

PRE-PRINT MANUSCRIPT

Tarren-Sweeney, M. (2013). The Assessment Checklist for Adolescents – ACA: A scale for measuring the mental health of young people in foster, kinship, residential and adoptive care. *Children and Youth Services Review*, 35, 384-393.

**Abstract**

The Assessment Checklist for Adolescents – ACA is a 105-item carer-report mental health rating scale, measuring behaviours, emotional states, traits, and manners of relating to others, as manifested by adolescents (ages 12 to 17) residing in various types of alternate care, as well as those adopted from care. The ACA was designed for population and clinical research with these young people, and for use as a clinical assessment measure. The ACA’s content was largely derived from the Assessment Checklist for Children (ACC). Fifteen ACC items were modified to better reflect adolescent difficulties, and 25 additional items were derived using a combination of inductive and deductive strategies. Item and factor analyses were carried out on scores from a 136-item research instrument, obtained for 230 young people residing in long-term care (as part of the NSW Children in Care study). These data were supplemented by ACC scores obtained for 142 adolescents residing in treatment foster care in Ontario, Canada. A robust 7-factor model was identified among a core of 73 clinical item scores, accounting for 51% of score variance. Four of the factors replicate ACC clinical scales (*non-reciprocal interpersonal behaviour; sexual behaviour problems; food maintenance behaviour; and suicide discourse*), and three are unique to the ACA (*social instability / behavioural dysregulation; emotional dysregulation / distorted social cognition; and dissociation / trauma symptoms*). The ACA also contains two empirically-derived low self-esteem scales (*low confidence; negative self-image*) that are shared with the ACC. Initial data indicate that the ACA has good content, construct and criterion-related validity, as well as high internal reliability.

**Keywords**

Developmental psychopathology; attachment and trauma difficulties; foster care; adoption; mental health assessment; Assessment Checklist for Children

## 1. Introduction <sup>1</sup>

The present paper describes the development of the *Assessment Checklist for Adolescents (ACA)*, which is an adolescent version of the Assessment Checklist for Children (ACC). The ACC is a 120-item carer-report psychiatric rating instrument, that measures behaviours, emotional states, traits, and manners of relating to others, as manifested by children in care, and related populations (including children adopted from care) (Tarren-Sweeney, 2007). It was designed to measure a range of mental health difficulties observed among children in care that are not adequately measured by standard rating instruments, such as the Child Behavior Checklist (CBCL), the Strengths and Difficulties Questionnaire (SDQ) and the Conners scales. These consist of a number of attachment-related difficulties (indiscriminate, non-reciprocal and pseudomature types), insecure relating, trauma-related anxiety, abnormal responses to pain, overeating and related food maintenance behaviours, sexual behaviour problems, self-injury and suicidal behaviours and discourse. The ACC was developed a decade ago for use in the Children in Care Study (CICS), a prospective epidemiological study of the mental health of children in long-term foster and kinship care, in New South Wales (NSW), Australia (Tarren-Sweeney & Hazell, 2006). Aside from investigating the nature of the mental health of children in care, the CICS located evidence that pre-care social adversity factors (notably the extent of children's exposure to pre-care maltreatment) were stronger predictors of the mental health difficulties measured by the ACC, than were children's experiences in care. Since then, the ACC has been employed in over 20 studies in Europe, North America and Australasia, and is increasingly used as a clinical assessment tool by specialised mental health services for children and young people in care – particularly in Britain and Australia (Chambers, Saunders, New, Williams, & Stachurska, 2010; DeJong, 2010).

Prior to commencing the CICS, the ACC's content was derived for a wide age range (4 to 17 years), with a view to: 1. employing a single set of items for baseline and follow-up studies; and 2. comparing the factor structure of this common set of items at different developmental stages. This plan was subsequently revised following examinations of what the ACC appears to measure among children and young people at different ages, and with different developmental pathways. A developmental perspective suggests that clinical phenomena are likely to evolve in complex ways in the context of *both* age-sensitive developmental stages, and maladaptive developmental trajectories. For this reason it was thought that, prior to embarking on a 7- to 9-year follow-up of

---

<sup>1</sup> Abbreviations:

CBCL	Child Behavior Checklist
CICS	Children in Care Study
NSW	New South Wales, Australia
ROC	Receiver Operating Characteristics
SDQ	Strengths and Difficulties Questionnaire
TFC	Treatment Foster Care

the CICS cohort (who would then be aged 11 to 18 years), there should be closer investigation of the validity and comprehensiveness of the ACC item pool for measuring those mental health symptoms manifested by adolescents in care that are not adequately measured by the CBCL, SDQ, Conners, etc. This preliminary investigation located a number of items that appear unsuitable for an adolescent population; suggested a need to modify some ACC items for an adolescent population; and suggested that some clinical phenomena manifested by young people in care are not adequately captured by the ACC. These findings prompted the formal development of an adolescent-specific measure for young people in the care system – the Assessment Checklist for Adolescents.

## **2. Selection and refinement of ACA content**

The central strategy for selecting and developing item content for the ACA was to refine and build on the content development carried out for the ACC a decade previously, rather than devising content from scratch. Prior to its inclusion in the CICS baseline survey, the ACC's clinical content was systematically derived using a combination of deductive and inductive strategies (Tarren-Sweeney, 2007), with the aim of identifying all clinically significant problems experienced by children and young people in alternate care that are not adequately measured by the CBCL. These strategies were (in order of occurrence):

1. a review of 110 clinical assessment reports sourced from the psychological records of 50 children and young people in care;
2. a survey of 47 clinicians (Psychiatrists and Psychologists) who worked extensively or exclusively with NSW children in care and / or maltreated children;
3. a review of literature describing the mental health of maltreated children, and of children in foster, kinship and residential care; development of a conceptual framework in the form of hypothesised symptom clusters;
4. review of a draft instrument by a foster parent focus group;
5. a final review of the proposed items by a group of experienced clinicians

The present steps taken to build on and refine content for an adolescent-specific instrument are listed below:

### *2.1 Reviewing age-sensitive / age-appropriate ACC items*

The initial step was to identify two sets of age-related items from the original pool of 132 ACC items, using both age-item correlations, and clinical-developmental reasoning. First, several items were identified as behaviours that are largely manifested among younger children, and which are developmentally-based (such as pica-related behaviours and masturbation in view of others). Second, several items were identified as being maladaptive during early and middle

childhood, but likely to be increasingly normative at ages 15 to 17 (e.g. some of the non-coercive sexual behaviours; cutting or ripping one's clothes). Further to this, two items measuring inattention were removed because 'inattention' is adequately measured by the CBCL. Thirteen items were thus removed from the ACC 132-item pool.

