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Evaluating and increasing in-home leisure activity among adults with severe disabilities in supported independent living

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Abstract

Observations were conducted of the in-home leisure activity of three adults with severe disabilities in three supported independent living (SIL) sites. Results indicated a lack of leisure engagement. Potentially preferred, typical leisure activities were then identified by consulting lists of common leisure activities, surveying adults in surrounding communities, and interviewing support staff and family members. Next, in-home staffs were trained to provide the identified leisure activities in a repeated, paired-choice manner. Results indicated increased leisure engagement for each participant when staff provided leisure choices along with brief prompting. Social validation surveys suggested the choice procedures were well received by the staff and participants. Comparison observations of nine adults in other SIL arrangements in two states indicated the low levels of engagement initially observed in the three target homes may be quite common among people with severe disabilities in SIL. Results are discussed regarding use of behavioral procedures to evaluate and improve aspects of quality of life in SIL. Future research needs noted focus on how to impact staff performance and consumer lifestyles in residential settings in which supervision is infrequent.

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A continuing emphasis within the developmental disabilities field is supporting people with disabilities to live in typical residences and communities. For many adults with severe disabilities, the most typical and least restrictive living arrangement possible is likely to be supported independent living (SIL) (Clees, 1996). In SIL, a person usually resides individually in a home or apartment, or with a maximum of two other individuals with disabilities, and the support of in-home staff (Howe, Horner, & Newton, 1998).

The availability of SIL has been increasing at an accelerating rate in the United States (Polister, Lakin, Smith, Prouty, & Smith, 2002). This type of living arrangement is largely viewed as having important benefits for the quality of life of adults with severe disabilities relative to more traditional, congregate- and facility-based living arrangements in which larger numbers of individuals with disabilities reside (Karan & Bothwell, 1997; O'Brien, 1994). Noted benefits include, for example, greater autonomy in lifestyle choices and increased community involvement. These and related benefits have been supported through anecdotal reports (Karan & Bothwell, 1997) as well as a growing amount of empirical research (e.g., Conroy, 1996; Howe et al., 1998). Still though, the SIL movement appears driven more by values than by supportive research, with calls to more closely examine the impact of this type of living arrangement (Harchik & Campbell, 1998; Karan & Bothwell, 1997).

One component of SIL that warrants research attention is the in-home leisure activity of adults with severe disabilities. The importance of leisure activity in general on quality of life among people with disabilities is well accepted (Hawkins, 1997; O'Reilly, Lancioni, & Kierans, 2000). To date, however, research on leisure among people in SIL has focused on activity that occurs outside of the home, with intent to evaluate and/or enhance community-integrated leisure activity (Clees, 1996; Howe et al., 1998). Little attention has been directed to what adults with severe disabilities residing in SIL do with their leisure time, while at home.

Increased research attention seems warranted specifically on in-home leisure activity within SIL for several reasons. In particular, the importance of in-home leisure activity on the quality of an individual's overall leisure time is well recognized (Hawkins, 1997). However, promoting desirable leisure activity among adults with severe disabilities in residential settings has been difficult historically. Observations in community residences of a congregate nature have indicated that individuals with severe disabilities often spend upwards of 75% of leisure time with no-apparent activity or engaging in inappropriate behavior (Felce, 1991). Observational studies in institutional settings likewise have indicated that during daily leisure periods, on average at least 65% of individuals typically are engaged in no-recognizable leisure activity beyond sitting, lying down, or wandering around (Parsons, Cash, & Reid, 1989; Reid & Parsons, 1989).

Another reason attention seems needed on in-home leisure activity in SIL pertains to staffing issues. Increasing leisure activity in congregate residences as just referred to usually requires training of support staff in specific ways of promoting activity involvement (Sturme, 1995). In SIL support staff often have minimal training to perform their duties (Bradley, Taylor, Mulkern, & Leff, 1997). Relatedly, new and inexperienced staffs frequently are present due to high staff turnover (Bradley et al., 1997).

