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Components of Personal Competence and Community Integration for Persons With Mental Retardation in Small Residential Programs

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This study identifies components of personal competence and community adjustment in a national sample of persons with mental retardation living in residential facilities of six or fewer residents. Factor analysis of 65 variables yielded an 8 principal component solution that accounted for approximately half the total variance in the observed variables (49%). The eight identified components of personal competence and community adjustment were labeled (1) Self Care and Functional Personal Living Skills, (2) Community Living Skills, (3) Home Living Skills, (4) Problem Behavior, (5) Community Training Goals and Objectives, (6) Recreation/Leisure Activity, (7) Family Contact/Relationships, and (8) Community Assimilation and Acceptance. The impli-

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cations of reducing potentially hundreds of indicators of personal competence and community adjustment into relatively few broad internally consistent composite constructs are discussed.

During the past 100 years or more, researchers have described the performance and adaptation of persons with mental retardation. Many early studies assessed the community adjustment and participation of persons leaving large institutional settings or samples of young adults formerly enrolled in special education programs (Edgerton, 1967; Edgerton & Bercovici, 1976; Goldstein, 1964; Lakin, Bruininks, & Sigford, 1981). Much of this research on the personal competence and community adjustment was concerned with describing more fully the qualities of life associated with the condition of mental retardation (Bruininks & McGrew, 1987; Grossman, 1983) and the later adjustment of persons with mental retardation formerly involved in largely segregated educational and residential programs.

With increased focus on enhancing the independence and integration of persons with disabilities, there has been renewed interest in describing more fully the personal competence, integration, and adjustment of youths and young adults with mental retardation. Much previous research has provided valuable descriptive information regarding the characteristics, adjustment, and integration of individuals with disabilities, but this research often fails to capture accurately the complexity of community adjustment due to a focus on unidimensional measurement strategies involving single, often dichotomous variables, univariate analyses, the lack of conceptual frameworks to guide research, and other limitations in research procedures (McGrew & Bruininks, 1991). As noted by Heal (1985), community integration research questions are "multivariate in complexity...(and) studies with single outcomes are guilty of oversimplifying reality" (p. 215). Contributing to this inability to understand fully the complexity of community adjustment is the fact that fully comprehensive multivariate models of community adjustment and personal competence for persons with mental retardation by which to organize and guide the research have not been developed (McGrew & Bruininks, 1990, 1991: McGrew, Bruininks, Thurlow, & Lewis, 1992).

Although a number of models have been presented in the literature to describe personal competence (Reynolds, 1981; Schaefer, 1975; Zigler & Tricket, 1978), few have demonstrated the breadth of Greenspan's (1979, 1981a, 1981b) model. Greenspan's conceptualization of general personal competence is divided into the behavioral domains of physical competence, intellectual competence, and emotional competence. Physical competence includes such abilities as reaction time, strength, size, gross and fine motor coordination, static and dynamic balance, speed and precision, visu-

al–motor integration, and flexibility (Bruininks, 1974; Guilford, 1958). Intellectual competence is conceptualized to include three subcomponents: (a) conceptual intelligence — the "ability to solve abstract intellectual problems and use and understand symbolic processes, including language" (Greenspan, 1981a, p. 30); (b) social intelligence — "a person's ability to understand and to deal effectively with social and interpersonal objects and events" (Greenspan, 1979, p. 483); and (c) practical intelligence — analogous to adaptive behavior in that it "represents the ability to deal with the physical and mechanical aspects of life, including both self-maintenance and vocational activities" (Greenspan, 1979, p. 510). Emotional competence represents a variety of character and temperament variables similar in description to the maladaptive dimensions included in many adaptive behavior scales.

