Development of BCFPI Questionnaires, and Software, 2000-2024

1. Introduction

The following pages describe BCFPI[1]'s development and psychometric characteristics, from ~ 2000 through to 2024.

Between 2000 and ~2014, BCFPI questionnaires were based on [Ontario Child Health Study Data (1987)](#).

The next years (2014-2024) listed in this document, are the years during which BCFPI Inc. commissioned 6 surveys of representative populations of Canadian Parents and Youth (2014-2024) and Swedish Youth and Parents (2023-2024) (Total n=10,174; 7,011 Parents and 3,063 Youth). Analysis of these data provided optimal factor loadings, for BCFPI questionnaire scales, and norms for these scales, for Canadian and Swedish Parents and Youth.

Section 2 summarizes our work based on the Ontario Child Health Study data, for BCFPI's Youth and Parent questionnaires, (V1).

Sections 3 - 8 describe our work based on surveys of Canadian and Swedish Parents and Youth.

Section 9 provides selected references related to this process.

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[1] BCFPI: stands for Brief Child and Family Phone Interview… BCFPI was initially administered as a PHONE Intake Interview. Subsequently, it became available as a Clinical Interview, Staff Administered Checklist, and on-line, self-completed checklist. Its original name (BCFPI) has been retained, to preserve continuity.

2. Development and Evaluation of the BCFPI V1 Parent and V1 Youth Self-Report Questionnaire (12 – 18 years) (2000-2014)

The questions employed in the BCFPI's V1 Parent Questionnaire, and V1 Youth Questionnaire were derived from questions developed for the Ontario Child Health Study (1987). The goal of our process was to identify compact item sets (scales), and scores, from the larger OCHS data set which were relevant to Child and Youth Mental Health service providers. We determined that 6 item scales were the most efficient at providing satisfactory factor loadings for these compact scales.

The same scales and items were included in the Youth and Parent questionnaires. This was intended to support comparisons of parent and adolescent perspectives, on a standardized set of questions.

The 6 'core' Mental Health Scales developed and deployed during this period were:
- Regulating Attention, Impulsivity and Activity Level
- Cooperativeness
- Conduct
- Separation from Parents
- Managing Anxiety
- Managing Mood

Additional scales developed and deployed during this period included:
- Child Functioning
- Informant Mood
- Impact on Family

Further details are available in the following publications:

Cunningham, C. E., Boyle, M., Hong, S., Pettingill, P., & Bohaychuk, D. (2009). The Brief Child and Family Phone Interview (BCFPI): 1. Rationale, development and description of a computerized children's mental health intake and outcome assessment tool. *Journal of Child Psychology and Psychiatry, 50*(4), 416-423. https://doi.org/10.1111/j.1469-7610.2008.01970.x

Boyle, M., Cunningham, C. E., Georgiades, K., Cullen, J., Racine, Y., & Pettingill, P. (2009). The Brief Child and Family Phone Interview (BCFPI): 2. Usefulness in screening for child and adolescent psychopathology. *Journal of Child Psychology and Psychiatry, 50*(4), 424-431. https://doi.org/10.1111/j.1469-7610.2008.01971.x

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3. Development and Evaluation of the BCFPI Infant Questionnaire (8 – 17 months (2014)

The Development of the Tool

In order to develop questionnaire items and scales that were relevant to infant emotional and behavioral regulation, we consulted experts in early child development and existing diagnostic classification systems, i.e., the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; American Psychological Association, 2013), the Research Diagnostic Criteria-Preschool Age (Task Force on Research Diagnostic Criteria: Infancy and Preschool, 2003), the Diagnostic Classification: 0-3 (Zero To Three, 1994), and the Diagnostic Classification: 0-3R (Zero To Three, 2005).

We pilot tested draft items on approximately 400 infants who were referred to a children's treatment centre. In an iterative process over several years that involved over 25 draft versions of the scale, we edited the questionnaire (added, clarified, and reworded items) based on feedback from clients' parents, clinicians, and experts. We conducted exploratory factor analyses on the data from the clinic-referred children, deleted items that did not load on any factor or had multiple or high cross loadings, and shortened the questionnaire to reduce informant burden.

In a subsequent pilot study of non-clinic referred children, we conducted anonymous online surveys of parents of 199 infants 8 to 17 months old. Parents were representative of the Canadian population in terms of geographic region, marital status, income, and education (cf. Statistics Canada, 2011). Exploratory factor analysis revealed five factors, and the total variance accounted for was 45%. Eleven items were deleted because they did not load above 0.35 on any factor, were redundant, or were awkwardly worded. One new item was generated and added to ensure six conceptually related items on each factor. The final questionnaire contained 30 items in total, with five scales of six items each: one externalizing scale (Cooperating), two internalizing scales (Expressing Emotion; Responding to Change), and two regulatory scales (Eating; Sleeping).