## 2.2 *State-wide survey of clinicians*

Approximately forty Psychologists employed by the Psychological service of the NSW statutory child welfare agency, who carry out clinical assessments of young people in care, were invited to propose any:

1. *individual problematic behaviours, emotional states, traits, or manners of relating to other people, that are particularly observed among adolescents in care aged 12 to 17 years, and which are not adequately measured by the ACC or CBCL; and*
2. *mental health disorders, syndromes or constructs that are particularly manifested by adolescents in care, and which are not presently measured by the ACC or CBCL.*

Eight clinicians responded to the survey. Several respondents proposed that adolescents in care present with trauma-related PTSD and dissociative symptoms that are not measured by the ACC. Others emphasised the need to obtain more comprehensive measurement of emotional and behavioural dysregulation.

## 2.3 *Literature review*

A review was carried out of literature describing the mental health of maltreated young people, and of adolescents in foster, kinship and residential care, updating a review carried out a decade earlier during development of the ACC.

## 2.4 *Development of a conceptual framework*

The steps carried out to this point supported the retention of content contained in the ACC's clinical scales, as well as retention of the two low self-esteem scales, with some modifications to the item pool and item wording. From the collated information, a conceptual framework was developed in the form of hypothesised symptom clusters *additional to* the ACC's 10 clinical scales. The conceptual framework is summarised in Table 1, centring on trauma and dysregulation symptoms. A number of items measuring dissociation were included in the 132-item research version of the ACC, but only a weak dissociation factor was identified at that time. It was thought that the dissociation items written for the ACC may not adequately measure the forms of dissociation manifested by children and young people in care. Further work was done to construct improved dissociation items to pilot in the CICS follow-up and adolescent surveys. Whereas clinicians and the literature did not identify restrictive eating symptoms as being

characteristically observed among this population, the present research presented an opportunity to examine the utility and relevance of measuring eating disorder symptoms among young people in care.

### *2.5 Modification of items for an adolescent population*

Fifteen ACC items were modified so as to have greater validity for an adolescent population. The modified ACA items are listed alongside the original ACC items, together with the reasoning for each modification, in Table 2.

### *2.6 Proposed new items reviewed by foster parents*

A list of proposed new items was reviewed by two groups of foster parents (12 foster parents in total), who were attending research focus groups in Christchurch, New Zealand, as part of a study of caregiver perceptions of children and young people's reactions to birth family contact. Following the completion of the focus groups, the group participants were invited to review the readability and validity of the list of proposed new ACA items within an informal discussion. Their feedback prompted changes to the wording of three of the items.

### *2.7 Inclusion of a draft instrument in the CICS follow-up and adolescent surveys*

A draft version of the ACA containing 136 items (118 clinical items, 18 low self-esteem items) was completed by foster and kinship caregiver respondents in the CICS follow-up and adolescent surveys. The draft instrument contained 111 existing or revised items from the 132-item research version of the ACC, and 25 newly developed items.

[insert Tables 1 and 2 about here]

## **3. Checklist format**

The ACA administration format is identical to the ACC. Each item refers to an individual behaviour, emotional state, trait, or manner of relating to others, that is observable by a child's carer. There are separate versions for boys and girls, allowing for use of gender-specific personal pronouns (him/her, himself/herself, he/she). Items are otherwise identical for boys and girls.

### *3.1 Response scale*

The ACA employs a three-point response scale (0-1-2), as used by the Revised Rutter Scales ("does not apply", "applies somewhat", "certainly applies") (Hogg, Rutter, & Richman, 1997), the CBCL and its companion instruments ("not true", "somewhat or sometimes true", "very true or often true") (Achenbach & Rescorla, 2001), and the Strengths and Difficulties Questionnaire ("not true", "somewhat true", "certainly true").

### 3.2 Measurement of infrequent critical events

The ACA and ACC were designed to detect infrequent events of critical problems such as suicide attempts and discourse, age-inappropriate sexual behaviour, and self-injury. Detecting single or isolated behaviours is important if they are markers for risk of harm, or if the events have clinical significance. Conversely, it is not useful to detect isolated instances of less critical problems, such as peer conflict. The ACA and ACC differentiate between these two types of items by assigning them to separate parts, each of which employs a different three-step response scale.

Part 1 uses the following instructions for less critical / higher incidence problems:

“Circle 0 if the statement is *not true* for this young person, in the last 4 to 6 months”

“Circle 1 if the statement is *partly true* for this young person, in the last 4 to 6 months”

“Circle 2 if the statement is *mostly true* for this young person, in the last 4 to 6 months”

Part 2 uses the following instructions for more critical / lower incidence problems:

“Circle 0 if the behaviour *did not occur* in the last 4 to 6 months”

“Circle 1 if the behaviour *occurred once* in the last 4 to 6 months”

“Circle 2 if the behaviour *occurred more than once* in the last 4 to 6 months”

## 4. Item and factor analyses

### 4.1 Sample

Item and factor analyses were performed on ACA scores for 372 young people in long-term alternate care, obtained from the CICS follow-up survey (n=85) and the CICS adolescent survey (n=147). Some analyses were supplemented by de-identified ACC scores for 142 young people enrolled in the multi-agency treatment foster care programme of the Children's Aid Societies of Durham, Highland Shores and Kawartha-Haliburton, in Ontario, Canada. The CICS is a prospective, epidemiological study of the mental health and development of children and young people in court-ordered foster and kinship care, in NSW, Australia. The follow-up and adolescent survey stages of the CICS have human ethics approvals from the University of Newcastle in Australia, and the University of Canterbury in New Zealand. The CICS was also approved and funded by the NSW Department of Family and Community Services (the state child welfare agency). Otherwise the Department had no role in the analysis or dissemination of the CICS findings.

The CICS follow-up study attempted to obtain follow-up social care and developmental data for all participants in the CICS baseline survey (carried out between 1999 and 2000) who remained in foster or kinship care in early to mid 2009. Of the 347 baseline survey participants,

231 remained in court-ordered foster or kinship care. Of these, 70 were residing in placements that did not have verifiable contact details, and whose caregivers could not be located by telephone. Of the remaining 171 eligible participants, questionnaires were returned for 85 young people, representing a 50% response rate. However, these participants represent only 25% of the baseline sample. The CICS adolescent survey was a cross-sectional survey of the mental health of 11 to 17 year-olds in long-term, court-ordered foster and kinship care in NSW, Australia, carried out a year after the CICS follow-up survey. The sampling frame was all young people aged 11 to 17 years residing in non-temporary court-ordered foster and kinship care in New South Wales, Australia, where case supervision was provided by the statutory child welfare agency (i.e. not supervised by private agencies), who were not part of the CICS baseline survey sample (i.e. baseline survey participants and non-participants), and whose placement address could be verified. Survey questionnaires were sent to the caregivers of 290 eligible participants residing at residential addresses with telephone contact, of which 145 were completed and returned (50% response rate).