A series of recent exploratory and confirmatory factor analytic studies have examined the validity of Greenspan's model and the derivation of additional factors in a number of relatively large samples (Bruininks, Thurlow, McGrew, & Lewis, 1990; McGrew & Bruininks, 1989; McGrew & Bruininks, 1990; McGrew, Ittenbach, Bruininks, & Hill, 1991). At the broadest level, these studies have provided support for a model of personal competence that includes the dimensions of physical competence, practical intelligence, conceptual intelligence, and emotional competence (McGrew & Bruininks, 1991). Although not yet included in these studies, reviews of the research (McGrew & Bruininks, 1990) have also provided support for inclusion of a social skills, intelligence, or awareness dimension in this model. More focused reviews of the nature of practical intelligence (i.e., adaptive behavior) (McGrew & Bruininks, 1989; Meyers, Nihira, & Zetlin, 1979) have suggested that as many as four to five different factors (personal independence, personal and/or social responsibility, functional academic/cognitive, vocational/community) may exist. The broad domain of emotional competence (i.e., maladaptive behavior) has also been found to be multidimensional with a number of maladaptive factors that may vary by level of disability and by age (McGrew, Ittenbach, Bruininks, & Hill, 1991).

In a similar manner, recent studies have begun to clarify the major dimensions of community adjustment. A series of multivariate studies, using exploratory and confirmatory factor analyses in samples with a wide range of disabilities (Bruininks, Thurlow, McGrew, & Lewis, 1990; Halpern, Nave, Close, & Nelson, 1986; McGrew & Bruininks, 1991; McGrew, Bruininks, Thurlow, & Lewis, 1992) have identified at least six factors or dimensions that characterize community adjustment, including: (1) Recreation/Leisure Integration — the extent to which individuals are actively involved in community-based recreation/leisure activities; (2) Social Network/Integration — the extent to which individuals have developed social support network and social relationships; (3) Residential

Environment Integration — the quality of a person's residential environment and their degree of independent living and integration into the community; (4) Employment/Economic Integration — the extent to which the individual is involved in meaningful daily activities and is self-sufficient and integrated in daily/work activities; (5) Need for Social Support Services — the extent to which a person needs a wide variety of services to function within the community; and (6) Personal Satisfaction — the extent of individuals' satisfaction with their daytime activities, living arrangement, social network, and recreation/leisure activities. To date, this research has resulted in the development of multidimensional outcome composite measures that correspond to five or six unique dimensions of community adjustment (McGrew & Bruininks, 1991).

Available research is producing increased information on the patterns of the personal competence and community adjustment among individuals with mental retardation. Although research studies that have investigated the performance and adjustment of individuals with disabilities in the community have produced valuable descriptive information, the lack of agreement over what constitutes community adjustment and how to capture accurately the complexity of this process has been limited by the use of large numbers of single outcome variables (e.g., employed vs. unemployed) in studies that tend to oversimplify the process (Heal, 1985; McGrew & Bruininks, 1991; McGrew, Bruininks, Thurlow, & Lewis, 1992; Zetlin, 1988). Moreover, the studies are characterized by a primary focus upon persons formerly placed in large institutional settings (Larson & Lakin, 1989, 1991), a limited range of measures, primary reliance upon descriptive versus multivariate statistical procedures, and samples consisting primarily of persons who reside in a very limited range of living environments. There have been very few studies involving persons in small-scale living environments (Halpern et al., 1986), the most rapidly developing area of residential living arrangements. Since results using single or multiple variables can be sample-specific, it is important to conduct studies that expand the measures of personal competence and adaptation in the community, as well as the number and range of environments in which such behaviors can be expressed.

The purpose of this study was to use exploratory factor analysis procedures to identify the dimensions of personal competence, community adjustment, and participation of persons with mental retardation living in small (six persons or fewer) community living arrangements. Moreover, the study used an extensive battery of measures assessing personal skills and community participation in living and neighborhood settings designed to increase inclusion of persons with mental retardation. The investigation included a large number of persons with mental retardation selected from an extensive national sample of foster and small group homes with six or

fewer residents and extensive measures of personal status, skills, and community participation.

