

# How Are We Measuring Resilience Following Childhood Maltreatment? Is the Research Adequate and Consistent? What is the Impact on Research, Practice, and Policy?

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## Abstract

The authors review the literature on resilience following childhood maltreatment and describe how variation in the measurement of outcomes at various developmental stages affects research findings, practice implications, and policy recommendations. Although the 21 studies reviewed considered competent functioning in similar domains as evidence of resilience following maltreatment, few provided prevalence estimates for specific indicators or across domains of functioning. Using the National Survey of Child and Adolescent Well-Being (NSCAW), the authors explored different ways of operationalizing resilience. The number of children demonstrating competence following maltreatment varied greatly by the indicators used; furthermore, competence in one domain (behavioral, emotional, or educational) did not guarantee competence in another. About one in five children were functioning poorly in all three domains. Because findings vary according to the operational definition of resilience, researchers must use caution in conceptualizing their analytic variables and interpreting findings. Furthermore, given the lack of cross-domain competence, services to maltreated children and their families should be comprehensive.

## Keywords

child abuse/neglect, competence, methodology, resilience

Family scholars are often interested in child outcomes following an array of life events and transitions. For example, there is a vast literature on the effects of divorce on children (Cherlin et al., 1991; Kelly, 2003; Vandervalk, Spruijt, De Goede, Meeus, & Maas, 2004) and the transition from elementary to middle school has been widely addressed (Eccles, Lord, Roeser, Barber, & Jozefowicz, 1997; Eccles, Wigfield, Midgley, Reuman, Mac Iver, & Feldlaufer, 1993; Seidman, Allen, Aber, Mitchell, & Feinman, 1994). Much of this research effectively addresses the concept of resilience, or how well children are functioning after a given adverse event or at a particular developmental stage. Our research focuses on resilience following the experience of child maltreatment. Although this article will be of particular interest to scholars of family violence and dysfunction, it is broadly relevant to other family researchers. The research, policy, and practice implications of how resilience following childhood maltreatment is operationalized have implications for how scholars might consider measuring and operationalizing outcome variables in a host of other arenas.

The child maltreatment field has only begun in last few decades to pay as much attention to positive adaptation following maltreatment as historically has been paid to maladaptive

outcomes (1993; Masten, Best, & Garmezy, 1990). In the extant literature on resilience following childhood maltreatment, little attention has been paid to the variability in the breadth and depth of the measurement of resilience among maltreated children and the implications of different definitions. The purpose of this article is to review the research and describe the variability in how resilience has been measured within the child maltreatment literature, to present results on resilience using the National Survey of Child and Adolescent Well-Being (NSCAW; the first national longitudinal probability study of children and families reported to child welfare), to describe practice recommendations and policy implications of

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how resilience is measured, and to provide suggestions for future research on resilience following childhood maltreatment. Although any study of resilience would be incomplete without consideration of a host of both risk and protective factors, we limit the focus of this article to the concept of resilience. We do this because our primary interest is in the conceptual issue of resilience rather than how and why it is attained. We believe that defining competence and resilience are precursors to identifying risk and protective factors. In future work, we will examine characteristics and factors related to resilience.

## Measures of Resilience

Investigators generally describe the essential nature of resilience as a “dynamic process encompassing positive adaptation within the context of significant adversity” (Luthar, Cicchetti, & Becker, 2000a, p. 543). It is important to consider measurement issues because substantial differences in the operationalization of resilience yield dramatic differences across studies about its prevalence. Positive adaptation, or *resilience*, is typically defined as displaying average functioning (rather than doing exceptionally well), the lack of trauma symptoms or pathology, and/or accomplishing stage-salient tasks (Cicchetti & Rogosch, 1997; Haskett, Nears, Sabourin Ward, & McPherson, 2006; Jaffee, Caspi, Moffitt, Polo-Tomas, & Taylor, 2007; Luthar, Cicchetti, & Becker, 2000b). For children with a history of maltreatment, exhibiting competence (performing within the normal range) across domains of functioning serves as evidence of resilience. Determining which indicators best measure resilience at different developmental stages can present problems for researchers. Even if inclusion of relevant indicators is guided by stage-salient development, distinguishing dysfunction from “normality” can still be difficult, especially during adolescence when individuals act out or test boundaries.

In addition, complicating our understanding and definition of resilience is the importance of incorporating different domains of functioning, such as behavioral, educational, and emotional functioning. The importance of looking at resilience across domains is a theme commonly echoed in the literature (Kinard, 1998; Luthar et al., 2000b; Masten & Coatesworth, 1998). Yet, few child abuse studies have explored multiple domains of functioning. Many studies that purport to examine resilience only focus on single indicators or single domains of functioning without taking into consideration functioning across multiple areas of competence. As suggested by McGloin and Widom (2001), resilience clearly cannot be assessed by a single outcome given what is known about the pervasiveness of risks and multiple adverse consequences of child maltreatment. It would not be accurate, for example, to describe someone with a history of child abuse as resilient just because she does not have a diagnosis of depression, while at the same time she is substance dependent (McGloin & Widom, 2001). Therefore, we limit our review of the research on resilience following

childhood maltreatment to studies that include measures of multiple domains of functioning.

Despite the recognized importance of resilience, a number of scholars have commented on the need for more definitional clarity and more information on the prevalence and stability of resilience (Kaufman, Cook, Army, Jones, & Pittinsky, 1994; Kinard, 1998; Luthar et al., 2000a). Previous reviews of resilience following child maltreatment (Haskett et al., 2006; Heller, Larrieu, D’Imperio, & Boris, 1999; Kaufman et al., 1994) have described some of the problems. This article will extend the literature on resilience by describing how variation in the measurement of outcomes at various developmental stages affects research findings, practice implications, and policy recommendations.

## Research Review

We conducted a search of two computerized databases (psychlit and academic search premier) to locate studies using the following combination of keywords: resilience and (a) child abuse, (b) child maltreatment, (c) sexual abuse, (d) physical abuse, (e) neglect, and (f) emotional abuse. The reference sections of studies located via these database searches were subsequently examined to locate additional relevant studies. In all, we located 21 articles that investigated resilience in more than a single domain of functioning. To make meaningful comparisons between studies and because measures of resilience necessarily differ in relation to children’s stages of development, we organize this review by the developmental stage of the study participants (childhood or adolescence) and present study findings in Table 1. If a study employed a sample from more than one developmental stage, we used the age range and mean age of the sample to place the study in the most appropriate category and longitudinal studies that report results for more than one developmental stage may appear in Table 1 more than once.

