

# Selecting Parenting Measures for Assessing Family-Based Prevention Interventions

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## INTRODUCTION

The purpose of this chapter is to assist researchers in selecting promising parenting measures for assessing the outcome of family-based prevention interventions.

The metaconstruct of parenting covers a wide variety of more narrowly defined constructs, including parenting practices, parenting style (see Darling and Steinberg 1993), and parental social cognitions. Parenting practices refer to sets of specific parenting behaviors that parents are observed to do, report that they do, or say they would do in interactions with their own children. They vary by specific content (e.g., praising the child, checking the child's homework on a regular basis) and socialization goals (e.g., cooperation with family members, academic achievement). Parenting style refers to the more global context in which parenting practices are implemented, as opposed to actions that are domain specific. Parenting style is thought to moderate the effectiveness of parenting practices. Parental social cognitions refer to parents' attitudes, values, and beliefs concerning parenting. The focus of this chapter is on parenting practices (see Liddle and Rowe, this volume, which focuses on measures of family functioning).

This chapter uses the term “promising” measures rather than “best” measures for several reasons. First, the measures described below are not intended to represent an exclusive list; instead, they represent examples of various types of measures of parenting practices. Second, these measures should not be required or necessarily be expected to be included in funding guidelines issued by granting agencies. Instead, measurement selection should be based on consideration of the issues, presented in the next section of this chapter. Finally, it is felt that the term “promising” captures an essential characteristic of these measures of parenting practices—that they have been, and will continue to be, evolving. In other words,

these measures are not finished products, but rather are currently useful and promising.

Although there are several promising measures of parenting practices, a serious weakness in this area of measurement has been the lack of attention to the cultural sensitivity of these measures. Measures of parenting practices, including the examples described in this chapter, have, for the most part, either been validated with nonminority populations or failed to directly assess the possibility of differential applicability to various minority populations when mixed samples have been included. Rarer still is the situation where a well-validated measure of parenting practices has been developed specifically for a particular cultural group.

In this chapter, the focus is on two tasks: (1) describing a number of issues to be considered in selecting appropriate measures for evaluation of family-based prevention interventions and (2) delineating five types of methods of assessing parenting practices. Within each method, a cluster of measures that meets reasonable psychometric criteria and that has been employed by at least two research groups is presented. Each cluster contains a description of the original measure as well as descriptions of at least one additional adaptation or derivation. The purpose in presenting these clusters is to demonstrate the dynamic and evolutionary nature of the measurement process.

## ISSUES IN SELECTION OF MEASURES OF PARENTING PRACTICES

Several issues in the selection of measures of parenting practices are presented:

- Theoretical constructs and objectives of the intervention
- Populations
- Developmental period
- Methods
- Informants
- Psychometric properties
- Longitudinal measurement

## Theoretical Constructs and Objectives of the Intervention

The measurement selection process must first and foremost be guided by a theory or model that specifies key constructs and construct indicators, the interrelationships among intervention variables (e.g., presence or absence of the intervention, intervention dosage, intervention integrity), and intervention outcomes (Collins and Shanahan, this volume). Most of the theories and models relevant to family-based intervention hypothesize that specific parenting practices mediate intervention effects on targeted child outcomes (e.g., diminution of conduct problems, delayed onset of substance use, decreased school dropout). Some of these models delineate sequences of various types of parenting practices and child behavioral outcomes (e.g., Spoth, this volume), specifying hypothesized chains of proximal and distal effects.

Examples of parenting constructs that have been identified in the literature as being important in predicting child outcomes include discipline, monitoring, problemsolving, and positive involvement; there are numerous others. Researchers must identify the particular parenting constructs of interest before they will be able to identify the most appropriate measures of those constructs.

Researchers must carefully consider the goals of their interventions in order to ensure that the particular parenting constructs and measures of parenting practices that are chosen will capture the changes expected to occur as a function of the intervention.

## Populations

The nature of the population of interest in a particular study should also guide the selection of measures of parenting practices. Important characteristics to consider include (1) the risk status of the children or families (i.e., whether they are high-risk or general populations); (2) the culture and language of the population; (3) social class; (4) family structure; and (5) other special characteristics such as literacy rates, rural versus urban status, and whether the population is characterized by significant recent disruption, unemployment, or immigration. Each of these population characteristics will have different implications for measurement selection. For example, the culture and language of the population will dictate the need for measures that are (at the very least) in the appropriate language and that use concepts understandable to that particular cultural group; different social classes and literacy levels will have implications for the reading level of a self-report instrument. Characteristics such as typical family

structure or risk status of the population will have implications for the ways in which questions or tasks are framed and the expected range of responses—an instrument intended for use with an at-risk population may not be sufficiently sensitive to the range of responses of a general population and vice versa. Recent immigration, widespread unemployment, and urban versus rural status all require attention to issues of ease of administration, cost to participants, and sensitivity to families' particular circumstances. The developmental status of the focal children is a population characteristic of primary importance in the selection of measures and is discussed below.

