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Parent and teacher perspectives on psychological adjustment: A national measurement study in Trinidad and Tobago

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ABSTRACT

This article reports on the national standardization and psychometric properties of the Adjustment Scales for Children and Adolescents–Home Edition (ASCA-H) for use in Trinidad and Tobago. ASCA-H is a parent rating scale composed of behavioral indicators in play, social, and learning contexts. The sample was comprised of students ($N = 780$) attending government and assisted elementary schools. Exploratory and confirmatory factor analyses revealed two internally consistent dimensions, Problems in Contexts Requiring Disciplined Behavior (i.e., Indiscipline) and Problems in Contexts Requiring Engaged Behavior (i.e., Disengagement). Dimensions were scaled with IRT and Bayesian scoring methods, with Disengagement scores more strongly relating to clinical disturbances, peer contexts, and classroom learning contexts. The norming information on the ASCA-H will enable identification of at-risk students and allow resources to be targeted to specific situational contexts with parents and other adults.

KEYWORDS

behavioral and social adjustment; psychopathology; context; item response theory; Trinidad and Tobago

Psychological adjustment problems negatively impact many social, economic, and health outcomes for individuals and for society as a whole. Adjustment problems are associated with lower educational achievement, substance abuse, violence, and reproductive health problems, whereas good psychological adjustment is linked to greater well-being and higher educational attainment (Eisenberg, Fabes, & Spinrad, 2006; Guerra & Bradshaw, 2008; Masten & Coatsworth, 1998; Patel, Flisher, Hetrick, & McGorry, 2007; Weissberg & Greenberg, 1998). Psychological maladjustment issues also impact economic outcomes, such that observed adolescent disruptiveness, inattentiveness, tardiness, and homework deficiencies portend lower levels of adult financial earnings (Segal, 2013). Even full-time and stable employment in early adulthood are predicted by kindergarten social skills (Jones, Greenberg, & Crowley, 2015). Early childhood prosocial skills are also inversely related to adult criminal activity (being arrested, the number of arrests for severe offenses, and court appearances). Moreover, childhood adjustment problems are significantly associated with residence in public

housing and receipt of public assistance (Jones et al., 2015).

Parent ratings

To assess the needs of children with psychological difficulties, clinicians traditionally gather data on children's behaviors using multiple methods, such as direct observation and rating scales completed by parents and teachers (Friedman, Leone, & Friedman, 1999). In this endeavor, parents have unique knowledge of their children, including friendships with peers, cleanliness, and participation in community activities (Friedman et al., 1999). Parents also have more insight into neighborhood context, sibling interactions, meal time behavior, and sleeping patterns than teachers who observe children entirely in classroom settings. Additionally, parents may observe skills and competencies that are generalized to the classroom learning environment (Yochum & Miller, 1993).

Currently, rating scales for children and youth typically require parents to indicate the presence or

frequency of problem behaviors, while neglecting the contexts wherein the behaviors occur (McDermott, Watkins, Rovine, & Rikoon, 2014). Common parent rating scales, such as the Social Skills Rating System (Greshman & Elliot, 1990), Behavior Assessment System for Children—Second Edition (Kamphaus & Reynolds, 2007), Devereux Student Strengths Assessment (LeBuffe, Shapiro, & Naglieri, 2009), Child Behavior Questionnaire (Rothbart, Ahadi, Hershey, & Fisher, 2001), and Child Behavior Checklist (Achenbach & Resorla, 2001) evaluate maladjustment solely on the presence or severity of problem behaviors without taking into account the contextual circumstances (e.g., aggression with siblings vs. parents, withdrawal from home vs. school activities, interactions with other adults vs. parents; McDermott, Steinberg, & Angelo, 2005). Most instruments tend to consider contextual variation to be random noise or measurement error (Mischel, 2004; Mischel, Shoda, & Mendoza-Denton, 2002). This approach fails to gather information on whether problem behaviors are limited to particular situations or whether they are pervasive across many different types of situational circumstances. These behavioral dimensions are described as *phenotypes* because they denote the familiar surface syndromes, such as aggression or withdrawal, while disregarding the situational contexts in which those problem behaviors occur (McDermott et al., 2005).

Importance of context

An individual's behavior within the school or home may vary across situations, indicating that behavior in any given situation is a function of that particular situation and the individual's particular dispositions (Mischel, 1973; Shaffer & Postelthwaite, 2012). Information on the contexts surrounding a behavior (the *when*, *where*, and *with whom*) provides valuable clues as to children's motivations and can be useful in determining appropriate intervention strategies. Contextually based assessments move past merely measuring the occurrence or frequency of problem behaviors toward examining the situational circumstances wherein those behaviors manifest. The dimensions discovered with situation- or context-based instruments are described as *sitotypes* (McDermott et al., 2005), stemming from the Latin root *situs*, meaning a situation or place.

The importance of context has been supported by empirical work on families and children. For instance, the literature suggests that (a) neighborhood quality and crime are associated with childhood conduct disturbances (Roosa et al., 2005), (b) living in a low socioeconomic status neighborhood increases children's risk for externalizing problems (Leventhal &

Brooks-Gunn, 2000), (c) adolescent-reported depression and antisocial behavior vary as a function of conflict and support in parent–child relationships and friendships (Sentse & Laird, 2010), (d) high stress reactivity in 5- and 6-year-old children is related to maladaptive outcomes in high-adversity family contexts and to better adaptation in low-adversity contexts (Obradović, Bush, Stamberdahl, Adler, & Boyce, 2010), (e) positive parent–child relationships are linked to lower levels of aggression (Stoltz et al., 2013), and (f) early childhood internalizing problems are associated with parental anxiety or depression and with parenting style (Bayer, Sanson, & Hemphill, 2006).

