maintenance of social interaction of mentally retarded persons. Also, it has been suggested that carefully planned recreation programs can effectively enhance the social interaction of mentally retarded persons (Kraus, 1978; O'Morrow, 1980; Wehman & Schleien, 1981). Although the field of recreation places a primary emphasis on socialization and social skill development, research in this area is inconclusive.

Specifically, Anderson, Grossman, and Finch (1983) found that a systematically designed recreation program did not significantly increase the number or quality of social interactions of residential mentally retarded adults. One of the points addressed in the researchers' discussion was that although the designed recreation program was appropriate to create a carry-over effect, subjects immediately returned to the preprogram activity in the dayroom environment in which no activities were planned or implemented. Thus the subjects did not exhibit an ability to initiate interactions without continued intervention. Apparently, then, the mentally retarded population studied did not maintain their recreation involvement because they did not learn why, how, and where to recreate. On the basis of this conclusion it seemed appropriate to the researchers to implement a leisure education program. They reasoned that if mentally retarded persons developed a greater awareness of leisure time, skills, and resources, they may display more initiative and increase their activity involvement, and hence their social interaction skills.

Joswiak (1979) developed a leisure counseling program for mentally retarded persons based on the concept that it "can help them assume to some degree the responsibility for their own leisure" (p. 2). After pilot testing the materials, Joswiak observed through nondata-based evaluation:

[developmentally disabled persons] can, to some extent, develop a greater awareness of leisure, of the meaning of free time and play, and of leisure resources in the home and community. Clients do learn of leisure resources and do begin to engage in or request varied activities utilizing these resources. (p. 2)

"Evaluation of the pilot test revealed that these leisure counseling materials appear to be effective with both the trainable and educable mentally retarded" (p. 3). Given Joswiak's success with the trainable and educable mentally retarded, the present investigations queried

In a later publication, Chinn and Joswiak (1981) stated, "One of the co-authors, responsible for writing a book on leisure counseling, now submits that leisure education would more appropriately describe that publication. The processes utilized are primarily educational in nature, with some counseling application." The term leisure education was used throughout the study and is used in this paper.
possible implementation with severely and profoundly retarded residents. Although Joswiak did not address the lower functioning mentally retarded, it is suggested that they demonstrate the same needs and experience similar leisure related behavior problems. Therefore, the purpose of this study was to explore the utility of Joswiak’s leisure education program as a treatment for increasing activity involvement and social interaction of all functioning levels of mentally retarded persons. Specifically, the research questioned whether there would be a significant increase in the subjects’ frequency or duration of activity and/or social interaction involvement following participation in Joswiak’s leisure education program.

Method

Subjects

The study was conducted at a state residential facility for mentally retarded persons. A disproportional stratified (by residential unit) random sampling technique was employed to select 40 subjects from seven residential units with a total population of 243 mentally retarded persons. The subjects’ ages ranged from 13 to 64 years, with a mean of 35 years. Of the subjects, 32 (80%) were male and 8 (20%) were female. They had been institutionalized between 1 and 43 years, with a mean of 19 years, 8 months. Twenty-one (53%) of the subjects had attended school for an average of 3 years, 5 months. All the subjects had been diagnosed as mentally retarded. Seven (17%) of the subjects were classified as educable; 8 (20%) were classified as trainable; 23 (58%) were classified as severe/profound; and 2 (5%) were indetermined. The two major secondary diagnoses were seizures, involving 9 (23%) of the subjects, and psychotic disorders, involving 8 (20%) of the residents. A major disabling condition found among the 40 subjects was communication problems. Hearing impairments afflicted 11 (28%), while 24 (60%) had expressive problems and 16 (40%) were nonverbal.

Instrumentation

In reviewing the literature on social interaction observation techniques, frequency count and duration recording were most commonly used (Berry & Marshall, 1978; Favell & Cannon, 1976; Keller & Carlson, 1974; Knapczyk & Yoppi, 1975; Mithaug & Wolfe, 1976). Levy (1982) cites the ease of collection in an unobtrusive manner as the major advantage of frequency counts. Additionally, fluctuations in frequency are more clearly observed than changes in duration. However, the purpose of the study determines which measure is germane. Considering the goals of the present study and uniqueness of frequency and duration, the authors decided that both elements should be observed. An instrument used by Anderson et al. (1983) to record both frequency and duration of social interactions was adopted for the present study. Frequency was calculated for independent occurrences of each behavior, and duration was measured in seconds of time for each independent occurrence.

