

Evaluating Stress Levels of Parents of Children With Disabilities

BETH M. LESSENBERRY

RUTH ANNE REHFELDT
Southern Illinois University

ABSTRACT: *Research has shown that the interactions of parents with their children with disabilities can have a profound impact on the progress that a child makes in his or her therapeutic or educational programs. For this reason, we argue that an important component of the screening and assessment process is a measure of the stress level experienced by parents. We provide an overview of the different assessment instruments currently used to evaluate stress in parents of children with disabilities, and make recommendations for further research and/or professional use of each instrument.*

Accumulating evidence suggests that parents of children with developmental disabilities often experience deleteriously high levels of stress (Bradley, Rock, Whiteside, Caldwell, & Brisby, 1991; Dumas, Wolf, Fisman, & Culligan, 1991; Hendriks, DeMoor, Oud, & Savelberg, 2000; McKinney & Peterson, 1987; Rodrigue, Morgan, & Geffken, 1990; Smith, Oliver, & Innocenti, 2001). Mothers of children with developmental disabilities have been reported to show significantly higher stress levels and report more negative child characteristics than mothers of children without disabilities (McKinney & Peterson), and mothers of children with autism have reported significantly higher stress levels and lower levels of parenting competency than mothers of children without disabilities (Rodrigue et al.). Parents of children with autism and behavior disorders have been similarly shown to report higher stress

levels than parents of children with Down syndrome and parents of children without disabilities, and also report higher frequencies of depression and struggles with challenging behaviors. This body of literature emphasizes the toll that raising a child with a disability may have on a parent.

It is important that professionals providing services to children with developmental disabilities carefully evaluate the levels of stress experienced by a child's parents, as well as the strategies for coping with the stress that a parent might exhibit. It is known that the family plays an important role in the child's treatment, and that parent training and involvement in services often improves the effectiveness of a particular intervention or treatment (Mahoney, Boyce, Fewell, Spiker, & Wheeden, 1998). For example, mothers of children receiving early intervention services showed significantly more interaction with their child than did mothers of children not re-

ceiving services. It seems reasonable to expect that the levels of stress a parent experiences may affect the frequency and quality of interactions with their child. Respite services in particular have been shown to reduce parental stress. Rimmerman (1989) discovered that mothers who received at least 6 hours of respite care per week for 6 months reported significantly lower stress levels than mothers who did not receive such services. Moreover, Mullins, Aniol, Boyd, Page, and Chaney (2002) found that parents of children who were admitted for an approximately week-long stay in a respite care facility and parents of children who were admitted for month-long inpatient treatment reported similar levels of stress reduction. These results suggest that the provision of short-term respite care may have a remarkable impact on a parent's well-being, which in turn may assist a child's progress and development.

The concept of stress can be broken down into four domains. These include (a) the *stressor*, or any event or situation that exceeds an individual's coping abilities; (b) *strain*, or the physical and emotional symptoms of a stressful event, including fatigue, irritability, muscle strain, and headaches (Sheridan & Radmacher, 1998); (c) *coping resources*, or those things that an individual can use to help mediate and manage the effects of a stressor, such as social support networks, intrapersonal strengths and skills, and educational contacts and resources (Sheridan & Radmacher); and (d) *coping strategies*, or the specific ways that an individual uses the available coping resources to avoid or reduce the effects of stressors. Examples of coping strategies might include attending a parent support group, hiring a respite care worker, or simply discussing fears and concerns with a friend or family member.

A number of assessment instruments have been created so that parental stress levels can be systematically measured and quantified. Each of these four domains can be assessed separately or in combination to provide information about the amount of stress a parent is experiencing and his or her reaction to that stress. Once an instrument or a battery of instruments have been selected for the assessment of a parent's stress level, it is appropriate to administer the tests as part of the initial screening of the child. The information provided in a stress assessment can play an important role

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in determining what type of intervention and services will be most beneficial to the child and the family. However, stress assessment can also be used throughout the course of treatment. A stress assessment could be used as a measure of program effectiveness both during and at the end of treatment. A stress assessment might also be useful in determining extraneous variables that may be affecting a child's performance in treatment.