Challenges in the measurement field

Unfortunately, few behavior rating scales, particularly contextually based measures, have been standardized and normed for use in developing countries (Mpfu, Oakland, Ntinda, Seeco, & Maree, 2014). Dimensional constructs, norms, and scoring routines are presumptuously borrowed from other countries without the collection of normative data or evaluation of validity and reliability evidence in the population of interest (Hu & Oakland, 1991; Oakland & Hu, 1993). Differences in cultural milieu across nations make it necessary to develop standardized local protocols of psychological instruments and to collect normative data in each population of interest (United Nations Children's Fund, 2013). It is a common misconception that psychometric properties (including reliability measures and validity at the item and scale levels) are sustained regardless of the circumstances wherein instruments are applied (van Widenfelt, Treffers, de Beurs, Siebelink, & Koudijs, 2005). Additionally, items and psychological constructs are not inherently universally meaningful (Hambleton & Patsula, 1998) and cultural expectations can seriously affect the respondent's perception of behaviors and interactions (Rubin, 1998; United Nations Children's Fund, 2013).

Psychological distress among children and youth appears to be universal, with up to 20% of children and adolescents worldwide experiencing significant emotional or behavior disturbances (World Health Organization [WHO], 2005), but cultural factors result in variations in the manifestation of problem behavior and militate a need for psychometric examinations of instruments before administration in a given nation (van Widenfelt et al., 2005). Similar to other developing countries, Trinidad and Tobago has few nationally adapted and validated behavior rating scales. The nation's economic circumstances, crime rates, and unique parental disciplinary practices necessitate the identification of and

mitigation of behavioral problems of struggling children and adolescents to improve their social, health, and academic outcomes (Cappa & Khan, 2011; Greenberg & Agozino, 2012; Krishnakumar, Narine, Roopnarine, & Logie, 2014; Roopnarine, Krishnakumar, Narine, Logie, & Lape, 2014; Williams, 2013).

To help struggling students, the Ministry of Education has elected to standardize a series of psychological assessments as part of a larger initiative to identify and support children and adolescents at risk for academic and behavior problems (Watkins, Hall, & Worrell, 2014). The purpose of this study is to examine the psychometric properties of the Adjustment Scales for Children and Adolescents–Home Edition (ASCA-H; Watkins & McDermott, 2002) for use in Trinidad and Tobago. ASCA-H is a parent rating scale comprised of behavioral indicators contextualized within home-based social, play, and learning situations. We chose to standardize ASCA-H because parents have unique insight into children's behavior in a wide range of contexts, whereas teachers are limited to observing children in classroom settings. Children behave differently under the demands of home than in the classroom, making parent ratings important for identifying problem behaviors in out-of-school situations (Hoffenaar & Hoeksma, 2002).

Exploratory and confirmatory factor analyses are conducted to investigate the dimensional structure of ASCA-H. Scaled scores are estimated using item response theory (IRT) with reliability evaluated using Cronbach's α and the examination of the relationships between estimated measurement error and reliability. Product–moment correlations are computed to assess the direction and magnitude of relationships between scores on each ASCA-H dimension and external criterion variables, and relationships are further evaluated through hierarchical linear modeling. External criterion variables included teacher ratings of classroom learning behavior (as measured by the Learning Behaviors Scale; McDermott, 1999), classroom social-emotional adjustment (measured by the Adjustment Scales for Children and Adolescents; McDermott, Stott, & Marston, 1993), classroom clinical behavior (measured by the Disruptive Behavior Disorders Rating Scale; Pelham, Gnagy, Greenslade, & Milich, 1992), and academic achievement (measured by oral reading fluency).

Method

Setting

Trinidad and Tobago is a country consisting of two islands in the southernmost Caribbean Ocean. The island

gained its independence from Great Britain in 1962, but retained its status as a Commonwealth country with English as the official language. Education is compulsory and free for children from 5 to 16 years of age. Parents emphasize strict discipline and order in relationships with their children, and they typically expect that children assist with household tasks and with care for siblings beginning around age five (Barrow, 2008). Corporal punishment by parents is socially accepted and children are taught respect for authority at a young age (Barrow, 2008; Cappa & Khan, 2011; Gopaul-McNicol, 1999; Roopnarine et al., 2014). The focus on discipline and respect increases as children age and disobedience is deemed attributable to lax parenting (Barrow, 2008; Gopaul-McNicol, 1993).

Sample and participants

The sample included students aged 4 to 15 years old ($M = 7.93$, $SD = 2.13$) attending 74 government and assisted elementary schools in Trinidad and Tobago in Infant 1 to Standard 5 grades. Prior to school selection, schools were stratified by regional enrollment, and regions with lower enrollments of students were less represented than regions with higher enrollments (Watkins et al., 2014). At each school, Guidance and Special Education officers from the Ministry of Education used a table of random numbers to select one classroom per grade for the study. A random number table was also employed to select 2 students from each identified classroom, yielding a sample of 14 students from each school. Approximately, 1 male and 1 female student were selected from each classroom in mixed-gender schools, with 2 males or 2 females selected from single-gender schools. This sampling method resulted in oversampling to allow for validity studies.