Childhood studies include samples of children whose ages range between 5 and 12, with a mean of about 9 years old in most studies. The study of Jaffee and Gallop (2007) includes slightly older children, 8–16 years old, than other studies; but the majority of the sample was between 8 and 14 years, with mean ages of 10.96 at Wave 1 and 12.2 at Wave 2. Studies on adolescent resilience use samples of children whose ages range between 11 and 18, with mean ages that range from 13.5 to 15.7. Table 1 shows the indicators of resilience, measure, reporter, and use of a clinical cutoff. In the following section, we first explore the specific indicators used to assess resilience and then examine prevalence estimates.

### Childhood Functioning

Studies of resilience during childhood examine domains of functioning, which represent stage-salient developmental tasks including emotional regulation, formation of secure attachment relationships, peer relations, and successful school performance. Generally, the indicators used for this developmental

**Table 1.** Research on Resilience Following Childhood Maltreatment

Authors (Year): Sample Description	N; Age	Abuse Type	Indicators of Resilience	Measure	Reporter	Clinical Cut-off	Prevalence Estimates <sup>a</sup>
A. Childhood Functioning							
Jaffe, Caspi, Moffitt, Tomas, and Taylor (2007): Environmental Risk Longitudinal Study, Twin Cohort 2 Waves	2,232; 5; 7	CPA	Antisocial behavior; overall competence	TRF	T	N	34%; (3–9%)
Jaffe and Gallop (2007): National Survey of Child and Adolescent Well-Being, CPS sample Waves 1 and 3	2,065; 10.9; 12.2	CSA; CPA; N; EM; Other	Depression; trauma; internalizing problems; externalizing problems; reading; math; social skills; overall competence	CDI; TSCC; YSR/PRF/TRF; YSR/PRF/TRF; MBA; SRS	C; C; C/P/T; C/P/T; C; C; C	Y; Y; Y; Y; N; N; Y	NR; NR; NR; NR; (13–14%)
Flores, Cicchetti, and Rogosch (2005): Children from low-SES Latino families	133; 8.7	CSA; CPA; N; EM	Pro-social behavior; aggressiveness; withdrawal; overall competence	PEI/nomination; STRS; PEI/TRF; SD	CC/Pe; CC; CC	N; Y; N; N	NR; NR; NR; 9%
Bolger and Patterson (2003): Maltreated children from the Virginia Longitudinal Study of Child Maltreatment	107; 9	CSA; CPA; N; EM	Behavioral adjustment; emotional adjustment; peer relationships; academic achievement; overall competence	CARS/YSR; CARS/YSR; nomination; SRA/ITBS	T/C/Pe; T/C/Pe; Pe/ C; C	Y; Y; N; Y	NR; NR; NR; NR; (6–21%)
Shonk and Cicchetti (2001): Children from low-SES families	229; 8.8	CSA; CPA; N/EM	Academic achievement; social competence; behavioral adjustment	TRS/TRF; TOPS/ITC/TRS; TRF	T/SR; T; CC/IT	Y; Y; N	NR; NR; NR
Trembley, Hebert, and Piche (1999): Abused pediatric hospital patients	50; 8.2	CSA	Internalizing; externalizing; global self-worth	PRF; PRF; PCSC	P; P; C	Y; Y; Y	62%; 64%; NR
Bolger, Patterson, and Kuppermidt (1998): Charlottesville Longitudinal Study, subsample of maltreated children	107; 9	CSA; CPA; N/EM	Self-esteem; peer relationships; friendship quality	PCSC; Nomination; NRI	C; Pe; C	Y; N; N	NR; NR; NR
Cicchetti and Rogosch (1997): Low-income disadvantaged children	213; 8	CSA; CPA; N; EM	Social competence; psychopathology; academic functioning; overall competence	Nomination/TRF; CDI/TRF; SD	Pe/CC; C/CC; SR	N/Y; Y/Y; N	NR; NR; NR; (1.5–10%)
Chaffin, Wherry, and Dykman (1997): Abused children under medical care	84; 9.8	CSA	Behavioral symptoms; abuse symptoms	PRF/TRF; CITES-R	P/T; C	Y/Y; Y	NR; NR
Kaufman, Cook, Army, Jones, and Pitinsky (1994): Abused elementary school children	56; 9.6	CSA; CPA; N/EM	Academic achievement; social competence; clinical symptomatology	K-ABC/CBCL; SPP/TRS; CBCL/TRF	C/T; C/T; P/T	Y; Y; Y	64/43%; 61/21%; 50/43%
Cicchetti, Rogosch, Lynch, and Holt (1993): Low-income disadvantaged children	206; 9.6	CSA; CPA; N	Social competence; psychopathology; academic functioning; overall competence	Nomination/TRF; CDI/TRF; SD	Pe/CC; C/CC; SR	N/N; Y; Y; N	NR; NR; NR; (18%)
Eckenrode, Laird, and Doris (1993): Public schoolchildren	831; 10.9	CSA; CPA; N	Academic achievement; grades; grade repetition; disciplinary problems	ITBS; SD; SD; SD	C; SR; SR; SR	N; N; Y; Y	NR; NR; NR; 62%; 66%
Herrenkohl, Herrenkohl, Egolf, and Wu (1991): Lehigh Longitudinal Study, Wave 1		CSA; CPA; N	School success; social accomplishment; emotional functioning; overall competence	SD; SD; SD	SR; C; T	N; N; N	NR; NR; NR; 13%

(continued)