The young people ranged in age from 11 to 18 years, with a mean age of 14.8 years. There was uneven distribution of young people across the age ranges, with fewer numbers in the oldest and youngest age groups (see Table 3). The mean age of young people in the three samples outlined above was 15.6, 15.2 and 14.0 years respectively. Gender was also unevenly distributed (54% boys and 46% girls). Eighty-three percent of young people resided with foster parents, 13% with kin, and 4% with adoptive parents. Their mean age at entry into care was 6.2 years and mean time in care (including post-care adoption) was 8.6 years. A total of 78% of young people had *clinic referred* status, as defined by one or more of the following criteria: 1. residing in treatment foster care; 2. prescribed psychopharmacologic medication; 3. caregiver receiving behavioural support or other carer intervention or young person receiving individual or group psychotherapy or counselling; and 4. caregiver actively seeking referral to a mental health service.

[insert Table 3 about here]

#### 4.2 Item analysis

A nominal total clinical score was generated from the sum of clinical item scores, and item-total correlations were calculated for the combined CICS samples (n=230). All but one of the item-total correlations were positive (the exception was *excessive dieting or fasting*), with 84% exceeding  $r = .30$ , and 40% exceeding  $r = .50$ . Eight items correlated less than  $r = .20$ . The procedure was repeated for low self-esteem items. The lowest low self-esteem item-total correlation was 0.44, with all others exceeding  $r = .50$ .

Excluding items that have an aggregate mean score less than .2, there were 19 items for which the gender ratio of item mean scores exceeded 1.5 (boy > girl = 11 items; girl > boy = 8 items). Sixteen items had an item-age correlation between .10 and .20 (9 positive and 7 negative), and there was one item-age correlation higher than .20 (*uses drugs or alcohol other than prescribed medications*,  $r = .31$ ). The latter correlation possibly reflects the increasingly normative use of alcohol in late adolescence. The analyses revealed considerably less age variation in item scores across the 11 to 18 year age-span, than was found across the 4 to 11 year age-span during the development of the ACC, possibly because the present data appear to be less confounded by *age at entry into care*.

Clinical item prevalence, defined as the proportion of the sample scoring either 1 or 2, ranged from 0.8% to 69%. Seven items had greater than 50% prevalence, such that they might be considered to be characteristic difficulties of young people in care. Five of these were considered to be sufficiently maladaptive to retain for further analysis, while *attention-seeking behaviour*, and *easily influenced by other young people* were not retained. Another seven items had very low prevalence and were not retained for factor analysis, including several that refer to restrictive eating. An initial exploratory factor analysis included these items but did not locate a restrictive eating factor. Consequently, a total of nine clinical items were discarded prior to factor analysis.

#### 4.3 Factor analysis of clinical items

A series of principal components factor analyses were carried out using oblique (promax) rotations. The analyses were hampered by a relatively low sample size for the number of items under examination. To work around this limitation, a number of exploratory factor analyses were first carried out to: 1. identify those factors that remain robust when selecting different sets of items; and 2. identify those items that do not load on any clinically meaningful factors through various rotations. Those items that performed weakly were progressively removed from the analyses, with a view to maximizing the subject to item (STI) ratio. Ten factors were initially retained after performing a scree plot test, each of which had an eigenvalue greater than 1.5. Rotations were then performed on models of 5 to 10 factors. The various analyses suggested a 7-factor model yielded the most stable and meaningful factors, while an 8-factor model yielded several additional weak factors, depending on which items were retained for analysis. Within the 7-factor model, two factors described very discrete constructs (*food maintenance behaviour*, and *sexual behaviour problems*). These factors remained robust regardless of which items were included in the analyses. This made it possible to carry out separate exploratory factor analyses of those items loading on the other five factors, again with a view to increasing the STI ratio. The exploratory analyses identified a set of items that reliably loaded .40 or higher on at least one factor.

Two main factor analyses were then carried out. The first identified loadings on the food maintenance and sexual behaviour factors in a 7-factor model using a pool of 72 items, with an STI ratio of 3.2. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for these 72 items was .83 overall, confirming that the item pool was appropriate for factor analysis. This model accounted for 51% of the score variance. The second identified loadings for the remaining five factors using a pool of 58 items (which excluded the food maintenance and sexual behaviour items), providing an STI ratio of 3.9, and with a KMO value of .85. This 5-factor model accounted for 47% of the score variance.

#### 4.4 Factor analysis of low self-esteem items

A preliminary factor analysis examined the factor structure of a combined pool of low self-esteem items and the 59 clinical items that loaded on the 5-factor model described above. All of the low self-esteem items loaded on two low self-esteem factors within a 7-factor model, while none of the clinical items loaded on the self-esteem factors. This suggests that the low self-esteem and clinical items are both conceptually and statistically distinct. A principal components factor analysis with oblique rotations was then performed on the 18 low self-esteem items. This yielded the same two-factor model of low self-esteem identified among younger children during the development of the ACC, representing constructs of *negative self-image* and *low confidence*.

### 5. Scale construction

Clinical and low self-esteem scales were derived from items with factor loadings above .40 on the relevant 7-factor and 5-factor clinical models, and the 2-factor low self-esteem model. Surprisingly, no item loaded above .40 on more than one factor. An additional criterion was that an item's presence should not lower the internal consistency of a scale. Seventy two items met criteria for inclusion with a clinical scale. Fifteen items that were considered clinically important but did not meet criteria for inclusion were retained as *other items*. One such item (*does not show pain if physically hurt*) loaded .44 on a dissociation factor, but its presence would have lowered that scale's internal consistency. All of the low self-esteem items met inclusion criteria. The final version of the ACA thus contains 105 items (87 clinical items and 18 low self-esteem items). All of the low self-esteem items and 66 of the 87 clinical items are shared with the ACC. Four of the ACA clinical scales have equivalents on the ACC, while the remaining three describe constructs that are not measured by the ACC. The ACA scales are listed with their constituent items in the Appendix.

## 6. Scale properties

The clinical scales are labelled:

- I. Non-reciprocal interpersonal behaviour
- II. Social instability / behavioural dysregulation \*
- III. Emotional dysregulation / distorted social cognition \*
- IV. Dissociation / trauma symptoms \*
- V. Food maintenance
- VI. Sexual behaviour
- VII. Suicide discourse

The low self-esteem scales are labelled:

- I. Negative self-image
- II. Low confidence

\* Scale is unique to the ACA

### 6.1 Relationships between clinical scales

A correlation matrix of the ACA clinical scales is presented in Table 4. The clinical scales are numbered I to VII in the order that best reflects inter-scale correlations and symptom prevalence i.e. adjacent scales are more closely related in terms of both correlation and the commonality of the difficulties being measured. A principal components factor analysis conducted on the seven clinical scale scores indicates the instrument has no higher-order factor structure (such as *internalizing* versus *externalizing* factors).