### Developmental Period

One of the most practical decisions facing researchers is the choice of measures of parenting practices that are appropriate to the developmental period of the children of focus. This will have important implications for the particular methods, informants, timeframes, and parenting constructs of interest, as well as the individual measures themselves. For example, although parental report of parenting practices appears useful at all developmental periods, the particular items used as indicators of parenting practices will differ as a function of the child's age. Assessment of parental monitoring (see Dishion and McMahon, this volume) in a family with a toddler will likely focus on the extent to which the parent tracks the child's ongoing activities in the home. On the other hand, assessment of parental monitoring of an adolescent will be more concerned with the extent to which the parent is aware of the teen's whereabouts, activities, and companions when away from home. Using children as informants about parenting practices can be quite useful during adolescence and perhaps middle childhood, but preschool or children in early grades are less likely to be considered appropriate informants. With regard to methods, observational procedures to assess parenting practices are highly useful throughout the developmental period, but the nature and structure of the observational tasks often vary with the age of the child (e.g., observation of play versus family problemsolving discussions). The timeframes for responding on individual items of a measure may also need to vary as a function of the child's age, with shorter intervals perhaps being more applicable for measures pertaining to younger children.

## Methods

The methods that are most applicable to the measurement of parenting practices include observation; interviews (in person or on the telephone); questionnaires; analog vignettes or simulated tasks using written, audiotaped, or videotaped vignettes as stimuli; and archival records (e.g., documentation of physically abusive parenting through examination of child protective services records). It is recommended that, to the extent possible, researchers use multiple methods of measuring parenting practices gathered from multiple informants, rather than relying on a sole method and sole informant. Much previous research has illuminated the problem of monomethod bias, a source of systematic bias that inflates relations among constructs measured with the same method and informant. Multimethod, multi-informant research methods can reduce the fallibility of reliance on a single assessment strategy (Dishion, Li, Spracklen, Brown, and Haas, this volume; Fiske 1987).

The setting in which each of these methods are employed is also relevant. For example, observations can occur in the home, research laboratory or clinic office, or community (e.g., the grocery store). More “naturalistic” unstructured observations generally occur in the home or community, whereas structured observation tasks generally are conducted in the laboratory or in a clinic office. The level of focus of these observational procedures also varies as a function of the type of coding system that is employed (e.g., microanalytic versus global) and whether the observers also record more general impressions following the observation.

The effects of various procedures for administration of measures, in terms of both single measures as well as assessment batteries, have been largely unexamined, but are important considerations. Issues include the length of individual measures and of the total assessment battery, the particular sequencing of measures, the frequency of administration, the balance between (and within) measures that focus on parenting competencies versus deficits, the veracity of measures (i.e., optimizing conditions for truthful responses), and the overall burden on research participants. Flexibility in timing and location (e.g., research center versus the home) of the assessment has also been noted as an important process issue (Capaldi et al., in press).

## Informants

The most frequently used informants concerning parenting practices are the parents themselves, independent observers, and the children. However, other potential sources of information about particular aspects of parenting include teachers (e.g., parental involvement in the child's schooling), family service workers, and other family members (e.g., a spouse, the child's siblings). An especially vexing issue is the extent to which other individuals in addition to the primary caregiver (usually the mother) should be included in the data collection process. Should the father's data always be included in two-parent families? Should other caregivers who spend significant amounts of time with the child (e.g., babysitters, a noncustodial parent, grandparents, aunts, older siblings) also be assessed with respect to their "parenting" practices? To do so is likely to provide a more complete and accurate picture, not only of the types of parenting that the child receives but also the extent to which such parenting is consistent across providers. However, it presents major measurement, design, and data-analytic challenges (see Collins and Shanahan, this volume, for an extended discussion of these issues.)

As described earlier, the decision regarding multiple informants is a critical one. Reliance on a sole informant on parenting practices is likely to yield biased reports and substantial method variance. Thus, researchers are encouraged to use multiple informants to the extent that it is practical. When parents and children are asked the same questions about parents' behavior, their answers frequently fail to agree; similarly, parent reports will often fail to converge with observer reports. Although this lack of convergence among informants will create substantial data-analytic challenges (Bank et al. 1990), each informant provides a unique perspective that yields valuable information for understanding the effects of parenting practices on child behavior.

## Psychometric Properties

Three aspects of the psychometric properties of measures of parenting practices are of particular relevance in selecting measures. The importance of the first two, reliability and validity, is self-evident, and will not be discussed further in this chapter (see Kamphaus and Frick 1996 for an excellent discussion of reliability and validity with respect to measures of child and familial functioning). It should be noted that the use of multiple methods and multiple informants poses special challenges regarding reliability and validity in

the context of structural equation modeling (see Bank et al. 1990; Dishion, Li, Spracklen, Brown, and Haas, this volume).

The third aspect, which is referred to as “sensitivity to change,” requires more elaboration. At the broadest level, it refers to whether the measure demonstrates an intervention effect when such an effect truly occurs. Failure to do so may be a function of problems with the specificity of the measure, the population for whom it is intended, a mismatch between parenting behaviors targeted by the assessment and behaviors targeted by the intervention, or assessment-by-intervention interactions. First, the way the questions are framed will likely affect sensitivity to change. For example, the response scale on a parent report questionnaire may be too general to capture subtle distinctions (e.g., “never” versus “sometimes” versus “always”). In addition, the temporal specificity of parent and child report items has an important effect on their sensitivity to change. The time interval for reporting the frequency of any given behavior should be long enough for the behavior of interest to have occurred, yet short enough for the respondent to remember and report the frequency of the behavior accurately, and to have no overlap between assessment periods. Global reports without sufficient temporal specificity may well be unable to capture subtle changes; in contrast, specific frequencies of well-defined behaviors within a clear timeframe are likely to have the best potential to capture change.

Second, population characteristics need to be considered when assessing sensitivity to change. For example, a measure that has been shown to be sensitive to changes in parenting practices in a high-risk population may not be sensitive to more subtle changes that occur in a general population. In other words, the magnitude of the expected effect size of the intervention for the particular population of interest must be taken into account when selecting measures for prevention interventions.