Data from the normative sample of students were collected to standardize and scale the Adjustment Scales for Children and Adolescents, the *teacher-rating* version of ASCA-H (ASCA; McDermott et al., 2015). ASCA-H ratings were collected from parents of students in the ASCA normative sample ($n = 571$), supplemented by ratings from another 209 parents, leading to a total sample size of 780. The 571-student normative sample was applied for scale calibration and the oversample was included in structural analyses. The full sample of 780 students was 49.9% female, with 39.1% of African, 38.6% East Indian, and 22.3% mixed descent. These demographic characteristics are comparable to national ethnic distributions in Trinidad and Tobago (i.e., 34.2% of African descent, 35.4% East Indian descent, and 24.3% mixed descent; Central Intelligence Agency, 2014).

Instruments

Home social-emotional behavior

ASCA-H is a parent-rating scale that includes behavioral indicators in 28 situational contexts. ASCA-H is similar to the ASCA, but items are related to behaviors observable in the home rather than the classroom. The parent records observed child behavior in the home over a two-month period by marking any behavioral descriptions relevant within each context. Parents may endorse multiple descriptions to represent the child's behavior within a given play, social, or learning context. For example, within the context where the child is reacting to parental correction, the parent may describe typical behavior as "Improves for the moment but it does not last long," "Accepts correction without fuss," "Takes correction badly (sulks, mutters under her breath, etc.)," "Argues and talks back but will eventually do what you say," "His/Her feelings are easily hurt," and/or, "Answers back aggressively, makes threats or creates a disturbance." As a measure to reduce response sets associated with presenting exclusively negative or problematic behaviors (see LeBoeuf, Fantuzzo, & Lopez, 2010), each situational context offers at least one positive or healthy behavioral alternative (e.g., in the previous example, "Accepts correction without fuss"). Table 1 contains

Table 1. Examples of contexts and behavioral indicators in the Adjustment Scales for Children and Adolescents—Home Edition.

Behavioral indicator ^a	Context
Answering parent questions (D) ^b Answers before she has time to think Not shy but rarely offers an answer <i>Answers if she can^c</i> Freezes up and has trouble answering	
	Getting along with agemates (I) ^b
Clowns around, plays silly tricks <i>A good mixer^c</i> Cannot keep a friend for long Unkind to weaker children Quarrels, provokes others Tries to dominate Fights physically with others	
	Sleeping patterns (I) ^b
Throws tantrums at bedtime Stays in bed to avoid responsibilities Has trouble sleeping unless she is near parent <i>Goes to bed without too much fuss^c</i> Sleeps more than other children but is still tired all the time	
	Valuing parent attention (D) ^b
Wants your interest but holds back Uses various ways to get your attention <i>Likes to be praised^c</i> Quite unconcerned whether she gets any of your attention or not Sometimes seems to seek disapproval	

^a Indicators comprising each context.

^b Letters in parenthesis signify the presence of the context in the Indiscipline (I) factor or the Disengagement (D) factor.

^c Italics indicate positive indicators that were endorsed for at least 50% of children.

more examples of contexts to illustrate the scope of the situations.

Classroom social-emotional adjustment

ASCA is a teacher-rating scale that includes 156 behavioral indicators describing problem behaviors and positive responses in relation to 29 classroom situational contexts (McDermott et al., 1993). The situational contexts encompass a range of situations, from being truthful with the teacher, to coping with new learning tasks, to interactions with teacher and with peers, to playing fairly. The teacher indicates a student's observed behavior over a two-month period by endorsing any behavioral indicators relevant to each context. Multiple behavioral indicators can be selected to describe the child's behavior within a given play, social, or academic context. For example, within the context on coping with new learning tasks, the teacher may endorse, "Has a happy-go-lucky attitude to every problem," "Charges in without taking time to think or follow directions," "Approaches a new task with caution but gives it a try," "Won't even attempt it if he senses a difficulty," "Likes the challenge of something difficult," and/or "Cannot work up the energy to face anything new." Each context provides 3–8 different behavioral indicators of behavior, including one positive description. The 29 positive behavioral descriptions (with prevalence greater than 50%) were included to reduce response bias associated with scales comprised of only negative behavior indicators (LeBoeuf et al., 2010). Three reliable dimensions ($\alpha > .75$; peer, learning, and teacher context problems) emerged in analysis of the situational contexts of problem behaviors in classrooms in the U.S. national normative sample (McDermott et al., 2005). These same three factors have recently emerged in analysis of normative data from Trinidad and Tobago (Rhoad & Drogalis, in press).

In addition to analysis of the contextual nature of problem behaviors, ASCA provides analysis of the behavioral indicators to investigate the phenological types of problem behaviors that occur across situations. Similar to many instruments measuring phenological syndromes (Eysenck; 1953; Kohn, 1977; Merrell, 2008; Peterson, 1961; Rutter, 1967), two broad-brand behavioral dimensions were revealed. Overactivity (i.e., externalizing problems) and Underactivity (i.e., internalizing problems) dimensions have emerged in analysis of the behavioral indicators in a national normative sample in the United States and in other populations such as Hispanic/Latino, Native American, and Canadian (Canivez & Beran, 2009; Canivez & Bohan, 2006; Canivez & Sprouls, 2005, 2010; McDermott, 1993).

These two reliable dimensions, with coefficient $\alpha > .70$, were also uncovered in recent work in Trinidad and Tobago (McDemott et al., 2015). Dimensions are scaled with IRT and Bayesian scoring methods, with the population mean and standard deviation for the Trinidad and Tobago normative sample centered at $M = 50$, $SD = 10$. Numerous research studies have provided substantial evidence on convergent and discriminant validity, internal consistency, and factorial validity of the ASCA across age, gender, and ethnicity (McDermott et al., 2005).