[insert Table 4 about here]

### 6.2 Optimal cut-points for ACA total clinical score

Relationships between ACA total score distributions and various indicators of mental health impairment were examined across the three study samples, with a view to identifying clinically significant scores. The indicators were: having CBCL total problems scores in the clinical range, and ‘borderline plus clinical’ ranges (CICS); having a reported psychiatric diagnosis (CICS); having prescribed psychopharmacologic medication(s) (CICS); and having ACC total scores in the clinical and ‘elevated plus clinical’ ranges (Canadian TFC sample). Sensitivity and specificity were plotted for each criterion in Receiver Operating Characteristics (ROC) analyses. An instrument’s screening accuracy is measured by the *area under the ROC curve*, referred to as the AUC, which is expressed as a proportion. An instrument that predicts no better than chance will have an AUC value in the vicinity of 0.5, while a ‘perfect’ screening instrument has an AUC of 1.0. Unless an instrument has a score cut-point that is 100% accurate (i.e. incurs no false positive or false negative results), then every screening cut-point involves a trade-off between *sensitivity* (the proportion of clinical cases who are positively screened i.e.

score at or above the screening cut-point) and *specificity* (the proportion of non-cases who are negatively screened i.e. score below the screening cut-point). Optimal cut-points for each analysis were identified by balancing two objectives: 1. that the cut-point maximises the number of young people correctly identified; and 2. that the cut-point has roughly equal sensitivity and specificity. The results of these analyses (listed in Table 5) suggest there are likely to be only slight gender differences in clinically meaningful scores, such that the same clinical cut-points can be applied to both genders. Two cut-points were selected to identify young people with clinically meaningful mental health problems. First, ACA total scores of 24 and above constitute a *clinical range* that is highly predictive of psychiatric impairment. Second, ACA scores in the range of 17 to 23 constitute a sub-clinical *elevated range*, indicating possible psychiatric impairment and a need for further mental health assessment, or periodic monitoring. Although neither cut-point incurs an unreasonable compromise between specificity and sensitivity, the clinical range is very specific (suggesting few false positives), and the elevated plus clinical range is very sensitive (few false negatives). For example, when predicting CBCL total problems scores in the clinical range, the sensitivity and specificity of the ACA clinical cut-point were 82% and 91% respectively, while those for the elevated range cut-point were 94% and 78%.

[insert Table 5 about here]

## 7. Initial validation

### 7.1 Content validity

The ACC's content was derived systematically over several years, with a view to identifying clinically significant behaviour manifested by 4 to 16 year-old children in foster, residential and kinship care that is not adequately measured by the CBCL (Tarren-Sweeney, 2007). Further to this, a systematic process was pursued to identify additional *adolescent-specific* mental health difficulties manifested by young people in care, using a similar combination of inductive and deductive strategies, including the development of a conceptual framework. The validity of the content was reviewed by experienced clinicians and foster parents, prior to inclusion in the CICS follow-up and adolescent surveys. Content was also subjected to item and factor analyses, resulting in deletion of some items. Item content can therefore be considered valid for 12 to 17 year-olds in various forms of alternate care.

### 7.2 Construct validity

The ACA's construct validity is supported by estimates of factorial and concurrent validity. The clinical scales were empirically derived through factor analysis. Various analyses revealed a stable factor structure, identifying a large pool of items that load strongly and exclusively on a single factor. The proportions of the clinical item score variance explained by

the 7-factor model (75 items, 51%) is comparable to that reported for the 10-factor ACC (Tarren-Sweeney, 2007), as well as for other carer-report checklists (Achenbach, 1991; Conners, Sitarenios, Parker, & Epstein, 1998; Dekker, Nunn, Einfeld, Tonge, & Koot, 2002; Goodman, 2001).

To possess construct validity, an instrument should correlate highly with measures of similar or allied constructs, and inversely with measures of opposing constructs (Aiken, 1996). While the ACA was designed to measure mental health difficulties experienced by adolescents in care that are not adequately measured by the CBCL, the total scores for both instruments should ideally provide estimations of *global* psychopathology, and thus should be strongly correlated. The ACA's validity is thus supported by high correlations of ACA and CBCL total clinical scores (boys:  $r = .90$ ; girls:  $r = .88$ ) for the combined CICS follow-up and adolescent survey samples ( $n=230$ ). Concurrent validity is further demonstrated by strong associations between ACA clinical scale scores and the CBCL total problems score. In a linear regression, the seven clinical scale scores accounted for 80% of the CBCL total score variance (adjusted R squared), with five scales being independent predictors.

The Assessment Checklist for Children – Plus (ACC+) is a partially developed, 29-item carer-report checklist of behaviours suggesting adaptive, pro-social functioning and well-being. The items are scaled with a view to detecting small improvements in mental health among children and young people in care who have mental health disorders i.e. to be more sensitive to therapeutic change than problem measures such as the ACC, CBCL or SDQ. Among the Canadian TFC sample ( $n=142$ ), ACC+ scores were moderately inversely correlated ( $r = -.56$ ) with a nominal ACA total clinical score calculated from the 66/87 ACA items that overlap with the ACC instrument.

### 7.3 Criterion-related validity – “Diagnosis / treatment / referral”

An important measure of a clinical instrument's validity is its ability to differentiate between referred and non-referred young people (Achenbach, 1991; Achenbach & Rescorla, 2001). The CICS follow-up and adolescent surveys surveyed several indicators of clinical service use or demand for services, namely: having a reported psychiatric diagnosis; being prescribed psychotropic medication; young people's engagement in counselling or psychotherapy in the previous year, and/or provision of clinical advice to carers (such as behaviour management); as well as unsuccessful attempts by caregivers to obtain such services. While these indicators don't neatly equate to referral status (since young people in care often receive preventative clinical services following abuse without regard to their mental health status), there were mostly substantial differences in ACA scale scores stratified by referral, medication and diagnostic status. Effect sizes (listed in Table 6) ranged from  $d = .45$  to 1.12 for

clinical scales measuring relatively common difficulties, and from  $d = .14$  to  $.72$  for the lower prevalence sexual behaviour problems and suicide discourse scales.

[insert Table 6 about here]

#### 7.4 Reliability

Internal consistency was high, with Cronbach's alpha ranging from  $.76$  to  $.90$  for the clinical and low self-esteem sub-scales (values listed in the Appendix), and  $\alpha = .96$  for the total clinical score and  $.92$  for the composite low self-esteem score. This is comparable to that of the CBCL (Achenbach & Rescorla, 2001) and the Conners Parent Rating Scale (Conners et al., 1998), while it exceeds that of the SDQ (Goodman, 2001). Split-half reliability coefficients for the total clinical and low self-esteem composite scales were calculated from correlations of nominal split-half forms. These were each constructed from half of the available items (items were consecutively allocated to the two forms). The split-half reliability coefficients for the total clinical and low self-esteem composite scales were  $r = .93$  (boys= $.94$ , girls= $.92$ ) and  $r = .88$  (boys= $.89$ , girls= $.88$ ) respectively.