Furthermore, data on activity involvement were deemed important. Using Johnson’s (1975) procedure, residents were observed and activities in which they participated most frequently were identified. Twenty-two free-time activities were identified from a pilot.

Further details may be obtained from the first author.
Table 1
Social Interaction Categories and Activity Involvements

<table>
<thead>
<tr>
<th>Social Interactions</th>
<th>Activity Involvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gives assistance</td>
<td>Arts/crafts</td>
</tr>
<tr>
<td>Greets</td>
<td>Assisting others</td>
</tr>
<tr>
<td>Commands/requests</td>
<td>Basketball</td>
</tr>
<tr>
<td>Giving information</td>
<td>Billiards</td>
</tr>
<tr>
<td>Shows affection</td>
<td>Cards</td>
</tr>
<tr>
<td>Taking turns</td>
<td>Dancing</td>
</tr>
<tr>
<td>Asks for information</td>
<td>Exercycle</td>
</tr>
<tr>
<td></td>
<td>Games</td>
</tr>
<tr>
<td></td>
<td>Writing letters</td>
</tr>
<tr>
<td></td>
<td>Looking out window</td>
</tr>
<tr>
<td></td>
<td>Looking at photographs</td>
</tr>
</tbody>
</table>

A blank space was provided for "other" activities which may not be as common. This instrument enabled the authors to record both frequency and duration of activity involvement.

The instruments were piloted with 8 subjects and adjustments were made accordingly. One change included combining the two instruments (social interaction and activity involvement) to improve observer accuracy. Also, a formal check was conducted to determine interobserver reliability for the two trained observers. The correlation coefficient for a group of 8 subjects equaled 0.95 for frequency, 0.99 for duration of social interaction, and 1.00 for activity involvement, on both frequency and duration of involvement.

Experimental Procedures

A baseline of social interactions and activity involvements was established by observing the 40 subjects. The subjects were divided randomly into two equal groups and each group was assigned to one of the two trained observers. Observations were recorded for two 15-minute periods for each subject. Short time samplings of behavior have been used in several studies involving severe/profoundly retarded adults (Landesman-Dwyer, Stein, & Sackett, 1978; Mansell, Felce, DeKock, & Jenkins, 1982; Mansell, Jenkins, Felce, & DeKock, 1984). The first 15-minute period was on the first day of observation and the second period was on the following day. The order in which subjects were observed on the first day was reversed on the second. Thus if a subject was observed first on Thursday, he or she would be observed last on Friday. The reason for this was to obtain a more
accurate sample of the subject’s behavior pattern as suggested in the literature (Beveridge & Berry, 1977). Frequency and duration of social interactions and activity involvements with staff members and peers were recorded. The average of the two observations was calculated for all 40 subjects.

Using a pre/posttest control group design, subjects were randomly assigned to control and treatment groups. Members of the control group followed their regular daily routine with assurance of nonparticipation in the treatment. Members of the treatment group participated in Joswiak’s leisure education program in addition to their regular daily schedule. The treatment program was systematically developed to ensure accountability. Three terminal performance objectives formed the overall goals of the program. These objectives were further divided into enabling objectives. Each enabling objective had a minimum of one corresponding leisure education activity which was designed to enhance achievement of that objective. The activities provided the outlines for instruction, teaching techniques, supplemental material, and other suggestions. Either one or two activities comprised a single leisure education session. The program consisted of 18 total sessions, 2 per week for 9 weeks. Each session was approximately 1 hour and 20 minutes long.

Joswiak’s program was conducted as it was written, including following the provided directions. The purpose of the program was to shape independent leisure behaviors. The following procedures were carried out: Each Friday one of the authors met with seven rehabilitation therapists (RTs) for 2 hours to provide in-service training on implementation of the leisure education program. Two of the 18 sessions were discussed in detail on each Friday with the RTs. In the week following each meeting, the RTs implemented the two sessions discussed. Six of the RTs worked with 3 subjects each while the seventh RT was assigned 2 subjects.

