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IDENTIFICATION OF CRITICAL FACTORS IN THE ASSESSMENT OF PRESCHOOL BEHAVIOR PROBLEMS

Abstract

The field of early intervention is predicated on the assumption that problems such as academic failure and behavior problems can be averted with early detection, prevention and intervention. In order to meet the needs of practitioners, an effective child-find screening system should be accurate, proactive, and cost-effective. In the assessment of young children, the indicators for problem behaviors are evident, but are significantly different from those of the school-age population. Critical factors in the assessment of young children with behavioral problems are: measuring the frequency and intensity of problem behaviors relative to a normative context (either local or national), delineating between externalizing (anti-social) and internalizing (withdrawn) behavioral patterns, utilizing multiple methods (e.g., ratings and direct observations) and gathering information from multiple sources (e.g., teachers and parents). This paper describes the need for and effectiveness of a functional screening and initial assessment system for behavior problems among preschool children aged three to five years: The Early Screening Project (ESP). Screening is an initial step in identifying those who exhibit a certain disorder for remediation. A functional assessment system has great potential for the early identification and proactive remediation of behavior problems.

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The field of early intervention rests on the assumption that problems such as academic failure, behavioral

maladjustment, and social rejection can be averted with early detection, prevention, and intervention. Children entering school face two primary social-behavioral adjustments: teacher and peer social expectations (Walker & Severson, 1990). For most young children, preschool is their first extended and consistent exposure to an environment having adults and children other than their family members. All preschool classes have expectations regarding classroom rules, attention to tasks, appropriate play, and the initial establishment of friendship patterns. The way in which a child adapts to these expectations is related to the child's subsequent adjustment to elementary schooling. The success (or failure) of the child's adjustment to a preschool classroom environment is a good indicator of future adjustment status (Campbell, 1990).

When assessing anti-social behaviors for elementary-age children and adolescents, the mere presence of a severe incident (e.g., tantruming) might be indicative of a behavioral disorder. Walker and Severson refer to such severe acts as "behavioral earthquakes" (Walker & Severson, 1990). That is, these behaviors are of such severity that their occurrence is a good predictor of special education services. For example, extreme and brutal cruelty to animals by young children is a sign of serious adjustment problems.

So we ask, "Are there any specific characteristics that will discriminate between those who will outgrow these behaviors and those who will not?" Most preschool children will exhibit some "problem" behaviors that occur during normal/expected socialization processes. In fact, it has been shown that normal children of all ages engage in some coercive behaviors. Patterson's research suggests that a typical preschool boy will yell, tease, or whine approximately once every three minutes, and a typical 10-year-old boy will engage in the same behaviors once every 10 minutes (Patterson, Reid, & Dishion, 1992). The critical features among preschool children appear to be the frequency and intensity of the deviant behavior (Bower, 1960; Gresham, 1985; Patterson et al., 1992). Therefore, the identification of behavior problems in preschoolers must include assessment of frequency and intensity relative to a normative context (Martin, 1986). The higher the overall frequency of antisocial acts, the greater the likelihood that extreme acts also will be involved.

In spite of developmental changes, the core of the antisocial behavior pattern changes very little over time (Patterson et al., 1992). Many teachers and parents believe that problem behavior will be "outgrown," and in many cases children do cease exhibiting their problem behaviors (Rolf & Haazi, 1977). Yet, researchers have found that a significant portion do not reduce the frequency or intensity of their problem behaviors. For many children, anti-social behavior follows a progression of: (a) disobedience in the home, (b) temper tantrums, and (c) teacher reports of fighting and stealing (Patterson et al., 1992). The antisocial acts that are frequent and relatively trivial often lead to acts that are infrequent and more serious (Patterson et al., 1992). Seemingly trivial examples of coercive acts (e.g., non-compliance) observed in the home and at school are prototypes of adolescent delinquent behaviors. Each step in this process puts the child at ever increasing levels of risk for long-term social maladjustment.

While not all children seem to pass through this progression from trivial to more serious antisocial acts, approximately 75% of children with serious behavior problems do (Reid, 1993). It has been shown that the further the youth moves into the progression, the greater the risk for later delinquency (Patterson et al., 1992). Walker and Reid (in press) conducted longitudinal research on criminal arrest rates that show a highly stable anti-social "trait" that perseveres from childhood. Walker and Reid invited the parents of all 4th grade boys enrolled in selected schools located in a high crime and low income area to participate in the study. Two groups of 40 boys were selected based on data from teacher and parent ratings and direct observations of their behavior. Based on these data, a boy could be selected for either the anti-social or the comparison group. The comparison group was labeled "at-risk" using the rationale that the high crime and low income factors would predispose these boys for involvement with the juvenile justice system over youth in non-high crime areas. Cumulative arrest rates were recorded for each group from fourth through eleventh grade (see Table 1). The number of arrests for the anti-social group was seven times the number for the at-risk group, showing the anti-social construct to be very stable from childhood to late adolescence.