Given the CICS follow-up and adolescent surveys obtained ACA and CBCL scores that were completed simultaneously by the same informant, some measure of external reliability can be gained from examining intra-rater correlation of scores on comparable ACA and CBCL items. Intra-rater score correlations for 8 sets of comparable items ranged from  $.62$  to  $.85$  (see Table 7). Other external reliability measures (test-retest & inter-rater reliability) have yet to be carried out, but a number of validation studies are planned. When considering the reliability of a carer-report psychometric measure, we need to delineate between extrinsic and intrinsic reliability. Intrinsic reliability is that which is directly attributable to the instrument's design and statistical properties. For example, an item can be poorly written because it has ambiguous or multiple meanings, such that caregivers interpret the item's meaning in different ways. In this case, the item detracts from the instrument's overall intrinsic reliability. Extrinsic reliability refers to that which is attributable to the general psychometric method, and/or the extent to which a particular construct can be reported on. The ACA has extrinsic reliability that is attributable to it being a caregiver report checklist. There are strengths and limitations with a caregiver-report method that affect the reliability of all caregiver-report measures. This includes situation-specific biases, such as a tendency by some caregivers to over-state their child's difficulties when they are seeking a clinical service for their child. The reliability of foster parent reports of children's problems remains somewhat uncertain, although there is evidence that in respect of children in long-term care, foster parents are at least as reliable as parents (Tarren-Sweeney, Hazell, & Carr, 2004).

[insert Table 7 about here]

## 8. Discussion

The development of the ACA was hampered by a small sample size for deriving factors from such a large item pool. A number of exploratory analyses needed to be carried out to reduce the numbers of items included in the final factor analyses, which is less than ideal for locating symptom factors. The low STI ratio also meant that gender-stratified factor analyses could not be carried out.

The development of the ACA as an adolescent-specific version of the ACC provides opportunities to consider both the *characteristic forms* and *course* of attachment- and trauma-related symptomatology through middle and late childhood, and thence into adolescence. A comparison of the respective ACC and ACA factor structures reveals several symptom clusters and clinical constructs that are manifested in much the same form across different developmental timeframes, namely: *non-reciprocal interpersonal behaviour*; *sexual behaviour problems*; *suicide discourse*; *food maintenance behaviours*; *low confidence*; and *negative self-image*. Aside from some variations in the age appropriateness and prevalence of some constituent symptoms, a comparison of pre-adolescent and adolescent score distributions suggests these are valid symptom clusters from ages 4 through to 17 years.

The most dominant ACA factor is represented by the *social instability / behavioural dysregulation* scale. This scale contains most of the items from the ACC *indiscriminate* and *pseudomature* interpersonal behaviour scales, as well as three items from the ACC *non-reciprocal* scale (referring to controlling social behaviour and lack of empathy), as well as four new items. Two high prevalence items withheld from the ACA (*attention-seeking behaviour* and *easily influenced by other young people*) also loaded strongly on this factor in exploratory analyses. It has previously been proposed that the high inter-correlation of the ACC social relatedness scales suggests that children in care present with attachment difficulties profiles, rather than discrete subtypes of attachment disorder (Tarren-Sweeney, 2009). The conformation and dominance of the ACA *social instability / behavioural dysregulation* factor is consistent with this view, suggesting that as children in care grow into adolescence, they manifest increasingly less specific forms of attachment-related difficulties.

The present analyses identified a strong clustering of dysregulated emotion (principally in relation to the uncontrolled expression of anger); distorted social cognition in regards to trust and victimisation; some anxiety symptoms; and one item each measuring feelings of emptiness and possible suicidal thinking. The factor is derived from nine new items that were designed to measure emotional dysregulation (see hypothesised symptom clusters in Table 1), as well as three items from the ACC *insecure* scale. High scores for pre-adolescent children on the ACC insecure scale are difficult to interpret because the scale measures insecure relating or felt insecurity that can be trait-and/or state- based. In the present analyses, the remaining ACC insecure scale items did not constitute an insecure factor among adolescents, and most did not load on any other factor.

Nonetheless, the behaviours measured by the ACC insecure scale remain maladaptive for adolescents, and comparable item mean scores were reported for pre-adolescent and adolescent samples. For this reason, many of those items loading on the ACC insecure scale have been retained in the ACA as *other items*.

The *dissociation / trauma symptoms* scale measures a combination of dissociative and anxiety symptoms that are suggestive of psychological trauma. The present analyses provide some confirmation that the newly written dissociative experiences items are better measures of dissociation experienced by young people in care, than those items written for the ACC. Generally we might describe the new items as measuring experiences that involve alterations to conscious awareness and perceptions of reality.

Whereas self-injury and abnormal pain response factors were clearly identified among pre-adolescent children during the ACC's development, they were not identified among the present adolescent samples. A couple of the items that loaded on these ACC scales were assigned to other ACA scales, but most did not load on any factor in the 7-factor model. In regards to self-injury, some of the ACC items appear less valid for adolescents, and several had notably lower item mean scores among the adolescents.

## 9. Conclusion

The Assessment Checklist for Adolescents – ACA is a 105-item carer-report psychiatric rating scale designed for population and clinical research with 12 to 17 year-olds in care, and for use as a clinical assessment tool. While its content is largely derived from the Assessment Checklist for Children, the ACA's factor structure differs somewhat from that of the ACC. These differences likely reflect the introduction of items that measure additional clinical phenomena, as well as substantive differences between adolescent and preadolescent developmentally-based symptomatology. The ACA contains seven empirically-derived scales that measure a range of attachment- and trauma-related mental health difficulties. Four of these replicate empirically-derived ACC scales (*non-reciprocal interpersonal behaviour; sexual behaviour problems; food maintenance behaviour; and suicide discourse*), and three are unique to the ACA (*social instability / behavioural dysregulation; emotional dysregulation / distorted social cognition; and dissociation / trauma symptoms*). The ACA also contains the same low self-esteem scales contained in the ACC (*low confidence; negative self-image*). Initial data indicate that the ACA has good content, construct and criterion-related validity, as well as high internal reliability. While the ACA was developed in the first instance as a population-specific clinical research tool, initial data suggest it is a useful measure to include in multi-method mental health assessments of young people in care, as well as those adopted from care. Use of the ACA is restricted to researchers and appropriately qualified clinicians, by way of a limited licence agreement. People wishing to obtain a copy of the

ACA should read the limited licence agreement at [www.childpsych.org.uk](http://www.childpsych.org.uk) and then email the author.