When considering the historical difficulty in promoting in-home leisure activity among adults with severe disabilities, and frequent problems with staff issues within SIL, it seems feasible that consumer leisure activity may be a concern in the latter settings. Correspondingly, interventions may be needed to enhance leisure engagement. If specific actions are warranted to promote leisure activity, it is important to ensure that the essence of leisure is maintained within the interventions in terms of respecting individual choice about how to spend one's leisure time (Hawkins, 1997).

The purpose of this study was to evaluate and increase in-home leisure activity of adults with severe disabilities in SIL. In accordance with the commonly accepted concept of leisure as just noted, attempts to increase leisure activity included individual choices regarding potentially preferred leisure activities.

1. Method

1.1. Setting and participants

The primary setting was three community residences in a Southern city. Participant CJ resided by himself in a house in a residential neighborhood, participant Lloyd lived with a roommate in an apartment in an apartment complex, and participant Noel lived by herself in an apartment in a different complex. Each participant received 24 h SIL services through the Medicaid Home and Community-Based Services waiver program (Walsh, Kastner, & Green, 2003) that provided a staff member in each residence. The waiver program services were administered through a different agency for each participant such that the responsibility for providing and overseeing the services was administered by three respective agencies. All experimental procedures took place within the typically furnished living rooms, dining rooms, and/or bedrooms of the participants.

CJ, Lloyd, and Noel were 25, 37, and 29 years of age, respectively. Each individual had significant support needs secondary to severe cognitive-, mobility- and communication-related disabilities. Each participant used a wheelchair for mobility and each required staff assistance to complete basic self-care routines. All three individuals had restricted upper body movements. CJ and Noel used gestures and brief vocalizations to communicate, and Lloyd communicated vocally although his articulation was poor. Each participant could respond to choice presentations by support staff through vocalizing, pointing, touching items or pushing items away (CJ), vocalizing, nodding or eye gaze (Lloyd), and reaching and grasping items, pushing items away or turning away with head movements (Noel). These individuals were selected for the investigation, because they each had severe disabilities and resided in a SIL arrangement. Additionally, administrators from the three agencies that were responsible for providing the waiver program supports agreed when contacted by an experimenter for the investigation to be conducted (no-agency representative that was contacted refused to allow participation).

For each participant, there was always one direct support staff present in the home during the study, although a different staff person may have been present across observations. For CJ, a total of three staff were present across observations, for Lloyd, the same staff person was present during all observations and for Noel, two staff were present

across different observations. These staff carried out all intervention procedures once trained by the experimenters. All staff were women and all had a high school education. One woman had 7 years of experience as a direct support staff person, one had 5 years experience, and the remainder had less than 2 years of experience.

1.2. Identification of potentially preferred leisure materials and activities

Because the benefits of providing choices of activities is generally considered to be enhanced if the choices involve preferred things to do (see Lancioni, O'Reilly, & Emerson, 1996, for a review of relevant research), several steps were conducted prior to implementing baseline observations to identify potentially preferred leisure materials and related activities to eventually include within staff choice presentations. Initially, an open-ended interview was conducted with each participant and the staff who provided in-home support. Interviews were conducted with four, two, and three support staff, respectively, for CJ, Lloyd, and Noel. CJ's mother and stepfather also participated in his interview. The interview involved an experimenter questioning what each participant enjoyed doing during leisure time.

Because the open-ended interview failed to identify very many potentially preferred leisure activities and materials (e.g., television watching was the only leisure activity reported as preferred for two participants), a more structured-interview procedure subsequently was devised (cf. Fisher, Piazza, Bowman, & Amari, 1996). The structured-interview incorporated additional leisure activities and materials drawn from lists of common in-home leisure pursuits among people in typical community residences (e.g., Wilcox & Bellamy, 1987). The structured-interview also incorporated results of a survey of 25 nondisabled adults that requested respondents to name the five in-home leisure activities in which they most frequently engaged. Based on information from these two sources, a list of potentially preferred leisure materials and activities was compiled, including items nominated during the initial open-ended interview (range of 24–29 listings across participants). Support staff and family members were then re-interviewed using the new list of materials and activities. An experimenter read each item on the list aloud and asked respondents to indicate whether they had either seen the participant use the material or engage in the activity or thought the participant might enjoy using the material or engaging in the activity. For each participant, materials and activities named by more than one person during the structured-interview were included in the list of potentially preferred leisure materials and activities to be presented. Additionally, because only three materials and activities were identified through this process for Noel, a vibrating ink-pen and paper were added to her pool of leisure materials and activities based on reports from Noel's staff that she enjoyed things that vibrated. The resulting list of potentially preferred materials for each participant is provided in Table 1.