This article will discuss instruments that are used in the assessment of parental stress for parents of children with disabilities. The instruments that were selected are those that have been used professionally with parents of children with disabilities such that their use is documented in the professional literature. A literature search using PsychINFO, an international index used to search literature in psychology and related disciplines (from 1966 to present), was conducted by the first author to confirm that all of the instruments selected for review have been used for this purpose, and to ensure that no instrument that has been used for this purpose was excluded. For each instrument, we describe its purpose, intended population, administration time, and reported values of reliability and validity. We do not provide criteria for what we believe constitutes an adequate instrument, but rather leave it to the user to determine which instrument suits a specific circumstance and what minimum level of reliability and validity he or she is willing to tolerate (see Pedhazur & Schmelkin, 1991). This information will be most valuable for professionals who provide services to children with disabilities and their families, such as educators, physical therapists, occupational therapists, speech pathologists, psychologists, behavior analysts, and family counselors.

PARENTAL STRESS ASSESSMENT INSTRUMENTS

PARENTING STRESS INDEX

The Parenting Stress Index (PSI) was developed by Abidin (1997) and is intended to assess the impact that the parenting role has on an individual's stress level. The PSI is a 120-item instrument that is available in both a paper version and a computer program. The 120 items are divided into the three separate sections of child characteristics, parent characteristics, and a stressful life events scale. The stressful life events scale is optional and does not have to be completed to obtain a valid score. The items in the child characteristics domain are further divided into the subscales of adaptability, demandingness, mood, distractibility/hyperactivity, acceptability of child to parent, and child's reinforcement of parent. The items in the parent characteristics domain are divided into the subscales of depression, attachment to child, social isolation, sense of competence in the parenting role, relationship with spouse/parenting partner, role restrictions, and parental health. Both the parent and the child characteristics sections are scored on a 5-point Likert-type scale, with a response of 5 indicating "strongly agree" and 1 meaning "strongly disagree." Responses to the stressful life events scale are recorded in a yes/no format. The results are presented with a subscore for each category and a total score, which can be interpreted using the computer program or information provided in the test manual. The PSI was originally intended for use with parents who have at least a fifth-grade reading level and who have children between the ages of 6 months to 10 years. A short version of the PSI is available and consists of 36 items drawn from the original version (Abidin).

A large number of studies have explored the reliability and validity of the PSI, with the test manual providing the abstracts of more than 250 studies involving the PSI. According to Abidin (1997), the test-retest reliability of the tool is fairly strong, with a range of .65 to .96 for the total score when the retests were conducted across time intervals from 3 weeks to a year (see Table 1). The average coefficient alpha reliability for the total score is .95 (Abidin). In an independent re-

view of the PSI, Wantz (1989) described these results as a strong indicator of the instrument's reliability; however, another reviewer described the same results as falling below the minimal standards necessary to establish reliability (Gresham, 1989).

The validity of the PSI has been established using a variety of studies into its predictive and concurrent validity (LaFreniere & Dumas, 1995). It has been shown to validly predict risk factors for abuse (LaFreniere & Dumas), the child's health status, and the mother's social status, as well as being correctly correlated with the Parent/Caregiver Involvement Scale and the INTERACT Behavioral Coding System.

The PSI is a flexible tool that can be used for a variety of purposes. The test's developer (Abidin, 1997) recommends it for measuring treatment progress, identifying areas for parenting skills training, and identifying parents at risk for abusive behavior. Abidin also described a case study in which the PSI was used to assist in making a decision in a child custody hearing. Smith et al. (2001) used the PSI as part of an assessment battery to examine the relationship between family and child variables and the level of stress experienced by parents of children with developmental disabilities. In a study performed by McKinney and Peterson (1987), the PSI was used to examine the variables that could act as predictors of high stress levels for parents of children with disabilities. In an independent review of the PSI, Wantz (1989) praised the instrument as being appropriate for diagnostic, research, and screening purposes.

Despite the apparent strengths of the instrument, such as its flexibility, its strong predictive validity, and its unique examination of both parent and child characteristics, the PSI does have at least one important drawback. According to several researchers, the standardization sample used in both the development of the test and for score interpretation is fairly limited and is not adequately representative of the U.S. population (Gresham, 1989; Wantz, 1989). There is a clear need for information regarding the instrument's use with parents with a wide range of education and income levels, as well as parents of non-Caucasian ethnicity and from a broader geographic region. Once a more representative

TABLE 1
Administration Information and Psychometric Data of Stress Assessment Instruments