Third, the degree to which the parenting behaviors measured in assessment match the parenting behaviors targeted in intervention will greatly affect sensitivity to change. If major parenting constructs addressed by an intervention (e.g., limit setting, positive reinforcement, monitoring) are measured weakly or not at all in the assessment, then changes in these constructs as a function of intervention are not likely to be captured. Researchers are encouraged to align intervention and assessment targets as much as possible.

Finally, assessment-by-intervention interactions may occur. These can affect parental reports of parenting practices and of child behavior. For example, prior to intervention, parents may perceive themselves to be competent monitors of their children and would rate themselves accordingly. However, as a function of intervention, parents may learn that their previous monitoring was not as appropriate as they thought; furthermore, parents learn the skills necessary to become more effective monitors. Pretest and posttest comparisons may indicate little change in parental ratings of their monitoring, even though there has been significant improvement. Similarly, an intervention that improves parental monitoring may make parents more aware of their children's inappropriate behaviors. Comparison of parental reports of child behavior prior to and after the intervention may actually suggest that parents perceive deterioration in their children's behavior, when in reality the parents have simply become better monitors of their children's behavior (Dishion and McMahon, this volume). Thus, in this situation, the researcher may wish to consider other informants, such as the child or independent observers, who may be less susceptible to this phenomenon. Alternatively, if parent report is used, then greater reliance may be placed on recording the frequency of occurrence of specific monitoring behaviors, as opposed to more subjective ratings.

#### Longitudinal Measurement

The issues raised up to this point apply to both cross-sectional and longitudinal measurements of parenting practices. When dealing with longitudinal measurement, however, the complexity of the measurement issues is magnified dramatically. In measuring parenting practices over time, the researcher is faced with discontinuities in both the measurement of parenting practices and in the parenting practices themselves (see Collins and Shanahan, this volume). As noted earlier, currently available measures of parenting practices are applicable to particular developmental periods (e.g., preschool, middle childhood). The authors are not aware of any measures of parenting practices that have been validated for use across several developmental periods. The implication for researchers whose investigations span multiple developmental periods is that they will be forced to switch measures of parenting practices as the children in their sample get older. This presents major difficulties for the statistical analyses of longitudinal data, which require that the same measure be administered at each time point (see Collins and Shanahan, this volume).

Parenting practices typically change over time (or at least they should) as the child enters new developmental periods. Thus, there is also discontinuity in both the children's behavior and the parenting practices that are most appropriate for dealing with those changing child behaviors. Family contexts also change over time, with the departure of a parental figure due to separation or death and the arrival of new family members such as siblings or stepparents. Thus, the family context in which parenting practices occur also changes over time in ways that are much less predictable and more individualized than changes in parent and child behaviors associated with the child's movement through different developmental periods (Collins and Shanahan, this volume).

Finally, retention of the sample in longitudinal investigations is a critical issue. With each passing year of involvement, the families' continued participation becomes increasingly important. Researchers must be actively involved in developing methods to increase the likelihood of continued familial involvement in long-term prevention intervention studies (see Capaldi et al., in press, for a discussion of such strategies). As noted earlier, this might include sensitivity to the length of the assessment battery as well as the relative proportion of measures (and items within measures) that tap negative, as opposed to positive, behaviors or practices.

## SELECTED MEASURES OF PARENTING PRACTICES

The following section presents descriptions of several sets of promising measures of parenting practices that are illustrative of different types of assessment methods. Within each set of measures, at least one adaptation of the measure is also described to provide the reader with a better sense of the evolving nature of the measurement process.

### Selection Criteria

Three criteria were employed to select the clusters of promising measures: (1) the measure has adequate psychometric properties (i.e., reliability, validity, and sensitivity to change); (2) the measure has been employed by more than one research group; and (3) the measure has been included in at least two published studies. The relevance of the first criterion is self-evident. Use of the measure by more than one research group was considered to provide some support for the generalizability of the measure. Inclusion of the measure in at least

two published research studies suggests that the measure has undergone at least some form of peer review.

Five clusters of measures are presented in table 1<sup>1</sup>. They include the following methods and informants: (1) observations by independent observers, (2) observer ratings and impressions, (3) telephone interviews with parents and children, (4) face-to-face parent interviews, and (5) parent questionnaires.

#### Observations by Independent Observers

Two observation measures that have evolved from a common background and that have been widely employed to assess the outcome of social learning-based family interventions with young children (ages 3 to 8 years) are the Dyadic Parent-Child Interaction Coding System (DPICS) (Eyberg and Robinson 1983; Eyberg et al. 1994) and the Behavioral Coding System (BCS) (see Forehand and McMahon 1981). The DPICS II (Eyberg et al. 1994) is a revised version of the DPICS (Eyberg and Robinson 1983), which, while similar in purpose and structure, has undergone substantial expansion from the original version. Both the DPICS and the BCS are modifications of the assessment procedure developed by Hanf (1970) for observing parent-child interactions in clinic or laboratory playrooms; however, both systems have also been employed and validated in home observations.

**Administration.** In the clinical or laboratory setting, a parent-child pair is observed in a playroom equipped with various age-appropriate toys. An observer codes the parent-child interaction from an adjoining observation room. Prior to the observation, each parent is instructed to interact with his or her child in several different contexts. These include free play (referred to as “Child-Directed Interaction” in the DPICS and “Child’s Game” in the BCS) and parental control (referred to as “Parent-Directed Interaction” in the DPICS and “Parent’s Game” in the BCS) tasks. The DPICS also includes a third structured task: Clean Up. Each of these tasks lasts 5 to 10 minutes. Because the time spent in assessing parent-child interactions is relatively short, this playroom observation procedure can be repeated frequently, thus providing an ongoing assessment of intervention effects.