Emotional/behavioral problems have been shown empirically to be exhibited through two dimensions or patterns: externalizing and internalizing behavior (Achenbach & Edelbrock, 1986; Eisert, Walker, Severson, & Block, 1989; Fischer, Rolf Haazi, & Cummings, 1984; Hinshaw, Lahey, & Hart, 1993; Kohn, 1977; Rolf & Haazi, 1977; Walker et al., 1988). Children with externalizing characteristics exhibit such behaviors as aggression, antisocial acts, social-skill deficits, hyperactivity, and/or lack of attention. Children with internalizing behaviors are characterized as being socially withdrawn, anxious, inhibited, depressed and

having social-skill deficits. The externalizing and internalizing characteristics discriminate clinical from control groups of preschool children (Achenbach & Edelbrock, 1981; Lerner, Inui, Trupin, & Douglas, 1985).

Research supports the validity of preschool-age externalizing and internalizing characteristics for predicting future behavior problems (Achenbach & Edelbrock, 1981; Lerner et al., 1985; Kohn, 1977; Patterson, DeBaryshe, & Ramsey, 1989). Kohn (1977) found that such externalizing characteristics as high levels of anger, low frustration tolerance, and restlessness were predictive of future behavior problems in elementary-school-age children. Similarly, Lerner et al. (1985) found that characteristics in preschool children, such as high activity levels, aggression, and social withdrawal, are predictive of future psychiatric disorders at a follow-up at age 11.

The Early Screening Project (ESP)

This research adapted Walker and Sevenson's Systematic Screening for Behavior Disorders (1990; SSBD) for use with 3-to-5-year-old children. The preschool adaptation, the Early Screening Project (ESP), assesses both the frequency and intensity of adjustment problems and allows for cost effective screening of problem behaviors in order to aid in early intervention and remediation for preschool-age children. The ESP is a three-stage, multiple-gating procedure to screen for behavior disorders among preschool children (see Figure 1).

Stage I. Stage I was based on teachers' rankings of their students on externalizing and internalizing behavior dimensions. Teachers were asked to list the five children who best exemplified a description of externalizing characteristics and the five children who best exemplified a description of internalizing characteristics. The two lists were mutually exclusive, so a child could be put on only one list. Then, the teachers ranked the children on each list from most characteristic to least characteristic of the externalizing or internalizing dimension. This procedure was modified from the SSBD procedure (in which 10 children had been ranked on each dimension) because of the smaller class sizes typical in preschools.

Stage II. Stage II was a behavior checklist consisting of five measures: Critical Events Index, Aggressive Behavior Scale, Social Interaction Scale, Adaptive Behavior Scale, and Maladaptive Behavior Scale. Stage II of the ESP differed substantially from the Walker/Sevenson SSBD. The SSBD Critical Events Index consisted of 33 occurrence/non-occurrence items. Therefore, a teacher would check an item if a child has exhibited the behavior. Since most preschool children exhibit problem behaviors at one time or another as part of typical development, the frequency and intensity of the behaviors were most likely the important discriminative features (Campbell, 1990; Paget, 1990). The Critical Events Index contained 16 occurrence/non-occurrence items. Items converted to five-point frequency ratings on the Aggressive Behavior Scale were: tantrums, physically assaults an adult, physically aggressive with other children, damages property, ignores teacher warnings, makes lewd gestures, and swears. The Aggressive Behavior Scale contained nine items and was only used with children ranked on the externalizing dimension. For the children ranked on the internalizing dimension, the Social Interaction Scale was utilized (Hops, Walker, & Greenwood; 1988). The Social Interaction Scale contained items regarding social withdrawal, such as the child's response to peer initiations. The Adaptive Behavior Scale contained eight items representing overall prosocial behavior (e.g., cooperation and positive social interactions). Four items were omitted from the SSBD Adaptive Behavior Scale due to their developmental inappropriateness for preschool children regarding cognitive skills or academic work. The Maladaptive Behavior Scale consisted of nine items representing overall anti- or non-social behavior (e.g., defies teacher requests and creates disturbance).

The items were carefully worded in order to facilitate the completion of ESP by a diverse group of preschool teachers who may have limited experience in assessment. Items regarding academics were omitted because of their inapplicability to most preschool curricula.

