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Resilience and Impairment: An Exploratory Study of Resilience Factors and Situational Impairment

Jack A. Naglieri¹, Sam Goldstein²,
and Paul LeBuffe³

Abstract

The purpose of this study was to begin to examine the relationships between social emotional factors related to resilience as measured by the Devereux Student Strengths Assessment (DESSA) and the degree of impairment as reflected in problem behaviors reported by parents according to the Home Situations Questionnaire (HSQ). A second goal was to study the relationships between impairment as measured by the HSQ with intelligence as measured by the Wechsler Intelligence Scale for Children—Fourth Edition (WISC-IV) and the Cognitive Assessment System (CAS). The participants were 49 children (76% males; all White; aged 6-14 years; mean = 8.9, *SD* = 2.0), evenly distributed among those diagnosed with attention deficit hyperactive disorder (ADHD) Inattentive, ADHD Combined type, ADHD Not Otherwise Specified, learning disabilities, mild mental retardation, depression, and combined depression and ADHD. The DESSA *T* score was 38.6, suggesting that this group of referred children were low in social-emotional protective factors. The WISC-IV Full Scale IQ was 96.8, with scores ranging from 87.7 on Processing Speed to 102.5 on Verbal Comprehension, and the CAS Full Scale was 94.5, with scores ranging from 90.9 in Planning to 100.4 in both Simultaneous and Successive processing abilities. Seven of the eight DESSA scales correlated significantly with the HSQ, as did the Social-Emotional Composite ($r = -.53$); lower social-emotional competence scores DESSA were associated with higher degrees of impairment in home situations. In contrast, none of the WISC-IV or CAS scales were significantly correlated with the HSQ.

Keywords

social emotional competencies, resilience, protective factors, PASS theory, CAS, WISC-IV, ADHD, impairment

The concept of resilience has gained considerable attention in psychology and education as have those variables that appear to protect children from risk factors or reduce their vulnerability (Brooks & Goldstein, 2005). Resilience can be defined as a child's achieving positive

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and avoiding negative outcomes under adverse conditions (Wyman et al., 1999). In this common usage, resilience often refers to positive adaptation in the context of past or present adversity. Resilience, when used in this manner, can be thought of as an outcome with at-risk children either achieving resilient outcomes or not. Consequently, those variables that influence the likelihood of successful adaptation include risk factors, vulnerabilities, adversity, and protective factors, all of which have both theoretical and practical importance. Unfortunately, there has been considerable confusion as to the precise meaning of and ways to measure the terms used by resilience researchers.

Progress in clarifying and operationalizing these concepts has been made in recent years as researchers have developed rating scales to measure protective factors that are used to quantify the child's social-emotional strengths related to resilience. For example, the Resiliency Scales for Children and Adolescents (Prince-Embury, 2007) measures areas of perceived strength and/or vulnerability related to psychological resilience along three dimensions (Sense of Mastery, Sense of Relatedness, and Emotional Reactivity). A series of resiliency scales has been published by researchers at the Devereux Center for Resilient Children. These include the Devereux Early Childhood Assessment for Infants and Toddlers (Mackrain, LeBuffe, & Powell, 2007), the Devereux Early Childhood Assessment (LeBuffe & Naglieri, 1999), the Devereux Student Strengths Assessment (DESSA; LeBuffe, Shapiro, & Naglieri, 2008) for children in kindergarten to eighth grade, and the Devereux Student Strengths Assessment—mini (DESSA-mini; Naglieri, LeBuffe, & Shapiro, 2010) for universal screening of social-emotional strengths. The availability of carefully developed measures of protective factors related to resilience offers the opportunity to examine essential validity questions related to these new instruments.

Historically, resilience has often been conceptualized as a categorical designation. That is, children have been described as resilient or not. The determination of resilience, in turn, has often been based on categorical indicators such as presence or absence of psychopathology, graduating from high school or dropping out, and juvenile arrest records or no involvement with law enforcement. This dichotomous view obfuscates the more subtle and graded effects that protective factors may have in determining day-to-day adaptation. In addition, these indicators are long-term, distal indicators of functioning. Using these important development milestones may require us to wait, in some cases for many years, before we ascertain whether or not a child is resilient.