The Normative Study

We again conducted anonymous online surveys of parents of infants for the normative study. In addition to demographic information and the infant questionnaire, we also collected information on family distress and caregiver mood. The sample was stratified by child sex (two levels; boys and girls) and child age (two levels, divided at the midpoint of the age range; 8-12 months, 13-17 months), with approximately 150 children in each of the four strata. The sample also was stratified on demographic characteristics (geographic region, marital status, income, and education) to ensure that it was representative of the Canadian population, as per

information from Statistics Canada (2011). To assess test-retest reliability, a subsample of participants received the survey again one week later.

Table 1 presents the demographic characteristics for infants in the normative study.

Table 1
Demographic Characteristics for Normative Sample of Infants 8-17 Months
(*N* = 542)

Region		N	%
	Atlantic	36	6.6
	Quebec	91	16.8
	Ontario	225	41.5
	West	190	35.1
Respondent Marital Status			
	Single	108	19.9
	Married/common law	434	80.1
Family Income/Year			
	< $29,999	74	13.6
	$30,000 - $79,999	221	40.8
	≥ $80,000	212	39.1
	Preferred not to answer	35	6.5
Respondent Education			
	≤High school	180	33.2
	College	229	42.2
	University	131	24.2
	Preferred not to answer	2	0.4
Child gender			
	Male	277	51.1
	Female	265	48.9
Respondent Parent Status			
	Biological Parent	516	95.2
	Adoptive Parent, Foster Parent, Other	26	4.8
Language Survey Completed in			
	English	470	86.7
	French	72	13.3
Primary Language Spoken in the Home			
	English	439	81.0
	French	82	15.1
	Other	21	3.9
Respondent Country of Birth			
	Canada	482	88.9
	Other	60	11.1

Factor Analyses

The Infant Mental Health subscales were derived via maximum likelihood factor analyses with varimax rotation. The factor analysis yielded 5 interpretable factors with eigenvalues greater than 1.

Tables 2 through 6 show the factor loadings for Infant Mental Health subscales. Factor loadings are listed in descending order.

Factor loadings show the strength of the relationship between an individual item and the factor. Factor loadings might be thought of as a correlation between an individual item and the overall factor score. Items with higher factor scores provide a purer estimate of the construct thought to be measured by that factor (Tabachnick & Fidell, 2019). It has been suggested that questions with factor loadings above .71 provide an "excellent" measure of a construct. Those with factor loadings of .63 to .71 are "very good". Factor loadings from .55 to .62 are "good". Factor loadings from .45 to .54 are "fair" and those from .32 to .44 are "poor" (Tabachnick & Fidell, 2019).

In allocating individual questions to the subscales, we required that factor loadings exceed .35 and questions load higher on that scale than other scales.

Cooperating

Table 2 shows factor loadings for the Cooperating subscale. Four of six items show a good to very good loading while two evidence a poor to fair loading.

Table 2
Infant Tool Factor Structure: Cooperating

Cooperating	Factor Loading
seem stubborn	.63
refuse to cooperate or do as you ask	.62
Scale item 3[2]	.58
Scale Item 4	.55
Scale item 5	.53
Scale item 6	.42

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[2] Examples of 2 scale items are provided. Contact info@bcfpi.com for further information

Expressing Emotion

Table 3 shows factor loadings for the Expressing Emotion subscale. Four of six items show a very good to excellent loading while one evidences a good loading.

Table 3
Infant Tool Factor Structure: Expressing Emotion

Expressing Emotion	Factor Loading
seem generally unreactive or withdrawn	.71
show little interest in or get little pleasure from usual activities	.68
Scale item 3	.68
Scale Item 4	.67
Scale item 5	.66
Scale item 6	.61

Responding to Change

Table 4 shows factor loadings for the Responding to Change subscale. Four of the 6 items evidence good to excellent factor loadings. Two items evidence fair factor loadings.

Table 4
Infant Tool Factor Structure: Responding to Change

Responding to Change	Factor Loading
get upset by new places	.75
get upset by new situations	.62
Scale item 3	.61
Scale Item 4	.58
Scale item 5	.47
Scale item 6	.45

Eating

Table 5 shows factor loadings for the Eating subscale. Four of six items evidence very good to excellent factor loadings and two showed good factor loadings.