The DPICS II offers flexibility in the methods for recording data. Coding can be conducted using paper-and-pencil systems that yield frequency counts or in which behaviors are recorded sequentially in

**TABLE 1.** *Examples of promising measures.*

Method/Name of Instrument	Authors	Parenting Variables Assessed
<i>Observation by Independent Observers</i>		
Dyadic Parent-Child Interaction Coding System (DPICS)	Eyberg and Robinson (1983)	Commands, descriptive and reflective statements, questions, acknowledgments, irrelevant verbalizations, praise, physical, critical statements
Behavioral Coding System	Forehand and McMahon (1981)	Rewards, attends, questions, commands, warnings, timeout
DPICS II	Eyberg et al. (1994)	Verbalizations, vocalizations, physical behaviors, responses following commands, responses following questions
DPICS-R	Webster-Stratton (1994)	DPICS variables plus positive and negative affect, problem-solving, parenting disagreement, specific parenting strategies
Fast Track Adaptation of Behavioral Coding System	McMahon and Estes (1993)	Commands, positive attention, negative attention
<i>Observer Ratings/Impressions</i>		
Oregon Social Learning Center Observer Impressions Inventory	Weinrott et al. (1981)	Hostility, disorganization <sup>a</sup>
Fast Track Coder Impressions Inventory	McMahon and Lengua (1996)	Appropriate discipline, harsh discipline, warmth
Webster-Stratton Adaptation	Webster-Stratton (1996b)	Nurturing/supportive, harsh/critical, discipline competence

**TABLE 1.** *Examples of promising measures (continued).*

Method/Name of Instrument	Authors	Parenting Variables Assessed
Telephone Interviews with Parents and Children		
Parent/Child Daily Report	Dishion et al. (1984a, b)	Monitoring, positive reinforcement, discipline
Daily Telephone Discipline Interview	Webster-Stratton and Spitzer (1991)	Physical force, critical verbal force, limit setting, teaching, empathy, guilt induction
Parent Interviews		
Oregon Social Learning Center Parent Interview	Capaldi and Patterson (1989); Oregon Social Learning Center (1991)	Monitoring, positive reinforcement, discipline*
Webster-Stratton Adaptation	Webster-Stratton (1996b)	Harsh, consistent, and positive discipline; physical force; critical verbal force; limit setting; teaching empathy; guilt induction
Parent Questionnaires		
Iowa Youth and Families Project Child Management Scale	Conger (1989)	Monitoring, inconsistent discipline, harsh discipline, communication
Spoth Adaptation	Spoth et al. (1995, in press)	Monitoring, effective discipline, positive reinforcement

\*Depending on the version, other parenting behaviors or constructs may be measured as well.

10-second intervals or a computer software program to record data in real time (Celebi and Eyberg 1994).

**Variables Assessed.** The DPICS included 12 parent behaviors and 7 child behaviors. The parent behaviors were (1) direct commands, (2) indirect commands, (3) descriptive statements, (4) reflective statements, (5) descriptive/reflective questions, (6) acknowledgments, (7) irrelevant verbalizations, (8) unlabeled praise, (9) labeled praise, (10) physical positive, (11) physical negative, and (12) critical statements. The DPICS II includes 26 behavioral categories, which can be coded for both parents and children. There are five categories of behavior: verbalizations (e.g., labeled praise, direct command, criticism), vocalizations (e.g., laugh, whine), physical behaviors (e.g., physical positive, destructive), responses following commands (e.g., compliance, noncompliance), and responses following information questions (e.g., answer, no answer). Coding categories may be reported as individual frequencies or combined into summary variables such as total praise, command ratio, or inappropriate behavior.

The BCS (Forehand and McMahon 1981) consists of six parent behaviors and three child behaviors. Parent behaviors include rewards (praise or positive physical attention); attends (description of the child's behavior, activity, or appearance); questions; commands (alpha commands are directives to which a motoric response is appropriate and feasible, beta commands are commands to which the child has no opportunity to demonstrate compliance); warnings; and time out. The child behaviors are compliance, noncompliance, and inappropriate behavior (whine-cry-yell-tantrum, aggression, deviant talk).

**Psychometric Properties.** The DPICS standardization study (Robinson and Eyberg 1981) reported adequate interobserver reliability; the means for parent and child categories were 0.91 and 0.92, respectively. A shorter version of the DPICS II intended for clinical use has been shown to have acceptable reliability estimates for nearly all parent and child categories (Bessmer 1993, cited in Eyberg et al. 1994).

The DPICS was successful in describing the parent-child interactions of children with conduct problems (Wruble et al. 1991) and was a sensitive measure of treatment outcome for these children in both the clinic (Eisenstadt et al. 1993) and the home (Webster-Stratton 1984). It has been used in conjunction with attachment variables to discriminate clinic-referred boys with conduct problems and control boys (Speltz et al. 1995). Recent investigations using the DPICS II

indicate that differences between referred and nonreferred children with conduct problems are detectable (Bessmer 1993) and that this measure is sensitive to treatment outcome in the clinic setting (Eyberg et al. 1995).