<i>Instrument</i>	<i>Purpose</i>	<i>Intended Population</i>	<i>Administration Time</i>	<i>Test-Retest Reliability</i>	<i>Internal Consistency</i>
<i>Clementine-Graichenfeldt Parent Satisfaction Scale</i>	Measures current levels of satisfaction with the parenting experience	Parents	not available	not available	not available
<i>Coping Resources Inventory of Stress (CRIS)</i>	Assesses the coping resources available for adapting to stress	Individuals with at least a seventh-grade reading level	45-60 minutes	0.93	0.88
<i>Family Inventory of Life Events and Changes (FLEEC)</i>	Evaluates the presence of stressors in families	Parents	not available	0.80	0.81
<i>Global Inventory of Stress (GIS)</i>	Measures an individual's status on the major dimensions of stress	Individuals with at least a seventh-grade reading level	15 minutes	0.89	0.86
<i>Parenting Stress Index (PSI)</i>	Assesses the impact the parenting role has on the stress levels of parents	Parents with at least a fifth-grade reading level	20 minutes	0.63-0.96	not available
<i>Parental Stress Scale</i>	Assesses the stress level associated with the parenting experience	Parents of children with and without clinical problems	not available	0.81	not available
<i>Perceived Stress Scale (PSS)</i>	Measures the extent to which situations are perceived as stressful	Individuals with at least a junior high school level of education	5 minutes	0.85	not available

standardization sample is provided, the PSI will be an effective instrument for assessing the stress levels of parents of children with disabilities.

PARENTAL STRESS SCALE

The Parental Stress Scale is an assessment tool designed to measure the level of stress parents experience as a result of having children (Berry & Jones, 1995). This tool is similar to the PSI in that both focus specifically on the stress generated by the parenting role, as opposed to the large number of instruments that fail to separate parenting stress from the stress that may result from other roles and situations, such as marital or financial difficulties.

The Parental Stress Scale consists of 18 items that describe the parent-child relationship and the parent's feelings regarding it. Parents respond by indicating the extent to which they agree or disagree with the statement. A Likert-type scale is used, with 1 indicating a strong disagreement and 5 indicating a strong agreement. Both positive and negative items are included, which allows the instrument to assess stress by weighing the negative impact of parenting against the benefits it may provide. For example, a positive item is "I am happy in my role as a parent." An example of a negative item is "I feel overwhelmed by the responsibilities of being a parent" (Berry & Jones, 1995). Although the scale's developers did not provide detailed information about the intended population or the length of time necessary for administration, the Parental Stress Scale was described as "appropriate for both mothers and fathers and for parents of children with and without clinical problems, and it is brief and easy to administer and score" (Berry & Jones, p. 470).

The standardization sample used in the development of the Parental Stress Scale consisted of two groups of parents of typically developing children (Berry & Jones, 1995). The first group included 125 parents with a mean age of 34.4 years and a mean education level of 15.5 years. The group was 91% Caucasian. The second group was made up of 233 parents, with a mean age of 36.8. Fifty percent of the group had college degrees and 95% were Caucasian. In the reliability studies performed with the standardization sample, reli-

ability was described as adequate, with a coefficient alpha of 0.83 (see Table 1). Test-retest reliability was also examined and found to be 0.81 when the scale was readministered after a 6-week period. When possible, the scale was administered to both parents in a household and their scores were examined for possible gender-related differences; however, no significant differences were found.

Tests of the scale's validity were performed with the standardization sample and several independent samples, during which Berry and Jones (1995) discovered that scores on the Parental Stress Scale were significantly correlated with scores on other measurements of stress, such as the Perceived Stress Scale (PSS) and the PSI. In addition, scores on the Parental Stress Scale effectively discriminated between the parents of typically developing children and parents of children with developmental delays and disabilities, as well as children with behavior problems. The validity of the scale was also assessed by comparing it to measures of emotion, social support, and role satisfaction, with the results indicating that the scores on the Parental Stress Scale were significantly correlated with the results on the additional measures (Berry & Jones).

An apparent strength of the scale lies in its ability to isolate and examine the stress that occurs as a result of the parenting role, without confounding those results with marital, financial, or other general life stress. However, an examination of the demographic data of the samples used for the scale's development and standardization reveals a drawback. The ethnic distributions of the two samples used were 91% and 95% Caucasian, indicating a need for further study of the scale's validity with a more ethnically diverse population (Berry & Jones, 1995).

In summary, the Parental Stress Scale appears to be an effective tool for assessing the level of stress that can be attributed to the parenting role. With further evidence of the scale's reliability and validity, the tool is likely to be eligible for recommendation in clinical use.

CLEMINSHAW-GUIDUBALDI PARENT SATISFACTION SCALE

Although the Cleminshaw-Guidubaldi Parent Satisfaction Scale does not directly measure the

construct of stress, it is appropriate for inclusion in a discussion of parenting stress because the purpose of the scale is to measure parents' current level of satisfaction with the parenting experience, which may contribute to or reduce the amount of stress experienced by parents (Guidubaldi & Cleminshaw, 1985). As the scale's developers suggest, the Cleminshaw-Guidubaldi Parent Satisfaction Scale could potentially allow professionals to identify attitudes and emotions that may directly affect parenting behaviors.