B. Adolescent Functioning

Authors	N	Abuse Type	Indicators of resilience	Measure	Reporter	Clinical Cut-Off	Prevalence Estimates
Collishaw, Pickles, Messer, Rutter, Shearer, and Maughan (2007): <i>Isle of Wight longitudinal study</i>	378; 14	CSA; CPA	Suicide ideation/attempt; anxiety disorder; conduct disorder; positive peer relations	SD; SD; SD; SD	C/P/T; C/ P/T; C/P/T; C/P	N; N; N; N	72%; 73%; 89%; 56%
DuMont, Widom, and Czaja (2007): <i>Prospective longitudinal study</i>	676; NR	CPA; CSA; N	Education; psychiatric disorder; substance abuse; arrest; violent behavior; overall competence	Graduation; DIS-III-R; DIS-III-R; SD; SRDC	C; I; I; OR; C	Y; Y; Y; N; N	48%; 54%; 67%; 73%; 81%; (48%)
Jaffe and Gallop (2007): <i>National Survey of Child and Adolescent Well-Being, CPS sample Wave 4</i>	2,065; 13.5	CSA; CPA; N; EM; Other	Depression; trauma; internalizing problems; externalizing problems; substance use; reading; math; social skills; overall competence	CDI; TSCC; YSR/PRF/ TRF; YSR/PRF/TRF; YRBS; MBA; MBA; SSRS	C; C; C/P/ T; C/P/T; C; C; C; C	N; Y; Y; Y; N; N; N; Y	NR; NR; NR; NR; NR; NR; NR; NR; (2- 11%)
Perkins and Jones (2004): <i>Physically abused middle and high school students</i>	3,281; 14.5	CPA	Problem alcohol use; tobacco use; drug use; sexual activity; delinquent behavior; suicide; purging; school success; helping others	ABQ; ABQ; ABQ; ABQ; ABQ; ABQ; ABQ; ABQ; ABQ	C; C; C; C; C; C; C; C; C	N; N; N; N; N; N; N; N; N	64%; 77%; 71%; 42%; 86%; 69%; 91%; 53%; 68%
Sagy and Dotan (2001): <i>Junior High School Israeli students</i>	226; NR	CPA; EM	Perceived competence; psychological distress	PSCS; LPEI	C; C	Y; N	NR; NR
Brown, Henggeler, Brondino, and Pickrel (1999): <i>Juvenile offenders</i>	120; 15.7	CSA; VE	Delinquency; psychopathology	SRD; DISC	C; C	N; Y	NR; NR
Lynsky and Ferguson (1997): <i>Christchurch, New Zealand health and development study</i>	1,025; 18	CSA	Major depression; anxiety disorder; conduct disorder; alcohol abuse; substance abuse; attempted suicide; Post CSA trauma; overall competence	CIDI; CIDI; SRD; CIDI; CIDI; CIDI; TSCC	C; C; C; C; C; C; C	Y; Y; N; Y; Y; N; N	88%; 83%; 95%; 81%; 91%; 97%; 92%; (24%)
Spaccarelli and Kim (1995): <i>Female victims clinic patients</i>	43; 14	CSA	Depression/anxiety; depression; social competence; overall competence	CDI/RCMAS; PRF; PRF	C/C; P; P	Y; Y; Y	44%; 47%; 81%; (24%)

Notes: Table Abbreviations include age (NR = not reported); abuse types (CSA = child sexual abuse; CPA = child physical abuse; N = neglect; EM = emotional or verbal maltreatment; VE = violence exposure); measures (SD = study developed, all others identified in Table 2); Reporters (C = child, CC = camp counselor, I = interviewer, OR = official record, P = parent, Pe = peer, T = teacher, SR = school records); clinical cutoff scores (Y = yes and N = no); and prevalence estimates (NR = not reported), PRF = parent report form; CDI = Revised Manifest Anxiety Scale; MBA = Mini Battery of Achievement; TSCC = Trauma Symptoms Checklist; ABQ = attitude and behavior questionnaire; YRBS = Youth Risk Behavior Survey; TOPS = Taxonomy of Problematic Social Situations for Children; CITES-R = Children's Impact of Traumatic Events Scale-Revised.

a. Estimates of overall resilience of maltreated children are represented in parentheses; other values represent estimates of competence for maltreated children on individual measures.

stage fall around three main themes behavioral and emotional competence, social competence, and academic achievement. Table 1 reports the proportion of maltreated children who were considered competent for each indicator and for overall competent or resilient functioning. Table 2 shows the items used to measure competence for each domain of functioning, their abbreviations, the authors of each item, and the number studies that have used each item to measure childhood or adolescent functioning.

*Indicators of behavioral and emotional competence.* The measure that is most widely used to assess children's problem behavior or emotional difficulties following maltreatment is the Child Behavior Checklist (CBCL), which includes youth, parent, and teacher reports of behavior and emotional problems and competencies. The CBCL produces a total behavior problems score and separate summary scores for externalizing and internalizing behaviors; it also includes several other narrow-band symptom scales. Other researchers use one or more indicators of specific disorders, such as depression or trauma, known to be associated with maltreatment; such as the Children's Depression Inventory (CDI), Trauma Symptoms Checklist (TSCC), or Children's Impact of Traumatic Events Scale-revised (CITES-R; see Table 2). Teacher reports of behavior problems, aggression, or withdrawn behavior are also used in samples of school-age children.

Only a few of these studies provide information on the proportion of maltreated children who demonstrate competence on behavioral or emotional indicators, among those that do, results indicate that between 43% and 66% demonstrate competence on any one measure. Jaffee and colleagues (2007) reported that only one third of their sample demonstrated behavioral competence; however, their measure combines two criteria externalizing and internalizing behavior problems.

*Indicators of social competence.* Measures of social competence in childhood indicate whether children have adequate social skills and social information processing abilities, positive peer and teacher interaction, and positive relationships. The most frequently used measure of social competence is the peer nomination method; some studies also use self-reported measures of friendship quality. Ratings of child interactions and relationships are also quantified in a number of studies from teacher reports.

Of the 13 studies we located only 1 (Kaufman et al., 1994) provides prevalence figures for social competence; 61% of maltreated children in the study met the criteria based on self-reports, but only 21% met the criteria for the teacher reported measure. Across studies, there was seemingly more ambiguity for the cutoff criteria needed to demonstrate social competence in comparison to behavioral and emotional competence. In several studies (e.g., Cicchetti & Rogosch, 1997; Cicchetti et al., 1993; Flores et al., 2005; Shonk & Cicchetti, 2001) measures were combined to create a composite score of social functioning, the criteria for social competence for maltreated children was relative to the level of functioning for the full

sample of at-risk children. Other studies tend to use population norm-based criteria.

*Indicators of academic competence.* During childhood, researchers tend to use measures of school performance (primarily standardized tests scores of vocabulary, reading, and math abilities), measures of achievement (subject grades and grade retention from school records), and teacher evaluations of academic engagement and performance to measure academic competence. The proportion of maltreated children who exhibit academic competence was only available in a single study (Kaufman et al., 1994); according to standardized test scores, 64% met the criteria for competence for academic performance, although teacher ratings indicated that 43% were competent.