Therefore, among the most important validity questions in the study of resilience is the relationship of protective factors to adequate daily functioning. That is, do children's scores on a measure of social-emotional factors related to resilience predict daily functioning? To answer such a question, it would be important to examine the degree to which scores from, for example, the DESSA are related to children's behavior at home. Demonstrating a relationship between the DESSA and the degree of impairment would suggest that these protective factors have relevance to actual behavioral outcomes. Assessing impairment in specific situations as a means of evaluating quality of life functioning can be accomplished with the Home Situations Questionnaire (HSQ; Barkley, 1981; DuPaul & Barkley, 1992). This rating scale has been used to assess the impact of a child's symptoms in home- and community-based situations. For example, Breen and Altepeter (1990) examined HSQ scores for two separate groups of 6- to 11-year-old children and found no gender differences in children with attention deficit hyperactive disorder (ADHD). Altepeter and Breen (1992) found four consistent factors (Nonfamily transactions, Custodial transactions, Task performance transactions, and Isolated play) that discriminated children with a diagnosis of ADHD from a control group. This scale seems to provide a measure of symptom severity related to overall levels of impairment (Gordon et al., 2006; Lewandowski, Lovett, Gordon, & Antshel, 2006).

The primary goal of this study was to begin to explore the relationship between protective factors related to resilience as measured by the DESSA with daily situational impairment as measured by the HSQ for a sample of children experiencing learning and emotional problems.

A secondary goal was to determine if situational impairment was more related to social-emotional scores on the DESSA than intelligence as measured by the Wechsler Intelligence Scale for Children—Fourth Edition (WISC-IV; Wechsler, 2003) and the Cognitive Assessment System (CAS; Naglieri & Das, 1997).

Method

Participants

The sample comprised 49 children primarily referred for evaluation by parents, physicians, educators, or community mental health providers to a fee-for-service neuropsychology clinic. Each participant received a comprehensive neuropsychological evaluation that included, for example, assessment of intellect, basic psychological processes, emotional functioning, and learning. Parents completed the DESSA at the time of evaluation of the child and the HSQ approximately 1 month prior to the evaluation. Parents gave written consent for their children to be evaluated and for the data to be used anonymously. The same parent rated HSQ and DESSA. The children (76% males; all White) in this study who ranged in age from 6 to 14 years (mean = 8.9, $SD = 2.0$) were in kindergarten to seventh grade. The sample was evenly distributed among those diagnosed with ADHD Inattentive, ADHD Combined type, ADHD Not Otherwise Specified, learning disabilities, mild mental retardation, depression, and combined depression and ADHD.

Instruments

Devereux Student Strengths Assessment. The DESSA (LeBuffe et al., 2008) is a 72-item standardized, norm-referenced behavior rating scale designed to assess social-emotional competencies that act as protective factors associated with degrees of resilience for children. The scale is completed by parents, teachers, or staff at child-serving agencies including after-school, social service, and mental health programs for children in kindergarten through the eighth grade. The DESSA standardization sample closely approximates the K-8 population of the United States on the basis of age, gender, geographic region of residence, race, ethnicity, and socioeconomic status (LeBuffe et al., 2008). A total of 2,494 children and youth in kindergarten through eighth grade comprised the standardization sample. Ratings were obtained from teachers and teacher aides ($n = 778$) and parents and other adult relatives living in the home ($n = 1,244$) with the children and youth; and after-school and other program staff contributed the remaining 472 ratings. See the DESSA Manual for more details including evidence of reliability and validity. The DESSA yields a total T score (mean = 50, $SD = 10$) as well as T scores for eight conceptually derived social-emotional competency scales. The scales are described below.

Social-Emotional Composite. This score, based on the combination of the eight scales, provides an overall indication of the strength of the child's social-emotional competence. The Social-Emotional Composite reliability coefficients for parent raters (.98) and teacher raters (.99) are very high.

Self-Awareness (7 items). This score provides an indication of a child's realistic understanding of her or his strengths and limitations and consistent desire for self-improvement. Internal reliability for parent and teacher raters are .82 and .89, respectively.

Social Awareness (10 items). This score provides an indication of a child's capacity to interact with others in a way that shows respect for their ideas and behaviors, recognizes her or his impact on them, and uses cooperation and tolerance in social situations. Internal reliability for parent and teacher raters are .84 and .91, respectively.

Self-Management (11 items). This score provides an indication of a child's success in controlling his or her emotions and behaviors to complete a task or succeed in a new or challenging situation. Internal reliability for parent and teacher raters are .82 and .89, respectively.

Goal-Directed Behavior (10 items). This score provides an indication of a child's initiation of, and persistence in completing, tasks of varying difficulty. Internal reliability for parent and teacher raters are .88 and .93, respectively.

Relationship Skills (10 items). This score provides an indication of a child's consistent performance of socially acceptable actions that promote and maintain positive connections with others. Internal reliability for parent and teacher raters are .89 and .94, respectively.

