Rethinking Measurement of Parenting Stress in ADHD-affected Families: A principal components analysis of the Disruptive Behaviour Stress Inventory

Abstract

A multitude of research has demonstrated that parents of children with ADHD report higher parenting stress than parents of typically developing children. However, this body of work almost exclusively uses the Parenting Stress Index (PSI) as a measure of parenting stress. The PSI may not be an appropriate measure for parents of children with Attention-Deficit/Hyperactivity Disorder (ADHD) because some items overlap with ADHD symptomatology (therefore, scores may be artificially inflated). This study investigated the factor structure of an alternative measure of parenting stress, the Disruptive Behaviour Stress Inventory (DSBI) in 1283 Australian parents of children with ADHD. A principal components analysis was performed which yielded a mathematically and conceptually sound five-component solution for the DBSI. These components were labelled: Routine Disruption, Academic Related Stressors, Behaviour at School, Relational Toll of Disruptive Behaviour and Incidental Stressors. Although further validation is needed, the factored version of the DBSI presented here represents a reliable and clinically useful substitute to the PSI.

Keywords: Parenting stress, ADHD, daily hassles, DBSI, principal components analysis

Highlights

- Analyses yielded 5 theoretically and statistically distinct factors of the DBSI.
- Factors were converted into subscales with adequate – excellent Cronbach's α.
- The enhanced clinical and research utility of the new DBSI is highlighted.

Rethinking Measurement of Parenting Stress in ADHD-affected Families: A principal components analysis of the Disruptive Behaviour Stress Inventory

There is little debate that parenting children with Attention-Deficit/Hyperactivity Disorder (ADHD) can be a cognitively, emotionally and physically demanding task (Anastopoulos, Sommer, & Schatz, 2009; Johnston & Mash, 2001). It is well documented that parents of children with ADHD report significantly higher stress levels than those rearing typically developing children (Johnson & Reader, 2002; Kadesjö, Stenlund, Wels, Gillberg, & Hägglöf, 2002; Miranda, Tarraga, Fernandez, Colomer, & Pastor, 2015; Wiener, Biondic, Grimbos, & Herbert, 2016). Perhaps the simplest explanation for this, is that children's ADHD symptoms create behaviours that are stressful for parents to manage, which may not be as prevalent or severe in the general population. For instance, inattention and hyperactivity/impulsivity may lead children to fail to follow instructions (Hammerness, 2009), have emotional outbursts (Sobanski et al., 2010) or engage in risk-taking behaviours (Drechsler, Rizzo, & Steinhausen, 2008).

There is a current paucity of well-validated measures of parenting stress that capture the unique stressors experienced by parents of children with ADHD. Commonly used measures of parenting stress pose several methodological issues within ADHD-affected populations, such as the overlap between the questionnaire content and ADHD symptoms. One emerging ADHD-specific measure with promising psychometric properties is the Disruptive Behaviour Stress Inventory (DBSI) developed by Johnson and Reader (2002). The DBSI assesses parenting stress in ADHD families by asking parents to rate the frequency and severity of parenting stressors commonly experienced in an ADHD population. The current study aims to contribute to the psychometric evolution of the DBSI by conducting a principal components analysis. This will enable clinicians and researchers to measure specific kinds of parenting stress within ADHD-affected families.

Existing Measures of Parenting Stress

Within the current literature, most parenting stress research uses the Parenting Stress Index (PSI) (Abidin, 2012) as a measure of stress. The PSI conceptualises parenting stress as attributable to the extent to which the child presents challenging characteristics and the degree to which the parenting role impacts the psychosocial functioning of the parent. Thus, the PSI is broken into two scales - the Parent Domain and the Child Domain. A short form exists with a similar concept coverage. The PSI has been well validated (Johnson, 2015), and the reliability coefficients of the fourth edition of the PSI were reported as .98 for the full questionnaire and .96 for both the Child Domain and Parent Domain scales (Abidin, 2012). Independent research has also revealed high estimates of reliability for both the full and short form versions (Embregts, du Bois, & Graef, 2010; Hoffman, Sweeney, Hodge, Lopez-Wagner, & Looney, 2009; Reitman, Currier, & Stickle, 2002).

Despite extensive psychometric development and its widespread use in parenting stress research, the PSI may be an inappropriate means of measuring parenting stress in ADHD-affected populations. This is because several PSI items explicitly measure ADHD-like behaviours as though they are aspects of parenting stress. For instance, the PSI includes items such as “Compared to most children, my child has difficulty concentrating and paying attention” and “My child appears disorganised and is easily distracted”. Thus, regardless of the individual’s actual level of stress, PSI scores of parents of children with ADHD will be automatically inflated because their child displays ADHD symptoms. Additionally, many childhood psychiatric disorders (e.g. separation anxiety disorder, paediatric anorexia nervosa, obsessive-compulsive disorder) have the potential to generate severe parenting stress, but are not directly reflected in the PSI in this way. Due to this overlap, one solution could be to simply omit the Child Domain items when using the PSI with parents of children with ADHD. However, we argue this would often be inappropriate as the PSI, as defined by scale

author Abidin (2012, p3) “assesses parent characteristics that may be contributing to overall stress”, rather than assessing the subjective experience itself. Indeed, the full-form Parent Domain includes a number of subscales that are conceptually related to stress but do not tap stress per se. These include the Competence (perceived parenting self-efficacy), Isolation (perceived social support), Attachment (perceived quality of parent-child relationship) and Depression (self-reported mood symptoms) subscales.

Disruptive Behaviour Stress Inventory

In response to a lack of ADHD-informed measures of parenting stress, Johnson and Reader (2002) developed a novel measure of parenting stress designed specifically for use with parents of children with ADHD called the Disruptive Behaviour Stress Inventory (DBSI). The DBSI draws upon daily hassles theory, focusing on the frequency and severity of concrete stressors. Daily hassles theory labels everyday parenting experiences which generate frustration, inconvenience or distress as “daily hassles” (Crnic & Greenberg, 1990). An individual’s subjective experience of parenting stress is thought to reflect the accumulation of these hassles (Deater-Deckard, 2006). Typical examples include minor misbehaviours by a child or completing child-related errands such as transporting children to sporting commitments (Creasey & Reese, 1996). While low-level parenting stress is viewed as normative (Crnic & Greenberg, 1990; Deater-Deckard, 2006), stress may become pathological when a parent either fails to adapt to daily hassles (Deater-Deckard, 2006) or when the strain of the hassles accumulates beyond the level at which the parent has the resources to cope (Creasey & Reese, 1996).

The DBSI measures the frequency and severity of a variety of daily hassles that arise when parenting a child diagnosed with ADHD. DBSI items were derived from an open-ended survey in which parents visiting a hospital-based ADHD clinic were asked to list the five most frequent/significant family-related stressful events they experience due to their child’s

behaviour (Johnson & Reader, 2002). At face value, DBSI content appears diverse, with items spanning stressors related to managing behaviour, challenges related to school and academia, conflict within the family, and problems accessing appropriate support.