The RTs used guided discovery and role play techniques, and reinforced subjects for positive responses. While meeting with the subjects 2 days per week, the RTs used a pictorial leisure resource bulletin board to discuss leisure opportunities. They encouraged, frequently assigned, and participated with the subjects in leisure activities. Awareness and identification of both personal and institutional leisure resources were a focal point of the education process. Specifically, the subjects were taught to share personal leisure resources and how to obtain information about leisure sources. Skill development and transportation received significant attention. Some of the skills taught were: individual and group activities such as sewing, walks, and field trips; table games involving puzzles, coloring, and building blocks; active games like softball, basketball, bowling, and bean bag toss; and the use of playground equipment. (For detailed explanation of the Leisure Education Program, refer to Joswiak, 1979.)

At the end of the 9-week treatment period, posttesting was conducted on all 40 subjects by the original observers. They observed their same 20 subjects as in the baseline, under identical conditions.

**Results**

A two factorial analysis of covariance (ANCOVA) for repeated measures (pre/posttesting) was used to analyze the effects of the leisure education program on activity involvement and social interaction of the residents. Length of institutionalization was included as a covariate. Since the authors were interested in analyzing each behavioral area independently, changes in frequency or duration of activity involvement and social interaction were analyzed.
using four separate ANCOVAs, one for each behavioral area. The two grouping variables were treatment/control groups, and level of retardation (educable, trainable, and severe/profound). Tables 2 and 3 present the mean scores and standard deviations, by levels of mental retardation, for activity involvement and social interaction, respectively.

Initially, an ANCOVA was conducted for frequency of activity involvement. Length of institutionalization was found to be nonsignificant. Thereafter, the analysis was then conducted without the covariate. The findings revealed nonsignificant main effects and only one significant interaction effect, $F(1, 32) = 3.85, p < .10$, which was between pre- and posttesting across the treatment and control groups. Because of the exploratory nature of this study, the authors chose to use a more liberal significance level to reveal potential trends in the data which could provide the basis for future investigation. This finding indicates the leisure education program had a significant effect on the activity involvement of the treatment group. Figure 1 reveals that the average frequency of activity involvement for the treatment group increased from 1.57 to 2.90 occurrences while the average frequency of involvement for the control group decreased from 1.98 to 1.73 occurrences. Further, since the main effects and remaining interaction effects were nonsignificant, the program effects were not materially different for the three levels of mental retardation.

The findings relating to the effects of the leisure education program on the subjects’ duration of activity involvement were quite different. After controlling for the effect of length of institutionalization, the only significant main effect was for level of retardation, $F(2, 31) = 5.72, p < .05$. This indicates that the leisure education program had no effect on the treatment group, but when the scores were pooled across treatment/control groups and pre/posttesting the duration scores for the three levels of retardation were significantly different. Post hoc comparisons involving the three levels of retardation reveal-

![Figure 1— Interaction between pre- and posttesting across treatment and control groups.](image-url)
### Table 2
Means and Standard Deviations for Activity Involvement

<table>
<thead>
<tr>
<th></th>
<th>Educable</th>
<th>Treatment</th>
<th>Sev/Pro</th>
<th>Educable</th>
<th>Control</th>
<th>Sev/Pro</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>2.50</td>
<td>1.32</td>
<td>1.00</td>
<td>.92</td>
<td>1.75</td>
<td>2.80</td>
</tr>
<tr>
<td>Duration</td>
<td>809.33</td>
<td>172.86</td>
<td>163.83</td>
<td>286.65</td>
<td>467.75</td>
<td>373.20</td>
</tr>
<tr>
<td>Frequency</td>
<td>3.33</td>
<td>2.57</td>
<td>3.67</td>
<td>1.69</td>
<td>1.50</td>
<td>2.60</td>
</tr>
<tr>
<td>Post</td>
<td>536.16</td>
<td>141.10</td>
<td>272.16</td>
<td>258.77</td>
<td>472.00</td>
<td>527.30</td>
</tr>
<tr>
<td>Duration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1Independent occurrences
2Duration in seconds