The Cleminshaw-Guidubaldi Parent Satisfaction Scale is a 50-item scale that requires respondents to use a 4-point Likert-type scale to indicate the extent to which they agree or disagree with each item. The scale is divided into the five focus areas of spouse support, parent-child relationship, parent performance, family discipline and control, and general satisfaction. The scale was developed through the examination of existing attitude assessments and the responses to a survey that asked parents what three factors they believe contributed to satisfaction in the parenting role, and what three factors they believe contributed to dissatisfaction in the parenting role (Guidubaldi & Cleminshaw, 1985). The authors did not provide details regarding the estimated duration of administration or the specific population for which the tool is appropriate.

In initial validity studies, the scale was examined for face and construct validity. Three child and family development experts were selected to study the scale and all three gave the tool good face validity ratings (Guidubaldi & Cleminshaw, 1985). To determine construct validity, the Cleminshaw-Guidubaldi Parent Satisfaction Scale was administered along with four life and/or marital satisfaction assessments, including the Dyadic Adjustment Scale (Spanier, 1976) and the Life Satisfaction Index (Lee, 1978). The scores on all five measures were significantly correlated in the expected directions (Guidubaldi & Cleminshaw).

The Parent Satisfaction Scale was also examined for any possible bias related to respondent characteristics (Guidubaldi & Cleminshaw, 1985). When a variety of characteristics such as age, socioeconomic status, and number of children were examined, the only significant correlations involved the gender of the respondent and

marital status. Both males and married respondents reported higher levels of satisfaction than did females and unmarried respondents (Guidubaldi & Cleminshaw).

Although the Cleminshaw-Guidubaldi Parent Satisfaction Scale appears to serve an important function in identifying attitudes and emotions that directly influence parenting, there is a clear need for further information concerning its validity and reliability and its effective use in a variety of clinical and research situations. The developers of the assessment recommend using the scale only for research purposes until further information is available (Guidubaldi & Cleminshaw, 1985).

GLOBAL INVENTORY OF STRESS

The Global Inventory of Stress (GIS) has been described as a generic scale (Sheridan & Radmacher, 1998) because unlike several other assessments, it does not focus on one specific dimension of stress. Instead, the GIS provides a more comprehensive examination of the three major dimensions of stress: coping resources, environmental stressors, and the perception of stress. Each of these areas is measured equally in the determination of a total stress score.

The GIS is one scale within the Comprehensive Scale of Stress Assessment (CSSA; Sheridan & Radmacher, 1998), which is a four-part assessment battery. The CSSA provides an in-depth assessment that measures both specific dimensions and global stress. However, the GIS can be effectively administered independently of the other components and is appropriate for use when a global assessment is desired.

The scale is a 22-item questionnaire that is appropriate for use with both adolescents and adults who have at least a seventh-grade reading level. The test can be administered in an estimated 15 min. Each of the 22 items falls under one of the three dimensions of coping resources, environmental stressors, and perceptions of stress. To help respondents answer as accurately as possible, definitions for the following terms are provided within the test: strain, arousal, stressors, stress coping resources, and primary relationships (Sheridan & Radmacher, 1998). Responses are recorded on a 5-point Likert-type scale, with higher scores indicating greater stress. The test

yields both a total score and six subscores. Three of the subscores correspond to the three dimensions of stress, with the other three scores indicating the three major situations in which stress is likely to take place—primary relationships, social relationships, and work situations. The total score is determined by summing the six subscores.

A variety of studies have examined the reliability of the GIS. In a study involving 307 college students, Radmacher and Sheridan (1989) examined the internal consistency of the scale and obtained a coefficient alpha of .86 (see Table 1). The test-retest reliability of the scale also appears to be adequate, with a correlation coefficient of .89 obtained after a 2-week period (Radmacher & Sheridan) and a correlation coefficient of .88 obtained when a retest was performed after 28 days (Sheridan & Radmacher, 1998). The results of Radmacher and Sheridan are presented in Table 1 because this is the highest value that has been obtained.