Classroom learning behavior

The Learning Behaviors Scale (LBS; McDermott, 1999) is a teacher rating scale containing 29 items, reflecting negative and positive approaches to learning tasks. Teachers record the frequency with which a student manifests behaviors on a 3-point scale (2 = “Most often applies,” 1 = “Sometimes applies,” 0 = “Does not apply”). It was standardized and validated on a U.S. sample of 1,500 students aged 5–17 years and stratified by age, gender, and grade level according to census information. The scale requires that teachers observe the child for at least 50 days to rate behaviors on a 3-point Likert scale. The instrument yields a total score and four subscores measuring Competence Motivation, Attitude Toward Learning, Attention-Persistence, and Strategy/Flexibility. Convergent and divergent validity evidence for LBS have been substantiated with measures of intellectual functioning using the Differential Ability Scales (Elliot, 1990), classroom behavior using ASCA (McDermott et al., 1993), and academic performance using the Basic Achievement Skills Individual Screener (The Psychological Corporation, 1983). High internal consistency (coefficient $\alpha = .75$ to $.85$) and interrater reliability were documented by McDermott (1999) and Worrell, Vandiver, and Watkins (2001), and factorial invariance has been reported in multiple contexts (Canivez & Beran, 2011; Canivez, Willenborg, & Kearney, 2006; Worrell et al., 2001).

Classroom clinical behavior

The Disruptive Behavior Disorders Rating Scale (DBDRS; Pelham et al., 1992) is a teacher rating scale that uses criteria from the three disruptive behavior categories (Attention Deficit Hyperactivity Disorder, Oppositional-Defiant Disorder, Conduct Disorder) described in the *Diagnostic and Statistical Manual of Mental Disorders*, revised version III (DSM-III-R; American Psychiatric Association, 1987) to aid in classifying clinical disorders. Most of the symptoms

listed in the DSM-III-R edition for these behavior categories remain the same in the more recent editions, though some of the diagnostic criteria have changed (Pelham, Fabiano, & Massetti, 2005). Teachers were asked to record the frequency of each symptom with these response options: “Not at all,” “Just a little,” “Pretty much,” and “Very much.” DBDRS yields scores for Inattention, Oppositional/Defiant, and Impulsivity/Overactivity. This scale demonstrates high internal consistency ($\alpha = .91$ to $.96$) and sufficient predictive and discriminant validity with children referred to a summer behavior treatment program (Masseti et al., 2003), males in regular classrooms (Pelham, Gnagy, et al., 1992), and in special education settings (Pelham, Evans, Gnagy, & Greenslade, 1992) and clinical settings. DBDRS has proven to be a sensitive measure for detecting behavioral and pharmacological effects in multiple studies (Pelham et al., 2005).

Academic achievement

Oral reading fluency (ORF) is evaluated with an individually administered curriculum-based academic assessment that measures reading fluency by the number of words that a child can accurately read in one minute (Hasbrouck & Tindal, 1992). ORF passages were taken from local grade-level reading texts and ORF scores represent the average number of words read correctly from two passages presented in counterbalanced order across the participants. The average correlation between the two passages was $.85$. ORF was administered in fall ($M = 60.9$, $SE = 38.7$), winter ($M = 67.5$, $SE = 39.3$), and spring ($M = 60.9$, $SE = 38.7$).

Oral reading fluency is defined as the oral translation of text with speed and accuracy and is based on the principle that individuals do not read faster than they can comprehend (Fuchs, Fuchs, Hosp, & Jenkins, 2001). ORF has been nationally normed in the United States (Hasbrouck & Tindal, 2006) and is used as a screening and progress monitoring measure of student reading skills (Fuchs et al., 2001). Multiple studies suggest fluency-based assessments are reliable and valid measures of reading proficiency when used as screening tools to identify struggling students (Fuchs et al., 2001; Good, Simmons, & Kame'enui, 2001). There is evidence for a steeper growth curve for fluency in the primary grades, with the growth curve negatively accelerating in later years (Fuchs et al., 2001). Recent research has supported the predictive validity and clinical utility of ORF scores (Hart et al., 2013; Petscher & Kim, 2011), and convergent validity evidence for ORF has been found with other curriculum-based measures and state reading assessments (Deno, Fuchs, Marston, & Shin,

2001; Stage & Jacobsen, 2001; Wood, 2006). Research suggests that ORF scores can identify students at risk for later reading problems. Good, Simmons, Kame'enui, Kaminski, and Wallin (2002) found that first-grade students who are reading 40 or more words correctly per minute (WCPM) on unpracticed passages have a low risk of reading difficulty at the end of first grade, while students reading below 40 WCPM experience some risk, and students reading below 20 WCPM are at high risk of reading failure.

Procedure

Data were collected through the efforts of the Trinidad and Tobago Ministry of Education and a contracted research team based at Pennsylvania State University (Watkins et al., 2014). Data were collected in the 2001–2002 school year. Guidance and Special Education Officers from the Ministry of Education were trained by the research team and collected data throughout one school year. The officers were paid an honorarium for each school with complete data. Teachers and parents received an honorarium for completing rating scales.

Exploratory analysis

The total sample was randomly partitioned into two subsamples, an exploratory subsample ($n = 450$) and a confirmatory subsample ($n = 330$). The exploratory subsample was 50.9% female, with 36.8% of African descent, 40.2% East Indian descent, and 23.0% mixed race or ethnicity. The confirmatory subsample had similar characteristics with 51.5% female, 42.2% of African descent, 36.4% East Indian descent, and 21.3% mixed race or ethnicity.