Using the BCS, Forehand and Peed (1979) reported an average interobserver agreement of 75 percent. The BCS possesses adequate test-retest reliability as well. Data from repeated observations of nonintervention parent-child interactions are stable and consistent with this coding system (Peed et al. 1977). With respect to validity, the BCS has been shown to discriminate between clinic-referred and nonreferred children in both the clinic (Forehand et al. 1975) and in the home (Griest et al. 1980). In other studies, parent-child interactions in the clinic have been shown to be similar to those observed in the home (Peed et al. 1977) and to predict child behavior in the home (Forehand et al. 1978). The observation procedure is also sensitive enough to measure significant treatment effects in the clinic and home (see McMahon and Forehand 1984 for a review).

**Adaptations.** Both the DPICS and the BCS have also been employed in the home in less structured contexts than the tasks employed in the clinic or lab. However, such home observation sessions are not completely unstructured, with limitations on certain activities (e.g., no telephone or television use) and who should be present (e.g., all family members, no guests).

When the DPICS has been employed in home observations, multiple sessions are conducted. For example, Webster-Stratton (1984) observed each child interacting with the mother and the father for 30 minutes each on two separate days during each assessment period. Observations were conducted between 4:30 p.m. and 7:30 p.m. When employed in the home setting, the BCS (Forehand and McMahon 1981) is used to collect data in blocks of four 40-minute observations, conducted on different days. The BCS permits the behavior of only a single adult and a single child to be recorded at a given time. If more than one parent is being observed, then separate observation sessions may occur with each parent and child, or the observer can code the behavior of each parent with the child in alternating 5-minute periods (Forehand and McMahon 1981).

Webster-Stratton (1994) has developed a modification to the original DPICS that she refers to as the DPICS-R (for "Revised"). Primary revisions include the addition of microanalytic codes for positive and negative affective behaviors (e.g., smiles, tone of voice) and problemsolving and five-point observer ratings of parental nonverbal

affect (ranging from exuberant affect to unrestrained negative affect) during parent-child interactions observed in the home. She has also added codes that include sibling deviance, parenting disagreement and criticisms, and other specific parenting strategies such as time out, loss of privileges, warnings, and “Grandma’s Rule.” This version of the DPICS has been demonstrated to be sensitive to intervention effects in the home with both clinic-referred (e.g., Webster-Stratton 1994, 1996a) and high-risk samples (Webster-Stratton 1996b), both at posttreatment and at subsequent followups.

McMahon and Estes (1993) developed a simplified version of the BCS that has been employed in structured observations in the home on the Fast Track project with families with children ages 6 to 8 years (Conduct Problems Prevention Research Group 1992). It has fewer codes to maximize reliability and reduce training time while retaining important treatment outcome information regarding parent-child interactions. The structure of the session includes Child’s Game (5 minutes), Parent’s Game (5 minutes), a Lego Task (in which the child is told to construct a developmentally challenging Lego figure and the parent is instructed to give only verbal aid) (5 minutes), and Clean Up (3 minutes). Three parent behaviors (commands, positive attention, negative attention) and three child behaviors (compliance, noncompliance, and disruptive behavior) are recorded. A composite measure of parental warmth/involvement that includes the positive attention score has been shown to be sensitive to intervention control differences in the Fast Track intervention (Conduct Problems Prevention Research Group 1996).

#### Observer Ratings and Impressions

The Oregon Social Learning Center (OSLC) has pioneered the use of global ratings completed by observers following the completion of observations coded by microanalytic coding systems such as those described earlier. The original version of the Observer Impressions Inventory (OII) (Weinrott et al. 1981) consisted of 25 items, most of which were rated on Likert-type scales.

**Administration.** Items are completed by the observer immediately following an observation.

**Variables Assessed.** A cluster analysis of the items in the original OII (Weinrott et al. 1981) indicated that there were four dimensions: hostility, disorganization, child aggression, and parental reactivity to being observed.

**Psychometric Properties.** The OII showed adequate internal consistency ( $\alpha = 0.73$  to  $0.88$ ) and discriminated between families with and without children with conduct problems. Two of the four dimensions (disorganization, child aggression) were significantly correlated with pretreatment child aversive behavior scores from a microanalytic coding system and predicted posttreatment child aversive behavior scores as well. Combining the OII data with the pretreatment child aversive behavior scores resulted in the strongest predictor of deviant behavior at posttreatment (Weinrott et al. 1981).

**Adaptations.** OSLC has developed several versions of the OII to supplement a variety of microanalytic coding systems and observational paradigms. For example, one revision of the OII consisting of 46 items has been shown to contribute significantly to the parental inept discipline construct described by Patterson and Bank (1986). Dishion, Li, Spracklen, Brown, and Haas (this volume) employed a 27-item version that was completed by observers following a family problemsolving discussion task (Forgatch et al. 1985). Items from the inventory contributed to constructs such as monitoring, relationship quality, problemsolving, and positive reinforcement.

Other investigators have also adapted the OSLC observer impressions inventories for use in their own research. The Coder Impressions Inventory (CII) (McMahon and Lengua 1996) is an adaptation of several observer impressions inventories from OSLC that is being employed in the Fast Track project (Conduct Problems Prevention Research Group 1992). It is completed by observers at the end of the structured home observations described earlier and is based on the observer's overall impressions of the parent, the child, and their interactions. The following rationally derived subscales pertaining to parenting practices were supported by confirmatory factor analyses: appropriate discipline, harsh discipline, and warmth. Both appropriate discipline and a composite measure of warmth/involvement, which includes the warmth scale from the CII, demonstrated significant intervention-control group differences at the end of the first year of the Fast Track intervention (Conduct Problems Prevention Research Group 1996).