The DBSI has several strengths as a measure of parenting stress in ADHD families. First, it avoids confounding ADHD symptoms with parenting stress the way previous measures, like the PSI, have. The DBSI can also provide clinicians with a concrete "snapshot" of typical family life through a ranking of frequent and infrequent family events, which may be useful in treatment planning. Additionally, the DBSI explicitly deals with potential variability in the degree to which parents perceive stressors related to their child's behaviour as demanding or bothersome. This is important in light of research with parents who label their child's ADHD as evidence that they are an "indigo" child (a pseudoscientific concept in which ADHD-type symptoms are thought to reflect supernatural sensitivity and creativity, Lench, Levine, & Whalen, 2013). In this cohort, the ADHD traits typically associated with parental strain are valued and praised which attests to the need to consider idiosyncratic interpretations of behaviour in measuring parenting stress.

The psychometric validation of the DBSI is ongoing, however promising preliminary results have been observed. Reliability statistics have been comparable to that achieved by the PSI, with Cronbach's alphas ranging from .90 to .93 for the Stress Experience scale and .93 to .96 from the Stress Degree scale (Johnson & Reader, 2002; Reader, Stewart, & Johnson, 2009). Across the few existing studies, the DBSI has been able to differentiate parents of children with ADHD from parents of typically developing children (Johnson & Reader, 2002; Reader et al., 2009; Whalen et al., 2009; Whalen et al., 2006). More recently, Williamson and colleagues (2016) demonstrated a decrease in DBSI scores following an intervention for externalising behaviour, providing evidence of predictive validity.

Unfortunately, at the time of writing, no published research has examined the convergent validity of the DBSI with existing parenting stress measures.

While the reliability of the DBSI has been previously demonstrated, little research has been devoted to the factor structure of these items. The DBSI's lack of subscales is limiting in both research and clinical settings for several reasons. First, as a heterogeneous disorder with three presentations, children with ADHD may vary widely in the kinds of behaviour they display and parenting stressors may also vary as a function of this (Weinberger, Gardner, & Gerdes, 2018). As the DBSI continues to evolve and cut-off scores for clinically significant thresholds are introduced, it would be helpful to also develop cut-offs at a subscale level. Relying on a total score only may miss parents who experience a high level of stress in relation to one cluster of events only. For instance, parents of children with predominantly inattentive ADHD may not score high on items associated with managing impulsive or risky behaviour, but may strongly endorse stress related to a child's learning problems. Additionally, a DBSI with subscales would also help assist to plan family-based interventions by targeting areas parents rate as most stressful. Moreover, if a parent rates a particular cluster of events as especially stressful it may provide clues to the child's areas of impairment and thus assist with general assessment. This may help to guide and assist in the evaluation of interventions aimed to teach parents to cope with ADHD behaviour related stress. Finally, from a research perspective, a factored version of the DBSI would allow the field to develop a more comprehensive understanding of the nature of parenting stress, by examining predictors of specific types or aspects of parenting stress in ADHD affected families. Thus, the aim of this paper is to investigate the potential factor structure of the DBSI.

Method

This study forms part of a larger project called the censusADHD study conducted by QIMR Berghofer Medical Research Institute (QIMR). This project aimed to broadly

investigate the financial, emotional and educational impact of children's attention and behavioural problems on Australian families.

Participants

Participants for this study were parents or primary caregivers of a child born between 2004 and 2008 (aged 6 to 11) whose child had received three or more prescriptions for at least one of the following medications to treat ADHD: dexamphetamine, methylphenidate, modafinil or atomoxetine.

Potential participants were identified by the Australian Government Department of Human Services (DHS) mail-out service. This service sent information about the study to families where Pharmaceutical Benefits Scheme prescription records indicated one or more children aged 6 to 11 had been prescribed a medication that could be used to treat ADHD on three or more occasions within the previous 4.5 years. The Pharmaceutical Benefits Scheme (PBS) is the universal healthcare mechanism by which the Australian government subsidises the cost of medicines. Access to subsidised PBS prescriptions for these medications is tightly regulated, requiring formal diagnosis by qualified clinicians and regular clinical review.

In total, 26 652 parents were approached which yielded 1571 potential ADHD cases. Sixteen (1.02%) participants indicated that their child's age was not within the specified bracket and 99 (6.3%) parents reported their child did not currently display sufficient symptoms to meet DSM IV criteria for ADHD. These participants were removed. The attrition rate was 5.92% (93 participants) and missing data ranged from 0.29 to 0.95% per variable. Little's Missing Completely at Random (MCAR) test was not significant, χ^2 (1974) = 1779.72, p = .99, suggesting that missing data were not systematic. The final sample size was 1363, however, as per Field's (2009) recommendation, only participants with a complete DBSI were utilised for the principal component analysis, which resulted in a sample of 1283 for the final model presented.

Table 1 displays the demographic details of the sample with population level data from the 2016 Australian census for comparison. The majority of the reporting parents were well-educated, partnered, employed and the biological mother of the child with ADHD. Most of the participants' children were male, of European descent (78.93%) and the mean age was 9.51 years (*SD* = 1.26).

Measures

Vanderbilt ADHD Rating Scale (VARS). The VARS was used to confirm current ADHD status. This measure was published by the American Academy of Pediatrics and the US National Initiative for Children's Healthcare Quality (2002), adapted from Wolraich and colleagues (1998). It assesses a child's ADHD symptomatology and associated diagnoses via parent ratings. Items 1 to 47 tap ADHD, Oppositional Defiant Disorder, Conduct Disorder and internalising symptoms via a 4-point Likert scale. Respondents indicate the frequency of a child's behaviour, whilst considering what is developmentally appropriate (0 = *never*, 1 = *occasionally*, 2 = *often*, 3 = *very often*). In this study, item 40, "has forced someone into sexual activity" was excluded. Items 48 to 55 are "performance items" which measure children's functioning in a variety of areas (e.g. school, relationships) on a 5-point scale (1 = *excellent*, 2 = *above average*, 3 = *average*, 4 = *somewhat of a problem*, 5 = *problematic*). Parents were asked to respond based on their child's behaviour when they are off medication. A participant was considered an ADHD case when they endorsed (i.e. a score of 2 or 3) at least 6 inattention symptoms items, at least 6 of the hyperactivity-impulsivity items, or met both of these conditions simultaneously. The VARS has demonstrated excellent internal consistency (α = .91 - .95) (Bard, Wolraich, Neas, Doffing, & Beck, 2013; Wolraich et al., 2003), high test-retest reliability (r = .88 - .95) (Bard et al., 2013) and correlates with more comprehensive assessments such as the Diagnostic Interview Schedule for Children (r = .79) (Wolraich et al., 2003).