Total scores were computed for each of the situational contexts by summing the number of marked problem behaviors. The polychoric correlation matrix of the summed scores for the 28 situational contexts was smoothed for positive semidefiniteness using MicroFACT (Waller, 2001) software. The smoothed matrix was generated through two-stage maximum-likelihood estimation (Olsson, 1979) and least-squares approximation of the original correlation matrix (Knol & Berger, 1991). Minimum average partialing (MAP; Velicer, 1976) was employed to provide a preliminary estimate of factors to be retained. Adhering to Snook and Gorsuch (1989) for scales containing fewer than 40 variables, iterated common-factor models were rotated toward simple structure using varimax, equamax, and promax rotations. The preferred solution satisfied multiple criteria, including (a) simple structure as defined by a maximized

hyperplane count (Yates, 1987) and situational context coverage; (b) at least four salient contexts per factor with loadings $\geq .40$ considered salient; (c) sufficient reliability (i.e., $\alpha \geq .70$); and (d) a factor structure with parsimonious coverage of content and compatibility with relevant research and theory (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

Confirmatory analysis

Applying the pattern of salient context loadings derived from the preferred exploratory solution, the best solution was submitted to weighted least squares means and variance adjusted (WLSMV) estimation. WLSMV is a robust estimator that does not assume that data are normally distributed (Brown, 2006). Good fit criteria corresponded to a root mean squared error of approximation (RMSEA) $\leq .06$ and comparative fit index (CFI) $\geq .95$ (Hu & Bentler, 1999).

Scaling

Salient contexts on each respective factorial dimension were scaled through IRT, applying generalized partial credit logistic models to the normative sample ($n = 571$) to maximize the representativeness of parameters. The normative sample parameters were applied to produce score estimates for the oversample ($n = 209$). Scores were computed via the Bayesian Expected A Posteriori (EAP) method, with the normative sample centered at $M = 50$ and $SD = 10$. Reliability was assessed for dimensions using Cronbach's α , and examination of the relationships between estimated information functions (the inverse of measurement error) and reliability. The overlap of the estimated information function and measurement error indicated cut-points for accurate distinctions between performance levels of students in the less adjusted score ranges.

External validity

Product-moment correlations were assessed to measure the magnitude and direction of relations between scores on each ASCA-H scale and external criterion. External criterion measures included the LBS, DBDRS, ORF, and ASCA. Adhering to the recommendations of Waterman, McDermott, Fantuzzo, and Gadsden (2012) for teacher-nested data, relationships were also evaluated with hierarchical linear modeling (HLM), where ASCA-H scores were the group-mean centered predictors in two-level conditional models, indicating the percentage of between-children within-classroom variance attributable to respective ASCA-H scales.

Results

Dimensionality

MAP for the 28 home contexts indicated that a minimum of three factors might be extracted from the smoothed polychoric matrix. The 1- through 4-factor models were evaluated against the stated criteria. The 2-factor, promax-rotated ($k = 3$) model was determined to be the optimal solution, having met all criteria, with Waller's (2001) Goodness-of-Fit Index = .97 and Root Mean Squared Residual = .004. Solutions extracting more than two factors generated unreliable dimensions and the 1-factor model compressed the 2-factor model into an uninterpretable composite. Three contexts produced nonsalient loadings and were not included in subsequent analyses.

Table 2 presents rotated pattern loadings, final communalities, product-moment context-scale correlations, polyserial context-scale correlations, and coefficient α for each scale. Based on patterns of descending

loadings and content in the contexts, the scales were named Problems in Contexts Requiring Disciplined Behavior (i.e., Indiscipline; featuring 15 contexts) and Problems in Contexts Requiring Engaged Behavior (i.e., Disengagement; featuring 10 contexts). Indiscipline corresponds to the absence of self-controlled behavior and Disengagement to absence of motivated and effortful interactions with parents and other adults. The scale intercorrelation was .69. The two-dimensional structure was cross-validated with the confirmatory subsample. Model fit was good with $\chi^2(274) = 364.97$, CFI = .966, and RMSEA = .032 (90% CI = .022–.040).

Scaling and reliability

The generalized partial credit threshold parameters for Indiscipline ranged 1.56–2.75 ($M = 2.20$, $SD = 0.39$), slopes 0.47–1.93 ($M = 0.70$, $SD = 0.16$), and the appropriate maximum information = 1.61 at $\theta = 2.90$; and the Disengaged thresholds ranged from 0.74–2.83 ($M = 1.88$,

Table 2. Dimensional structure and properties of problem behavior contexts in the Adjustment Scales for Children and Adolescents–Home Edition.

Component situation description ^a	Context pattern loadings ^b				
	I	II	Communality	Context/scale r^c	Context/scale polyserial ^d
Problems in contexts requiring disciplined behavior (Indiscipline); coefficient $\alpha = .85^e$					
Respecting agemates' belongings	.73	.06	.59	.57	.68
Personal cleanliness	.67	–.07	.39	.43	.55
Taking part in games	.63	.02	.42	.54	.65
Getting ready for school	.62	.03	.41	.48	.59
Informal/Unorganized play	.61	.05	.41	.55	.68
Behavior at meal time	.60	.03	.38	.48	.58
Standing in line	.52	.17	.41	.53	.68
Truthful with parent	.51	.14	.38	.45	.57
Sleeping patterns	.50	.11	.33	.44	.54
Working with hands	.47	.08	.27	.38	.49
Getting along with agemates	.46	.31	.50	.59	.70
Caring for belongings	.42	.26	.39	.49	.61
Coping with homework	.41	.14	.27	.41	.52
Behavior at home	.41	.29	.41	.56	.68
Coping with new tasks	.40	.24	.35	.45	.57
Problems in contexts requiring engaged behavior (Disengagement); coefficient $\alpha = .82^e$					
General manner with parent	–.13	.76	.45	.56	.69
Talking with parent	.09	.66	.52	.61	.73
Reaction to parent correction	.08	.64	.49	.57	.70
Valuing parent attention	.00	.63	.40	.51	.69
Seeking parent help	.01	.60	.37	.41	.54
Greeting adults	.08	.52	.34	.52	.66
Greeting parent	.08	.50	.32	.47	.62
Answering parent questions	.07	.50	.30	.46	.60
Getting along with adults	.24	.49	.45	.52	.68
Has companions	.04	.48	.27	.43	.58

^aDescriptions incorporate item content and relevant situational contexts. Item content and contexts are abbreviated for convenient presentation.