### **Acknowledgements**

The Treatment Foster Care Program for the Children's Aid Societies of Durham, Highland Shores and Kawartha-Haliburton, in Ontario, Canada, kindly contributed ACC scores for the present analyses. The CICS was funded and approved by the NSW Department of Family and Community Services.

References

- Achenbach, T. (1991). *Manual for the Child Behavior Checklist / 4-18, and 1991 profile*. Burlington, VT: University of Vermont.
- Achenbach, T., & Rescorla, L. (2001). *Manual for ASEBA school-age forms and profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.
- Aiken, Lewis R. (1996). *Rating scales and checklists: Evaluating behavior, personality, and attitudes*. New York: Wiley.
- Chambers, M, Saunders, A, New, B, Williams, C, & Stachurska, A. (2010). Assessment of children coming into care: Processes, pitfalls and partnerships. *Clinical Child Psychology and Psychiatry, 15*(4), 511-527.
- Conners, C. Keith, Sitarenios, Gill, Parker, James D. A, & Epstein, Jeffrey N. (1998). The revised Conners' Parent Rating Scale (CPRS-R): Factor structure, reliability, and criterion validity. *Journal of Abnormal Child Psychology, 26*(4), 257-268.
- DeJong, Margaret. (2010). Some reflections on the use of psychiatric diagnosis in the looked after or 'in care' child population. *Clinical Child Psychology and Psychiatry, 15*(4), 589-599.
- Dekker, M, Nunn, R, Einfeld, S, Tonge, B, & Koot, Hans M. (2002). Assessing emotional and behavioral problems in children with intellectual disability: Revisiting the factor structure of the Developmental Behavior Checklist. *Journal of Autism & Developmental Disorders, 32*(6), 601-610.
- Goodman, R. (2001). Psychometric properties of the Strengths and Difficulties Questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*, 1337-1345.
- Hogg, C, Rutter, M., & Richman, N. (1997). Emotional and behavioural problems in children: The Revised Rutter Scales. In I. Schlare (Ed.), *Child psychology portfolio*. Windsor, UK: NFER-Nelson.
- Tarren-Sweeney, Michael. (2007). The Assessment Checklist for Children - ACC: A behavioral rating scale for children in foster, kinship and residential care. *Children & Youth Services Review, 29*, 672-691.
- Tarren-Sweeney, Michael. (2009). *Attachment- and trauma-related psychopathology among children in alternate care*. Paper presented at the Annual Conference of the Faculty of Child & Adolescent Psychiatry, Royal Australian & New Zealand College of Psychiatrists – RANZCP, Queenstown, New Zealand.
- Tarren-Sweeney, Michael, & Hazell, Philip. (2006). The mental health of children in foster and kinship care in New South Wales, Australia. *Journal of Paediatrics & Child Health, 42*, 91-99.
- Tarren-Sweeney, Michael, Hazell, Philip, & Carr, Vaughan. (2004). Are foster parents reliable informants of children's behaviour problems? *Child: Care, Health and Development, 30*(2), 167-175.

Table 1 **ACA hypothesised symptom clusters *additional to the ACC's 10 clinical factors***

<b>Symptom clusters</b>	<b># of existing ACC items</b>	<b># new items</b>
Trauma-related dissociation symptoms	4	6
PTSD / trauma-related anxiety symptoms	10	4
Emotional dysregulation symptoms	3	9
Disconnection / sense of belonging	0	2
Eating disorder symptoms	4	7

**Table 2** Modifications to ACC items

<u>ACC item</u>	<u>Modified ACA item</u>	<u>Reason for modification</u>
Causes herself to vomit	Causes herself to vomit, <i>after eating (or uses laxatives)</i>	Younger children vomit during tantrums
Distressed by traumatic memories	Distressed <i>or troubled</i> by traumatic memories	Denotes other ways of experiencing negative effects
Easily influenced by other children	Easily influenced by other <i>young people</i>	
Fears you will reject her	Fears you <i>(or other adults)</i> will reject her	Adolescents have expanded social network and supports
Forces or pressures other children into sexual acts	Forces or pressures other <i>youth or children</i> into sexual acts	
Has nightmares	Nightmares <i>about specific events or people</i>	More specific to trauma
Has blackouts or periods of amnesia	Has periods of amnesia ( <i>e.g. has no memory of what has happened in the last hour</i> )	'Blackouts' not sufficiently specific to mental ill-health
Prefers to be with adults, rather than children	Prefers to be with adults, rather than <i>peers</i>	
Prefers to mix with older children	Prefers to mix with older <i>youths</i>	
Shows sex parts to others	Inappropriately shows genitals to others (in person, or by video or photo)	Rules out appropriate situations; genitals less ambiguous than sex parts; Caregivers reporting common transmission of photos by phone and internet
Startles easily	Startles easily ( <i>'jumpy'</i> )	Increase comprehension of the item's meaning
Starts rude conversations, tells jokes about sex	Seems overly preoccupied with sex ( <i>e.g. crude sexual talk, inappropriate sexual comments</i> )	The child version is increasingly normative in later adolescence
Thinks other children are better than her	Thinks other <i>young people</i> are better than her	
Touches or puts mouth on other person's sex parts	Touches or puts mouth on other person's <i>genitals or breasts</i>	'Genitals' less ambiguous than sex parts
Wary or vigilant	Wary or vigilant ( <i>over-alert to danger</i> )	Increase comprehension of the item's meaning

**Table 3** Age distributions by source and gender

<i>Age</i>	<i>Total N</i>	<i>Study source</i>			<i>Gender</i>	
		<b>CICS follow-up</b>	<b>CICS adol. survey</b>	<b>Canadian TFC</b>	<b>Boys</b>	<b>Girls</b>
<b>11</b>	17	1	2	14	11	6
<b>12</b>	37	0	3	34	21	16
<b>13</b>	67	15	28	24	31	36
<b>14</b>	94	23	45	26	52	42
<b>15</b>	56	8	28	20	35	21
<b>16</b>	47	11	18	18	23	24
<b>17</b>	46	24	16	6	25	21
<b>18</b>	8	3	5	0	3	5
<b>Total</b>	372	85	147	142	201	171

**Table 4** Correlation matrix (*r*) of ACA clinical scales (n=230)

---

Non-reciprocal	.69						
Social instability / Behav. dysregulation	.88	.51					
Emotional dysregulation / distorted social cognition	.83	.46	.66				
Dissociation / Trauma symptoms	.65	.35	.41	.53			
Food maintenance	.66	.42	.50	.43	.47		
Sexual behaviour	.54	.25	.47	.29	.44	.36	
Suicide discourse	.40	.09	.22	.44	.29	.20	.40
	Total clinical score	Non-reciprocal	Soc/behv dysregulation	Dysregulated emotion	Dissociation / Trauma symp.	Food maintenance	Sexual Behaviour