METHOD

Sample

The study utilized a controlled national sample of 181 small community-based residential facilities and a total of 336 persons with mental retardation. A small residential facility was defined as a residence licensed, contracted, and/or operated by the state to provide long-term care to persons with mental retardation that housed six or fewer residents, one or more of whom had mental retardation. Two types of residential facilities included in the present study were: (1) foster home — a residence owned or rented by a family as their own home with one to six people with mental retardation living as family members; and (2) group home — a residence with staff who provide care, supervision, and training for one to six people with mental retardation. Because of the substantial increase in federal funding for community residential services through the Intermediate Care Facility for the Mentally Retarded (ICF-MR) program, special samples of small ICF-MR certified group homes were also selected.

The 1982 national registry of residential facilities for persons with mental retardation developed by the Center for Residential and Community Services, University of Minnesota, provided the initial sample frame for the present study (Lakin, Hill, & Bruininks, 1985). In all, the 1982 census identified 15,633 residential facilities providing 24-hour, 7-days-a-week responsibility for room, board, and supervision for one or more persons with mental retardation (a total of 243,669 residents with mental retardation). The scope and representativeness of the study, with the distribution of facilities in the sample frame and the total number of persons with mental retardation in each respective facility type, is presented in Table 1. Each of the selected facilities was considered eligible for inclusion, pending screening to ensure continued eligibility.

A systematic stratified random sampling procedure was used to select a nationally representative sample of smaller foster and group homes (see Hill et al., 1989, for more detailed information on sampling strategies). The actual sampling of facilities for this study occurred in June 1986, approximately 3 years from the time the original national sample frame census was completed.

The second stage of sampling involved selection of a controlled random sample from three types of facilities, including foster homes, group homes, and ICF-MR certified group homes. The third stage of sampling was the random selection of individual residents within these sampled facilities.

TABLE 1
Scope of Study as Compared to 1982 Census

	1982 Census Study		1986 Samples	
Facility Types	Facilities	Residents	Facilities	Residents
Foster homes	6,375	16,448	80	139
Group homes	3,065	13,450	67	130
ICF-MR group homes	492	2,532	34	67
Other	5,701	211,239	—	—
Total	15,633	243,669	181	336

The response rate from facilities was about 87%. Once selected, letters were mailed to each facility to explain the study and to request participation. Telephone follow-up occurred approximately 2 weeks later to determine eligibility and to identify key informants from among eligible direct-care personnel to serve as respondents. During the initial telephone contact, eligibility was determined by assessing whether the facility continued to be licensed to serve six or fewer persons with mental retardation. Facilities were replaced with the facility appearing immediately after it in the sample frame listing if those selected were no longer eligible because of size or type changes, lack of eligible direct-care respondents, inability to locate facilities, or refusal to participate.

If eligible, interviewers requested general information about the facility with respect to size, careperson, costs, and administration, as well as basic information about all residents with mental retardation, including age, gender, duration of placement, level of mental retardation, functional limitations, additional disabilities, problem behaviors, and participation in day programs. To select a sample of residents in the facilities for study, a procedure of random sampling of members from among eligible residents was implemented. In order to be eligible for sampling, a resident was classified as mentally retarded and must have lived in the home for at least 3 months. For facilities that reported to have only one or two eligible residents, the one or two individuals were selected for study. When facilities had three to six residents who were eligible, all eligible residents were listed alphabetically, and the first two on the list were selected. Table 1 shows the final responding facilities and residents in the 1986 sampling process.

Subjects

The original sample consisted of 336 persons with mental retardation (51% males and 49% females) between the ages of infancy and 79 years

(M = 33.2, SD = 16.1) from 181 small community-based foster care and group homes. Group homes (including both ICF-MR certified and nonICF-MR group homes) included representation from 48 of 50 states, 40 of which also included samples of foster care homes.

The factor analyses reported in this study were based on a subsample of 169 persons who had complete data on all measures used in the study. Some preliminary statistical analyses comparing the distribution of the reduced subsample (N = 169) with that of the total sample (N = 336) suggested that the subsample adequately represented the original sample on most primary facility and resident characteristics.