^bValues are promaxian pattern loadings at $k = 3$, where hyperplane count is maximized. Salient pattern loadings ($\geq .40$) are italicized. $N = 450$ comprising the random exploratory analysis subsample.

^cEach correlation reflects the relationship between the sum of observed behaviors for a given context and the sum of behaviors across contexts comprising a scale, where distributions were standardized to unit-normal form.

^dValues are correlations between ordered categorical sums of behaviors within a given context and the continuous sum of behaviors across all contexts comprising a scale.

^eReliability is based on the exploratory subsample ($N = 450$).

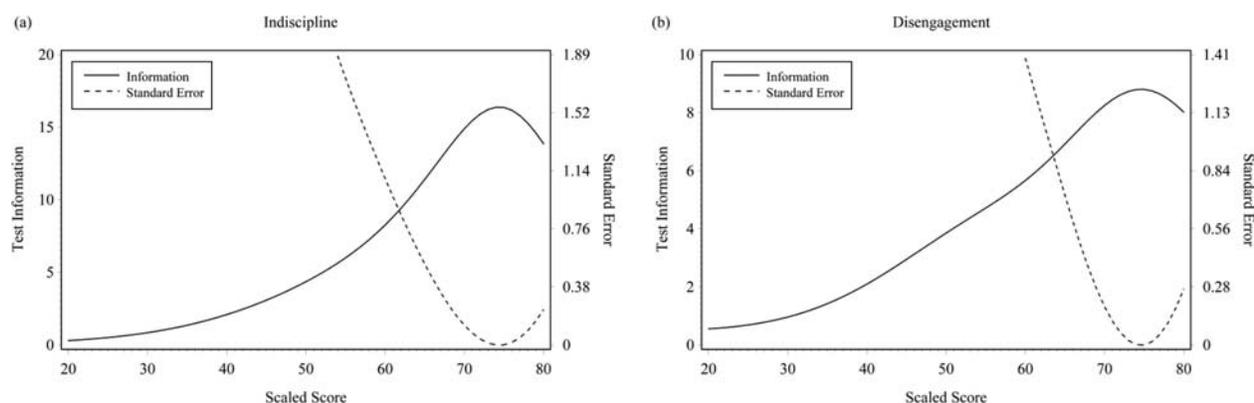


Figure 1. Distributions of estimated information functions and standard errors for ASCA-H problem contexts.

$SD = 0.62$), slopes ranged $0.45-0.85$ ($M = 0.67$, $SD = 0.12$), average information = 0.40 , and appropriate maximum information = 1.89 at $\theta = 2.62$.

EAP (Thissen, Pommerich, Billeaud, & Williams, 1995) scaled scores were produced for students, with the normative sample $M = 50$ and $SD = 10$ and higher scores indicating more problem behaviors. Figure 1 illustrates the overlap of measurement error and total test information for the dimensions. The displays indicate that scaled scores will have apt discrimination from ~ 1.5 SD above the population mean for both dimensions, indicating an appropriate cut-point for discerning levels

of maladjusted children (e.g., $65-69 = at\ risk$, $\geq 70 = maladjusted$). Scales were internally consistent with Indiscipline yielding an α coefficient of $.85$ and Disengagement an α of $.82$.

External validity

Table 3 displays relationships between the situational contexts and independent criterion measures. Disengagement had a stronger relationship with DBDRS dimensions than did Indiscipline, indicating that the disengagement dimension detects clinical disturbance in

Table 3. Relationships between ASCA-H scores and concurrent criterion measures.

Criterion measure	ASCA-H scale ^a		% Explainable variance ^b
	Indiscipline	Disengagement	
Disruptive Behavior Disorder Rating Scale (teacher rating)			
Inattention ($n = 596$)	.15 (3.0)	.32 (21.1)	78.3
Oppositional/Defiant ($n = 553$)	.11 (4.5)	.25 (34.1)	85.6
Impulsivity/Overactivity ($n = 552$)	.07 [†] (0.8)	.27 (22.1)	73.7
Oral Reading Fluency (direct assessment)			
Fall mean of A & B passages ($n = 595$)	-.09 [†] (-0.3)	-.24 (1.2)	55.6
Winter mean of A & B passages ($n = 623$)	-.10 (0.3)	-.24 (0.6)	59.0
Spring Mean of A & B passages ($n = 595$)	-.09 [†] (-0.3)	-.24 (1.2)	55.6
Learning Behaviors Scale (teacher rating)			
Total score ($n = 638$)	-.18 (5.3)	-.24 (10.4)	83.8
Competence motivation ($n = 685$)	-.17 (2.3)	-.20 (2.5)	100.0
Attitude ($n = 688$)	-.17 (12.4)	-.19 (17.3)	80.6
Persistence ($n = 689$)	-.17 (3.4)	-.27 (8.9)	86.8
Strategy ($n = 671$)	-.11 (0.4)	-.23 (10.1)	70.6
Adjustment Scales for Children and Adolescents (teacher rating)			
Overactivity ($n = 719$)	.12 (0.2)	.29 (16.1)	85.0
Underactivity ($n = 719$)	.08 [†] (1.9)	.08 [†] (10.8)	91.3
Peer contexts ($n = 719$)	.15 (1.3)	.30 (17.2)	73.9
Teacher contexts ($n = 719$)	.11 (9.0)	.13 (8.1)	91.7
Learning contexts ($n = 719$)	.19 (3.1)	.32 (17.0)	85.1