1.3. Behavior definitions and observation system

The primary target behavior was participant leisure engagement. Secondary, target behaviors included support staff choice presentations and participant response to the choice opportunities. Leisure engagement was defined to include motor movement, commu-

Table 1
Materials Presented for systematic choice presentations

| Participant | Materials |
|-------------|---|
| CJ | Darts, books, keyboard, handheld video game, radio, electric drumstick |
| Lloyd | Trouble [®] , Yahtzee [®] , Uno [®] , books, radio |
| Noel | Vibrating pen and paper, Trouble [®] , books, electric dart board |

nication, and/or attending, while turn-taking related to a leisure activity. Engagement resulting from motor movement involved manipulation of a leisure material (e.g., turning pages in a magazine) or movement related to a specific-leisure activity (e.g., clapping hands, while music was playing). For manipulation of a leisure material to be considered engagement, the material had to be manipulated in the manner in which it was intended to be manipulated by design (e.g., stereotypic behavior with a leisure item was not considered engagement). Watching television was considered engagement only when there was observable motor movement associated with the activity such as using the remote to adjust the volume or change channels or the television was tuned to a channel playing music and the participant was making motor movements such as clapping, singing or rocking in apparent correspondence to the music. Engagement resulting from communication occurred when a participant vocally or gesturally interacted with another person regarding a leisure material or activity present or looked at another person who was talking to him/her about a leisure material or activity. Engagement resulting from attending, while turn-taking was recorded when the participant looked at another person doing something related to a leisure material or activity or the leisure material itself, while waiting to take a turn such as when throwing darts with another person.

Staff leisure choice presentations were defined in accordance with recommended ways to provide choices to people with severe disabilities as described in the American Association on Mental Retardation *Positive Behavior Support Training Curriculum* (Reid, Parsons, Rotholz, Braswell, & Morris, 2004). Specifically, a choice presentation was defined as a support staff providing an open-ended vocal choice, a specific-vocal choice or an object choice. An open-ended vocal choice consisted of the support staff posing a choice by asking an open-ended question (e.g., “What do you want to do?”). Specific-vocal choices included questions that named at least two leisure material and/or activity choice options such as, “Do you want to read magazines or play cards?” Object choices occurred when a support staff provided choices by showing the participant two or more objects representing the choice (e.g., “Do you want to look at the magazine or play cards?”, while showing the participant a magazine and cards).

Two categories of participant choice were defined, based a participant’s response to a staff choice presentation: affirmative choice and no-choice. An affirmative response to the choice presentation was recorded if the participant indicated a choice by vocalizing about a choice offered in a vocal choice presentation or by vocalizing about, pointing to, touching or looking at (for at least 3 s) an object presented in an object choice. An affirmative response was coded only during the observation interval (see next section) in which the choice was provided or the next observation interval. A no-choice response was recorded, if within the interval the choice was provided, and the subsequent interval, the participant did not respond to a choice opportunity in a manner as just described.

Observations were conducted during periods of at least 40 min, during which no activities of daily living (e.g., self-care, home maintenance), medical or related procedures (e.g., a physical therapy session) or formal teaching sessions were scheduled. Observation sessions involved a minimum of one and a maximum of three, 10 min observations per session, depending on a participant's existing daily schedule. There was an average of 2.6, 10-min observations per participant, for each observation session throughout the investigation (range of 2.1–2.9 across participants). Each 10-min observation was separated by a 5 min pause. A continuous 20 s, partial-interval process was used within each 10 min observation. Observation sessions typically occurred on average of once per week per participant, with a range of 0–3 sessions per week.