Personal Responsibility (9 items). This score provides an indication of a child's tendency to be careful and reliable in her or his actions and in contributing to group efforts. Internal reliability for parent and teacher raters are .86 and .92, respectively.

Decision Making (8 items). This score provides an indication of a child's approach to problem solving that involves learning from others and from her or his own previous experiences, using her or his values to guide her or his actions, and accepting responsibility for her or his decisions. Internal reliability for parent and teacher raters are .85 and .92, respectively.

Optimistic Thinking (7 items). This score provides an indication of a child's attitude of confidence, hopefulness, and positive thinking regarding herself or himself and her or his life situations in the past, present, and future. Internal reliability for parent and teacher raters are .82 and .89, respectively.

Home Situations Questionnaire. The HSQ (Barkley, 1981; DuPaul & Barkley, 1992) is a 16-item rating scale intended to assess the impact of a child's ADHD symptoms in home- and community-based situations. This rating scale allows the clinician to evaluate specific situations in which a child's impairments cause problems. Each item is scored Yes or No for the question "does this child have problems . . ." and then using a 1- to 9-point scale to answer the severity of the problem. Questions include topics such as situations when playing alone, watching TV, getting dressed, at the dinner table, doing chores, and so on. Each of the 16 items was scored on a 9-point scale: 0 (*no problem*) to 9 (*most severe problem*). Because there are no nationally representative norms for the HSQ, a total raw score was computed from the sum of these items rated by each child's parent. An internal alpha reliability of the HSQ of .911 was obtained for the present sample, which is very similar to the .93 reliability coefficient reported by DuPaul and Barkley (1992).

Wechsler Intelligence Scale for Children—Fourth Edition. The WISC-IV (Wechsler, 2003) is an individually administered test of general ability for children aged 5 to 17 years. The test yield four index scores (Verbal Comprehension, Perceptual Reasoning, Working Memory, Processing Speed) and a Full Scale IQ, each with a mean of 100 and standard deviation of 15. The average internal reliabilities for the scales are as follows: Verbal Comprehension = .94, Perceptual Reasoning = .92, Working Memory = .92, and Processing Speed = .88. The WISC-IV was standardized on 2,200 children aged 6 years 0 months to 16 years 11 months, who closely matched the U.S. population on the basis of gender, race, parental education, and geographic region. For more information on the reliability, validity, and utility of the WISC-IV, see O'Donnell (2009).

Cognitive Assessment System. The CAS (Naglieri & Das, 1997) is an individually administered test for children aged 5 to 17 years, which yields four scales (Planning, Attention, Simultaneous, and Successive [PASS]) organized according to the PASS theory and a Full Scale standard score, each with a mean of 100 and standard deviation of 15. The average internal reliabilities for the PASS scales are as follows: Planning = .88, Attention = .88, Simultaneous = .93, Successive = .93, and Full Scale = .96. The CAS was standardized on 2,200 children aged 5 years 0 months to 17 years 11 months, who closely matched the U.S. population on the basis of gender, race, ethnicity, parental education, community setting, geographic region, classroom placement, and educational classification. Naglieri and Conway (2009) summarized much of the research that showed

that the scores the CAS yields are (a) sensitive to the problems shown by children with attention deficit disorder and reading decoding disabilities, (b) strongly related to academic achievement, and (c) relevant to intervention and instruction.

Results

Means and standard deviations for all variables are provided in Table 1. The overall DESSA *T* score of 38.6 indicates that, as a group, these referred children were low in protective factors related to social-emotional strengths. The eight separate DESSA scales showed very little variability and ranged from a low of 37.9 for the Self-Management scale to a high of 42.1 on the Self-Awareness scale. The WISC-IV findings suggest that this sample was of average ability (Full Scale IQ of 96.8) with highest mean score on Verbal Comprehension (102.5) and lowest on Processing Speed (87.7). Interestingly, whereas the CAS Full Scale (94.5) was similar to the WISC-IV Full Scale IQ, the PASS scores varied considerably (a low score of 90.9 in Planning and high scores of 100.4 in Simultaneous and Successive processing abilities). The intercorrelations of the DESSA with the HSQ reported in Table 2 suggest that there were strong correlations between the two scales. Seven of the eight DESSA scales correlated significantly with the HSQ (at $p < .05$ using a Bonferroni correction for the number of values), as did the Social-Emotional Composite. These data suggest that the protective factors included in the DESSA are related to behaviors seen in the home as reported by parents with lower social-emotional competence being associated with higher degrees of impairment in home situations. In contrast, none of the WISC-IV or CAS scales were significantly related to the HSQ. The WISC-IV correlations ranged from .04 (Processing Speed) to .20 (Verbal Comprehension), and the CAS correlations ranged from $-.02$ (Simultaneous) to .16 (Planning; all $p > .10$).