Disruptive Behaviour Stress Inventory. The DBSI is a 40 item questionnaire which asks respondents about a range of stressful events commonly experienced by parents of children with ADHD (Johnson & Reader, 2002). Example items include, "not being able to leave your child with a babysitter" and "not knowing how to deal with your child's behaviour". The Stress Experience scale consists of a forced-choice *yes* (1) or *no* (0) format regarding whether a particular event has been experienced within the past 6 months. Participants who answer *yes* then rate the severity of stress associated with that event on 4-point Likert scale (0 = *not at all stressful*, 1 = *somewhat stressful*, 2 = *moderately stressful*, and 3 = *very stressful*). Participants who answer *no* on the Stress Experience section are coded as 0 in the severity section. The sum of these severity scores represents the Stress Degree scale. Possible scores range from 0 – 40 in Stress Experience scale and 0 – 120 in the Stress Degree scale. In order to increase variability in the dataset, Stress Degree scores were recoded to differentiate participants who did not experience an event, and those who experienced it but did not find it stressful (i.e. 0 = *event did not occur*, 1 = *event occurred but was not at all stressful*, 2 = *somewhat stressful*, 3 = *moderately stressful* and 4 = *very stressful*). This increased the possible range of scores to 0 – 160. Additionally, in the current study, item 4, "having to leave or miss church because of your child's behaviour" was substituted with "having to miss or leave an appointment because of your child's behaviour". This adjustment was made to make the item more applicable to the Australian context. For the main analyses, only Stress Degree data were used because its continuous response set was expected to yield a more informative factor structure than the Stress Experience scale.

Design

Data were collected cross-sectionally via online survey. Prospective families identified by the DHS were sent a one page letter outlining the purpose of the study, an invitation to participate in an anonymous online survey and a URL to access the survey. No information

about who received these letters was provided to the researchers. A chronic disease control group (parents of children with asthma) and a healthy control group were also contacted, however, this data was not utilised in this study. No compensation was provided to participants.

Analytic Plan

First, descriptive statistics and internal consistency coefficients were generated for the original scale. A principal components analysis was conducted on the Stress Degree items to obtain a preliminary factor structure. Direct oblimin rotation was utilised as components were expected to correlate. Scree plot interpretation, Kaiser's criterion and parallel analysis (in which the data's eigenvalues are compared to monte-carlo simulated eigenvalues) were used to determine the number of factors to extract. A criterion of .4 was used to judge whether item loading was satisfactory (Field, 2009; Yong & Pearce, 2013). Items which failed to load onto any component in the pattern matrix were pruned and the solution was re-run iteratively until a suitable model (i.e. no orphaned items) was obtained (Pituch & Stevens, 2016). A small number of cross-loading items were tolerated and these were assigned to the component to which they had the highest loading. Once the structure was deemed conceptually sound, Cronbach's alphas were calculated for each component, as well as subscale scores so that basic descriptive statistics could be reported. Smith, McCarthy and Anderson (2000) highlight that an essential step in producing an alternative version of a scale is demonstrating equivalency with the original measure. For this reason, we examined the correlation between the amended DBSI's Stress Degree score with the original Stress Degree score.

Results

Descriptive statistics

This sample produced a mean Stress Experience score of 21.83 (*SD* = 9.46) and a mean Stress Degree score of 48.37 (*SD* = 28.16). Cronbach's alpha was .93 for the Stress Experience scale and .95 for the Stress Degree scale.

Principal Components Analysis

Preliminary analyses. The initial case to variable ratio for this analysis was 1363:40. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was .96, surpassing the criterion value of .6 (Hutcheson & Sofroniou, 1999) and Bartlett's Test of Sphericity was significant, χ^2 (780) = 23896.43, $p < .001$. Preliminary analyses revealed items 30 "problems related to medication side effects" and 35 "getting complaints from the school bus driver" had poor communalities and were subsequently removed. The anti-image correlation matrix was also examined. All diagonal values were above .5 as Field (2009) recommends. Off-diagonal elements were very low, with the majority under .1. In terms of the number of components to extract, Kaiser's criterion indicated six and parallel analysis suggested five. In Figure 1, the 95th percentile random-order eigenvalues generated during parallel analysis have been superimposed on a standard scree plot. The correct interpretation of the standard scree plot was unclear as arguments could be made for the retention of one or three components. Parallel analysis has been recognised as the most methodologically rigorous method of determining the number of components to extract (Yong & Pearce, 2013). Thus, a five component solution was adopted, in light of disagreement between various criteria.

Model 1 (5 component solution). A five component solution was attempted on the remaining 38 items using direct oblimin rotation with Kaiser normalisation. The initial solution accounted for 53.62% of the variance in the dataset. Item 20 cross-loaded and four items failed to load onto a component. These were item 40 (having your child embarrass you …), item 31 (not knowing how to explain your child's behaviour to others), item 29 (other people telling you how to parent your child) and item 37 (not getting support from others in dealing with your child's problems).

Items 40, 31, 29 and 37 were removed and the analysis was rerun. The process of iteratively pruning orphaned items was continued until a satisfactory component structure

was obtained (see Supplementary material for details). In total, six items were pruned (40, 31, 29, 37, 39 and 15). Following the removal of orphaned items, two items remained cross-loaded (item 23, dealing with complaints from other parents about your child behaviour, and item 20, dealing with your child's conflicts with other children). These cross-loading items were affiliated with different factors. In both instances, these items were more strongly conceptually linked to the component to which they loaded most highly. To examine the impact of these changes, we performed a PCA in which these items were removed. While the factor structure was resilient to the removal of these items, a secondary parallel analysis indicated that five components were no longer the best fit for the dataset following their pruning. Thus, the decision was made to retain these items and assign them to their highest loading component.

The final five component solution explained 55.62% of the variance in the remaining 32 items. A new scree plot was produced to check if the removal of items impacted its form (see Figure 1). There were three points of inflexion, occurring after one, three and five components. Parallel analysis was rerun however which indicated five components. Finally, re-examination of Kaiser's criterion revealed that five components were also recommended by that method. Due to the convergence of parallel analysis, the scree plot and Kaiser's criterion, it can be concluded with confidence that a five component model is a good representation of the amended dataset.

Model 2 (6 component solution). Although the five component model yielded an acceptable structure, it was noted that there was thematic similarity between several of the items removed. Many of the pruned items seemed to relate to judgement or negative evaluation from others (e.g. item 40, having your child embarrass you in front of others). In light of this, a six component solution was attempted to see if a "Negative Evaluation" component would emerge. While the sixth component did include some elements of social

judgement, a conceptually non-consistent item loaded onto it also (item 27, being concerned about your child being injured). Furthermore, there appeared to be significant theoretical overlap between the fifth and sixth components. In light of this, the five component solution was selected as optimal.