Webster-Stratton (1996*b*) has employed an expanded version of the Fast Track CII in her own work with younger preschool-age children and their families. She reports three scales related to parenting: (1) nurturing/supportive, which refers to parenting interactions that are characterized by an atmosphere of acceptance, appreciation and

respect for the child, positive encouragement, patience, and verbal and physical affection; (2) harsh/critical, which denotes a lack of acceptance, condemnation and disregard for the child, and criticism, sarcasm, neglect, and lack of acknowledgment of the child's abilities; and (3) discipline competence, which refers to the parent's ability to gain compliance utilizing a variety of discipline techniques, clear limit setting, realistic expectations, consistent follow-through, and general confidence. Cronbach's alphas range from 0.84 to 0.91, and interobserver reliabilities ranged from 0.75 to 0.96. In a prevention trial with Head Start families, Webster-Stratton (1996*b*) demonstrated significant differential improvement in parenting practices on each of the three scales of her version of the CII for mothers in the intervention compared with mothers in a control condition.

### Telephone Interviews With Parents and Children

An alternative to observations by independent observers in the natural setting is to train parents and children to observe and record certain types of parent and child behavior on a regular basis (e.g., daily). OSLC has developed telephone interviews with parents and children to obtain reports of the occurrence of particular child and parent behaviors during a restricted time period (e.g., over the past 24 hours). The Parent Daily Report (PDR) (Chamberlain and Reid 1987; Dishion et al. 1984*a*) has been widely employed as a measure of parental report of the occurrence of a variety of child behaviors (see McMahon and Estes 1997, for a review of this version of the PDR). Originally developed in 1969, the PDR exists in multiple forms. Current versions consist of various combinations of negative (and in some cases, positive) child behaviors (e.g., Chamberlain and Reid 1987; Patterson and Bank 1986; Webster-Stratton and Spitzer 1991); the PDR has also been modified to have parents report on the occurrence of parent behaviors (e.g., Dishion et al. 1984*a*). In addition, child report versions of these telephone interviews have been developed (e.g., Dishion et al. 1984*b*). This chapter focuses on those versions that collect data on parent practices rather than on child behavior.

**Administration.** The PDR is typically administered during a series of brief (5- to 10-minute) telephone interviews over the course of 1 to 2 weeks. Respondents are asked whether any of a variety of parenting practices have occurred in the past 24 hours.

**Variables Assessed.** Parent behaviors, ranging from a single item referring to whether the parent has spanked the child in the past 24 hours to multiple items assessing constructs such as parental

monitoring, positive reinforcement, and parental discipline, are included in many versions of the PDR (Chamberlain and Reid 1987; Dishion et al. 1984a; Patterson and Bank 1986). Some versions also record the setting in which the problem behavior is occurring (e.g., home, school, community, other).

There is also a parallel form of the PDR for children ages 11 to 14 variously referred to as the Child Daily Report (CDR), the Youth Daily Report, or the Child Telephone Interview. In one version (Dishion et al. 1984b; Patterson et al. 1992), the child is asked whether he or she has engaged in any of various conduct problem behaviors or has experienced peer relationship problems, whether peers have engaged in conduct problem behaviors, and whether the parents have engaged in any of several behaviors related to monitoring, discipline, and positive parenting.

The parent practices versions of the PDR and CDR can be employed on a preintervention basis to assess the frequency of various parenting practices and as a check on information presented by the parents in the initial interview. They can also be used during intervention to monitor the progress of the family. Although the child behavior version of the PDR has been employed extensively as a measure of intervention outcome on child behavior (Chamberlain and Reid 1994; Patterson 1982; Sheeber and Johnson 1994), uses of the parent practices versions of the PDR and CDR as measures of intervention outcome on parenting practices do not appear to have been published.

**Psychometric Properties.** Items from the parent practices versions of the PDR and CDR have loaded significantly, along with items from other methods/informants, on constructs such as monitoring, positive involvement, and positive reinforcement (Capaldi and Patterson 1989; Dishion et al., this volume; Patterson et al. 1992). Dishion and colleagues reported 3-month stabilities of the PDR and CDR for monitoring (0.42 to 0.48), relationship quality (0.60 to 0.67), and positive reinforcement (0.40 to 0.42).

**Adaptations.** The Daily Telephone Discipline Interview (DDI) was developed by Webster-Stratton (Webster-Stratton and Spitzer 1991) as an addendum to the child behavior version of the PDR to provide more detailed information about parental responses following child misbehavior reported on the PDR. The DDI has been employed with parents of young children (3 to 7 years old) referred for the treatment of conduct problems. Parents are called twice a week for 2 weeks and asked whether each targeted child behavior on the PDR occurred

during the past 24 hours. For each behavior endorsed by the parent, the interviewer asks “How did you handle this problem?” Responses are later coded for 43 behaviors that are included in one of six categories: physical force (e.g., spank, restrain), critical verbal force (yell, argue), limit setting (time out, logical consequences), teaching (reasoning, rewards), empathy (identifying warmly with child’s feelings), and guilt induction (humiliation, reminding child of mistake). Flexibility and inappropriateness of disciplinary strategy can also be scored.

The DDI possesses adequate psychometric properties. Overall interrater agreement was 80 percent and ranged from 60 to 88 percent for individual categories. Internal consistency was moderate, with alphas ranging from 0.59 to 0.86. Test-retest reliability (1 week) ranged from 0.45 to 0.75. DDI variables were significantly related to parent reports of child behavior problems, observed parent and child behavior, and parental self-reports of personal and marital adjustment and family violence (Webster-Stratton and Spitzer 1991). The DDI has also shown sensitivity to change: The inappropriateness of discipline strategy score predicted long-term parent training outcome at 1 to 2 years posttreatment for girls’ (but not boys’) teacher-rated conduct problems (Webster-Stratton 1996a).