Stage III. Stage III measures were based on direct observations of a child's Social Behavior in the classroom and on the playground. The Social Behavior observation was a record of the quality, level, and distribution of a child's social behavior during free play settings. Anti- or non-social was defined as (1) a negative exchange of either verbal or physical interaction, (2) disobeying established classroom rules, (3) tantruming, and (4) solitary play. The children were each observed for 20 minutes, 10 minutes each on two occasions. If the total time was under 20 minutes, a third observation was conducted to bring the time up to 20 minutes. In these

observation codes, the stopwatch was started when the child exhibited anti- or non-social behavior and was turned off when the child displayed pro-social behavior. The stopwatch was restarted when the child exhibited anti- or non-social behavior. The procedure was repeated throughout the recording interval.

Parent Questionnaire. The parent questionnaire had 12 items divided into three scales: (a) Playing with other children, (b) Getting along with caregivers, and (c) Playing with materials and self care. All items were adapted from the ESP Stage II teacher questionnaires. The first two scales, playing with other children and getting along with caregivers, were stated in positive pro-social behavioral language and the third scale, playing with material and self care, was oriented to more problematic critical behaviors.

Technical Adequacy of ESP

Beginning in 1991, studies on the ESP were conducted to assess its reliability and validity. These findings have been very promising (Feil & Becker, 1993). The reliability and validity data show strong results. The interrater reliability coefficients of most ESP measures are at least .80, which meets Salvia and Ysseldyke's (1988) guidelines for a screening instrument. Good psychometric standards were attained despite the difficulties inherent in the assessment of young children (Martin, 1986). Validity studies show consistently high relationships to criterion measures: Conners Teacher Rating Scales (Conners, 1989) and Preschool Behavior Questionnaire (Behar & Stringfield, 1974). Correlations resulted in significant coefficients ranging from .34 to .87, with most above .70. The consistency of scores across ESP measures illustrates the potential utility of the screening system, giving evidence that behavior problems may be identified accurately among preschool children (Feil, Walker, & Severson in press).

Furthermore, a discriminant analysis provides a measure of the accuracy of the ESP with specificity and sensitivity coefficients. Specificity and sensitivity are important criteria when choosing an assessment method (Elliot, Busse, & Gresham, 1993). Sensitivity is the percentage of true positives and specificity the percentage of true negatives (Schaughency & Rothlind, 1991). Results show good sensitivity (62%) and excellent specificity (94%), leading to accurate assessments with a minimal risk in identifying a child who exhibits developmentally appropriate behavior (Feil, Walker, & Severson in press).

Observational data had lower reliability and validity correlations than the rating measures, but these results should not be discounted as invalid. Correlations between Stage II teacher measures and the Stage III observational measures are low but this is to be expected (Cairns & Green, 1979; Schaughency & Rothlind, 1991). In the comparison of rating scales and observations, several research studies have generally found a weak relationship between methods (Schaughency & Rothlind, 1991). Teachers asked to rate each child on three rating scales: the Quay-Peterson Behavior Problem Checklist, the Miller School Behavior Checklist and a scale involving frequency estimates of the nine behaviors revealed considerable independence (i.e., low correlation coefficients) of observations compared to ratings (Cospers & Erickson, 1984). Skiba's review (1989) found a weak relationship between ratings and observations of identical behaviors. Within behaviors, the correlations between observations and ratings ranged from .13 (off-task) to .62 (negative peer interactions). The correlations accounted for an average of only 4% of the variance of the target behaviors. Skiba (1989) states that the data do not support the criterion-related validity of ratings or observations. Some behaviors related better (i.e., higher correlations) between behaviors rather than across methods. For example, both observations and ratings of off-task behavior have higher correlations to aggressive behavior than the correlations between observational and rating measures of off-task behavior. Failure to find strong correlations among measures across methods might be a function of differences in both content and what is captured by different methods (McMahon 1984).

Cairns and Green (1979) propose a heuristic for delineating sources of variation for rating scales and direct observations. First, the authors delineate the goals of each assessment method. Ratings strive to measure enduring characteristics of the child. The goal of observations is to record all relevant behavioral events of the child and those with whom the child interacts within a specific setting (including enduring characteristics of the child, temporary states of the child, interpersonal acts, interaction between settings, and institutional norms). Observations have broader goals than ratings. Second, Cairns and Green divide the variance from both methodologies into characteristics of: (a) the child (stable and temporal.), (b) the setting, (c) the social interchange, (d) the rater or observer, and (e) other sources of errors (e.g., recording errors). Ratings have more of their variance attributable to rater and stable child characteristics, while observations have most of their variance attributable to setting and social interchange characteristics. Cairns and Green conclude that

each method has its own appropriate uses. Ratings attempt to measure more "stable" characteristics, while observations can be the key for identifying how actual behaviors are elicited, maintained, and organized. The procedures occupy different places on the continuum of assessment information. For those who describe consistencies in individual differences in behavioral styles or interactions over time, ratings can be more useful. For understanding how behavior is maintained and changed by environmental events, observations are more useful (Cairns & Green, 1979).