A large proportion of the residents in the studied sample were adults aged 22 to 62 years (72.02%); the next largest age cohort were youths between the ages of 12 and 21 (15.48%). Children (11 or younger) and elderly people (63 or older) comprised small portions of the sample (7.4% and 5.1%, respectively). The level of mental retardation of the sample was mostly moderate and severe (24.9% borderline/mild, 34.3% moderate, and 40.8% severe/profound). Most of the sample members (92.9%) could understand simple speech, such as simplified requests, directives or questions; could use simple language to communicate (76%), and could walk independently (74%) or with some help (19%).

Procedures

Within 1 week of the telephone interview, persons identified as being the most appropriate key informants for one or more sampled residents were provided more detailed information about their role in the study and were mailed a Careprovider Survey and one Resident Survey for each sample member. Both questionnaires were completed primarily by mail. However, all respondents were given the option of a full telephone interview for all survey instruments to reduce the likelihood of nonresponses due to low reading and writing abilities and/or low English proficiency of the care-providers. Approximately 1 month following mailing, a second contact was made if materials had not been returned. A minimum of one direct telephone contact following receipt of the survey packet and at least two follow-up mailings were provided before a care-provider was considered a "nonrespondent" and replaced.

All surveys were edited for completeness and logic of responses. Respondents were recontacted to clarify ambiguous and missing information. Call-back interviews were made for most questionnaires. Following data entry, extensive computer checks were conducted to detect errors of coding or to identify inconsistency of responses, and corrections were made in the data.

Instrumentation

The Resident Survey protocol (Hill et al., 1989) provided primary data for the present investigation. The survey consisted of approximately 210 questions providing comprehensive information on the characteristics of the residents as well as on the nature and quality of their life in the community in 11 areas (namely, health/physical conditions, adaptive behavior, problem behavior, placement history, case management, day program participation, special services, family contacts, friendships, leisure activities, and programs in self-care skills/community living skills). Items on the problem behavior section of the survey were adapted with permission from Inventory for Client and Agency Planning (ICAP; Bruininks, Hill, Weatherman & Woodcock, 1985), which is a 123-item standardized measure of adaptive behavior, problem behavior, functional characteristics, and other information for determining a person's service needs. Development and construction of the Resident Survey instrument was based upon both empirical and theoretical grounds. Items on the questionnaire were constructed on the basis of previous and extensive field research on residential placement and/or of their logical relationship to efforts directed toward residential services that reflect evolving standards for community-based programs. Several colleagues who had professional expertise in the area of foster care and small group facilities provided assistance in the development and review of the instrument. The survey instrument was drafted, edited, reviewed, revised, and then field tested with eight foster care and small group care providers prior to the final revision.

Analysis

The complete set of 210 items on the Resident Survey were screened and/or refined on the basis of their appropriateness, with regard to both theoretical rationale and psychometric properties. The theoretical review was based substantially on previous research in the areas of community integration and personal competence (Hill et al., 1989; McGrew & Bruininks, 1990; McGrew, Bruininks, Thurlow, & Lewis, 1992). The psychometric considerations, on the other hand, focused both on the level of measurement (i.e., nominal, ordinal, interval, or ratio) and on the amount of missing data. Specifically, all variables that were at less than ordinal level (e.g., categorical) were reconstructed (by combining categories, counting, aggregating, etc.) to create variables with more desirable psychometric qualities. All potential variables were constructed to be at least at the ordinal level (binary dummy codes), with the majority being interval level data. Furthermore, variables with more than 20% cases missing were

eliminated because of their potential threat to the generalizability of the statistical inferences. This screening process resulted in 140 separate variables being available for the subsequent analyses.

A series of exploratory factor analyses were conducted to identify the underlying structure of community integration and personal competence for persons with mental retardation residing in small residential settings as measured by the Resident Survey. Since the nature of many variables included in the study had not been investigated in previous research, a confirmatory approach would have been premature. Therefore, the principal component factor extraction procedure was used, followed by varimax rotation to simplify the derived component structure.

