The Development of a Reinforcer Choice Assessment Scale for Persons with Severe and Profound Mental Retardation

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Reinforcement is a cornerstone for treating adaptive skills and eliminating problem behaviors for persons evincing mental retardation. To effectively use reinforcement, professionals must find reinforcers that are most effective for each individual. Establishing reinforcers is particularly important for persons functioning in the severe and profound ranges of mental retardation as reinforcers are often difficult to identify in this population. The current study aimed at developing a reinforcer rating scale that would have applicability on a broad clinical basis, looking specifically at the psychometric properties of the scale.

Training adaptive behaviors in individuals with developmental disabilities is often a daunting task. Whereas reinforcement is an essential element of behavioral interventions designed to shape behavior, identification of reinforcers for persons with severe and profound mental retardation is especially difficult (Egel, 1981; Wacker, Berg, Wiggins, Muldoon, & Cavanaugh, 1985). Surprisingly, little research has established a systematic means of determining preferred reinforcers, despite many studies that report reinforcement as part of a treatment package to teach skills to these persons.

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Because of the severe communication impairments often found in individuals with the most extreme cases of mental retardation, reinforcer assessments with this population have typically relied on the subjective reports of primary caregivers regarding the reinforcers most valued by the clients in their charge (Green et al., 1988). Moving toward establishing a more systematic method for identifying reinforcers, Pace, Ivancic, Edwards, Iwata, and Page (1985) introduced a method in which persons with profound mental retardation were presented with 16 different stimuli. The stimuli that were approached most were deemed most preferred.

Several limitations of this procedure have been identified. The Pace et al. (1985) method of assessment is often quite lengthy and problematic for professionals working large caseloads in institutional or hospital settings. In addition, Fisher et al. (1992) noted that some clients would approach all stimuli presented. To remedy this problem, Fisher et al. (1992) tested a modified version of the Pace et al. (1985) model by presenting severely mentally retarded clients with various stimuli arranged in a paired forced-choice format. This method resulted in greater differentiation between stimuli and provided researchers with information regarding which stimuli would elicit higher rates of responding (Fisher et al., 1992).

Paclawskyj and Vollmer (1995) further modified the Fisher et al. (1992) choice procedure by using physical guidance to prompt the subject to explore the two stimulus items. This method was accomplished by guiding the subjects to touch the items and then placing the subjects’ hands in their laps. Approach/no approach behavior was then scored. Paclawskyj and Vollmer (1995) noted that this modified choice procedure might be the most reliable method for the visually impaired population, a substantial subsegment of persons who are severely mentally retarded.

Involving clients in reinforcer selection has been a major advance in assisting persons with severe handicaps in choice making. Nonetheless, other systems may also be necessary. First, a limited range of reinforcers can be tested. Tangible items are easily tested but social reinforcers are much harder to assess. Second, this type of assessment is expensive; reinforcer kits must be developed, maintained, and transported. Third, this type of assessment is time consuming. People with multiple physical and severe mental disabilities often fatigue easily or evince behavior problems compounding the assessment process. Thus, multiple sessions and several hours may be required to complete one evaluation. For these and other reasons, a reliable and valid reinforcer checklist would be a useful addition to complement the battery of measures used to systematically assessing reinforcer preferences in persons with severe or profound mental retardation.

In Experiment One, the prevalence rates of different reinforcers for persons with severe or profound mental retardation were examined. From this data a standardized checklist was created to assess reinforcers for this population.
METHOD

Participants

Participants were 185 persons with severe or profound mental retardation residing at a large developmental center in central Louisiana. Diagnoses of severe and profound mental retardation were made on the basis of the Stanford Binet intelligence scale and Vineland Adaptive Behavior Scales (APA, 1994). There were significantly more individuals with profound mental retardation (90%) than severe (10%) and the sample consisted of 60% males and 40% females. Seventy-seven percent of the sample was white and 23% was African American. Age ranged from 19 to 77 years, with a mean age of 44.

Procedure

A list of 92 items was selected through review of reinforcer assessment literature and nomination by experts. These items covered categories including edibles, travel, social, environmental, and tangible. Examples of items included cake, candy, bus rides, walking, affection, conversation, bean bags, fish tanks, balls, and books. This list of 92 items was then used to interview the primary caregivers (direct care staff) for each of the 185 subjects. The persons responsible for interviewing the staff were mental retardation professionals with at least a Bachelor’s degree.

Informants were direct care staff who had known and worked with the individual at least 6 months. They were asked to indicate the items most preferred by the client in question. Based on these reports from staff, frequency and prevalence ratings for each of the 92 items were obtained.