Observers included one experimenter and three assistants. Observer training included instructions, role-playing with feedback, and practice observations of a videotape depicting a simulation of an individual demonstrating the target behaviors within the context of in-home leisure. Approximately, one-third of the way through the investigation, an additional observer was trained using the same definitions, instruction, videotape, etc., as a control against observer drift (Bailey & Burch, 2002, Chapter 5).

Interobserver agreement checks occurred during 36% of all sessions, including each experimental condition for each participant. Interobserver agreement was calculated interval-by-interval by dividing the number of agreements by number of agreements plus disagreements, multiplied by 100%. For leisure engagement, overall agreement averaged 95% (range 91–99%), occurrence agreement averaged 85% (range 77–92%), and nonoccurrence averaged 95% (range 90–99%). Respective averages for staff choice presentations were 99% (range 98–100%), 73% (range 62–100%), and 99% (range 98–100%). For affirmative response by participants to choices offered by staff, respective averages were 99% (range 98–100%), 68% (range 59–100%), and 99% (range 98–100%). The no-choice response category was only recorded for Noel during interobserver agreement checks, and all agreement figures were 100%.

1.4. Experimental conditions

1.4.1. Baseline

Observations were conducted in the homes of participants during naturally occurring leisure times (e.g., late afternoon) as described earlier. After initially greeting the participant and the direct support worker upon entering a home, the observer positioned him/herself as unobtrusively as possible, and then completed the observation. Observations continued for the three, 10 min periods as described earlier or until an activity of daily living, medical or related therapeutic procedure, or structured-teaching session was scheduled to occur. There was no further interaction with the participant or direct support worker until the observation was complete. At that point, the observer thanked the individuals for allowing the observation or provided a similar departing comment. Throughout the observations, engagement was recorded as defined earlier along with the other target behaviors. Engagement could involve any material or activity as previously described, not just engagement involving the specified, potentially preferred materials.

During baseline, no feedback was provided regarding the focus of the observation. Staff were familiar with the observer due to the previous interactions regarding the interview

processes for selecting leisure materials and activities or were introduced to the observer if there had not been a previous introduction such as during the first time an observer was present for reliability purposes. Staff were aware on what day(s) of a given week an observation would occur, but were not aware of the exact time that an observer would be coming to the home other than a general reference such as during the afternoon.

1.4.2. Systematic choice presentations

The intervention consisted of staff presentation of choices of materials representing leisure activities in a paired-item manner (Fisher et al., 1992; Newton, Ard, & Horner, 1993). The materials offered for choice were drawn from the list of potentially preferred items and activities described earlier. Each direct support staff member was trained to provide choices in a paired-item manner in the respective participant's home individually by an experimenter and an assistant using instructions, role-play demonstrations, and practice with feedback. Prior to initiating training, an experimenter explained that the purpose of providing leisure materials in a paired-item, choice format was to assist participant involvement in preferred activities based on what the participant chose. Next, the assistant assumed the role of a participant and the experimenter demonstrated the procedure for presenting paired-choices in a systematic manner. The experimenter first demonstrated how to check a master list to determine, which two items to present, and which item was to be presented on the right and left side of the participant during each choice presentation. The master list of potentially preferred items had been prepared such that a participant would be provided choices of different leisure materials during the course of the leisure period if the initial choice did not result in sustained leisure engagement (see Section 3). The list also was prepared in a manner such that respective items would be presented to a participant on alternating sides across choice presentations.