Although an oblique factor rotation may be more consistent with the theoretical relationships among the components, an orthogonal solution (i.e., varimax) was used since the clarity of factor interpretation was deemed to be a priority in this exploratory study. In the varimax rotation method, all components in the initial solution were rotated to a simpler, theoretically more meaningful orientation according to Thurstone's simple structure principles (Harman, 1976), subject to the constraint that all components in the final solution were orthogonal to one another.

Because the study was designed to be exploratory in nature, the analyses were carried out in two stages. First, a principal component analysis was performed on all 140 variables. Based upon rotated component structure in a smaller, retainable factorial space suggested by the Kaiser eigenvalue-greater-than-one criterion, more than half of the variables (75) were discarded because of low communalities (< .30) on the retainable components. The remaining 65 variables were then factor analyzed. A review of the possible factor structures based on multiple factor extraction criteria (Kaiser's eigenvalue criteria, which retain all components with eigenvalues greater than 1.0, inspection of the scree plot, and interpretability of factors) suggested the possibility of five competing factorial models, ranging from 6 to 10 components. These models provided adequate explanation of the observed correlations among the variables as well as meaningful frameworks of the component structures. The five models were all considered potential candidates for the final solution, since they accounted for approximately equal amounts of variance among the variables. Based on the multiple subjective and objective factor extraction criteria, with primary emphasis on the interpretability of the components, the eight-component solution was deemed to provide the most meaningful and interpretable representation of the data. The eigenvalue and percent of variance accounted for by each of the eight components, respectively, were: 14.74 (21.7%), 4.20 (6.2%), 3.03 (4.5%), 2.85 (4.2%), 2.53 (3.7%), 2.13 (3.1%), 2.01 (3.0%), and 1.77 (2.6%).

RESULTS

A review of the eight-component solution shows a relatively high value of Kaise-Mayer-Olkin (KMO) measure of sampling adequacy (.86). KMOs at or above .80 are considered meritorious (Dzubian & Shirkey, 1974; Kaiser, 1974; cited in SPSSPC, 1988). This suggests that the correlation between pairs of variables could be explained, to a large extent, by other variables in the set, indicating that the variables belong together psychometrically and were appropriate for factor analysis. The solution also indicated that the eight-principal component solution accounted for slightly less than half of the total variance in the observed variables (49%). Table 2 shows the result of the eight-component solution.

TABLE 2
Component Structure of Eight-Component Solution of Community Integration of Persons With Mental Retardation

	Component							
Variable	1	2	3	4	5	6	7	8
Assistance needed — dressing	.81	—	—	—	—	—	—	—
Assistance needed — toileting	.80	—	—	—	—	—	—	—
Assistance needed — eating	.79	—	—	—	—	—	—	—
Assistance needed — making bed	.75	—	—	—	—	—	—	—
Mobility	.73	—	—	—	—	—	—	—
Assistance needed — bath/shower	.73	.36	—	—	—	—	—	—
Arm/hand use	.70	—	—	—	—	—	—	—
Level of Communication	.64	.31	—	—	—	—	—	—
House chore — make bed	.62	—	—	—	—	—	—	—
House chore — clean room	.61	—	—	—	—	—	—	—
Understanding people talk	.49	—	—	—	—	—	—	—
Assistance needed — groceries	—	.78	—	—	—	—	—	—
Assistance needed — checkbook	—	.68	—	—	—	—	—	—
Assistance needed — phone	.41	.67	—	—	—	—	—	—
Assistance needed — city bus	.32	.64	—	—	—	—	—	—
Supervision in leisure activity	—	.63	—	—	—	—	—	—
Assistance needed — meals	.36	.63	.34	—	—	—	—	—
Level of mental retardation	.47	.57	—	—	—	—	—	—
Assistance needed — laundry	.45	.50	.41	—	—	—	—	—
Leisure — Writing letters	—	.47	—	—	—	—	—	—
Leisure — dating	—	.38	—	—	—	.31	—	—
House chore — cleaning	.31	—	.68	—	—	—	—	—
House chore — clean other rooms	.33	—	.66	—	—	—	—	—
House chore — set table	—	—	.60	—	—	—	—	—
House chore — dishes	.46	—	.60	—	—	—	—	—
House chore — laundry	—	—	.59	—	.32	—	—	—
House chore — trash	.33	—	.52	—	—	—	—	—
House chore — grocery	—	.42	.49	—	—	—	—	—
Leisure — shopping	.30	—	.37	—	—	.32	—	—
Purpose of fac. as a family	—	—	.33	—	—	—	—	—