*Prevalence of resilience.* Because the main focus of many studies of resilience during childhood is to identify characteristics and factors that enhance functioning, many do not provide information about the proportion of maltreated children, which demonstrate competence on single indicators or estimates of the prevalence of overall resilience. Moreover, researchers have used various strategies to operationally define resilience. Three studies (Cicchetti et al., 1993; Cicchetti & Rogosch, 1997; Flores et al., 2005) used the same method to measure competent childhood functioning. In these studies, competence is dichotomized as high functioning for those in the most adaptive third for *each* measure of pro-social behavior, behavioral symptomatology, and academic achievement; the other two thirds of the sample were considered to be not competent for that domain. The authors indicate that they used this method because so few children were able to meet criterion levels of competence. Summed scores for *all* indicators then reflected a composite score of overall functioning; this score was in turn used to divide children into three groups a high functioning or resilient level, a middle range level, and a low level. Using these criteria, 9–18% of maltreated and 17–35% of nonmaltreated children were determined to be resilient at any one point in time. Cicchetti and Rogosch (1997) used a longitudinal design and found that across 3 years, only 1.5% of the maltreated group and 10% of the comparison exhibited competence. The majority (67%) of their sample maintained stable functioning across the 3 years, and roughly equal numbers of the maltreated and comparison group had unstable or fluctuating patterns of functioning over time (10%). However, in contrast to the comparison group, a slightly larger proportion of the maltreated children experienced declines in functioning (12% vs. 9%), than experienced improved functioning (11% vs. 16%) over the 3 years.

A similar strategy was used in another longitudinal study that employed a sample of maltreated children and a comparison group (Herrenkohl, Herrenkohl, Egolf, & Wu, 1991). In this case, those scoring in the top 40% on three measures of competence (cognitive/academic, social, and emotional functioning) during the elementary school phase of the study were considered high functioning, those in the bottom 40% across



**Table 2.** Items Used to Measure Competence by Domain

Measure	Abbreviations	Authors	No. of Studies CH/AD
<b>Behavioral domain</b>			
Child Behavior Checklist	CBCL	Achenbach (1991a, 1991b)	
a. Youth Self-Report	YSR		2/1
b. Parent Report Form	PRF		3/1
c. Teacher Report Form	TRF		6/1
Student Teacher Relationship Scale	STRS	Pianta and Steinberg (1992)	1/0
Classroom Adjustment Rating Scale	CARS	Cowen, Lorion, and Caldwell (1975)	1/0
National Institute of Mental Health (NIMH) Diagnostic Interview Schedule	DIS-III-R	Robins, Helzer, Cottler, and Goldring (1989)	0/0
Self-Report of Delinquency and Criminality	SRDC	Wolfgang and Weiner (1989)	0/1
Youth Risk Behavior Survey	YRBS	Brenner, Kann, McManus, Kinchen, Sundberg, and Ross (2002)	0/1
Search Institute's Profile of Student Life: Attitude and Behavior Questionnaire	ABQ	Benson (1990), Blyth (1993)	0/1
Diagnostic Interview for Children	DISC	Schaffer (1992)	0/1
Composite International Diagnostic Interview	CIDI	World Health Organization (1993)	0/1
Self-Report Delinquency Instrument	SRD	Elliot, Ageton, Huizanga, Knowles, and Canter (1983)	0/1
Study-Developed Measure	SD		0/2
<b>Emotional Domain</b>			
Child Behavior Checklist	CBCL	Achenbach (1991a, 1991b)	
a. Youth Self-Report	YSR		2/1
b. Parent Report Form	PRF		2/2
c. Teacher report form	TRF		2/1
Pupil Evaluation Inventory	PEI	Pekarik, Prinz, Liebert, Weintraub, and Neale (1976)	1/0
Classroom Adjustment Rating Scale	CARS	Cowen, Lorion, and Caldwell (1975)	1/0
Children's Depression Inventory	CDI	Kovacs (1992)	2/2
Trauma Symptoms Checklist	TSCC	Briere (1996)	1/2
Children's Impact of Traumatic Events Scale-Revised	CITES-R	Wolfe, Gentile, Michienzi, Sas, and Wolfe (1991)	1/0
NIMH Diagnostic Interview Schedule	DIS-III- R	Robins, Helzer, Cottler, and Goldring (1989)	0/1
Langer's Psychological Equilibrium Index	LPEI	Langer (1962)	0/1
Search Institute's Profile of Student Life: Attitude and Behavior Questionnaire	ABQ	Benson (1990), Blyth (1993)	0/1
Revised Manifest Anxiety Scale	RCMAS	Reynolds and Richmond (1978)	0/1
Study-Developed Measure	SD		1/1
<b>Social domain</b>			
Pupil Evaluation Inventory	PEI	Pekarik, Prinz, Liebert, Weintraub, and Neale (1976)	1/0
Nominations		Coie and Dodge (1983)	5/0
Network of Relationship Inventory	NRI	Furman and Buhrmester (1985)	1/0
Student Teacher Relationship Scale	STRS	Pianta and Steinberg (1992)	1/0
Social Skills Rating System	SSRS	Gresham and Elliot (1990)	1/0
Self-Perception Profile for Children	SPP	Harter (1985a)	1/0
Taxonomy of Problematic Social Situations for Children	TOPS	Dodge, McClaskey, and Feldman (1985)	1/0
<b>Children</b>			
Teacher's report form	TRF	Achenbach (1991a, 1991b)	3/0
Teachers Checklist of Children's Peer Relationships and Social Skills	TC	Coie and Dodge (1988)	1/0
Teachers Rating Scale	TRS	Harter (1985b)	2/0
Search Institute's Profile of Student Life: Attitude and Behavior Questionnaire	ABQ	Benson (1990), Blyth (1993)	0/1
Parent Report Form	PRF	Achenbach (1991a, 1991b)	0/1
Study-Developed Measure	SD		0/1

(continued)

Table 2 (continued)

Measure	Abbreviations	Authors	No. of Studies CH/AD
Academic domain			
Mini Battery of Achievement	MBA	Woodcock, McGrew, and Werder (1994)	1/1
Achievement Series	SRA	Science Research Associates	1/0
Iowa Test of Basic Skills	ITBS	The University of Iowa College of Education	2/0
Teacher's Report Form	TRF	Achenbach (1991a, 1991b)	1/0
Kaufman Assessment Battery for Children	K-ABC	Kaufman and Kaufman (1983)	1/0
Search Institute's Profile of Student Life: Attitude and Behavior Questionnaire	ABQ	Benson (1990), Blyth (1993)	0/1
Study-Developed Measure	SD		4/1
Self-esteem			
Perceived Competence Scale for Children	PCSC	Harter (1985)	2/1

Note: CH = childhood studies; AD = adolescent studies.

the three measures were considered low functioning, and all others were labeled as middle functioning. Thirteen percent of the maltreated group demonstrated overall competence.