#### Face-to-Face Parent Interviews

Structured in-person interviews with parents have also proven to be a valuable tool for assessing parenting practices. The example of a structured parent interview presented here was also developed at OSLC (Oregon Social Learning Center 1991). This Parent Interview was originally developed to assess an at-risk population in the Oregon Youth Study (Capaldi and Patterson 1989).<sup>2</sup> Although it has now been adapted in a variety of ways in more recent studies at OSLC, some recent adaptations have been used with general populations. The interview was originally developed for children in middle childhood, but the questions have now been adapted for a wide age range. To date, the Parent Interview has been used at OSLC with children from preschool age through late adolescence. (If the child is old enough, he or she may also be interviewed about the parents’ parenting behaviors, although the description here focuses only on the parent interview.)

**Administration.** The parent interview lasts approximately 45 minutes. Parents are asked about the frequency with which they engage in various parenting behaviors, such as monitoring, positive reinforcement, and consistent discipline, and how they would handle a

variety of discipline situations. Response options for frequency items are typically five-point Likert-type scales from “always” to “never.”

**Variables Assessed.** The Parent Interview is frequently used at OSLC as part of a multi-informant and multimethod assessment battery that includes this interview, telephone interviews, direct observations and/or videotaped interactions, and observer/interviewer impressions. The parenting behavior constructs assessed by the Parent Interview include monitoring, positive reinforcement, and discipline (Capaldi and Patterson 1989).

**Psychometric Properties.** The Parent Interview has continued to be one of the key forms of assessment in OSLC studies over many years, although the specific content of the interview has varied from study to study, depending on the target population and age of child studied. In general, research at OSLC has shown the Parent Interview to be a valuable source of information about parenting behaviors within the context of multimethod, multi-informant assessment (Dishion, Li, Spracklen, Brown, and Haas, this volume). The Parent Interview is rarely, if ever, used in isolation at OSLC.

Parent Interview items have loaded significantly with items from other methods/informants (e.g., observer impressions, child interview, parent and child telephone interviews) on constructs measuring monitoring, positive reinforcement, and discipline. Reliability and validity scores for these constructs vary from study to study, but monitoring and positive reinforcement constructs generally show good reliability and predictive validity (Capaldi and Patterson 1989; Dishion, Li, Spracklen, Brown, and Haas, this volume; Patterson et al. 1992). Parental reports of discipline have fared less well, however, because they have not been significantly associated with direct observation measures of parental nattering, abusive behavior, and use of appropriate and consistent discipline or with observer impressions (Dishion, Li, Spracklen, Brown, and Haas, this volume).

Some items from the OSLC Parent Interview have shown sensitivity to change in the context of OSLC’s multitrait-multimethod assessments (J. Reid, personal communication, December 1996), although in general, direct observational measures have been more sensitive to change than more global parent reports in the interview in OSLC investigations (Dishion, Li, Spracklen, Brown, and Haas, this volume).

**Adaptations.** Webster-Stratton (1996*b*) has adapted the OSLC Parent Interview for use with high-risk mothers of preschool-age children

(i.e., participants in Head Start). Her version consists of two sections that relate to parents' current parenting practices. One section consists of three summary scores related to the extent to which the parent's discipline is harsh, consistent, and positive. The other section asks the parent to respond to several examples of child misbehavior. Responses are then coded on the DDI (Webster-Stratton and Spitzer 1991). Internal consistency coefficients range from 0.60 to 0.71. Intervention families have shown significant differential improvement on both sections of this measure compared with nonintervention families at both posttreatment and 1-year followup (Webster-Stratton 1996*b*).

### Parent Questionnaires

A number of questionnaires specifically designed to assess parenting practices have been developed. Although most often completed by parents, in some cases older children and adolescents serve as informants. As noted by McMahon and Estes (1997), these questionnaires may be especially appropriate as adjuncts to behavioral observations of parenting practices, as methods to assess low base-rate behaviors or behaviors that are otherwise difficult to observe, as screening instruments in multiple-gating procedures to determine when more costly observational procedures are indicated, and as ways to assess intervention effects. Following is a description of a parent questionnaire currently in use by various investigators in Iowa—the Iowa Youth and Families Project Child Management Scale (ICMS).

Conger (1989) derived the ICMS from a set of items originally constructed by Thornberry and colleagues for a study of the causes and correlates of delinquency. Conger and colleagues have applied the ICMS in a longitudinal study of rural seventh graders and their families. This study, the Iowa Youth and Families Project (Conger and Elder 1994), examined an etiological model of economic stressors on family functioning and adolescent adjustment. In applications of the ICMS by Conger and colleagues, it has been used only in combination with the Iowa Family Interaction Rating Scales (Melby et al. 1991), a global observational coding system designed to measure the quality of behavioral exchanges between family members.

**Administration.** The ICMS is one of several instruments included in a questionnaire booklet administered to families as part of an in-home interview during which family interactions are videotaped. Parents are typically requested to complete the questionnaire booklet during the first segment of the interview, prior to videotaping.

In addition to parental self-report, the young adolescents in the Iowa Youth and Families Project reported separately on fathers' and mothers' child-rearing practices at each wave of data collection, using questionnaire items worded similarly to those responded to by their parents.