TABLE 2. Continued

Variable	Component							
	1	2	3	4	5	6	7	8
Behavior problems — damages property	—	—	—	.65	—	—	—	—
Behavior problems — hurts other people	—	—	—	.64	—	—	—	—
Behavior problems — disrupts other's activity	—	—	—	.63	—	—	—	—
Behavior problems — uncooperative/breaks rules	—	—	—	.61	—	—	—	—
Behavior problems — socially unacceptable behavior	—	—	—	.60	—	—	—	—
Behavior problems — hurts self	—	—	—	.56	—	—	—	—
Behavior problems — habits/stereotyped behavior	—	—	—	.34	—	—	—	—
No. community living objectives	—	—	—	—	.89	—	—	—
No. community living objectives — meals	—	—	—	—	.62	—	—	—
Training goal in comm. liv. skills	—	—	—	—	.61	—	—	—
No. community living objectives — grocery/banking	—	.40	—	—	.49	—	—	—
No. community living objectives — self preserv.	—	—	—	—	.47	—	—	—
No. community living objectives — housekeeping	—	—	—	—	.41	—	—	—
No. community living objectives — telephone	—	—	—	—	.37	—	—	—
No. community living objectives — other	—	—	—	—	.33	—	—	—
Leisure — movies	—	—	—	—	—	.60	—	—
Leisure — sporting events	—	—	—	—	—	.57	—	—
Leisure — field trip	—	—	—	—	—	.55	—	—
Leisure — entertains friends	—	.37	—	—	—	.53	—	—
Leisure — visits friends	—	.31	—	—	—	.52	—	—
Leisure — physical exercise	—	—	—	—	—	.52	—	—
Leisure — party/dance	—	—	—	—	—	.49	—	—
Leisure — goes to a park	—	—	.37	—	—	.46	—	—
Leisure — radio/records	—	—	—	—	—	.46	—	—
Leisure — goes to a library	—	—	—	—	—	.43	—	—
Part of social group	—	—	—	—	—	.40	—	—
Regular contacts with relatives	—	—	—	—	—	—	.84	—
Number of relationships	—	—	—	—	—	—	.81	—
Frequency visiting home	—	—	—	—	—	—	.74	—
Length (duration) of placement	—	—	—	—	—	—	.43	—
Length careperson worked in facility	—	—	—	—	—	—	.43	—
Neighbors' general response	—	—	—	—	—	—	—	.71
No. neighbor families res has met	—	—	—	—	—	—	—	.70
People's response to res in public	—	—	—	—	—	—	—	.66
If res has been invited to neighbors' home	—	—	—	—	—	—	—	.62

Note. Loadings less than .30 were eliminated from the table.

Inspection of Table 2 suggests that the eight components encompassed the two broad categories of personal competencies and community participation and adjustment. Interpretation of the eight components was guided by an inspection of the variables that loaded highly on each component. In the area of personal competencies, five components emerged. Component 1 appeared to represent the domain of Self Care and Functional Personal Living Skills, primarily assessing the extent to which individuals needed assistance in performing day-to-day functional living activities, such as dressing, making bed, and bathing, as well as taking care of basic personal needs, such as eating and toileting. Component 1 also contained measures of physical abilities that have great bearing on individual's functional living, including mobility, use of limbs, and communication skills. Component 2 defined a Community Living Skills dimension and appeared dominated by items assessing facets of personal life that were oriented toward effective functioning in the community. This component appeared to represent the degree to which the resident needed assistance in activities related to the use of generic community resources, such as grocery stores, banks, phones, and city buses. Other variables with high loadings on the second component included assistance in organizing meals, leisure activity supervision, the resident's level of mental retardation, and assistance needed to do laundry — areas consistent with efficient functioning in community living. Component 3, labeled Home Living Skills, was largely concerned with the expected participation of the individual in meeting the demands of the domestic environment, including cleaning a home, setting a table, doing dishes, and other household chores. Component 4 was defined by items that tapped an individual's problem behaviors and appeared to represent a general Problem Behavior or emotional competence dimension. Component 5 reflected Individualized Training Program Goals and Objectives with respect to needed training in community living skills.