Discussion

The primary goal of this study was to begin the examination of the relationship between protective factors as measured by the DESSA and behaviors that reflect situational impairment seen in the home as measured by the HSQ. Our findings suggest that, in this sample of clinic-referred children, an inverse relationship may exist between these two sets of variables. That is, the lower protective factors as measured by the DESSA the higher the degree of impaired behavior as measured by the HSQ. This finding suggests that children with greater reported behavioral and situational problems may in fact be less resilient as defined by the DESSA. Prior to considering the implications of these data, the limitations of this study must be recognized. First, the sample was small and limited to children referred in a fee-for-service clinic setting, which limits generalization of these findings. Second, the children were not grouped by specific diagnoses, and the possible effects of socioeconomic status or any other demographic variable were not controlled. Third, the HSQ has no national standardization sample that could be used to generate standard scores (for more information about the relevance of psychometric qualities to test use, see Naglieri & LeBuffe, 2005). Finally, more verification of the accuracy of parents' responses to the HSQ about their children's situational problems would be helpful. Despite these limitations, we can suggest some tentative conclusions and consider implications for evaluation and treatment.

If behaviors associated with resilience have significant impact on long-term outcome, clinicians should begin to focus on the development of resilience or protective factors for the most vulnerable youth. This could be accomplished by assessing protective factors as part of the comprehensive assessment used during the diagnostic process or, within a preventative perspective, assessing protective factors as part of a universal screening effort using the DESSA-mini as suggested by Naglieri et al. (2010). Additionally, in light of research suggesting that children

Table 1. Means, SDs, and *N* for the DESSA, WISC-IV, CAS, and Home Situations Questionnaire

	Mean	SD	<i>N</i>
DESSA Social-Emotional Composite	38.6	8.7	49
Personal Responsibility	38.7	8.6	49
Optimistic Thinking	40.9	10.1	49
Goal-Directed Behavior	41.1	10.5	49
Social Awareness	39.2	8.2	49
Decision Making	40.5	9.0	49
Relationship Skills	41.2	8.9	49
Self-Awareness	42.1	9.2	49
Self-Management	37.9	7.7	49
Home Situations Questionnaire	36.2	24.6	46
WISC-IV			
Verbal Comprehension	102.5	21.5	31
Perceptual Reasoning	99.7	19.2	31
Working Memory	96.7	16.5	31
Processing Speed	87.7	16.5	31
Full Scale IQ	96.8	20.7	31
CAS			
Planning	90.9	14.9	48
Simultaneous	100.4	16.5	48
Attention	92.8	14.4	48
Successive	100.4	15.2	48
Full Scale	94.5	17.3	48

Note: DESSA = Devereux Student Strengths Assessment; WISC-IV = Wechsler Intelligence Scale for Children—Fourth Edition; CAS = Cognitive Assessment System. DESSA values are *T* scores (mean = 50, *SD* = 10), WISC-IV and CAS are standard scores (mean = 100, *SD* = 15), and Home and School Situations Questionnaire values are raw scores.

Table 2. Pearson Correlations of the DESSA Social-Emotional Composite and Scales With the Home and School Situations Questionnaire Scores (*N* = 46)

	HSQ
DESSA	
Personal Responsibility	-.410*
Optimistic Thinking	-.420*
Goal-Directed Behavior	-.334
Social Awareness	-.540*
Decision Making	-.551*
Relationship Skills	-.476*
Self-Awareness	-.439*
Self-Management	-.519*
Social-Emotional Composite	-.531*

Note: DESSA = Devereux Student Strengths Assessment; HSQ = Home Situations Questionnaire. Correlations marked with an asterisk are significant at a Bonferroni-corrected $p < .05$.

demonstrating a greater degree of adversity and cross-situational problems typically experience greater problems as they transition through adolescence into adulthood (Goldstein & Rider, 2005), protective factors may have a significant role in mediating the potential adverse long-term outcome for these children. Importantly, future research should examine the extent to which positive

outcomes are possible for those children who show evidence of one or more strengths on the separate scales of the DESSA (sometimes referred to as islands of competence; Brooks & Goldstein, 2005). Finally, this study suggests that it may be important to assess protective factors for children who could be viewed as vulnerable because of their clinical status as protective factors were associated with positive outcomes, and they may also mitigate the impact of the clinical disorders. It will be equally important to determine what social-emotional interventions can be most effective for different types of disabled children and the extent to which the presence of a protective factor strength leads to less impairment and incrementally better outcomes.

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