A Comparison and Evaluation of Three Commonly Used Autism Scales

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Reliability and validity of three commonly used autism scales, the Autism Behavior Checklist (Krug, Arick, & Almond, 1980), the Real Life Rating Scale (Freeman, Ritvo, Yokota, & Ritvo, 1986), and the Childhood Autism Rating Scale (Schopler, Reichler, & Renner, 1988), were investigated. Data analyses were based on completed protocols for 24 children or adolescents who met DSM-III-R criteria for pervasive developmental disorders. First, to replicate previous findings, interrater reliability of each of the two direct observational scales was assessed. Second, correlations between pairs of the three scales were calculated. Third, diagnostic classifications based on autism scale cutoff scores were compared to classifications based on DSM-III-R criteria. Fourth, relationships between autism scale scores and adaptive behavior scores were investigated. Results and implications for the use of these scales in the assessment of autistic behaviors are discussed.

Autism frequently represents a difficult disorder to diagnose accurately (Schopler, 1978). Recent attempts to facilitate diagnosis are illustrated by the growing number of behavioral rating scales developed to assess autistic symptoms (e.g., Barthelemy et al., 1990; Lord et al., 1989; Parks, 1983). However, few studies have attempted to compare the broad range of symptoms assessed across these various scales. The present study was designed to examine more closely three autism assessment scales that are gaining widespread use. These instruments include the Autism Behavior Checklist (Krug, Arick, & Almond, 1980), The Ritvo-Freeman Real Life Rating Scale

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(Freeman, Ritvo, Yokota, & Ritvo, 1986), and the Childhood Autism Rating Scale (Schopler, Reichler, DeVellis, & Daly, 1980; Schopler, Reichler, & Renner, 1988).

Despite the widespread popularity of these three instruments, many details about their usefulness in assessing autism remain uninvestigated. First, the Autism Behavior Checklist, the Real Life Rating Scale, and the Childhood Autism Rating Scale were each developed with different sets of diagnostic criteria in mind, resulting in marked differences in content. Original items for the Autism Behavior Checklist (ABC) were selected from several sources, including the Rimland E-2 (Rimland, 1964), Creak's Nine Points (1964), Kanner's original criteria (1958), and other early checklists (see Krug et al., 1980). The Real Life Rating Scale (RLRS) places a great deal of emphasis on disturbances in response to sensory stimuli defined in the NSAC/ASA criteria for autism (Ritvo & Freeman, 1978). The authors of the Childhood Autism Rating Scale (CARS) took the most comprehensive approach to content selection. The CARS contains items found in the five most frequently cited diagnostic systems: (a) Kanner (1943), (b) Creak (1961), (c) Rutter (1978), (d) NSAC/Ritvo and Freeman (1978), and (e) DSM-III-R (American Psychiatric Association, 1987). Thus, although all three of these instruments have initially proven useful in assessing autistic behaviors, the degree to which they are measuring the same behaviors or categories of behaviors is unclear. It is also unclear whether these instruments could be used interchangeably or even whether a person who scores high on one scale tends to score high on another.

A second problem with these scales relates to their psychometric properties. Although initial estimates of reliability and validity for the ABC, RLRS, and CARS appear adequate, more thorough evaluations are needed. For example, only one study (Freeman et al., 1986) was found where interrater reliability for the RLRS was assessed. Replication by independent investigators with samples from other parts of the United States would be useful in broadening the generalizability of these findings.

Only a few studies of the relationship between adaptive behavior deficits and autistic symptoms have been conducted (e.g., Jacobson & Ackerman, 1990). A third important point for investigation, therefore, relates to adaptive behavior profiles of persons with autistic behaviors. It is unclear which adaptive behavior skills or deficits serve as the best predictors of severity of autistic symptomatology. For instance, is the degree of social skills deficits the best indicator of the severity of an individual's autistic symptomatology, or is severity best predicted by degree of language impairment? Similarly, which are the better predictors of autism severity, adaptive behavior deficits or aberrant behavior excesses? Given the behavioral heterogeneity among autistic individuals, is it possible to find a single