Results of Model 1. The five component model is presented in Table 2 below. Reliability analysis was performed for each component, the results of which ranged from acceptable to excellent (see Table 2). A component correlation matrix was generated which revealed low to medium associations between the components, hence justifying oblique rotation (see Table 3). Note that the Incidental Stressors and Relational Toll components correlated negatively with the other three components. This is expected due to the negative loadings of the items assigned to these components.

Component 1 appeared to tap routine disruption, practical annoyances and difficulties completing day-to-day activities. Therefore, this component was labelled "Routine Disruption". Component 2 included items relating to the child's school performance or learning difficulties and was thus labelled, "Academic Related Stressors". Component 3 described the stressful events that arise from children's behavioural problems within the school context such as in the classroom or playground. This component was assigned the label "Behaviour at School". Component 4 was labelled "Incidental Stressors" as its items related to unavoidable consequences of caring for a child with ADHD that were not a direct consequence of disruptive behaviour. Finally, Component 5 appeared to tap the impact of the child's disruptive behaviour on the parent's relationships with their spouse, their other children and themselves. Accordingly, this component was labelled "Relational Toll of Disruptive Behaviour".

Using the solution obtained, each component was converted into a subscale for which descriptive statistics are reported in Table 2. The total Stress Degree DBSI score was also

calculated using only the retained items which yielded a mean of 39.68 (*SD* = 23.17). Cronbach's alpha was also repeated using these items, and a coefficient of .94 was obtained.

Evidence of equivalency between original and amended DBSI

A bivariate correlation between the original and amended DBSI was calculated to provide evidence of overlapping variance. This revealed are very high positive correlation between the two scores, $r = .99$, $p < .001$.

Discussion

This study aimed to contribute to the psychometric development and clinical utility of the DBSI by confirming the measure has adequate reliability and identifying latent dimensions of the questionnaire. These dimensions were to reflect qualitatively similar groups of daily hassles experienced by parents of children diagnosed with ADHD. Reliability analyses revealed that both full-form scales (Stress Experience and Degree) had excellent internal consistency ($\alpha = .93$ - .95). Additionally, principal components analysis produced a conceptually sound five component solution, which maintained the internal consistency of the original measure. After pruning, the amended DBSI consisted of 32 items, organised into five components which accounted for 55.62% of the variance. The components demonstrated satisfactory internal consistency, with Cronbach's alphas ranging from .78 - .9. Considering the smallest component consisted of only three items, reliability statistics of this magnitude are sound. Moreover, a very strong bivariate association between the original and amended total Stress Degree scores was observed. This indicates that the amended version is a meaningful representation of the original measure.

The first component identified was labelled "Routine Disruption" and described how a child's disruptive behaviour may impede on the parent's or the family's capacity to carry out daily activities. Routine Disruption had the highest number of items loading on to it, with almost a third of all the items included in the final model assigned to this component. This

suggests a large portion of the original scale is, in fact, tapping routine disruption. This is perhaps because the items included in this component represent the most direct and obvious translation of children's ADHD symptoms into parental stressors. Given that scale items were created via spontaneous reports from parents caring for a child with ADHD, it makes sense that the majority of stressors would fall into this category. However, this is an important consideration in interpreting the meaning of the full scale scores, as Routine Disruption may be thought of as disproportionally represented compared to other kinds of daily hassles. Some conceptual overlap between this component and the PSI's Child Domain exists, however it is important to highlight the strength of the DBSI in accounting for idiosyncratic responses to potentially stressful events.

Two components emerged related to the child's functioning at school, which were labelled "Academic Related Stressors" and "Behaviour at School". This indicates that stress related to one's child's academic performance and stress related to behaviour at school is conceptually distinct, at least in our sample. This is an important consideration, as it highlights that if a parent complains of stress related to "dealing with the child's school", academic and behavioural problems are not necessarily simultaneously implied. Indeed, different responses or interventions from service providers may be warranted depending on what kind of problems the parent is experiencing.

The fourth component, Incidental Stressors, described stressors that come about as a consequence of raising a child with ADHD that are not a direct result of ADHD-type behaviour. Examples include difficulty locating, attending and paying for specialist services for one's child. Although not direct consequences of behaviour, these stressors represent an important part of ADHD familial experience (DosReis, Barksdale, Sherman, Maloney, & Charach, 2010; Holden, Setyawan, Coghill, Hodgkins, & Currie, 2013; Marks et al., 2009; Travell & Visser, 2006). For this reason, a daily-hassles type measure of stress such as the

DBSI is advantageous for this population, as it includes these specific stressors that may not be captured by measures like the PSI in which items are limited to behavioural challenges.

The final component, Relational Toll of Disruptive Behaviour, described the ways in which the parent's relationships are impacted by their child's behaviour. Most alluded to difficulties within the family system such as children with ADHD interfering with their siblings' care and problems in the co-parenting relationship. This component also tapped how children's behaviour impacts the way parents view themselves within the parenting role (item 17) and their capacity to nurture an identity outside of this role (item 14). A limitation of the utility of this component is that it seems to lack items pertaining to how disruptive behaviour can impact the parent's relationship with their ADHD-affected child. There is much evidence to suggest that problematic parent-child interactions (i.e. high hostility, low sensitivity, low warmth) are more frequent in dyads where a child has been diagnosed with ADHD (Fletcher, Fischer, Barkley, & Smallish, 1996; Gerdes et al., 2007; Johnston & Jassy, 2007; Tallmadge, & Barkley, 1983) and it seems highly likely that this translates to daily hassles.

While the conceptual appropriateness of most items in relation to their component was clear, two items require additional explanation. For instance, it is not immediately obvious why item 27, "being concerned about my child being injured" loads onto the Routine Disruption component. It is proposed that this item taps rumination or worry, which may act as a cognitive imposition on day-to-day activities. It may also represent precautionary behaviours a parent undertakes to minimise risk for an impulsive child (e.g. avoiding shopping centres during busy times) which may make routines more tiresome or stressful. Similarly, item 22 "having to watch your child so he/she doesn't get into trouble" loads onto the Behaviour at School component but may seem to be a better fit on the Routine Disruption, as it alludes to the imposing nature of disruptive behaviour. However, closer inspection of the wording of the item suggests that such supervision aims to prevent the child

from “getting into trouble” from others. Thus the emphasis on the experience of a third party, rather than how the behaviour affects the parents themselves, as is the case with the Routine Disruption component. This item may load onto this component because it reflects parents’ need to monitor their child’s behaviour while in the playground before or after school, or during school events.