Bolger and Patterson (2003) used two strategies to determine the prevalence of resilience in a 4-year study of maltreated children. Their first strategy was to ascertain how many children displayed high positive adjustment in one domain (better than 1 standard deviation above the mean) without doing poorly (lower than 1 standard deviation below the mean) in any other domain. Based on these criteria, only 9% were classified as competent in any year of the study, and only 1 (0.9%) was considered resilient with sustained positive functioning over the 4 years of the study. Their second strategy was to use factor analysis of all measures to create a composite measure of competence; to be classified as competent a child's score had to be above the median score of the sample for each year of the study, and to be classified as resilient a child's score had to be above the median across the 4 years of the study. Using this method, 21% were considered competent at any one time and 5% were classified as resilient.

Two more recent articles (Jaffee et al., 2007; Jaffee & Gallop, 2007) describe the prevalence of resilience among nationally representative samples of children. In the first (Jaffee et al., 2007), a study of English and Welch twin pairs, the authors operationalized competence for maltreated children as teacher reported antisocial behavior scores at or below the median of the nonmaltreated comparison group. Nine percent of maltreated children met the criteria for overall competence at either age 5 or 7 and 3% were resilient at age 7. Jaffee and Gallop (2007) provide estimates of resilience using the NSCAW data. The criteria for resilience in this study included measures of functioning in the domains of mental health, academic achievement, and social competence. Children were considered competent whether (a) self-reports indicated no depression or trauma and either the caregiver or teacher report on internalizing agreed with the child's assessment; and two of the three (caregiver, child, or teacher) reported no externalizing problems; and (b) children scored above the mean on standardized reading and math tests; and (c) both the teacher and caregiver reported competency in social skills. Using these criteria,

the authors report that 13% of the sample was competent on all three domains of functioning at the Wave 1 and 14% were resilient at Wave 3 (18 months postbaseline).

### Adolescent Functioning

Studies of resilience during adolescence include competence in behavioral, emotional, social, and academic domains. However, in addition to the absence of psychopathology, operational definitions of behavioral competence at this developmental stage assess a wide range of problematic behaviors such as delinquency, substance abuse, risky sexual behavior, purging, and suicidal behavior or ideation.

*Indicators of behavioral and emotional competence.* Some instruments assessing behavior problems commonly used in childhood studies are also used in the studies of maltreated adolescents. In addition, a variety of items are used to assess adolescent delinquent and risk behaviors as well as emotional problems known to be related to maltreatment (see Table 2). The instrument used by Perkins and Jones (2004) to assess resilient behavior differs appreciably from those in other studies. They use items from a single instrument, the attitude and behavior questionnaire (ABQ), to measure nine aspects of adolescent competence, including seven indicators of problem behavior. Taken together these items are more of a delinquency or deviant behavior scale and lack any measure of psychological disorder. Study-developed measures were more likely to be used to measure behavior and emotional problems in the studies of adolescents than for younger children. For example, one group of researchers (Collishaw, Pickles, Messer, Rutter, Shearer, & Maughan, 2007) used interviews of adolescents, parents, and teachers conducted by trained psychologists and social scientists to assess the frequency, duration, and severity of behavioral symptoms to derive clinical levels of anxiety disorder, conduct disorder, and suicidal ideation.

Determining which delinquent or deviant (such as sexual activity or purging) behaviors, or what frequencies of these behaviors, discriminate competence in adolescence seem to present one of the most difficult challenges for resilience

researchers. For example, any use of an illicit substance precluded adolescents from meeting the criteria of resilience in some studies (Jaffee & Gallop, 2007; Perkins & Jones, 2004) while continued use that leads to recurring problems is the criteria used by others (DuMont, Widom, & Czaja, 2007). This problem is especially evident when it comes to the measurement of delinquent adolescent behaviors as no two studies used the same indicator.

Lynsky and Fergusson (1997) relate the self-report of delinquency and criminality (SRDC) items to Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria for conduct disorder and report that 95% of their sample was competent (did not meet the criteria in the prior 2 years). Between 42% and 91% of maltreated adolescents demonstrated competence across the ABQ measures (Perkins & Jones, 2004); and DuMont et al. (2007) results show 81% were competent for violent behavior and 73% were competent for arrest. Unfortunately, there is no information available from studies in this review regarding how these instruments may be comparable to other measures of externalizing behavior such as the CBCL's youth self-report (YSR).

**Indicators of social competence.** There is limited use of measures of social competence in the studies of maltreated adolescence. Perkins and Jones (2005) include an indicator of helping others, which indicates an adolescent has at least once in the past year been involved in a project to help others, given money or time to a charity, or spent time helping someone who was poor, sick, hungry, or unable to provide their own care to measure pro-social behavior. In the two other studies that measured social competence, one used items from the CBCL's parent report form and the other used study-developed measures. One study (Collishaw et al., 2007) reported on positive peer relationships in adolescence; in this case, attachment to peers is employed both as a measure of adolescent competence and moderating factor for adult competence. The authors report that 56% of abused adolescents demonstrated competence in this area.

**Indicators of academic competence.** Three studies of adolescent resilience incorporate indicators of academic performance or achievement. Academic performance was measured by the Mini Battery of Achievement (MBA) in one study (Jaffee & Gallop, 2007); in other studies the ability to achieve grades of mostly As or Bs (rather than half B/half C or worse; Perkins & Jones, 2004) or successfully graduate from high school (DuMont et al., 2007) indicated academic competence. Perkins and Jones (2004) report that 53% of adolescents achieved school success based on grades and DuMont et al. (2007) report that 48% of their sample graduated from high school.