^a Nonparenthetical entries are Pearson product-moment correlations. Parenthetical entries indicate the percentage of variance in the respective criterion measure scores between children within classrooms that is accounted for by a given ASCA-H scale score. Values equal the proportional reduction in the residual variance (100) as estimated via hierarchical linear modeling. Each two-level random coefficients model entered a given ASCA scale as the covariate. All correlations and fixed effects associated with ASCA-H scales are significant statistically at $p < .01$ unless indicated [†] (nonsignificant). ASCA = Adjustment Scales for Children and Adolescents-Home Edition.

^b Total percentage of potentially explainable variance between children within classrooms. Values equal $1 - \text{intraclass correlation}$ (100), where the intraclass correlation was estimated via hierarchical linear modeling. Each two-level, unconditional means model applied random intercepts for classrooms, where the random effect was significant at $p < .001$.

the classroom. ORF performance was negatively correlated with Disengagement, as expected. Students with higher levels of Disengagement problems tended to perform more poorly on ORF. Correlations between ORF and Indiscipline were nonsignificant or very small in magnitude, suggesting Indiscipline problems had little reciprocity with academic achievement. The Indiscipline and Disengagement problems had the expected negative relationships with LBS dimensions, confirming that a higher level of problems in parent ratings of indiscipline and disengagement contexts corresponds to poor learning behavior in school. However, Strategy was more strongly correlated with Disengagement than Indiscipline, suggesting higher levels of Indiscipline have less of an influential association with strategic learning than the other LBS dimensions.

As anticipated, Disengagement was more strongly correlated with teacher ratings of Peer and Learning Context problems than Teacher Context problems on the ASCA, indicating parents were not observing the same types of behavior in children as those observable in teacher contexts. Relative to Disengagement, correlations between Indiscipline and Peer, Learning, and Teacher contexts were smaller. Overactivity, as reported by teachers, was more strongly associated with parental ratings of Disengagement than Indiscipline, suggesting students that experience problem behavior in situations that require engagement are more likely to be Overactive. Underactivity ratings were not significantly related to Indiscipline and Disengagement, implying problem behaviors in home contexts were more related to Overactivity problems than Underactivity difficulties in school settings. Overall, Disengagement was more strongly correlated with most of the external criterion measures than Indiscipline, indicating that higher levels of Disengagement problems are typically linked to poor behavior and academic performance.

To control for the nesting of children's data within teachers, the last column in Table 3 contains the percentage of criterion measure variance that is attributable to children's actual individual differences, whereas parenthetical values in the previous three columns indicate how much of that variance can be predicted by respective ASCA-H scaled scores. For example, the last column entry for the DBDRS Oppositional/Defiant scale in Table 3 denotes that, whereas 85.6% of score variance represents children's individual differences (rather than teacher characteristics), 34.1% of that variance is predictable from children's Disengagement scores and 4.5% from Indiscipline scores. Parents appear to be more sensitive to recording disengagement problems than indiscipline problems. Indiscipline and Disengagement account for relatively similar portions of variation in individual differences for children's reading fluency.

Table 4. Mean population distribution of indiscipline and disengagement by gender and grade level in Trinidad and Tobago.

Gender	Indiscipline		Disengagement	
	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>
Infant 1				
Male (<i>n</i> = 42)	52.1	(9.2)	53.6	(10.2)
Female (<i>n</i> = 41)	52.0	(10.8)	50.4	(11.4)
Infant 2				
Male (<i>n</i> = 39)	49.1	(9.7)	52.0	(11.0)
Female (<i>n</i> = 38)	52.8	(8.5)	51.8	(9.7)
Standard 1				
Male (<i>n</i> = 42)	51.5	(9.7)	53.6	(9.8)
Female (<i>n</i> = 38)	49.4	(9.0)	48.7	(9.3)
Standard 2				
Male (<i>n</i> = 44)	48.1	(10.7)	49.9	(9.3)
Female (<i>n</i> = 42)	49.3	(10.3)	48.8	(10.1)
Standard 3				
Male (<i>n</i> = 39)	51.1	(11.7)	50.3	(12.4)
Female (<i>n</i> = 42)	50.2	(10.8)	50.4	(8.9)
Standard 4				
Male (<i>n</i> = 38)	49.1	(8.5)	48.4	(9.2)
Female (<i>n</i> = 43)	49.9	(10.3)	46.2	(10.5)
Standard 5				
Male (<i>n</i> = 41)	50.0	(11.1)	48.8	(9.8)
Female (<i>n</i> = 42)	49.3	(9.6)	48.2	(9.9)
Total				
Male (<i>n</i> = 285)	50.1	(10.1)	51.0	(10.3)
Female (<i>n</i> = 286)	50.4	(9.9)	49.2	(10.1)

Demographic trends

Table 4 displays the mean population scaled score distributions of Indiscipline and Disengagement context problems by student gender and grade level, and Table 5 presents the distributions by gender and ethnicity. The results evince no consequential disparities or trends in demographic distributions.