Once the experimenter obtained the two items designated on the list, he modeled the procedure for beginning a paired-item choice presentation. The experimenter initiated the choice presentation by saying, "(Name), I've got some things I'd like you to check out. Take a look and see if you'd like to use one of the things I've got." When the participant was attending, the experimenter modeled presenting each item on the prescribed side of the participant's field of vision, while verbally describing the items (e.g., "Look (name) I've got a book and the dart set"). Next, the experimenter demonstrated holding or placing both items on a surface within the participant's field of vision on the prescribed side and within arm's length of the participant, while asking, "(Name), which of these items would you like?" If the participant chose an item within 3 s, the experimenter briefly described and demonstrated for the participant how to use the item and then, using a least-to-most assistive prompt process, prompted the participant to use the item. If the participant did not choose an item within 3 s of the choice presentation, the experimenter modeled removing one item (arbitrarily selected), and then briefly described and demonstrated how to manipulate the remaining item, and then prompted the participant to use the item. It was explained that demonstrating how to use an item and participant prompting should only occur when a given leisure material was provided for the first time during a respective day. For participant choices of materials that involved a turn-taking activity (e.g., an electric dart game or card game), the staff person was instructed not to prompt the participant any

further at that point, but to wait until it appeared to be the staff person's turn and then to participate in the activity.

Next, the experimenter demonstrated how to set a kitchen timer for 2 min. When the timer sounded the experimenter demonstrated checking to see if the participant was engaging in an activity with the chosen item, and recording on the master list whether or not the participant was engaged at the end of the 2 min interval. If the participant was engaged when the timer sounded, the experimenter reset the timer for an additional 2 min and waited until the end of the next interval. This procedure continued until the participant was observed not to be engaged with the item at the time the 2 min timer sounded. At that point, the experimenter modeled recording the lack of engagement and checking the master list to determine the next two items, and their location, to be presented for the next choice. This procedure was repeated until three choice presentations had been modeled by the experimenter.

After the process just described, the staff member was asked to assume the role of choice provider, while an assistant assumed the role of the participant. The experimenter observed and provided feedback to the staff person. This procedure continued until the staff person proficiently demonstrated all the steps involved in providing repeated choice presentations. The entire training process was completed in one visit to a respective participant's home, which encompassed approximately 90 min per staff member.

Following the training session, the staff member was asked to conduct the paired-item choice process whenever possible during the participant's leisure time. Observations then resumed as during baseline the next time an observer visited the participant's home. Additionally, after each observed session, brief vocal feedback was provided by the observer regarding the degree to which the staff member followed the choice presentation procedures and the participant was engaged in leisure activity relative to baseline. The procedural feedback provided to staff was based on a prepared checklist of the intervention procedures that was used to observe staff performance in providing choices.

1.5. Experimental design

The experimental design was a multiple probe across the three participants.

1.6. Social validation measures

At the completion of the study, staff were surveyed to assess their perceptions of the acceptability and effectiveness of providing systematic choices as a strategy to increase participant choice making and leisure engagement. Surveys were completed by three staff for CJ, one staff for Lloyd, and two for Noel. Respondents were asked to indicate how strongly they agreed or disagreed with the following five statements using a five-point Lickert scale (1, "disagree strongly" and 5, "agree strongly"): (a) the person I support is more actively engaged with leisure materials since I began using the choice procedure, (b) the choice procedure is very easy for me to do, (c) I enjoy doing the procedure with the person I support, (d) since I learned to do the procedure during leisure time, I am more likely to provide choices at other times during the day, and (e) the person I support appears to enjoy participating in the choice procedure.

1.7. *Evaluative comparison observations*

To assess whether the levels of in-home leisure activity initially observed within the SIL arrangements in this study might be characteristic of the levels in other such residences, comparison observations were conducted of the leisure activity of nine other adults with severe disabilities who resided in seven SIL arrangements. The residences were selected due to their focus on adults with severe disabilities, their geographical proximity to the experimenters' location, and willingness of agency executives to allow the observations to occur (no-agency representative who was contacted refused to participate). Five of the SIL arrangements were in the same state as the residences of the target participants, and two were in another Southern state. Among the nine individuals observed, two resided by themselves, two resided together with one other individual (who was not at home during the observation), and five resided in respective homes with one other roommate each. Each individual received waiver program services in the home. One observation was conducted of each individual, using the same observation system as described previously. Interobserver agreement checks were conducted on 100% of the observations. Overall agreement for leisure engagement averaged 97% (range 93–100%), occurrence averaged 79% (range 50–100%), and nonoccurrence averaged 94% (range 67–100%). For staff choice presentations and choice responses, no-observer recorded any occurrence (100% agreement on nonoccurrence).