The three remaining components appeared to represent different aspects of community participation and adjustment. Component 6 is a Recreation/Leisure Activity dimension as it involved the degree to which the individual participated in community-based recreational/leisure activities outside the home. Component 7, labeled Family Contacts/Relationships, primarily measured the extent to which the individual had developed an active social network through family relationships and contacts. Note that two variables (length of placement and length of time the careperson had worked in the facility) produced negative loadings on this component. These results were mostly attributable to lower outside family and social contacts among residents in foster home placements and longer job tenure among care providers in foster homes (Hill et al., 1989). Finally, Component 8 provided an index of the resident's Community Assimilation and Acceptance, measuring both involvement with and posi-

tive response or acceptance of the resident by neighbors and other people in the community.

DISCUSSION

The exploratory factor analysis procedures identified five different personal competence components. These components included the areas of Self-Care/Functional Personal Living Skills, Community Living Skills, Home Living Skills, Problem/Maladaptive Behavior, and Individualized Training Program dimension related to personal and community living skills. Reviews of the factor analytic research in the area of adaptive behavior have suggested that as many as four to five (personal independence, personal and/or social responsibility, functional academic/cognitive, vocational/community) different practical intelligence or adaptive behavior factors may exist (McGrew & Bruininks, 1989; Meyers, et al., 1979).

It should be recognized, however, that the outcome of a factor analytical study often results from a complex interaction of the nature of the measurement instrument, the characteristics of the sample, and the specific factor methods that are used. The dimensions that emerge in a specific factor analysis study are largely dependent upon the number and types of variables included in the investigation, the way the subjects respond to these variables, and the specific factor extraction and rotation procedures used in the analysis. Applying factor analytical techniques to a large set of interrelated variables will almost always lead to a certain structured configuration, which provides a conceptual synthesis of the variables. However, it is one thing to derive a factor structure and label it "personal competence and community integration," yet another matter entirely to suggest that the mathematical structuring of the variables substantively represent the conceptual framework of adaptive behavior and community living experience. For an issue as complex and enormous as community integration, one single research effort is definitely inadequate to capture the complete essence of this construct. Rather, each study should be viewed as an additional building block to a better understanding of the rich aspects of community living. In this manner, each study represents one step further in providing validation of the construct of community integration. Until the technology of trait measurement becomes more sophisticated through accumulation of evidence from additional research studies, the essence of community integration will not be fully realized.

The adaptive and maladaptive components identified in the current investigation show some similarity to those factors identified in prior research and suggest growing consensus for factors that emphasize self-care, home living, use of community resources, vocational skills, and absence of problem behaviors. The Community Living Skills component is

similar to the Vocational/Community factor, while the Self Care/Personal Living Skills and Home Living Skills components both tap two portions formerly described as personal independence and personal responsibility. The greater differentiation in component structure found in this study is likely related to the increased demands for participation in the home, neighborhood, and broader community for the individuals and the largely adult ages in this sample.