Discussion

This study sought to nationally standardize and examine the psychometric properties for ASCA-H for use in Trinidad and Tobago. ASCA-H is a reliable parent measure that offers information on the situational contexts wherein

Table 5. Mean population distribution of indiscipline and disengagement by gender and ethnicity in Trinidad and Tobago.

Gender	Indiscipline		Disengagement	
	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>
African descent				
Male (<i>n</i> = 106)	49.1	(9.7)	51.1	(10.1)
Female (<i>n</i> = 106)	50.6	(10.1)	51.6	(10.1)
East Indian descent				
Male (<i>n</i> = 107)	50.1	(10.4)	49.3	(10.9)
Female (<i>n</i> = 110)	49.5	(10.2)	45.9	(9.7)
Mixed descent				
Male (<i>n</i> = 64)	51.6	(9.2)	53.1	(8.6)
Female (<i>n</i> = 60)	51.7	(9.4)	50.8	(9.7)
Total				
Male (<i>n</i> = 277)	50.1	(9.9)	50.9	(10.1)
Female (<i>n</i> = 276)	50.4	(10.0)	49.2	(10.2)

children experience problem behaviors. Two situational context types were uncovered in a nationally representative sample of schoolchildren in the islands: Indiscipline, corresponding to poor self-controlled behavior, and Disengagement, defined by difficulties with motivated and effortful interactions with parents and other adults. Similar to many developing nations, Trinidad and Tobago has few nationally normed and validated assessments of problem behavior. The standardization and norming of the ASCA-H in Trinidad and Tobago were important steps in the identification of behavioral problems of struggling children and adolescents to improve their social, health, and academic outcomes.

The relationships between ASCA-H context scores (produced by parents) and ASCA scores (produced by teachers) are low overall, with Indiscipline correlating near zero for all contexts and Disengagement correlating near zero for Underactivity and teacher contexts and moderately correlating with Overactivity, peer contexts, and learning contexts. This finding of low to moderate correlation is common between teacher and parent ratings on behavior scales, with stronger correlations for externalizing, overactive behaviors than for internalizing ones (Achenbach, McConaughy, & Howell, 1987; Costenbader & Keller, 1990; Kolko & Kazdin, 1993; Lee, Elliot, & Barbour, 1994; Stanger & Lewis, 1993). This correspondence is explained by the more overt nature of overactive behaviors, where they typically occur as disruptive rather than less obtrusive, passive manifestations. The demands and nature of the relationship (parent–child vs. teacher–student) and environment (home vs. classroom) will lead to larger discrepancies between parent and teacher observations. The low correlation of both parent rating scores of Disengagement and Indiscipline with teacher context problems suggests that situational specificity is a factor, where children behave quite differently under the demands of home than in the classroom (Hoffenaar & Hoeksma, 2002). Though it would not be expected that behavior ratings of teachers and parents be identical, the degree of congruence among the ratings increases the likelihood that a child is facing generalized psychological distress that should be addressed with appropriate interventions (Dinnebeil et al., 2013).

Phenotypes versus situations

Child behavior rating scales have typically focused on incidence and frequency of problem behaviors broadly represented without reference to situational context, rather than distinguishing the contextual circumstances in which those behaviors occur (McDermott et al., 2005). Similar to these phenotype measures, ASCA-H is also able to capture the two traditional broad-band

dimensions by using item-level behavior indicators instead of context-based information. With a sample of U.S. school children, Coffey (2006) discovered a two-dimensional second-order structure for ASCA-H, similar to the Overactivity and Underactivity factors also found in the ASCA, the teacher version of the rating scale. The Overactivity and Underactivity dimensions, resultant from ASCA behavioral indicators, also emerged in analysis of the Trinidad and Tobago national sample (McDermott et al., 2015).

This present study examines the situations in which problem behaviors arise. The traditional measurement approach fails to consider that contexts influence behavior and that behavior may be differentially motivated in various contexts. By neglecting contextual information, practitioners and educators miss the opportunity to move beyond general interventions to tailored intervention strategies that address problem behavior in the situations where they present. For example, the motivations behind the behavior of students who manifest relatively high levels of phenotypically overactive and underactive behaviors may vary. Overactivity in the context of situations requiring disciplined behavior might be addressed with a different type of intervention than overactivity in the context of problems requiring engagement.

Limitations and future directions

Future work on ASCA-H in Trinidad and Tobago should include phenotype analysis. With information on both phenotypes and situations, it might be possible to generate psychological profiles that offer a better understanding of the specific conditions that animate behavior disturbances and provide clues on how to mitigate these conditions. Future work should also strengthen criterion validity of the ASCA-H by including other parental rating measures and standardized academic measures. Validity analyses of academic achievement were limited to oral reading fluency because no other academic assessments were administered in Trinidad and Tobago. Comparing ASCA-H to other parent rating devices in the future will be helpful in determining whether ASCA-H measures the same psychological adjustment constructs included in commonly used parent rating scales. The normative sample was further limited to elementary school students because organization logistics precluded exclusion of secondary schools in the islands. Future studies should expand the educational levels of students to include secondary school students.

Conclusion

This standardization of ASCA-H in Trinidad and Tobago will allow clinicians to identify at-risk students and

provide resources targeted toward specific situational contexts with parents and other adults. ASCA-H performance levels (with standard scores < 65 indicating *good or adequate adjustment*, 65–69 *at risk*, and ≥ 70 *maladjustment*) may be used to categorize student adjustment based on observable behavior. This information can be applied to support home intervention plans that address the specific situational contexts where problematic behaviors are occurring. Through these interventions, students' social-emotional competencies may be developed and strengthened, hopefully leading to better educational, economic, and social outcomes.

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