2. Results

Throughout baseline, no-leisure engagement was observed for any of the three participants (Fig. 1). In contrast, during the choice presentation condition, each participant engaged in leisure activity during half or more of the observation intervals during each observation session, with the exception of the first session for Lloyd. Leisure engagement averaged 77% of observation intervals for CJ (range 50–99%), 69% for Lloyd (range 34–91%), and 83% (range 62–97%) for Noel during the systematic choice presentation condition. Because only three sessions were conducted with Lloyd, changes with his leisure engagement must be qualified due to the relatively small number of observations. However, for CJ and Noel – for whom continued observations were conducted – increases in leisure engagement maintained throughout the choice condition. Additionally, follow-up observations conducted over a 10-week period for CJ and a 4-week period for Noel indicated that leisure engagement maintained well above baseline levels for both participants (although Noel's engagement decreased somewhat from the average level observed during the formal choice condition). Essentially all of the observed engagement during the intervention involved the specified, preferred leisure materials (accounting for at least 97% of all engagement for each participant) in contrast to any other materials that may have been present in the home.

The changes in participant leisure engagement generally corresponded to changes in choice presentations provided by staff across experimental conditions, although the latter changes were not of the same magnitude as the changes in leisure engagement. Throughout baseline, no-choices were observed to be offered by any support staff. During the choice

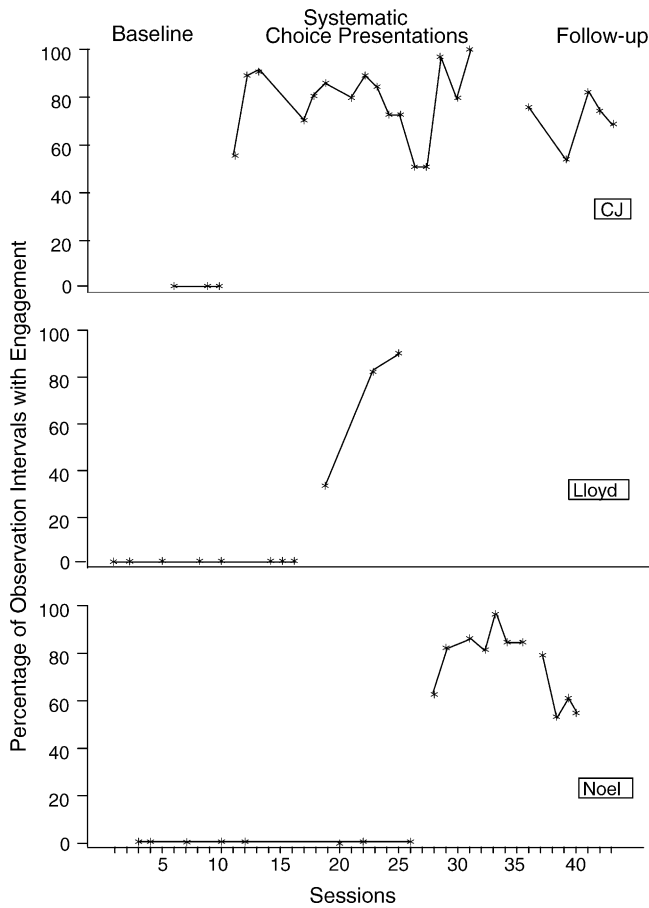


Fig. 1. Percentage of observation intervals with leisure engagement for each observation session for each experimental condition for the three participants.

presentation condition after staff were trained to provide choices in a paired-item format, staff provided choices to CJ during an average of 10% of observation intervals (range 4–23%), to Lloyd during 8% (range 3–20%), and to Noel during 8% (range 3–13%). During follow-up observations, staff provided choices during an average of 8% of observation intervals for both CJ and Noel.