**Prevalence of resilience.** DuMont et al. (2007) considered adolescents to be resilient if they had been successful in at least four of the five domains shown in Table 1B. They found that 48% of adolescents with a documented history of abuse and 61% of the control group met the criteria for resilience. Lynsky

and Fergusson (1997) report that 24% of adolescents in their study met their criteria for resilience (competent on seven indicators of adjustment difficulties); another 24% exhibited only one difficulty. Thus, using comparable criteria, the two studies provide similar rates of resilience. However, the national prevalence estimates from the NSCAW study (Jaffee & Gallop, 2007) indicate that 11% of children in child welfare demonstrate competence during adolescence.

Few articles provide information about the proportion of adolescent who were able to achieve competence on measures of psychopathology or abuse-related trauma. Lynsky and Fergusson (1997) found higher levels of competence on most indicators (from 82% to 96%), but their assessments of functioning was limited to symptoms that participants experienced in the prior 2 years. The results from other studies without the 2-year caveat showed that between 53% and 89% of maltreated adolescents are competent on the various measures of psychiatric disorders. Spacarelli and Kim (1995) report that among the female victims of sexual abuse in treatment used in their study, 44% self-reported and 47% of parent reports indicated the absence of clinical levels of depression.

Results from a longitudinal study conducted by Herrenkohl, Herrenkohl, and Egolf (1994) showed that maltreated children in the high functioning group during elementary school were still functioning better on average as adolescents than those in the low functioning group on age-salient measures of competent functioning such as high school completion and self-reported criminal and delinquent behavior. However, 39% of the maltreated children who had been high functioning in elementary school dropped out of school before obtaining a high school diploma; and of the remaining 61% who had graduated or were still in school only 26% had achieved a B average or better.

## Summary

Previous reviews underscore the problem of incongruity between child, parent, and teacher reports of functioning (Haskett et al., 2006; Kinard, 1998; Kaufman et al., 1994); in our review of studies on resilience across multiple domains following childhood maltreatment, we also noticed the scarcity of information available in these articles about making comparisons between various informants. Additionally, other reviewers often suggested that there is a lack of consensus regarding the appropriate operational definition for resilience. Our review of relevant studies seems to indicate that this is not exactly the case.

As evident in Table 1, many researchers consider functioning in similar domains as evidence of resilient adaptation to childhood maltreatment. In childhood, many researchers consider peer attachment, academic achievement and performance, and behavioral and emotional regulation as evidence of resilience. During adolescence, most assessments include stage-salient problem behaviors (substance abuse/dependence, delinquency/criminality, suicidal ideation/attempts, and purging), some include measures of externalizing or internalizing



behavior problems, and others use instruments that measure psychiatric diagnosis. Academic performance and achievement and social skills also continue to be included as evidence of resilience in most studies. What is lacking across many studies is the prevalence estimates for individual indicators or grouping across domains.

The only area of disagreement regarding what indicators should be included in operational definitions of resilience seems to be about whether to include measures of self-esteem. There seems to be incongruity about the impact of maltreatment on self-esteem; some researchers have conceptualized it as a moderator, which may be more appropriate if levels are stable before and after maltreatment. Available studies seem to indicate that self-esteem lacks stability during childhood and adolescence (Kernis, 2005; Trzesniewski, Donnellan, and Robins, 2003). Younger children in particular seem to have trouble distinguishing between how they “typically” feel, a qualification of many questions included in self-esteem measures, and how they feel at the time they are interviewed or complete a questionnaire. Moreover, a recent literature review (Baumeister, Campbell, Krueger, & Vohs, 2003) indicated that self-esteem is not a strong predictor of objective outcomes such as school achievement, drug abuse, or criminality. We suggest that if self-esteem measures are included in studies of resilience that they should be limited to studies using adolescent or young adult samples; furthermore, we would suggest that self-esteem is better conceptualized as a risk factor or protective factor related to, rather than an indicator of, resilience.

Another significant problem with establishing resilience results from the use of measures that do not provide clear criterion to establish competence. Researchers themselves are left to determine whether “normal” or “above average” levels of functioning should be the criteria that establishes resilience. Because the study of resilience originated in the field of developmental psychopathology, early studies define resilience as the absence of clinical levels of emotional or psychological disorders. Criminologists and child maltreatment researchers who conducted many of the studies in this review may be more sensitive to other outcomes associated with childhood abuse and seem more likely to include indicators of relationship problems, and delinquent, violent, or criminal behaviors. However, in a recent study, Collishaw et al. (2007) excluded these types of indicators of problems (personality difficulties, criminality, poor health, and relationship instability) as evidence of incompetence. The authors imply that because the aforementioned problem behaviors were more prevalent in the nonabused comparison group than among those who had suffered childhood physical or sexual abuse, their absence should not be used as evidence of resilience. Child maltreatment researchers would likely point to the substantial evidence that indicates delinquency and violence are likely a result from childhood abuse (Carter & Hay, 2003).

Another problem arising from our review is determining whether the normative samples used to develop the criterion levels for these instruments screen out maltreated children.

General population surveys will include maltreated children, thus the established norm may be biased. The extent of this problem may vary across measures. Taken together these problems likely produce inadequate and inaccurate prevalence estimates of resilient functioning. In the next section of this article, we explore the consequences of operationalizing resilience in different ways using the NSCAW data.

## NSCAW

NSCAW is a nationally representative sample of children who have been reported to child protective services (CPS) because of alleged maltreatment and whose reports resulted in a child welfare investigation. NSCAW used a stratified two-stage cluster sampling strategy that included 92 child protection agencies in 36 states. From these agencies, children were randomly selected from a list of completed maltreatment investigations. Because the CPS sampling frame included all investigated cases, NSCAW includes cases that were both substantiated and unfounded at baseline. Additional information on the NSCAW study design and sampling procedure has been previously published (National Survey of Child and Adolescent Well-Being [NSCAW] Research Group, 2002). The CPS sample of the NSCAW includes investigations conducted between October 1999 and December 2000, on 5,504 children aged 0–16 years. Face-to-face interviews were conducted with youth, his or her current caregiver, teacher, and caseworker at multiple time-points. The NSCAW study is an ongoing data collection effort (there are currently five waves of data collected approximately with 1-year interval; [http://www.acf.hhs.gov/programs/opre/abuse\\_neglect/nscaw/index.html](http://www.acf.hhs.gov/programs/opre/abuse_neglect/nscaw/index.html)).