Limitations & Future Directions

The results of this study are qualified by several limitations. For instance, sampling issues are worth noting. The overall response rate for the study was low: out of the 26, 652 letters sent, only 1571 parents chose to respond. We have no data on the number of letters that were undeliverable, and there may be systematic differences between parents who responded and those who did not. For example, parents experiencing the most severe stress may not have had the time or resources to complete the survey. Another sampling issue is the fact that participants were recruited through prescription records. Reader et al. (2009) found that parents of children who were taking medication had significantly higher DBSI scores than those whose ADHD was treated via other methods. Although parents were instructed to complete the DBSI based on when their child was off medication, it is unclear if the factor structure presented here is representative of a non-medicated population. The generalisation to families who chose not to try pharmaceutical treatments for ADHD is also unclear. Additionally, while all children had a confirmed diagnosis of ADHD (as children are unable to access ADHD medication in Australia without a specialist’s diagnosis), the classification of ADHD presentation based on parent-only report may have introduced some error, as best practice in diagnosis should employ multiple respondents (e.g. teacher ratings) (Carr, 2016). Finally, like much of the parenting literature in general (Panter-Brick et al., 2014), mothers were overrepresented in the current study. Generalisations of these results to fathers or other caregivers in a parenting role are therefore limited. Thus, replication of this study with a more

diverse sample (including parents of children off medication), with data from multiple informants is recommended. Then, examining the variance in factor structure according to carer type would be a useful step in assessing the robustness of our model.

It is also important to acknowledge that this study did not examine the convergent or divergent validity of the DBSI. Indeed, as no previous work has attempted these endeavours, this presents a significant gap in the psychometric validation of the DBSI. Future research may benefit from examining the relationship between the DBSI and existing measure of parenting stress as well as other conceptually related constructs (general stress, perceived quality of life, parenting self-efficacy). While we have presented some critique of the PSI within ADHD-affected populations, we acknowledge that it is currently the most widely used and validated measure of parenting stress. Thus, the lack of a head-to-head test between the PSI and the DBSI is a particularly important shortcoming in the validation of the DBSI to date. Additionally, another limitation of the DBSI itself is that the items appear most appropriate to parents of school-aged children, and its applicability to individuals caring for preschool or adolescent children has not been assessed. Thus a future direction in the development of the DBSI may be to examine the appropriateness of the measure in these cohorts, and perhaps create parallel versions if required.

Another important limitation to acknowledge is the discrepancy in the number of items loading upon the various factors within the model presented here. This likely reflects the manner in which the DBSI was designed – that is, based on a survey where parents of children with ADHD were asked to nominate there most significant family-related stressors. At that point in time, there was no attempt to ensure adequate concept coverage because there was no intention at that time to develop subscales. Going forward, it would be ideal for future studies investigating the psychometric properties of the DBSI to add additional items that attempt to tap the underrepresented factors (i.e. Academic Related Stressors).

Finally, it is also necessary to explore the theoretical implications of our decision to eliminate several DBSI items. As noted earlier, most of the items that were removed seemed to relate to negative evaluation from others; however, these items were unable to form a distinct sixth factor. Based on existing literature, these kinds of hassles likely represent a clinically important aspect of the parenting stress for parents of children with ADHD (DosReis et al., 2010; Harborne, Wolpert, & Clare, 2004; McIntyre, & Hennessy, 2012). However, the amended DBSI no longer reflects this. Thus, an important future direction in the development of the DBSI may be to re-examine the potential for a "negative evaluation" factor and possibly supplement the DBSI with more items that attempt to directly target this construct. This may assist in stabilising this factor if it indeed exists. Specific concerns raised in interviews with parents of ADHD such as children being labelled as "troublemaker" (DosReis et al., 2010), children being excluded from activities at school/kindergarten (McIntyre & Hennessy, 2012), or children being bullied for their difficulties (DosReis et al., 2010) could serve as potential items. On the other hand, reducing the measure by 8 items may equally be considered a strength of this study, in that shorter scales are often preferred by researchers due to their efficiency and reduced risk of missing data or attrition (Edwards et al., 2002; Kruyen, Emons, & Sijtsma, 2013).

While orphaned items were pruned, this study opted to retain two cross-loading items in order to preserve the integrity of the component structure. This may potentially serve to undermine the degree to which the components reported here can be thought of as conceptually distinct and it is therefore important to acknowledge. However, we also note that relationships between components were expected and observed due to the nature of the measure. It may be useful for future efforts to validate the DBSI by editing the wording of these items so that they more clearly reflect the component to which they have been assigned.

For example, within the Behaviour at School component, item 23 “dealing with complaints from other parents about your child” could be improved by adding the phrase “at school”.

Despite these considerations, the amended DBSI represents a promising tool for assessing and engaging parents of children with ADHD. Like all children, young people with ADHD are best understood within the context of their family, and parenting stress represents a clinically important aspect of family functioning. To the authors’ knowledge, the DBSI is the only daily hassles measure of parenting stress appropriate for parents of children with ADHD and the questionnaire overcomes many of the limitations of PSI use with this population. The amended DBSI offers an efficient and low-effort means for clinicians to gauge the extent of family disruption from ADHD-type behaviour without lengthy interview and may serve as a tool to support and scaffold further assessment. Moreover, the components that we obtained are consistent with the broad literature on ADHD-family life and thus the measure appears to capture key concerns for parents caring for a child with ADHD. It is hoped that the work presented here will inspire further effort to establish the DBSI as a valid assessment of parenting stress and thus address the current paucity of appropriate measures for ADHD-affected populations.

References

Abidin, R. R. (2012). *Parenting Stress Index (4th ed.).* Lutz, FL: PAR.

American Academy of Pediatrics., & US National Initiative for Children's Healthcare Quality. (2002). *NICHQ Vanderbilt Assessment Scale: Used for diagnosing ADHD*. Retrieved from https://www.nichq.org/sites/default/files/resource-file/NICHQ_Vanderbilt_Assessment_Scales.pdf

Anastopoulos, A. D., Sommer, J. L., & Schatz, N. K. (2009). ADHD and family functioning. *Current Attention Disorders Reports*, 1(4), 167-170. doi:10.1007/s12618-009-0023-2

Bard, D. E., Wolraich, M. L., Neas, B., Doffing, M., & Beck, L. (2013). The psychometric properties of the Vanderbilt Attention-Deficit Hyperactivity Disorder Diagnostic Parent Rating Scale in a community population. *Journal of Developmental & Behavioral Pediatrics, 34*(2), 72-82. doi:10.1097/dbp.0b013e31827a3a22

Carr, A. (2016). The handbook of child and adolescent clinical psychology a contextual approach (3rd ed.). Routledge

Creasey, G., & Reese, M. (1996). Mothers' and fathers' perceptions of parenting hassles: Associations with psychological symptoms, nonparenting hassles, and child behavior problems. *Journal of Applied Developmental Psychology*, *17*(3), 393-406. doi:1016/S0193-3973(96)90033-7

Crnic, K. A., & Greenberg, M. T. (1990). Minor parenting stresses with young children. *Child Development*, *61*(5), 1628-1637. doi:10.2307/1130770

Deater-Deckard, K. (2006). *Parenting Stress*. New Haven, CT: Yale University Press.