The validity of the GIS has been established through multiple studies focused on criterion and predictive validity. In a study by Radmacher and Sheridan (1989), scores on the GIS were compared to participants' grade point averages and to scores on the Orientation to Life Questionnaire (e.g., Feldt & Rasku, 1998), and the Social Readjustment Rating Scale (e.g., Scully, Tosi, & Banning, 2000). The results indicate statistically significant correlations between the GIS and the other measures, with each of the correlations occurring in the predicted direction. In a separate study, statistically significant correlations were found between scores on the GIS and responses to a measure of daily health status, indicating that the scale could be used to identify individuals at risk for potential health problems (Sheridan & Radmacher, 1998).

The predictive validity of the GIS has also been studied. Specifically, the scale was shown to be an effective predictor of hypertension. In a study by Evans (as cited in Sheridan & Radmacher, 1998), the scale was found to predict anxiety in high school and college students.

The reliability and validity of the GIS has been demonstrated across a diverse population and in a variety of settings. In addition to its apparent psychometric strength, the brief time necessary for administration and global approach

make the scale an effective and efficient tool that is appropriate for a wide range of use, including the assessment of the stress levels of parents of children with disabilities.

Instruments that assess stress based on the number of stressors present in a person's life fail to take into account the way that people interact with those stressors and the influence that coping resources may have on the actual experience and perception of stress.

PERCEIVED STRESS SCALE

The PSS is an instrument intended to provide a global measure of the extent to which an individual perceives his or her life to be stressful (Cohen, Kamarck, & Mermelstein, 1983). Whereas more objective tools are typically designed to measure the number of potentially stressful events or situations occurring in an individual's life, the PSS attempts to assess the respondent's beliefs about those events, which may provide a more accurate description of the actual level of stress being experienced (Cohen et al.). Instruments that assess stress based on the number of stressors present in a person's life fail to take into account the way that people interact with those stressors and the influence that coping resources may have on the actual experience and perception of stress. Although the PSS does not measure the amount of coping resources available to a respondent or the skills necessary to effectively utilize those resources, by assessing how stress is being perceived, the effects of those resources are measured indirectly.

The PSS is a 14-item questionnaire that typically takes 5 min to complete. Responses are scored from 0 to 4 on a Likert-type scale, with a score of 0 corresponding to an answer of "never" and 4 being an answer of "very often." The test is scored by reversing the scores on the positive items and totaling the scores. A higher total score indicates a higher level of perceived stress. The PSS is considered appropriate for use with people

who have a junior high school level of education or higher (Cohen et al., 1983).

Cohen et al. (1983) described three studies that were performed to determine the reliability and validity of the scale. Two of the studies were conducted with college students and the third sample consisted of participants in a smoking cessation program. In all three of the studies, gender and age were examined for possible relationships to perceived stress scores; however, no correlations were found for either variable in any of the samples.

The test-retest reliability of the PSS was assessed by readministering the scale to the two college samples after a period of 2 days and readministering it to the smoking cessation group after a period of 6 weeks (Cohen et al., 1983). Because the PSS was designed to measure a construct that changes from day to day, the authors expected the test-retest reliability to be low after longer periods. The results supported these expectations, with a correlation coefficient for the college groups of .85 and a correlation coefficient of .38 for the smoking cessation group. (The results for the college group are presented in Table 1.)

The criterion validity of the scale was assessed by examining the correlations between scores on the PSS and scores on a life events scale. It was expected that there would be a strong positive correlation between the two scales for all groups. A positive correlation was found between the scales, though it was fairly small, with scores of .20 and .17 for the two college groups and .38 for the smoking group. However, the authors claim that the correlation is adequate and large enough to be statistically significant (Cohen et al., 1983).

The PSS provides an assessment of the amount of stress individuals believe they are experiencing, which for some purposes may be a more effective tool than an instrument that measures the number of stressors present in an individual's life. This scale might be especially appropriate for identifying parents who need training in the effective use of coping resources. The PSS could also be used as part of an assessment battery that includes a measure of actual stressors, such as the Family Inventory of Life Events and Changes (FILE; a description follows). Such a combination of instruments would allow for a comparison be-

tween the number of stressors present and how those stressors are perceived.

FAMILY INVENTORY OF LIFE EVENTS AND CHANGES

The FILE is a self-report questionnaire that is intended to assess the presence of events and changes that are occurring within a family that function as stressors (McCubbin & Patterson, 1991). The presence of these stressors is used as a means of determining the amount of stress being experienced by a family. Using the number of stressors to assess the stress levels experienced by a family may provide a more objective evaluation than instruments, such as the PSS, that rely on subjective reports of the stress experienced.