For the current analysis, we use baseline data to provide prevalence estimates at three levels of resilience; the indicator level, domain, and overall (i.e., cross-domain). Cases missing the abuse type at baseline were dropped from our analyses ( $n = 456$ ). At baseline, case records indicated whether the case was substantiated (maltreated was indicated to have occurred). For the current analysis, we include substantiated (at baseline) cases for children aged 8 years or older, because the same indicators were used within each age group—school-age (8-to-10-year-olds, sample size varied by indicator and ranged from 725 to 816, with an average  $n = 762$ ) and adolescents (11-to-15-year-olds, sample size varied by indicator and ranged from 977 to 1,075, with an average  $n = 1,041$ ). Jaffee and Gallop (2007) also use NSCAW data, but we include two different age groups and additional measures. The current analysis was approved by the University of New Hampshire Institutional Review Board.

*School-age children.* At the indicator level, nine measures were included to assess competence. As shown in Table 3, the percentage of the sample, who were competent on individual measures ranged from 66% to 88%. If the indicator was having average scores on the Social Skills Rating System (SSRS; which measures children’s cooperation and responsibility), 66% of the sample was resilient. In contrast, if the indicator

**Table 3.** Percentage of Early School-Age<sup>a</sup> Children Resilient Following a Substantiated Report of Maltreatment ( $N = 762^b$ )

Measures of Resilience by Domain	% Competent	% Competent on the Number of Indicators Within Each Domain		
<b>Behavioral</b>		$\geq 1$ , 76%	2, 53%	
Scores in the nonclinical range on CBCL externalizing scale	63			
Average scores in the pro-social range on the Social Skills Rating System	66			
<b>Emotional</b>		$\geq 2^c$ , 94%	$\geq 3$ , 75%	4, 47%
Scores in the nonclinical range on Children's Depression Inventory	88			
Scores in the nonclinical range on Trauma Symptom Checklist for Children	78			
Scores in the nonclinical range on CBCL Internalizing Scale	83			
Scores in the age appropriate range on Vineland Adaptive Behavior Screener	73			
<b>Educational</b>		$\geq 1$ , 90%	$\geq 2$ , 73%	3, 45%
Scores within average range <sup>d</sup> on Mini Battery of Achievement for Reading	75			
Scores within average range <sup>d</sup> on Mini Battery of Achievement for Math	65			
Scores in the engaged/adaptive range on the school engagement items <sup>e</sup>	67			

a. School-age children = aged 8–10 years.

b.  $N$  ranged from 725 to 816 depending on the measure; average  $N = 762$ .

c. Very few children had 0 or 1 indicators.

d. At least 1 standard deviation below the mean.

e. 11 items from Drug Free School Community Act (DFSCA) study.

was having nonclinical scores for depression on the CDI, 88% met this criterion. This is not surprising given that the threshold of these two measures is quite different: the later determines a clinical cutoff level for depression and the former determines whether a child has average social skills, which could be considered a more lenient assessment of competence. In addition to variations in the threshold levels across different indicators, conceptual definitions of competence may be ambiguous for single indicators. For example, we defined competence for reading as achieving scores at least 1 standard deviation below the average score on the MBA (in the normal range). Using this classification, 75% of maltreated children were competent. Another way to define competence could be achieving scores that are higher than 1 standard deviation above the mean. Using this classification, 22% of maltreated children were competent.

Next, we examined competent functioning within each domain. Not surprisingly as the number of indicators increased, the percentage of the sample able to demonstrate competence across measures decreased (see Table 3). For each domain, approximately 90% of children were competent on at least one indicator, 75% on the majority, and nearly half were competent on all of the indicators within each domain. We then examined whether children were competent across domains. Although the majority of children were competent in at least one domain, 27% were functioning poorly in *all three* domains; 19% were competent in only one domain; 27% were competent in two domains, and 27% were competent in all three domains. Because we used very low thresholds (achieving normal rather than high functioning) to establish competence for individual indicators, we considered only those children who were able to demonstrate competence across domains of functioning to be resilient. It is striking that so few children achieved resilience in multiple domains.

**Adolescents.** At the indicator level, 13 measures were included to assess adolescent functioning. As shown in Table 3,

from 43% to 89% of the sample were competent on specific measures. Similar to other research, when youth were asked to rate their externalizing behaviors, only 43% were classified as functioning competently; but, when caregivers were asked to rate their child's externalizing behaviors, 69% were classified as competent. Not surprisingly when the threshold was nonclinical levels of functioning more adolescents demonstrated competence in comparison to measures with more lenient thresholds, such as scores within the engaged/adaptive range on the school engagement instrument (Table 4).

Similar to the early school-age group, the percentage of adolescents classified as competent within domains decreased as the number of indicators increased (see Table 3). In contrast to the early school-age group, the percentage functioning well on all indicators within each domain varied by the domain. About 90% demonstrated competence on at least one indicator within a domain, about 70% on most indicators, but a minority scored well on all indicators for the behavioral (25%) or educational (37%) domain.

Next, we examined whether adolescents were competent across domains. Although the majority of adolescents were competent in at least one domain, few did well in more than one domain. Most notable, 24% were functioning poorly in *all three* domains; 40% achieved competence in only one domain; 20% were competent in two domains; and only 16% of adolescents were competent across all three domains, thus demonstrating resilience following a substantiated maltreatment experience.

### Future Research

Existing research on resilience currently lacks information on developmental differences. Finkelhor (1997) used the term "developmental victimization" to emphasize that the impact of abuse and victimization experiences will vary across

**Table 4.** Percentage of Adolescents<sup>a</sup> Resilient Following a Substantiated Report of Maltreatment ( $N = 1,041^b$ )

Measures of Resilience by Domain	% Competent	% Competent on the Number of Indicators Within Each Domain				
<b>Behavioral</b>		$\geq 2^c$ , 94%	$\geq 3$ , 84%	$\geq 4$ , 73%	$\geq 5$ , 50%	6, 25%
Scores in the nonclinical range on CBCL externalizing scale	69					
Scores in the nonclinical range on Youth Self-Report Externalizing Scale	43					
Average scores in the pro-social range on the Social Skills Rating System	64					
Absence of substance abuse <sup>d</sup>	89					
Absence of risky sexual behavior <sup>e</sup>	73					
Absence of delinquency <sup>f</sup>	82					
<b>Emotional</b>		$\geq 2^c$ , 92%	$\geq 3$ , 88%	4, 67%		
Scores in the nonclinical range on Children's Depression Inventory	87					
Scores in the nonclinical range on Trauma Symptom Checklist for Children	88					
Scores in the nonclinical range on CBCL Internalizing Scale	81					
Scores in the age appropriate range on Vineland Adaptive Behavior Screener	89					
<b>Educational</b>		$\geq 1$ , 93%	$\geq 2$ , 71%	3, 37%		
Scores within average range <sup>g</sup> on Mini Battery of Achievement for Reading	83					
Scores within average range <sup>g</sup> on Mini Battery of Achievement for Math	63					
Scores in the engaged/adaptive range on the school engagement items <sup>h</sup>	56					

a. Adolescents = 11–15 years.