DosReis, S., Barksdale, C. L., Sherman, A., Maloney, K., & Charach, A. (2010). Stigmatizing experiences of parents of children with a new diagnosis of ADHD. *Psychiatric Services, 61*(8), 811-816. doi:10.1176/appi.ps.61.8.811

Drechsler, R., Rizzo, P., & Steinhausen, H.-C. (2008). Decision-making on an explicit risk-taking task in preadolescents with attention-deficit/hyperactivity disorder. *Journal of Neural Transmission, 115*(2), 201-209. doi:10.1007/s00702-007-0814-5

Edwards, P., Roberts, I., Clarke, M., Diguiseppi, C., Pratap, S., Wentz, R., & Kwan, I. (2002). Increasing response rates to postal questionnaires: systematic review. *British Medical Journal*, 324(7347), 1183 - 1192. doi:10.1136/bmj.324.7347.1183

Embregts, P. J. C. M., du Bois, M. G., & Graef, N. (2010). Behavior problems in children with mild intellectual disabilities: An initial step towards prevention. *Research in Developmental Disabilities, 31*(6), 1398-1403. doi: 10.1016/j.ridd.2010.06.020

Field, A. P. (2009). *Discovering statistics using IBSM SPSS Statistics* (4th ed.). London, UK: SAGE Publications.

Fletcher, K. E., Fischer, M., Barkley, R. A., & Smallish, L. (1996). A sequential analysis of the mother-adolescent interactions of ADHD, ADHD/ODD, and normal teenagers during neutral and conflict discussions. *Journal of Abnormal Child Psychology, 24*(3), 271-297. doi:10.1007/BF01441632

Gerdes, A. C., Hoza, B., Arnold, L. E., Hinshaw, S. P., Wells, K. C., Hechtman, L., . . . Wigal, T. (2007). Child and parent predictors of perceptions of parent-child relationship quality. *Journal of Attention Disorders, 11*(1), 37-48. doi:10.1177/1087054706295664

Hammerness, P. G. (2009). *Biographies of disease: ADHD*. Westport, CT: Greenwood Press.

Harborne, A., Wolpert, M., & Clare, L. (2004). Making sense of ADHD: A battle for understanding? Parents' views of their children being diagnosed with ADHD. *Clinical Child Psychology and Psychiatry, 9*(3), 327-339. doi: 10.1177/1359104504043915

Hoffman, C. D., Sweeney, D. P., Hodge, D., Lopez-Wagner, M. C., & Looney, L. (2009). Parenting stress and closeness. *Focus on Autism and Other Developmental Disabilities, 24*(3), 178-187. doi: 10.1177/1088357609338715

Holden, S. E., Setyawan, J., Coghill, D., Hodgkins, P., & Currie, C. J. (2013). The incidence, resource utilization and financial costs of treating children with Attention Deficit/Hyperactivity Disorder (ADHD) in the United Kingdom (UK). *European Psychiatry, 28*, 1. doi:10.1016/S0924-9338(13)76165-0

Hutcheson, G., & Sofroniou, N. (1999). *The Multivariate Social Scientist.* London, UK: SAGE Publications

Johnson, A. O. (2015). Test review: Parenting Stress Index, fourth edition (PSI-4). *Journal of Psychoeducational Assessment, 33*(7), 698-702. doi:10.1177/0734282914556069

Johnson, J. H., & Reader, S. K. (2002). Assessing stress in families of children with ADHD: Preliminary development of the Disruptive Behavior Stress Inventory (DBSI). *Journal of Clinical Psychology in Medical Settings, 9*(1), 51-62. doi:10.1023/A:1014136029697

Johnston, C., & Jassy, J. S. (2007). Attention-Deficit/Hyperactivity Disorder and oppositional/conduct problems: Links to parent-child interactions. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 16*(2), 74-79. Retrieved from http://www.cacap-acpea.org/en/cacap/Volume_16_Number_2_May_2007_s5.html?ID=350

Johnston, C., & Mash, E. J. (2001). Families of children with Attention-Deficit/Hyperactivity Disorder: Review and recommendations for future research. *Clinical Child and Family Psychology Review, 4*(3), 183-207. doi:10.1023/A:1017592030434

Kadesjö, C., Stenlund, H., Wels, P., Gillberg, C., & Hägglöf, B. (2002). Appraisals of stress in child-rearing in Swedish mothers pre-schoolers with ADHD. *European Child & Adolescent Psychiatry, 11*(4), 185-195. doi:10.1007/s00787-002-0281-3

Kruyen, P., Emons, W. M., & Sijtsma, K. (2013). On the shortcomings of shortened tests: A literature review. *International Journal of Testing, 13*(3), 223-248. doi:10.1080/15305058.2012.703734

Lench, H. C., Levine, L. J., & Whalen, C. K. (2013). Exasperating or exceptional? Parents' interpretations of their child's ADHD behavior. *Journal of Attention Disorders*, *17*(2), 141-151. doi:10.1177/1087054711427401

Marks, D. J., Mlodnicka, A., Bernstein, M., Chacko, A., Rose, S., & Halperin, J. M. (2009). Profiles of service utilization and the resultant economic impact in preschoolers with Attention Deficit/Hyperactivity Disorder. *Journal of Pediatric Psychology, 34*(6), 681-689. doi:10.1093/jpepsy/jsn112

McIntyre, R., & Hennessy, E. (2012). 'He's just enthusiastic. Is that such a bad thing?' Experiences of parents of children with Attention Deficit Hyperactivity Disorder. *Emotional and Behavioural Difficulties, 17*(1), 65-82. doi: 10.1080/13632752.2012.652428

Miranda, A., Tarraga, R., Fernandez, M. I., Colomer, C., & Pastor, G. (2015). Parenting stress in families of children with autism spectrum disorder and ADHD. *Exceptional Children, 82*(1), 81–95. doi:10.1177/0014402915585479

Panter-Brick, C., Burgess, A., Eggerman, M., McAllister, F., Pruett, K., & Leckman, J. F. (2014). Practitioner Review: Engaging fathers – recommendations for a game change in parenting interventions based on a systematic review of the global evidence. *Journal of Child Psychology and Psychiatry, 55*(11), 1187-1212. doi:10.1111/jcpp.12280

Pituch, K. A., & Stevens, J. P. (2016). *Applied Multivariate Statistics for the Social Sciences: Analyses with SAS and IBM's SPSS* (6th ed.). New York, NY: Routledge

Reader, S. K., Stewart, L. M., & Johnson, J. H. (2009). Assessing ADHD-related family stressors with the Disruptive Behavior Stress Inventory (DBSI): A replication and extension. *Journal of Clinical Psychology in Medical Settings, 16*(2), 148-160. doi:10.1007/s10880-008-9140-9