### Table 3
Means and Standard Deviations for Social Interaction

<table>
<thead>
<tr>
<th></th>
<th>Educable</th>
<th>Treatment</th>
<th>Sev/Pro</th>
<th>Educable</th>
<th>Control</th>
<th>Sev/Pro</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>2.93</td>
<td>2.32</td>
<td>1.83</td>
<td>2.69</td>
<td>2.25</td>
<td>2.30</td>
</tr>
<tr>
<td>Duration</td>
<td>37.83</td>
<td>41.95</td>
<td>28.00</td>
<td>45.27</td>
<td>22.50</td>
<td>108.90</td>
</tr>
<tr>
<td>Frequency</td>
<td>2.00</td>
<td>1.80</td>
<td>2.33</td>
<td>2.15</td>
<td>4.00</td>
<td>3.80</td>
</tr>
<tr>
<td>Post</td>
<td>4.67</td>
<td>4.16</td>
<td>18.83</td>
<td>58.08</td>
<td>103.37</td>
<td>88.50</td>
</tr>
<tr>
<td>Duration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Independent occurrences
Duration in seconds
ed that the educable group was significantly higher in duration of activity involvement than the severe/profound group. However, there were no significant differences in duration scores among any of the other pairwise comparisons.

The results of the ANCOVA for frequency of social interaction, controlling for length of institutionalization, revealed no significant differences. This indicates the effects of the leisure education program are independent of the frequency of social interaction behaviors. Also, frequency of social interaction appears not to be affected by level of retardation. However, after controlling for length of institutionalization there was a significant interaction effect, \( F(2, 31) = 2.61, p < .10 \), among the three levels of retardation across treatment and control groups for one's duration of social interaction. This finding has little importance since neither the main effects for pre/posttesting nor the interaction effect between pre/posttesting and treatment/control groups were significant. Figure 2 plots the averages for duration scores pooling across pre- and posttesting. Post hoc comparisons revealed that there were no significant differences in duration scores at any of the three levels of retardation even though the interaction effect was significant. These findings may be an artifact of the limited power of post hoc comparisons combined with the relative heterogeneity of individuals within each level of retardation.

Overall, the findings of the four analyses suggest the leisure education program had (a) a positive effect on frequency of activity involvement, (b) no effect upon duration of activity involvement, but duration of involvement was significantly affected by level of retardation, (c) no effect upon the frequency of social interaction, and (d) no effect on the duration of social interaction.

![Figure 2 — Interaction among levels of retardation across treatment and control groups (adjusted means).](image-url)
Discussion

The findings of this study reveal Joswiak’s leisure education program has a differential effect on the behavior of mentally retarded persons. The program appears to enhance frequency of activity involvement but has little effect on the three other behavior areas investigated in this study. Joswiak’s program emphasizes a greater awareness of leisure resources in a group home or other residential settings; therefore, it does not seem unusual that the treatment had a significant effect on activity involvement. The findings suggest involvement may increase in relation to the client’s level of awareness of opportunities. Also, of the four behavioral areas investigated, it seems that frequency of activity involvement may be the easiest to enhance. Activity involvement does not necessarily require any increase of social skills or attention span, as would be the case with the remaining three areas of behavior. Further, since social skills and attention span are thought to be more difficult areas to affect, the 24 hours of leisure education provided in this study may have been insufficient to change these behavior patterns. In summary, the value of Joswiak’s leisure education program for severe/profoundly mentally retarded persons may be its ability to assist them in increasing their frequency of activity involvement. However, it is believed that this outcome is meritorious in and of itself.

In consideration of these points, four recommendations that may increase the effectiveness of Joswiak’s program in enhancing social interaction skills are suggested. First, more emphasis should be placed upon conducting activities in the training sessions which directly address social skills development. Second, the overall length of the training should be increased substantially from the 24 hours conducted in this study. Third, since the level of retardation was significantly related to duration of activity involvement, professionals using the leisure education program should take this into account when developing their objectives for such a program. Finally, planned intervention following the education program appears to be essential. Cartagena (1980) substantiates this recommendation in her study where she found mentally retarded adults did not initiate or maintain recreation involvement without assistance of the staff, even after completing a leisure education program.

References