**Variables Assessed.** The Conger version of the ICMS is divided into several subscales: monitoring (6 items), inconsistent discipline (7 items), harsh discipline (4 items), and communication (10 items). Parents respond to each item on five-point Likert-type frequency scales, with the scales anchored by "always" and "never." Subsets of items from the communication subscale have been used to measure communications specific to standard setting, focusing on the use of inductive reasoning (four items) and on verbally rewarding positive child behaviors (two items).

**Psychometric Properties.** Subscale alpha reliabilities were assessed for both mothers and fathers, across multiple waves of data. The alpha reliabilities for the monitoring subscale ranged from 0.52 to 0.74 for mothers and from 0.63 to 0.77 for fathers. The alpha reliabilities for inconsistent discipline ranged from 0.51 to 0.72 and from 0.53 to 0.62; for harsh discipline from 0.44 to 0.60 and from 0.39 to 0.55; and for communication from 0.80 to 0.84 and from 0.80 to 0.83 for mothers and fathers, respectively. The alpha reliabilities for the parallel youth reports were similar to those for their parents. Parent-reported subscale measures have been shown to be fairly stable over a 1-year period (Magruder et al. 1992). Preliminary analyses of the correspondence between a subset of observer ratings on the Iowa Family Interaction Rating Scales and parent report of the specific parenting practices on the ICMS indicate correlations between 0.20 and 0.26 across all subscales for both mothers and fathers, with the exception of child monitoring (0.03 for mothers and 0.18 for fathers).

**Adaptations.** Spoth and colleagues have adapted ICMS subscales for two family-focused prevention intervention outcome studies (Spoth et al. 1995, in press). Spoth and colleagues (1995) used both the ICMS and the Iowa Family Interaction Rating Scales (Melby et al. 1991) to measure a global parenting construct of "general child management." Eight subscale items from the ICMS, representing three types of parenting practices (monitoring; effective discipline, including setting standards and consistent discipline; and rewarding positive child behavior), were combined with seven observer ratings from the Iowa Family Interaction Rating Scales. At pretest, the alpha reliabilities for the composite measure were 0.76 for mothers and

0.74 for fathers. At posttest, reliabilities for the mother and father measures were 0.72 and 0.70, respectively.

An intervention outcome model specified the expected relationship between “intervention-targeted parenting behaviors” (a measure designed to be sensitive to the specific behaviors directly targeted by the intervention, such as parental explanation of rules regarding substance abuse) and the more global general child management construct. The latter construct was expected to be indirectly influenced, rather than proximally influenced, by the intervention and therefore moderately sensitive to change. The findings were generally consistent with the hypothesized model. After controlling for intervention-targeted parenting behavior effects, there was only a small direct effect on the general child management measure for mothers and no direct effect for fathers.

A latent construct structural equation modeling approach (see Spoth, this volume) has also been employed to evaluate intervention outcomes (Spoth et al., in press). Thirteen ICMS subscale items measuring parenting dimensions similar to those described earlier were used to construct three scales serving as indicators of general child management. Observational measures of standard setting and consistent discipline from the Iowa Family Interaction Rating Scales (Melby et al. 1991) were also used as indicators of the latent variable construct. Indicator item scores were averaged for mothers and fathers. The alpha reliabilities for the three ICMS subscales were 0.68, 0.72, and 0.74, respectively. The combined measurement model showed an acceptable fit with the data and was equivalent across experimental groups and across time. Findings supported the construct validity of general child management. As expected, intervention effects on this construct were primarily indirect. The construct validity of the composite general child management measure has also been supported through a test of a model of protective family processes (Spoth and Redmond 1996).

## CONCLUSIONS

As previously stated, the authors’ goal was to assist researchers in selecting promising measures of parenting practices for assessing the outcome of family-based prevention interventions. First, the authors delineated a series of issues relevant to the selection of appropriate measures for evaluating family-based prevention interventions. These issues included theoretical constructs and objectives of the intervention, population and developmental period of interest,

methods and informants, psychometric properties, and additional issues related to longitudinal assessment. The evaluation of these issues by the individual researcher will, to a large extent, guide the selection of measures that are the most appropriate for addressing a particular research question.

Second, the authors provided examples of several sets of measures of parenting practices that appear promising because they meet reasonable psychometric criteria and have achieved some generalizability across research groups. Examples of observational systems, observer impressions, telephone interviews, in-person interviews, and parent questionnaires were all described, with attention to administration, variables assessed, psychometric properties, and adaptations.

Although the measurement of parenting practices has made great strides in recent years, sustained attention is still needed to continue to advance the field. Some of the most pressing issues in this regard are related to the cultural sensitivity of instruments, method variance, sensitivity to change in parenting practices, the fragmentation of the family and its implications for assessment, and longitudinal assessment over different developmental periods. In addition, efforts to develop valid yet cost-effective methods for assessing parenting practices in general populations must continue.

As discussed previously, the measures of parenting practices described in this chapter are “works in progress,” as the field of family-based prevention interventions continues to evolve and mature. Researchers must both continue to improve upon these promising assessment measures and use them as springboards for the development of new measures if they are to advance their ability to assess the outcomes of family-based prevention interventions.

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#### ACKNOWLEDGMENTS

The material presented in this chapter is based on discussions at a meeting sponsored by NIDA on Measurement Issues for Family Prevention Intervention, which was held in Snowbird, UT, October 14 to 16, 1996.

#### NOTES

Some of the descriptions of specific measures are adapted from McMahon and Estes (1997).

This book is now out of print. Information regarding OSLC instruments can be obtained by contacting Kathy Jordan (E-mail address "kathyj@oslc.org" or on the OSLC home page: <http://www.oslc.org>).

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