Reitman, D., Currier, R. O., & Stickle, T. R. (2002). A critical evaluation of the Parenting Stress Index-Short Form (PSI-SF) in a Head Start population. *Journal of Clinical Child & Adolescent Psychology, 31*(3), 384-392. doi:10.1207/S15374424JCCP3103_10

Smith, G. T., McCarthy, D. M., & Anderson, K. G. (2000). On the sins of short-form development. *Psychological Assessment, 12*(1), 102-111. doi:10.1037/1040-3590.12.1.102

Sobanski, E., Banaschewski, T., Asherson, P., Buitelaar, J. K., Chen, W., Franke, B., . . . Faraone, S. V. (2010). Emotional lability in children and adolescents with attention deficit/hyperactivity disorder (ADHD): Clinical correlates and familial prevalence. *Journal of Child Psychology and Psychiatry, 51*(8), 915-923. doi:10.1111/j.1469-7610.2010.02217.x

Tallmadge, J., & Barkley, R. A. (1983). The interactions of hyperactive and normal boys with their fathers and mothers. *Journal of Abnormal Child Psychology, 11*(4), 565-580;579;. doi:10.1007/BF00917085

Travell, C., & Visser, J. (2006). 'ADHD does bad stuff to you': Young people's and parents' experiences and perceptions of Attention Deficit Hyperactivity Disorder (ADHD). *Emotional and Behavioural Difficulties, 11*(3), 205-216. doi:10.1080/13632750600833924

Wiener, J., Biondic, D., Grimbos, T., & Herbert, M. (2016). Parenting stress of parents of adolescents with Attention-Deficit Hyperactivity Disorder, *Journal of Abnormal Child Psychology, 44*(3), 561-574. doi:10.1007/s10802-015-0050-7

Weinberger, K. A., Gardner, D. M., & Gerdes, A. C. (2018). Maternal functioning differences based on ADHD subtype. *Journal of Attenten Disorders*, *22*(13), 1218-1223. doi: 10.1177/1087054714567132

Whalen, C. K., Henker, B., Ishikawa, S. S., Floro, J. N., Emmerson, N. A., Johnston, J. A., & Swindle, R. (2009). ADHD and anger contexts: electronic diary mood reports from mothers and children. *Journal of Pediatric Psychology*, *34*(9), 940-953. doi:10.1093/jpepsy/jsn138

Whalen, C. K., Henker, B., Jamner, L. D., Ishikawa, S. S., Floro, J. N., Swindle, R., . . . Johnston, J. A. (2006). Toward mapping daily challenges of living with ADHD: maternal and child perspectives using electronic diaries. *Journal of Abnormal Child Psychology*, *34*(1), 111–126. doi:10.1007/s10802-005-9008-5

Williamson, A., Harrison, R., Reader, S., & Tynan, W. (2016). Parent-child groups for externalizing disorders: Outcomes, sociodemographic moderators, attendance, and attrition in a real-world setting. *Evidence-Based Practice in Child and Adolescent Mental Health*, 1(2-3), 126–143. doi: 10.1080/23794925.2016.1227945

Wolraich, M. L., Lambert, W., Doffing, M. A., Bickman, L., Simmons, T., & Worley, K. (2003). Psychometric properties of the Vanderbilt ADHD Diagnostic Parent Rating Scale in a referred population. *Journal of Pediatric Psychology, 28*(8), 559-568. doi:10.1093/jpepsy/jsg046

Wolraich, M. L., Hannah, J. N., Baumgaertel, A., & Feurer, I. D. (1998). Examination of DSM-IV critieria for Attention Deficit/Hyperactivity Disorder in a county-wide

sample. *Journal of Developmental and Behavioral Pediatrics*, *19*, 162– 168. doi: 10.1097/00004703-199806000-00003

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory analysis. *Tutorials in Quantitative Methods for Psychology*, *9*(2), 79-94.

Table 1

Sample Characteristics

	n (%)	Population reference data*
Child Characteristics		
Child's sex		
Male	1069 (78.43%)	
Female	294 (21.57%)	
ADHD presentation		
Inattentive	290 (21.28%)	
Hyperactive-impulsive	46 (3.37%)	
Combined	1027 (75.35%)	
Co-morbid ODD	937 (68.75%)	
Parent Characteristics		
Relationship to child		
Mother	1184 (86.87%)	
Father	99 (7.26%)	
Other	76 (5.58%)	
Unknown	4 (0.29%)	
Relationship Status		
Married/De facto	983 (72.12%)	
Divorced/Separated/Widowed	218 (15.99%)	
Single	115 (8.44%)	
Other	32 (2.35%)	
Unknown	15 (1.1%)	
Employment Status		
Employed	835 (61.26%)	72.7%
Unemployed	73 (5.36%)	4.9%
Carer	257 (18.86%)	22.4%
Studying	73 (5.36%)	
Other	111 (8.14%)	
Unknown	14 (1.03%)	
Parent Education Level		
Primary School	1 (0.07%)	
Grade 10	157 (11.52%)	33%
Grade 12	189 (13.87%)	
Certificate/Diploma/Apprenticeship	510 (37.42%)	31%
Undergraduate Degree	235 (17.24%)	25%
Postgraduate Degree	264 (19.37%)	10%
Unknown	7 (0.51%)	

Note. Demographics are reported for full study sample, N = 1363

* Source – 2016 Australian census data for Australian women aged 20-55. https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2071.02016?OpenDocument

** Please note that both grades 10 and 12 were considered successful completion of high school at the time at which these parents attended high school. Years 11 and 12 were only required for

those planning to attend university and those that chose to leave in grade 10 were awarded a High School Diploma which can be used to apply for entrance to a technical college or trade school.