Criterion for item inclusion in the scale were items that were endorsed by staff for at least 25% of the sample. Therefore, only items that were endorsed for more than 46 of the 185 persons were selected as reinforcers.

RESULTS

Of the original 92 items used during the interview process, 43 did not meet inclusion criteria (endorsed by staff for at least 25% of the sample). The remaining 49 items are listed in Table 1. Close to one-half of the items were edible reinforcers. Social reinforcers were also endorsed as an important form of reinforcement for most individuals. In particular, affection, praise, and conversation were endorsed at a high rate (over 70%). Other notable items included outside activity, watching television, and going to the canteen.

In reviewing the items listed in Table 1, some overlap existed. Therefore, several items were either removed or combined with others. After additional items were identified by experts, the final item pool rose to 60. These items were categorized into four general categories: (1) Edibles, (2) Tangibles, (3) Activities, and (4) Sensory.
The reinforcers identified as most prominent in this study were edibles and social reinforcement. These results have significant treatment implications for professionals working in the field. Edibles are readily available in group homes and institutional settings and can be easily used as reinforcers in treatment packages that eliminate maladaptive behaviors or train adaptive social and communication skills. The same may be said for social reinforcement, as it is often the case that individuals will perform very well in training tasks granting social praise and attention as reinforcement (Egel, 1981). Also, social reinforcement may be used in a proactive fashion, as praise, conversation, and attention often serve to interrupt maladaptive behaviors demonstrated for social stimulation before they escalate.

**EXPERIMENT 2**

The purpose of the second experiment was to establish internal consistency, inter-rater reliability, and test-retest reliability of our reinforcer checklist. Es-
tablishing the psychometric properties of the scale is necessary in establishing
the measure’s utility.

METHOD

Participants

Participants included 100 individuals with severe or profound retardation
residing in a state institution in central Louisiana. Thirty-two percent were male
and 68% were female, with 38% in the severe range and 62% percent in the
profound range of mental retardation.

Procedure

The choice assessment was completed by staff members who had known and
worked directly with the individuals being assessed for at least 6 months. The
interviewers administering the instrument were trained graduate students. Inter-
rater reliability was collected for 50% of the subjects by having two raters
independently score the subjects at the same point in time. Pearson product-
moment correlations were used to compute inter-rater reliability. A total of four
different raters in various two rater combinations were involved in the 50
reliability ratings. Test-retest reliability was also collected for 50% of the
subjects. The same interviewer who conducted the initial assessment repeated
the identical assessment on a second occasion. The time interval over which
retest reliability was measured was approximately 3 weeks. Effort was made to
interview the same staff member on both occasions, but this was not always
possible. Pearson product-moment correlations were used to compute test-retest
reliabilities for the four subscales and total score.

RESULTS

The initial step in the data analysis involved performing Cronbach’s alpha to
calculate the internal consistency of the choice assessment scale. The Cronbach
alpha coefficient was .94. Split-half reliability was also calculated using the
Guttman split half method ($r = .90, p < .001$).

Inter-rater reliability estimates were also calculated by correlating the four
subscale scores from Rater A with the equivalent four subscale scores from
Rater B. These values ranged from .94 (Activities) to 1.0 (Edibles). Sensory and
Tangibles both achieved Pearson correlations of .99. All correlations were
significant at the $p < .001$ level. Further, the inter-rater reliability score for the
total scale was estimated at .99.

Test-retest reliability was established by correlating the scores obtained by
the same persons on the two separate administrations of the assessment. There
was a significant correlation between the test and retest total scores ($r = .54,$
DISCUSSION

Internal consistency of the choice assessment was good. The items on the scale group together well. In fact, an internal consistency coefficient of .94 is ideal for clinical decision making.

The choice assessment showed excellent interrater reliability. Test-retest reliability was more than acceptable despite interviewing different respondents for the two administrations of the rating scale. Overall, the scale seems to be a reliable measure of reinforcer preference in individuals with severe and profoundly mental retardation.

GENERAL DISCUSSION

Establishing a system where consumers have more choice options and where reinforcers are the most potent is an important, but rarely studied, issue. In this study, we developed a scale and established the reliability of a checklist that could be used as part of an overall choice assessment.

Past researchers have consistently documented the utility of systematic reinforcer assessments in identifying reinforcers for persons with severe or profound mental retardation (Green et al., 1988; Pace et al., 1985). Although viable methods, this methodology is often problematic because of constraints on time and manpower. It is possible that this new scale may help alleviate these problems.

REFERENCES