The FILE is a 71-item questionnaire that is divided into 9 different scales, each of which is given a separate score, in addition to the total score. The 9 scales include Intra-Family Strains, Marital Strains, Pregnancy and Childbearing Strains, Finance and Business Strains, Work-Family Transitions and Strains, Illness and Family Care Strains, Losses, Transitions In and Out, and Legal (McCubbin & Patterson, 1991). Responses are recorded in a yes/no format, and for scoring purposes a "no" response is scored as 0 and a "yes" response is scored as 1. Scores are totaled and higher scores indicate a higher level of family stress. The total score is interpreted by determining where the score falls in the ranges of low, moderate, or high stress. The stage in which the family is currently functioning determines the range of scores. For example, for a couple with a preschool age child, a low score would fall in the range of 0–220, a moderate score would fall in the range of 221–839, and a high score would fall in the range of 840 or higher (McCubbin & Patterson). Descriptions of each stress category and the potential risks associated with it are provided in the assessment manual. There is also an alternative scoring method that involves weighting the responses to reflect the magnitude of change that different items represent. Both the weighted and the unweighted scoring methods provide accurate results (McCubbin & Patterson).

The instrument can be administered to either one parent or both simultaneously and the responses should include events and changes that

involved any of the immediate family members. The construct of family stress used in the development of this scale stipulates that if one family member is experiencing stressors, the presence of those stressors influences the total family stress (McCubbin & Patterson, 1991). Estimated duration of administration was not provided.

The authors of the FILE conducted an assessment of its internal consistency reliability for both the total score and the individual scale subscores (McCubbin & Patterson, 1991). A reliability score of .81 was found for the total score, and a range of .30 to .73 was found for the different subscales (see Table 1). These results indicate that only the total score should be used in assessing the family, instead of focusing on the subscale scores.

The test-retest reliability of the scale was examined in a study by McCubbin and Patterson (1991), in which they administered the test to 150 high school, undergraduate, and graduate students. The scale was then readministered to the participants 4 weeks later. The test-retest reliability of the total score was .80, with the subscales receiving scores ranging from .72 to .77.

McCubbin and Patterson (1991) also examined the scale's validity by comparing it to a similar family functioning instrument, the Family Environment Scales (see Anderson, 1984). The results show strong correlations between the two instruments in the direction expected. The predictive validity of the FILE was also assessed by examining the scores of families with a child with cystic fibrosis. The tool effectively showed that those families with a child with cystic fibrosis had higher stress scores than families without a child with cystic fibrosis, and the severity of the child's health problems was correlated to the family stress scores.

A study by Smith et al. (2001) included the FILE as part of an assessment battery used to examine the relationship between several family and child variables and the level of stress experienced by parents of children with disabilities. The specific variables assessed included general family functioning, general child functioning, family resources, social support, severity of disability, and the child's social skills. Statistical analysis of scores on the FILE, the PSI, the Family Support Scale, and the Family Resource Scale (Hanley, Tasse,

Aman, & Pace, 1998; Van Horn, Bellis, & Snyder, 2001) revealed that family functioning was a more effective predictor of stress levels than child functioning. The authors suggest that the results support the need for parent training programs that focus on the effective use of family resources, as well as education about available funding and support services (Smith et al.).

One disadvantage of the FILE is its length of 71 items, which may make it a less desirable choice for those professionals needing a brief assessment for initial screening purposes. However, this disadvantage may be outweighed by the valuable information that such a thorough instrument can provide.

COPING RESOURCES INVENTORY FOR STRESS

The Coping Resources Inventory for Stress (CRIS) is an assessment instrument designed to measure coping resources, such as problem-solving skills, physical fitness, confidence, and social support (Matheny & Curlette, 1998). The developers of the tool emphasize that coping resources differ from coping responses. Coping resources are described as those things that are in place before the stressful events occur; coping responses have been defined as the way that individuals react after the stressful events have occurred (Matheny & Curlette).

The CRIS is a 280-item instrument that is available as either a paper test booklet or a computer program. The items are divided into 12 subscales that focus on specific resource types. The subscales include self-disclosure, self-directedness, confidence, acceptance, social support, financial freedom, physical health, physical fitness, stress monitoring, tension control, structuring, and problem-solving. Administration of the computer version typically lasts 45 min; the test book is estimated to take 60 min to complete. The computer version of the test is scored by the software that accompanies it; however, the answer sheet of the paper test booklet must be faxed or mailed to the producers of the CRIS for scoring. The instrument produces 37 scores, including an overall score, a score for each of the 12 subscales, 3 composite scale scores, 16 wellness-inhibiting scale scores, and 5 validity key scores. The CRIS is appropriate for use with individuals who have

at least a seventh-grade reading level (Matheny & Curlette, 1998).