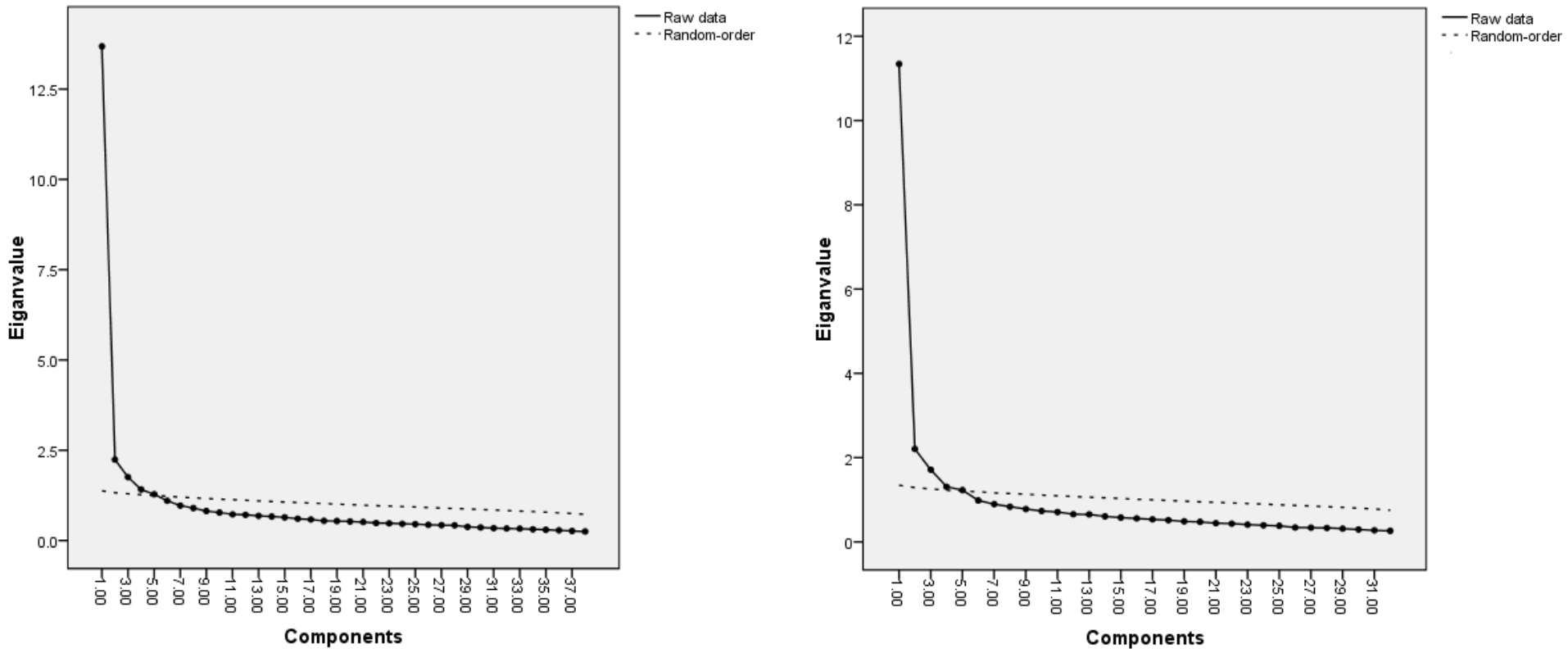

Figure 1. 38 item and 32 item scree plot with 95 percentile random-order eigenvalues

Table 2

Loadings, Communalities and Reliability Statistics of Five Component Model of DBSI

		Component					
	Item	1	2	3	4	5	Communality
38	Being unable to take your child to public places	**.81**	-.01	.003	.01	-.05	.68
24	Having to miss important social events because of your child's behaviour	**.76**	-.01	.07	-.06	-.04	.69
8	Not being able to take your child shopping because of his/her behaviour	**.73**	.01	-.04	.03	-.17	.62
2	Not being able to go out to eat because of your child's behaviour	**.68**	-.06	.05	.02	-.2	.61
4	Having to miss or leave appointments because of your child's behaviour	**.65**	-.07	.06	-.15	-.02	.55
26	Dealing with complaints from neighbours about your child's behaviour	**.61**	.1	.11	.09	.18	.37
27	Being concerned about your child being injured	**.55**	.12	.08	-.05	.05	.41
1	Not being able to leave your child with a babysitter	**.54**	-.03	.03	-.2	-.09	.48
32	Not being able to work outside of home because of your child's behaviour	**.52**	-.05	.01	-.29	.05	.44
25	Not being able to get to bed at a decent hour because of your child's behaviour	**.49**	.09	-.12	-.1	-.18	.4
28	Not getting work done at home because of your child's behaviour	**.46**	.14	-.08	-.07	-.37	.58

13	Spending an excessive amount of time helping your child with homework	.001	**.83**	-.10	.01	-.1	.69
33	Conflicts with your child over homework	.08	**.79**	.01	.16	-.18	.69
10	Dealing with your child's academic difficulties	-.08	**.73**	-.01	-.21	-.001	.64
34	Calls from school regarding your child's academic problems	.06	**.55**	.32	-.12	.21	.54
21	Calls from the school regarding your child's behaviour problems	-.002	.01	**.84**	-.03	-.08	.75
5	Dealing with teachers' complaints about your child's behaviour	.03	.1	**.77**	-.06	-.07	.73
23	Dealing with complaints from other parents about your child's behaviour*	.43	-.02	**.48**	-.01	.08	.54
22	Having to watch your child so he/she doesn't get into trouble	.31	-.03	**.44**	-.05	-.29	.63
12	Difficulties getting your child to appointments with various professionals	.04	.02	-.04	**-.76**	-.04	.61
11	Difficulties dealing with your child's doctors	.01	-.03	-.05	**-.75**	.01	.53
6	Difficulties finding professional services for your child	.04	.05	.09	**-.68**	.01	.56
19	Problems paying for services your child needs	.09	.14	-.03	**-.48**	-.15	.42
7	Having to miss work because of your child's problems	.02	-.09	.34	**-.47**	-.13	.48
16	Difficulties getting school-based services for your child	-.001	.34	.16	**-.46**	.09	.5
18	Disagreements with your spouse about managing your child's behaviour	-.17	.08	.13	-.06	**-.7**	.51
36	Having less time with partner because of your child's behaviour	.11	.08	-.03	-.08	**-.61**	.52

17	Not knowing how to deal with your child's behaviour	.09	.06	.22	-.01	**-.54**	.48
14	Not having enough time to yourself because of your child's behaviour	.26	.16	-.06	-.17	**-.49**	.61
3	Being interrupted by your child when trying to care for your other children	.33	.03	-.01	<.001	**-.49**	.51
9	Not being able to spend enough time with your other children	.26	.06	-.06	-.09	**-.49**	.48
20	Dealing with your child's conflicts with other children*	.08	.01	.43	-.03	**-.46**	.56
Eigenvalue		11.34	2.2	1.71	1.31	1.23	
Percentage of variance accounted for		35.45	6.89	5.35	4.09	3.84	
Mean subscale score		10.79	6.46	4.66	6.92	10.63	
SD		9.37	3.7	4.04	5.28	6.09	
Cronbach's alpha		.9	.78	.82	.79	.83	

Note. Boldface denotes assignment to the corresponding component; * indicates cross-loading item; Factor 1: Routine Disruption, Factor 2: Academic Stressors, Factor 3: Behaviour at School, Factor 4: Incidental Stressors; Factor 5: Relational Toll of Disruptive Behaviour

Table 3

Component Correlation Matrix

	Routine Disruption	Education Stressors	Behaviour at School	Relational Toll	Incidental Stressors
Routine Disruption	-				
Education Stressors	.27	-			
Behaviour at School	.37	.23	-		
Incidental Stressors	-.41	-.34	-.33	-	
Relational Toll	-.43	-.24	-.17	.31	-