b.  $N$  ranged from 977 to 1,075 depending on the measure; average  $N = 1,041$ .

c. Very few children had 0 or 1 indicators.

d. 14 questions from Drug Free School Community Act (DFSCA). Absence of substance abuse defined as no or low use.

e. Four questions from LongSCAN measure. Absence of risky sexual behavior defined as no activity is less than 15 or protection used if 15 or older.

f. Modified self-report of delinquency. Absence of delinquency defined as no serious index offense.

g. At least one standard deviation below the mean.

h. 11 questions from DFSCA study.

developmental levels based on differences in capabilities, activities, and environments for youth. In their review of the research on resilient adaptation among maltreated children, Trickett, Kurtz, and Pizzigati (2004) note that “Some of the differences both within and between studies may be due to developmental effects, although this has rarely been the focus of research” (p. 78). Yet we were able to locate only a few studies that investigate how functioning at one stage of development may be related to competence at later stages. An important goal of future work should be to establish which competencies, or levels of functioning, are amenable to improvement over time and what factors may be associated with changes in functioning.

Evident in our review is the fact that very little is known about resilience in young children. This echoes the broader field of resilience, which has mostly focused on middle childhood and adolescence (Yates, Egeland, & Sroufe, 2003). Yet, developmental trajectory models of aggressive behavior emphasize the necessity of understanding aggression within the first 5 years of life (Tremblay, 2000). In addition, previous research indicates that parent–child relationships are critically important in children’s ability to establish positive peer relationships (Cicchetti, Lynch, Shonk, & Manly, 1992). But little is known about whether deficits in parental attachments in maltreated children may be related to functioning in other areas at later stages of development. More research is also needed to create reliable instruments that measure problem behaviors, especially to determine what behaviors signify higher than normal levels of problems during adolescence.

Researchers should also investigate whether child, parent, or teacher reports of problems in childhood are most accurate in predicting adolescent or adult competence.

Future research should also consider how the type of maltreatment contributes to differences in competence. Many studies of child maltreatment still classify maltreatment into single (or predominant) types, despite estimates among CPS samples of multitype maltreatment ranging from 12% to 27% (Bae et al., 2007; Kinard, 2004; U.S. Department of Health and Human Services Administration of Children and Families [USDHHS], 2004). A more precise understanding of children’s co-occurring maltreatment experiences would contribute to a better understanding of the effect on case handling and children’s outcomes (Higgins & McCabe, 2000a; Kinard, 1998; Johnson-Reid, Drake, & Chung, & Way, 2003).

Obviously, the ultimate goal of studying resilience is to understand how and why it is attained for some but not others. Thus, future work not only needs to study functioning before maltreatment as well as over time but also needs to consider which protective factors contribute to competence and under what conditions. This review on defining the breadth and depth of indicators typically used to measure resilience is a first step. Despite the methodological and definitional limitations of the existing research, we found that there is a general consensus about what domains of functioning establish resilience. Much more attention should be paid to the nuances of what specifically is measured and how indicators are combined to develop composite indicators of competence. Only by continuing to

expect excellence in the construction of difficult measures can we work to ensure that all children receive the opportunity to thrive.

## Implications for Practice, Policy, and Research

- How we conceptualize and define resilience has a number of practice and policy implications. First, limitations and variations in the conceptual definitions of competence and resilience could constrain the breadth and depth of intervention services. If a narrow, or single measurement, is used to determine resilience, then it is possible that services would be geared to what was measured rather than addressing other possible outcomes. Our analyses demonstrated that the prevalence of competence and resilience vary by the specific indicators used for assessment. Approximately half of the school-age group, for example, achieved competence within each domain. However, competence in one domain did not guarantee competence in other domains. Approximately one in five adolescents were competent in all three domains and one in five were not competent in any of the domains. For the adolescent group, most were competent in at least one domain, but only one in three achieved competence in more than one domain. Although most children do not excel across all areas, the threshold to be classified as resilient in the current analysis was fairly lenient (i.e., absence of clinical-level problems, within average range of competence). Given the lack of cross-domain competence, services should be comprehensive and not limited to one specific concern and individual competencies, and limitations should be carefully assessed and treated.
- Second, problems with operational definitions of resilience seem to arise when researchers are confronted with the findings that few or none of the children in their sample achieve criteria for clinical cutoffs or levels that would indicate lack of problems or clinical symptomology as established from normative samples. This problem is especially prominent in studies using small samples. This leads researchers to create alternative schemes to divide sample into high, medium, and low functioning groups, often accomplished by the use of control group means (or medians) to establish critical levels of competence. Because the purpose of many studies on resilience is to identify risk or protective factors related to different levels of functioning; establishing criteria in this manner allows researcher to assess what factors are related to better rather than poorer functioning. Others have noted this problem and suggest that appropriate criteria for operationalizing resilience should be linked to the aim of individual studies (Kaufman et al., 1994). But we argue that these types of classification schemes create significant obstacles to establishing a reliable or valid body of knowledge about resilience following maltreatment with adequate scientific rigor. For example, the prevalence of competence or resilience can be obscured; and furthermore, we may be identifying protective

factors that do not really help individuals overcome the adverse outcomes that result from maltreatment in childhood.

- Third, given the variation in the breadth and depth of measurement of resilience, it is important to be explicit about measurement so that findings are generalized appropriately. Few studies provided information on the proportion of maltreated children who demonstrated competence on specific indicators as well as for specific domains or across domains. In the studies that report overall competence, results show that approximately 10–25% of maltreated children achieve resilience. However, without delving into the specifics of how competence varies by different indicators, it is difficult to interpret these remarkably low levels of overall competence across studies.

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## Declaration of Conflicting Interests

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## Bios

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