In examinations of the instrument's reliability, internal consistency has been found to be relatively high, with a median score of .88 and a range of .84 to .97 (see Table 1; Matheny, Aycock, Curlette, & Junker, 1993; Matheny & Curlette, 1998). The test-retest reliability of the CRIS was tested across a 4-week period, with a resulting mean score of .95 (Matheny et al.).

The concurrent validity of the CRIS was demonstrated by comparing the instrument to seven other tools, including the Social Reticence Subtest, the Social Support Questionnaire-Satisfaction Subtest, and the Personal Problem-Solving Inventory. Strong positive correlations were found between the CRIS and those instruments predicted to have convergent scores; the strong negative correlations were found with those instruments expected to be divergent, supporting the validity of the CRIS (Matheny et al., 1993).

Independent studies of the CRIS have also supported its concurrent and predictive validity. Gulesserian (as cited in Matheny et al., 1993) found significant correlations between the CRIS and the Beck Depression Inventory (Steer, Ball, Ranieri, & Beck, 1999), a finding that was supported by the results of a similar study conducted by Ellett (as cited in Matheny et al.). The validity of the CRIS in predicting illness, depression, and drug dependency has also been supported, as shown in studies performed by Cupp (as cited in Matheny et al.) and Matheny and Weatherman (1998).

In addition to using the CRIS to assess the stress levels and coping resources of parents of children with disabilities, other possible clinical applications include using the instrument as a pretest/posttest measure of effectiveness of a variety of interventions. The CRIS has been used to identify candidates for drug use relapse prevention programs and as an intake assessment in a drug rehabilitation center (Matheny & Curlette, 1998).

Similar to the FILE, a disadvantage of the CRIS is its duration of administration, which at 45 to 60 min may limit its appropriateness for inclusion in an assessment battery. This is even more true with the paper booklet version, which

must be faxed or mailed to the test producers for scoring. However, the important information it provides about coping resources and its predictive validity makes the CRIS worthy of consideration for professional use.

A number of factors may contribute to the elevated stress levels that parents of children with disabilities experience, including such child characteristics as challenging behaviors, reduced intellectual functioning, physical limitations, deficits in self-care skills, and limited social skills.

CONCLUSION

When developing an intervention program for a child with a disability, there is a clear need to assess not only the child, but also the child's parents in order to select the most effective interventions, provide the most appropriate supports and services, and increase the well-being of both the child and the family. It has been demonstrated that the stress levels of parents of children with disabilities are typically higher than those of parents of nondisabled children (Bradley et al., 1991; Hendriks et al., 2000; McKinney & Peterson, 1987; Rodrigue et al., 1990; Smith et al., 2001). A number of factors may contribute to the elevated stress levels that parents of children with disabilities experience, including such child characteristics as challenging behaviors, reduced intellectual functioning, physical limitations, deficits in self-care skills, and limited social skills. Parents may also have fears regarding the child's prognosis for improvement and the social stigma that often accompanies having a child with a disability. It has been shown that a parent's stress influences a child's development and the effectiveness of treatment programs (Mahoney et al., 1998). Importantly, Mahoney et al. observed that as parental stress levels increased, the quality of interactions with the child decreased. Moreover, parental stress has been shown to affect the psychological health of children with disabilities (Kobe & Hammer, 1994). Thus,

parental stress can have a profound impact on the development and progress of the child.

The instruments described in this review are all effective tools for evaluating stress, focusing on either the presence of stressors, the perception of stress and experience of strain, the availability of coping resources, or the ability to use those resources effectively. Further investigations into the psychometric properties of some of the instruments is still warranted, however. This is particularly the case for the Cleminshaw-Guidubaldi Parent Satisfaction Scale, which promises to have an important role in clinical practice once its reliability and validity have been more clearly specified. In addition, it is important that some of the instruments continue to be evaluated with more diverse samples. The PSI and PSS were evaluated using parents of similar ethnic, educational, or socioeconomic backgrounds. It is important that the psychometric properties of these instruments be assessed using a more varied sample of respondents. The instruments reviewed can be used either individually or in combination to develop a clear picture of the amount of stress affecting parents, and to assist practitioners in the creation of programs to teach parents techniques for reducing stress. By reducing parental stress, the effectiveness of services may be enhanced and the child's prognosis is likely to improve.