Corresponding with the lack of staff choice presentations during baseline, no participant was observed to make any leisure choices during baseline. However, all participants made choices following staff choice presentations during the systematic choice condition. Participant CJ responded to 80% of all staff choice presentations during the latter condition with an affirmative choice response, and to 100% of choice presentations during follow-up observations. Lloyd responded to 90% of staff choice presentations with an affirmative choice response. Noel also responded to staff choice presentations, although not as frequently as did CJ and Lloyd. Noel responded to 27% of staff choice presentations with

Table 2

Results of evaluative comparison observations of leisure engagement of adults with severe disabilities in supported independent living

| Individuals observed | Percentage of leisure engagement |
|----------------------|----------------------------------|
| 1 | 1 |
| 2 | 3 |
| 3 | 7 |
| 4 | 8 |
| 5 | 0 |
| 6 | 7 |
| 7 | 87 |
| 8 | 13 |
| 9 | 0 |

an affirmative choice response during the systematic choice condition, and to 30% of presentations during follow-up.

2.1. Social validation measures

Responses to the social validation survey suggested that staff viewed the choice presentation process as acceptable and effective. All average rating responses were between “agree” and “agree strongly” or were “strongly agree.” Average responses to each question were (a) the person I support is more actively engaged with leisure materials since I began using the choice procedure: 4.6 (range 4–5), (b) the procedure is very easy for me to do: 5.0 (all responses were 5), (c) I enjoy doing the procedure: 4.8 (range 4–5), (d) since I learned to do the procedure during leisure time, I am more likely to provide choices at other times: 4.6 (range 4–5), and (e) the person I support appears to enjoy participating in the choice procedure: 4.6 (range 3–5).

2.2. Evaluative comparison observations

Results of the evaluative comparison observations (Table 2) indicated that for the most part, the low level of engagement observed during baseline for the target participants was representative of the levels of engagement observed among other adults with severe disabilities in SIL. For four individuals observed, engagement was less than 4% of observation intervals, and for seven individuals, engagement was less than 9%. A high level of engagement (87%) was observed for only one of the nine individuals. Also, similar to the observations during baseline of the target participants, throughout all comparison observations, no-choice presentations by staff were observed and no-choice responses by the adults with severe disabilities were observed.

3. Discussion

As indicated previously, the purpose of this investigation was to evaluate and increase in-home leisure activity among adults with severe disabilities in SIL. In regard to the evaluative

purpose, baseline observations in the homes of the three participants indicated a lack of apparent leisure activity for each participant. These results suggest that difficulties in involving this population in leisure activity that have been noted historically in larger congregate- and facility-based residential settings (Felce, 1991; Parsons et al., 1989; Reid & Parsons, 1989) can exist as well in SIL. The comparison observations in other SIL situations further suggest that in-home leisure involvement of adults with severe disabilities can be problematic in these types of settings. For 78% of the comparison observations, leisure activity occurred at very low levels (i.e., from 0 to 8% of observation levels). When considered in total, these observational results suggest that as the availability of SIL arrangements continues to grow (Polister et al., 2002), special efforts are likely to be needed to help individuals with severe disabilities participate in meaningful leisure activities in these types of residences.

In regard to the second purpose of the study – that of increasing leisure activity – results suggested that direct service staff can increase individual involvement in leisure activity by providing repeated choices of leisure activities and initially prompting the individuals if necessary to engage in the activities. Except for the first session of the repeated choice condition for Lloyd, each participant engaged in leisure activity during half or more of the observation intervals throughout the choice condition. The fact that all procedures were carried out by the regular in-home staff offers support for the practical applicability of the intervention. The repeated choice procedure also seems to maintain the essence of leisure in that participants were supported in choosing the materials with which to engage (Hawkins, 1997). Additionally, given that participants were prompted to use a leisure item only once when the item was first presented on a respective day suggests that engaging with the materials may have been reinforcing to the participants (i.e., the participants used the materials without continued prompting by staff).