Both ratings and observational measures are important to understand the child within the preschool context. Ratings appear to be more effective predictors of individual differences and observations appear to be more effective in the analysis of interactional regulation and development (Cairns & Green, 1989). Both kinds of data and analysts are important for understanding behavior disorders with their socially dependent nature.

Utilization of the ESP

This use of multiple gating procedures within a large group setting minimizes time demands on teachers and special services consultants. The gating procedure was found to reduce assessment time up to 16% over other procedures for elementary school children. Walker et al. (1994) found a very high relationship between time and cost of assessment for Behavior Disorders. It was more efficient and often desirable to conduct a group administration of Stages I and II of the ESP procedure. Stage I and II screening procedures can be completed for an entire preschool in a one-and-a-half hour meeting.

Discussion

The critical factors in the assessment of young children with behavioral problems are: measuring the frequency and intensity of problem behaviors relative to a normative context (either local or national), delineating between externalizing (anti-social) and internalizing (withdrawn) behavioral patterns, utilizing multiple methods (e.g., ratings and direct observations) and gathering information from multiple sources (e.g., teachers and parents). Investigators have studied the use of multi-methods with a convergence of information to more accurately assess a child's "true" behavior. Schaughency and Rothlind (1991) concluded that systematic multimethod assessment and application of diagnostic criteria can produce reliable diagnosis. Multiple informants contribute unique information about the child's behavior that are superior to a score provided by a single informant. In their review of the literature, Gresham and Elliot (1984) found that a multimethod approach yielded the most accurate assessment in terms of discriminative and convergent validity. In one study, four methods (teacher, peer and self ratings, and analog situations) all shared approximately equal amounts of variance on three classes of social behavior: (a) positive interaction, (b) receiving positive interaction, and (c) assertion. Therefore, it appears that a combination of observational data with ratings provides better prognostic information about child behavior than either measure alone (McMahon, 1984). Observations have low rater bias, yet test-retest reliability is low and time requirements are high. Ratings have lower cost and better test-retest reliability, but are more susceptible to rater bias. For example, there is an increase toward prosocial behavior with repeated rating measurements even with no intervention. Using the convergent validity of observations and ratings can increase diagnostic accuracy and improve treatment outcomes for young children (Hinshaw, et al., 1993; Patterson et al., 1992). Few assessment systems have been created to utilize the convergent validity across methods, settings, and raters to make valid generalizations.

Screening is the initial step in remediation of a behavior problem, but does not provide enough information to delineate the specific causes and/or mediating factors (Salvia & Ysseldyke, 1988). Once a child has passed through the ESP multiple-gating process, further assessment may be needed. The ESP provides a broad range of information, but should be used in conjunction with other assessment information (both quantitative and qualitative), including professional (clinical) judgment. Even if the child exceeds normative criteria on the ESP measures, the child's behavior could be due to a variety of factors, such as activity levels, poor supervision, speech/language delays, parental divorce or stress, and cognitive delays. For these reasons, other assessment procedures, such as interviews and functional analysis (Nelson & Hayes, 1986) are highly recommended. As with most decisions, eligibility determinations should be made by a team of qualified professionals, including teachers, mental health specialists, and behavioral consultants. ESP information should be used as part of a professional's decision-making process that includes an examination of possible medical issues, language problems, a cognitive delay, and contextual factors.

Overall, the ESP can be utilized as part of best-practices for early intervention programs screening for school adjustment problems. Preschool programs, facing increasing requirements (such as Child-Find), need to maximize their resources (e.g., teacher's knowledge and experience) within a proactive and fair system. The proactive nature of the ESP provides assessment of adjustment problems for all children in a classroom. We believe that the ESP can minimize the time and cost requirements of preschool assessments while increasing accuracy over currently used screening instruments.

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Table 1 Number of Arrests by Group per Grade in School

Grade	Anti-Social	At Risk
4 or Below	20	0
5	27	0
6	10	3
7	26	2
8	51	5
9	106	6
10	85	12
11	25	17
Total	350	45

DIAGRAM: Figure 1. Early Screening Project Procedure.

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