In addition to improving the services provided to the families of children with disabilities, stress assessment can also play an important role in research. A number of socially relevant research questions could be addressed with the use of a stress assessment battery. It may be important to compare the stress experience between parents of different ethnic origins and parents of different socioeconomic backgrounds. It may also be important to examine the degree to which parents' employment status affects their level of stress. Differences might be expected, for example, between the levels of stress for mothers who have full-time careers and mothers who work part-time or not at all. Examining the effects of stress on single parents of children with disabilities would also be an important endeavor, as would examining the coping resources and strategies utilized by single parents. The instruments could potentially be used to determine the effectiveness of experimental treatments or interventions, as well as to

compare the overall effectiveness of existing interventions for children with disabilities.

In addition to improving the services provided to the families of children with disabilities, stress assessment can also play an important role in research.

In conclusion, it is the responsibility of service providers to ensure that a child is receiving the best treatment possible. In order to ensure that services will benefit the child to the maximum extent possible, it is important that parents receive the support services that will enable them to fulfill their responsibility as parents to the best of their abilities. An initial step in this process is an evaluation of parental stress. Only then can appropriate support resources be suggested and referrals for other services be made. It is hoped that this review will encourage the use of stress assessment instruments and help practitioners to select those instruments that are most appropriate for a child and his or her family.

IMPLICATIONS FOR PRACTICE

This review inspires a number of implications for clinical practice. Clearly, practitioners must recognize the important role of parental stress in a child's progress and development. The stressors and strains that a parent experiences and the coping resources and strategies utilized by him or her can all have a dramatic impact on the family system. The assessment of parental stress should become a routine part of a child's screening and evaluation. The assessment can also take place periodically so as to assess changes in a parent's stress level over the course of a child's participation in treatment. We have reviewed a number of instruments, each of which can be administered in isolation or as a part of a larger, more comprehensive, stress assessment battery. Most of the instruments can be completed within a relatively short period of time, requiring little effort on the part of the respondent. The scoring and interpretation of most of the instruments reviewed are rel-

atively straightforward, and computer software is available for scoring use with some of the instruments.

A formal assessment of parental stress can provide a great deal of information that a mere interview with a parent cannot provide. An assessment of parental stress can, for example, help identify the support needs of a parent. Scores on the PSI, PSS, and CRIS might suggest the need for respite care, support groups, and marriage or family counseling. Many parents may be unable to articulate their need for such support services. A stress assessment can also identify parents who question their parenting competency. The GIS, PSS, and PSI may all provide a profile of a parent's perception of his or her own parenting abilities. Those who perceive themselves as incompetent are likely to benefit from parent training, as well as cognitively oriented psychotherapy that focuses on changing the parent's perceptions. Importantly, an assessment of parental stress can alert practitioners to potentially dangerous situations where a child is at risk for abuse or neglect. Use of the PSI may be particularly appropriate to this end. Finally, an assessment of parental stress may help identify parents who are at risk for the development of serious health problems that, if not identified and treated, could seriously jeopardize the parent's ability to care for his or her child.

With a growing emphasis on service outcomes, service providers may find that a demonstration of reductions in parental stress levels over the course of a child's involvement in services can be used as evidence for the effectiveness of those services. Thus it may be important to reevaluate a parent's level of stress several times over the course of treatment. A stress assessment can also inform practitioners of what particular aspects of a parent's relationship with his or her child is stress provoking. Such areas can then be made the focus of services. For example, Baker, Blacher, Crnic, and Edelbrock (2002) found that many parents of children with developmental delays reported that their child's demonstration of challenging behaviors in public caused the highest levels of stress. Teaching the child socially appropriate behaviors in community settings and teaching parents to manage challenging behaviors in such settings thus might be made a high priority for parents

An assessment of parental stress can help identify the support needs of a parent.

whose stress assessment was consistent with this finding. The GIS and the CRIS may be particularly useful for this purpose. Information obtained from an assessment of parental stress may also help explain a child's lack of progress in treatment. For example, a stress assessment may reveal that the parent seldom interacts with the child, often loses patience, and demonstrates other unproductive coping strategies. Last, measuring parental stress may encourage the practitioner to view the child within the context of the larger family system.

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ABOUT THE AUTHORS

BETH M. LESSENBERRY, Student, Behavior Analysis and Therapy program; and **RUTH ANNE REHFELDT**, Assistant Professor, Rehabilitation Services Program, Southern Illinois University, Carbondale.

Address all correspondence to Ruth Anne Rehfeldt, Rehabilitation Services Program, Rehabilitation Institute, Mail code 4609, Southern Illinois University, Carbondale, IL 62901-4609. E-mail: rehfeldt@siu.edu

Manuscript received October 2002; accepted April 2003.