---

**Table 5** Receiver Operating Characteristics (ROC) of ACA total score as screen for various clinical outcomes

	<b>BOYS</b>				<b>GIRLS</b>			
	<b>Optimal score</b>	<b>% Correct<sup>a</sup></b>	<b>AUC<sup>b</sup></b>	<b>95% C.I.<sup>c</sup></b>	<b>Optimal Score</b>	<b>% Correct</b>	<b>AUC</b>	<b>95% C.I.</b>
<b>CBCL clinical ranges (CICS, n=230)<sup>d</sup></b>								
Total problems clinical range	26	90%	.95	.91 - .98	23-26	89%	.96	.93 - .99
Total problems borderline + clin.	19	90%	.96	.93 - .99	14-18	87%	.95	.91 - .98
Any CBCL scale in clinical range	18	91%	.97	.94 - .99	12-14	85%	.93	.89 - .98
<b>ACC clinical ranges (TFC, n=142)<sup>e</sup></b>								
ACC clinical range	25	93%	.98	.96 - 1.00	24	100%	1.00	1.00 - 1.00
ACC elevated + clinical range	21	99%	1.00	.99 - 1.00	18	100%	1.00	1.00 - 1.00
<b>Clinical service use (CICS, n=230)</b>								
Reported diagnosis <sup>f</sup>	19	74%	.77	.69 - .86	19	82%	.87	.80 - .94
Psychopharmacologic medication <sup>g</sup>	22	77%	.79	.70 - .87	23	76%	.88	.81 - .95

<sup>a</sup> Percent of scores that correctly classify criteria

<sup>b</sup> Area under the curve (AUC)

<sup>c</sup> 95% confidence interval of AUC

<sup>d</sup> CBCL total problems scores in the clinical range (yes=87, no=143), borderline + clinical range (yes=112, no=118), and having any CBCL scale score (broadband or sub-scale) in the clinical range (yes=113, no=117), Australian CICS sample

<sup>e</sup> ACC total problems score in the clinical range (yes=117, no=25), and elevated + clinical range (yes=117, no=25), Canadian TFC sample

<sup>f</sup> Reported as having a prior diagnosis of an emotional, behavioral or psychiatric disorder (yes = 93; no = 137), Australian CICS sample

<sup>g</sup> Child presently prescribed psychopharmacologic medication (yes = 51; no = 179), Australian CICS sample

**Table 6** Effect sizes ( $d$ )<sup>a</sup> of reported diagnostic status and clinical service use on ACA scale scores

ACA Scales	Australian sample (N=230)			Australian and Canadian samples N=372
	Reported diagnosis <sup>b</sup>	Psychotropic medication <sup>c</sup>	Psychotherapy/ <sup>d</sup> behavioural advice	Clinic-referred <sup>e</sup>
Non-reciprocal	.74	.67	.67	
Nominal non-reciprocal score (9/10 items shared with ACC)				.89
Social instability / beh. dysregulation	.73	.78	.67	
Nominal social/beh. dysreg. score (17/21 items shared with ACC)				.94
Emotional dys. / dist. soc. cog.	.84	1.12	.75	
Dissociation / trauma symptoms	.67	.98	.43	
Nominal dissoc / trauma symp. score (4/7 items shared with ACC)				.45
Food maintenance	.68	.68	.57	
Nominal food maintenance score (4/7 items shared with ACC)				.70
Sexual behaviour problems	.27	.23	.14	.39
Suicide discourse	.46	.72	.28	.26
ACA total clinical score (87 items)	.95	1.06	.82	
Nominal ACA total clinical score (66 items shared with the ACC)				1.10

<sup>a</sup> Effect size reported as standardised difference between mean scores (Cohen's  $d$ ) i.e. the difference between group mean scores expressed as a proportion of the standard deviation of scores for the aggregate CICS sample

<sup>b</sup> Reported diagnosis of an emotional, behavioral or psychiatric disorder: yes=137; no=93

<sup>c</sup> Young person presently prescribed psychotropic medication: yes=51; no=179

<sup>d</sup> Received psychotherapy or counselling in previous year, or caregiver received professional advice or training for management of young person's difficulties: yes=143; no=87

<sup>e</sup> CICS clinic-referred young people, plus the Canadian Treatment Foster Care sample 'Clinic-referred' defined as having a reported diagnosis, and/or prescribed psychopharmacologic medication, and/or receiving psychological treatment or behavioural support including TFC, or active attempt to obtain a mental health service: yes=291; no=81

**Table 7 Intra-rater correlations of corresponding ACA and CBCL item scores**

<b>ACA item</b>	<b>CBCL item</b>	<b>Intra-rater correlation</b>
<i>20. Eats too much</i>	<i>53. Overeating</i>	.85
<i>25. Feels worthless or inferior</i>	<i>35. Feels worthless or inferior</i>	.70
<i>32. Impulsive (acts rashly, without thinking)</i>	<i>41. Impulsive or acts without thinking</i>	.80
<i>39. Nightmares about specific events or people</i>	<i>47. Nightmares</i>	.67
<i>43. Prefers to mix with older youths</i>	<i>63. Prefers being with older kids</i>	.74
<i>44. Refuses to talk</i>	<i>65. Refuses to talk</i>	.62
<i>98. Sudden or extreme mood changes</i>	<i>87. Sudden changes in mood or feelings</i>	.65
<i>55. Suspicious</i>	<i>89. Suspicious</i>	.73