In considering the results just summarized and related conclusions, several questions arise. First, it should be noted that only one observation was conducted per individual in the seven SIL comparison homes. Further, although drawn from two states, the settings were not selected in a manner that would allow conclusions about how representative the settings were of SIL situations in general. Additional observations are warranted to determine the pervasiveness of lack of in-home leisure activity among adults with severe disabilities in SIL. Again though, observations in more traditional living arrangements for this population would suggest that the problems noted in the observations in this investigation are likely to be encountered in other settings in which adults with severe disabilities reside.

A second question arising from this investigation pertains to the types of leisure materials and activities presented for participant choice. Because of the noted benefits of providing choices of preferred materials and activities (Lancioni et al., 1996), relatively considerable effort was made to identify potentially preferred leisure materials and activities through the open- and structured-interview processes. Effort was also made to identify leisure materials and activities that are common for adults in typical homes through the survey of adult leisure activities and reliance on commonly recommended leisure activities (Wilcox & Bellamy, 1987). The degree to which selecting leisure materials and activities in this manner impacted the increased engagement of the participants is not clear and warrants continued research.

A related concern pertains to the reliance on several components within the intervention such that it is not clear, for example, whether access to potentially preferred leisure

materials or being provided with choice opportunities accounted for the increased leisure engagement. Staff prompting a participant to engage when a leisure item was first presented for choice on a given day may have also played a role in this regard. However, given that prompting only occurred a maximum of one time per day per leisure item, it seems unlikely that such a low frequency of prompting would have accounted for the amount of increased engagement relative to baseline. Nonetheless, future research could conduct a component analysis to determine the controlling variables within the overall approach to increasing engagement.

When considering the leisure materials and activities related to the materials, it should be noted that a conservative definition of television watching was used (i.e., using the remote or making some movement in apparent correspondence to what was playing on the television). Such a definition was used to ensure that if television watching was recorded as engagement, the participant was truly attending to what was being shown. Additionally, a concern within the investigation was to increase active rather than passive engagement, and television watching without any apparent movement was considered passive. Nonetheless, a more liberal definition of television watching may have affected higher engagement levels.

A final question concerning the results pertains to maintaining staff actions in assisting adults with severe disabilities to engage in leisure activities. Although clear increases in leisure engagement occurred for each of the three participants, and maintained for the two participants for whom follow-up observations were conducted, it is not known if the staff consistently provided choices when observations were not conducted nor if they continued to provide such choices after the investigation. Staff responses to the social validity questionnaire indicated that they were accepting of the choice procedure and planned to continue using it. However, staff responses on acceptability questionnaires are not always predictive of day-to-day staff performance (Reid & Parsons, 1995).

Concern over staff performance in continuing to present leisure choices warrants particular research attention because of the nature of SIL sites (Harchik & Campbell, 1998). Relative to more traditional, congregate-based living arrangements, on-site supervision is infrequent in SIL situations in that one staff person usually works alone with one or a small number of consumers. Hence, usual supervisory procedures for maintaining staff performance such as frequent supervisory interactions to provide feedback to staff are not as applicable in the latter settings (Harchik & Campbell, 1998). Also, the potential for staff reactivity to the periodic presence of a supervisor or as the case with this study, an observer, seems heightened relative to situations in which a supervisor or observer is routinely present. In short, results of this investigation appear to demonstrate a means through which staff can effectively increase leisure engagement of adults with severe disabilities in SIL, but it does not necessarily demonstrate a means of ensuring that staff routinely and consistently carry out the relevant procedures with consumers in the home. Future research seems desirable on means of effectively supervising staff performance in SIL situations in the leisure area as well as other areas affecting quality of life of adults with severe disabilities who reside in those settings.

In a general sense, results suggest that benefits attributed to SIL for adults with severe disabilities may be extended through specific-behavioral applications. The paired-choice procedure evaluated in this investigation has been used repeatedly in research in other situations with people with severe disabilities. To our knowledge, the procedure has not

been evaluated previously with in-home leisure activity in SIL. Continued behavioral applications may help assess more specifically the benefits and possible shortcomings of SIL, and potentially help overcome shortcomings that may be identified. Such applications could further enhance quality of life for adults with severe disabilities within typical homes.

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