The finding of only one broad Problem Behavior factor is discrepant from prior research (McGrew & Bruininks, 1989; Meyers, et al. 1979), which has suggested a number of maladaptive factors that may vary by level of disability and age (McGrew, Ittenbach, Bruininks, & Hill, 1991). Across 12 samples that varied by age (birth to 98 years) and degree of retardation (mild to profound), McGrew et al. (1991) found evidence for an internal maladaptive factor that has been found frequently in research on problem behaviors (Meyers et al., 1979). This study also found evidence for up to four external maladaptive factors (i.e., Socially Disruptive; Destructive-General; Destructive-External; Destructive-Internal). At the broadest level, the findings of the current study do provide support for Greenspan's broad domains of practical intelligence (adaptive behavior) and emotional competence (maladaptive behavior), although the dimensionality within these broad domains may be less well understood at this time. The differences in factors that have emerged in the current and prior studies (McGrew & Bruininks, 1989; Meyers et al., 1979) most likely are due to the inclusion of different pools of variables in the respective analyses.

Using somewhat different measures from prior research studies, reliable factors of community participation and adjustment surfaced for Training Program Goals related to Community Living Skills, Recreation/Leisure Integration, Family Relationships and Contacts, and Community Assimilation and Acceptance. The Recreation/Leisure and Family Relationships and Contacts components are similar to the Recreation/Leisure Integration and Social Network/Integration factors found in prior factor studies in samples of young adults with mild to severe disabilities (McGrew, Bruininks, Thurlow, & Lewis, 1992) and in a sample of young adults with mild to moderate mental retardation (Halpern, Nave, Close, & Nelson, 1986). In addition, the Community Assimilation and Acceptance component found in the current study contains indicators similar to those that comprised the Social Support/Safety factor reported by Halpern et al., (1986). Through a series of studies involving a variety of samples and circumstances, there appears to be a growing consensus for including the broad dimensions of leisure participation, social relationships, and family relationships and contacts to characterize the adaptation of persons with mental retardation in the community (McGrew & Bruininks, 1991). When combined with the prior factor analytic research on community adjustment,

which has identified a number of other factors (McGrew & Bruininks, 1991), it would appear that to adequately describe the community adjustment process, investigators may need to include measures of recreation/leisure integration, social network integration (including family contacts), residential environment/integration, employment/economic integration, need for support services, personal satisfaction, and community assimilation/acceptance.

The results of this study and others (Halpern et al., 1986; McGrew, Bruininks, Thurlow, & Lewis, 1992) demonstrate the promise of efforts to unravel the complexity of personal competence and community adjustment (and the relationships between and within these broad areas) through studies that use multidimensional outcome measures with a variety of samples in different environments. Such approaches offer the possibility of designing improved instruments to explore the multiple forms of performance and adaptation of persons with mental retardation. The ability to reduce potentially hundreds of indicators to a few broader and internally consistent composite measures can contribute to improving the quality of research through the use of measures with better construct validity. In addition, the use of such multidimensional measures may facilitate the development and investigation of models of personal competence and community adjustment that can be used to improve the integration of literature, and to guide future research, practice, and policy development in the field of developmental disabilities. Using such data reduction approaches, the prospects can also lead to evaluation and quality assurance procedures to assess the important outcomes of service programs.

Finally, much additional research is needed on personal competence and community adaptation of persons with mental retardation with a broad range of skills and abilities and in a variety of learning, work, and living environments. A number of similarities exist between the community adjustment dimensions found in the current study and in those of Halpern, Nave, Close, and Nelson (1986), and McGrew, Bruininks, Thurlow, and Lewis (1992), using different samples in different living circumstances. Some differences are also apparent. Such differences may derive from coverage and characteristics of instruments, sampling differences, statistical procedures, and the effects of opportunities for varying degrees of participation and experience among sample members. Further studies involving expanded samples, environments, and measures will be required to understand such differences fully. Furthermore, future studies should be expanded to investigate predictive relationships between dimensions of personal competence and other important variables that reflect contextual factors and levels of support (e.g., family support, SES, gender, amount of special services received, etc.) as they relate to adjustment in community as defined by a broad range of outcome measures. Through such research, the

skills and opportunities needed by persons with mental retardation to experience life as a competent, adjusted community member can be better understood and can lead to greater understanding of approaches to services, supports that can improve their overall quality of life.

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