## APPENDIX

### CLINICAL SCALES

		Loading <sup>a</sup>	Item-rest <sup>b</sup>	Prevalence (%) <sup>c</sup>	ACA-specific <sup>d</sup>
<b>I. Non-reciprocal (10 items, <math>\alpha = 0.83</math>)</b>					
2	avoids eye contact	.52	.49	31	
13	does not cry	.53	.33	29	
14	does not share with friends	.50	.50	24	
15	does not show affection	.82	.62	31	
30	hides feelings	.56	.55	47	
44	refuses to talk	.47	.45	20	
46	resists being comforted when hurt	.64	.54	26	
50	seems alone in the world (not connected to people or places)	.59	.60	25	Yes
66	uncaring (shows little concern for others)	.50	.57	28	
69	withdrawn	.61	.55	23	
<b>II. Social instability / behavioural dysregulation (21 items, <math>\alpha = 0.92</math>)</b>					
4	changes friends quickly	.60	.61	27	
8	constantly seeking excitement or 'thrills'	.54	.53	25	Yes
9	craves affection	.53	.55	38	
32	impulsive (acts rashly, without thinking)	.49	.65	57	Yes
36	lacks guilt or empathy	.42	.63	42	
38	manipulates or 'uses' friends	.59	.64	24	
40	possessive, can't share friends	.56	.65	17	
41	precocious (talks or behaves like an adult)	.62	.56	29	
42	prefers to be with adults, rather than peers	.59	.54	25	
43	prefers to mix with older youths	.63	.52	33	
45	relates to strangers as if they were family	.72	.63	26	
47	risks physical safety, fearless	.44	.48	24	
57	threatens to withdraw love (e.g. "I won't love you anymore unless ...")	.48	.52	10	Yes
59	too dramatic (false emotions)	.45	.56	28	
60	too friendly with strangers	.64	.54	42	
61	too independent	.42	.47	22	
62	too jealous	.44	.62	22	
64	tries too hard to please other young people	.63	.59	33	
65	turns friends against each other	.59	.45	11	
67	upsets most people (without good reason)	.59	.66	21	Yes
88	hugs men, other than a relative or male carer	.49	.43	10	
<b>III. Emotional dysregulation / distorted social cognition (14 items, <math>\alpha = 0.90</math>)</b>					
12	distrusts friends	.54	.51	21	Yes
24	feels victimised or misunderstood	.56	.63	31	Yes
33	is convinced that friends will reject him/her	.54	.55	24	
48	says friends are against him/her	.51	.61	23	
52	shows intense and inappropriate anger	.42	.68	39	Yes
53	startles easily ('jumpy')	.52	.48	17	
73	can't get scary thoughts or images out of his/her head (not due to watching a scary movie)	.54	.47	10	Yes
80	extreme reaction to minor event (or for no obvious reason)	.48	.66	24	Yes
81	extreme reaction to losing a friend, or being excluded	.53	.61	11	
90	intense reaction to criticism	.59	.67	34	Yes
93	says his/her life is not worth living	.62	.62	9	
94	says he/she feels 'empty' or without emotions	.58	.27	2	Yes
98	sudden or extreme mood changes	.64	.65	28	Yes
105	uncontrollable rage	.56	.76	23	Yes
<b>IV. Dissociation / trauma symptoms (7 items, <math>\alpha = 0.76</math>)</b>					
39	nightmares about specific events or people	.52	.47	15	
71	appears dazed, 'spaced out' (like in a trance)	.52	.51	20	Yes
74	can't tell if an experience is real or a dream	.67	.60	10	Yes
82	feels like things, people or events aren't real	.75	.61	4	Yes
85	has panic attacks	.50	.46	11	
86	has periods of amnesia (e.g. has no memory of what has happened in the last hour)	.63	.52	10	
87	hits head, head-banging	.46	.37	7	
<b>V. Food maintenance (7 items, <math>\alpha = 0.87</math>)</b>					
19	eats secretly (e.g. in the middle of the night)	.77	.71	20	Yes
20	eats too much	.75	.73	30	
28	gorges food	.66	.69	23	
31	hides or stores food	.75	.65	13	
54	steals food	.80	.73	15	
79	dramatic changes in eating (e.g. dieting then overeating)	.61	.39	5	Yes
84	has eating binges (bouts of excessive eating)	.70	.64	12	Yes

**CLINICAL SCALES** (continued)

	Loading <sup>a</sup>	Item-rest <sup>b</sup>	Prevalence (%) <sup>c</sup>	ACA-specific <sup>d</sup>
<b>VI. Sexual behaviour</b> (7 items, $\alpha = 0.85$ )				
83	forces or pressures other youth or children into sexual acts	.76	.71	3
89	inappropriately shows genitals to others (in person, or through video or photo)	.56	.60	3
95	seems overly preoccupied with sex (e.g. crude sexual talk, inappropriate sexual comments)	.56	.60	9
96	sexual behaviour not appropriate for age	.67	.72	7
97	sexual relations with an adult	.69	.43	1
103	touches or puts mouth on other person's genitals or breasts	.72	.63	2
104	tries to involve others in sexual behaviour	.75	.75	3
<b>VII. Suicide discourse</b> (6 items, $\alpha = 0.88$ )				
72	attempts suicide	.61	.57	3
76	describes how he/she would kill him/herself	.86	.83	3
91	intentionally harms him/herself with knife/implement	.57	.54	3
99	talks about suicide	.81	.70	4
100	threatens to injure him/herself	.87	.82	4
101	threatens to kill him/herself	.79	.76	4
<b>Other Clinical Items</b> (15 items)				
5	clingy		19	
7	confused about where or with him he/she belongs		13	Yes
11	distrusts adults		21	
22	fears you (or other adults) will reject him/her		16	
34	is fearful of being harmed		14	
51	seems insecure		37	
55	suspicious		21	
58	too compliant (over-conforms)		16	
63	treats you as though you were the child, and he was the parent		33	
68	wary or vigilant (over-alert to danger)		10	
75	causes injury to him/herself		7	
77	distressed or troubled by traumatic memories		16	
78	does not show pain if physically hurt		13	
92	rocks back and forth		6	
102	throws him/herself against walls, onto floors, etc		4	

**LOW SELF-ESTEEM SCALES**

	Factor 1 <sup>e</sup>	Factor 2 <sup>f</sup>	Item-rest <sup>b</sup>	Prevalence (%) <sup>c</sup>	
<b>I. Negative Self-Image</b> (9 items, $\alpha = 0.91$ )					
3	believes he/she is no good at anything	.59	.21	.65	30
6	complains of not being likeable	.79	-.05	.70	17
10	dislikes him/herself	.78	.03	.74	15
21	fears he/she might do something bad	.71	-.11	.56	13
23	feels ashamed	.77	-.08	.64	10
25	feels worthless or inferior	.78	.10	.76	21
29	has a low opinion of him/herself	.70	.22	.75	35
49	says he/she is "bad", or "no good"	.81	-.06	.70	14
56	thinks other young people are better than him/her	.72	.01	.65	22
<b>II. Low Confidence</b> (8 items, $\alpha = 0.83$ )					
1	adjusts slowly to changes	.02	.56	.46	52
16	does not speak up for her/himself	-.06	.57	.40	30
17	easily discouraged at home	.23	.53	.57	29
18	easily discouraged at school	.17	.58	.57	39
26	finds it hard to make decisions	.08	.66	.61	46
27	gives up too easily	-.08	.84	.66	53
35	lacks confidence	.38	.53	.63	53
70	won't attempt new activities	-.10	.71	.51	31
<b>Other Item</b>					
37	low self-esteem	.54	.38	n.a.	37

<sup>a</sup> Factor loading

<sup>b</sup> Item-rest correlation (correlation of the item score and the sum of all other items in the scale)

<sup>c</sup> Item prevalence = percentage of the CICS combined sample (n=230) with item score of 1 or 2

<sup>d</sup> Items that are specific to the ACA, i.e. not shared with the ACC

<sup>e</sup> Loading on Factor 1 on 2-factor model of low self-esteem

<sup>f</sup> Loading on Factor 2 on 2-factor model of low self-esteem