Table 5
Infant Tool Factor Structure: Eating

Eating	Factor Loading
eat too little	.72
refuse to eat foods that you think are healthy	.69
Scale item 3	.67
Scale Item 4	.63
Scale item 5	.61
Scale item 6	.59

Sleeping

Table 6 shows factor loadings for the Sleeping subscale. Four of six items show very good to excellent factor loadings and two showed good loadings.

Table 6
Infant Tool Factor Structure: Sleeping

Sleeping	Factor Loading
sleep less than other children of the same age	.71
have difficulty staying asleep	.69
Scale item 3	.69
Scale Item 4	.65
Scale item 5	.62
Scale item 6	.57

Impact on Family

Using an eigenvalue of .9, one interpretable factor emerged including items on family activities and family comfort. Table 7 shows the factor structure. All seven items show very good to excellent factor loadings.

Table 7
Infant Tool Factor Structure:
Impact on Family

Impact on Family	*Factor Loading*
How frequently has your child's behaviour prevented his brothers or sisters from having friends, relatives or neighbours to your home?	.81
How frequently has your child's behaviour prevented you from having friends, relatives or neighbours to your home?	.80
Scale item 3	.78
Scale Item 4	.74
Scale item 5	.71
Scale item 6	.69
Scale item 7	.66

Informant Mood

The Table below shows the Informant Mood Scale that was introduced in Version 3.2.6 of the BCFPI. The 6 questions included in BCFPI Informant Mood Scale were derived, with permission, from the Centre for Epidemiological Study of Depression Scale (Radloff, 1977). Norms for this scale are from parents, mostly mothers, participating in the Revised Ontario Child Health Study Scales norming study's population sample (Boyle et al., 1993). On the Informant Mood scale, higher t-scores reflect poorer functioning. The Table below shows the infant normative study factor loadings for the six items included in this scale. Five of the six items show very good to excellent factor loadings and one showed a good loading.

Table 8
Infant Tool Factor Structure: Informant Mood

Informant Mood	*Factor Loading**
I felt sad	.83
I felt depressed	.80
I had trouble keeping my mind on what I was doing	.74
I could not get going	.74
My sleep was restless	.66
I did not feel like eating; my appetite was poor	.55

Reliability Analyses

Table 9 shows internal consistency scores (Cronbach's alpha) for the Infant Mental Health subscales. Cronbach's alpha represents the average of all possible split half reliabilities (correlating half of the subscale with the other half of the subscale). Cronbach's alpha scores should generally fall between .70 and .90 (Streiner & Norman, 2014). Scores above .90 suggest that the scale contains redundant questions and may describe a construct too narrowly. Scores below .70 suggest a more heterogeneous set of questions that reflect more than one construct (Streiner & Normal, 2014). Cronbach's alpha (internal consistency) scores ranged from .78 to .86 for the Infant Mental Health subscales.

Table 9
Infant Tool Reliability Analyses:
Internal Consistency Scores for Infant Mental Health Subscales

	Cronbach's Alpha
Cooperating	.78
Expressing Emotion	.86
Responding to Change	.80
Sleeping	.85
Eating	.86

Table 10 shows internal consistency scores for the Informant Mood and impact on Family scales.

Table 10
Infant Tool Reliability Analyses:
Impact on Family and Informant Mood Scales Internal Consistency Scores

	Cronbach's Alpha
Impact on Family	.87
Informant Mood (CES-D)	.81

Test-Retest Reliability
Test-retest analyses results in Table 11 suggest that Infant Mental Health subscale scores are stable and reliable over a period of 1 week.

Table 11
Infant Tool 1-Week Test-retest Correlations (n = 54)

Infant Subscale	*r*
Cooperating	.73
Expressing Emotion	.68
Responding to Change	.66
Sleeping	.76
Eating	.81

Construct Validity: Impact on Family and Informant Mood

The Infant Mental Health subscale scores are linked to higher scores on the Impact on Family scale and Informant Mood scale.

Table 12
Infant Tool Construct Validity:
Correlation of Infant Mental Health Subscales with Impact on Family and Informant Mood Scores

Infant Mental Health Subscale	*Correlation*	
	Impact on Family	*Informant Mood*
Cooperating	.43**	.29**
Expressing Emotion	.58**	.34**
Responding to Change	.67**	.33**
Sleeping	.41**	.35**
Eating	.51**	.29**

** $p < 0.01$

Construct Validity: Demographic Characteristics

Some infant scale scores also were related to family demographic characteristics: Single parents reported that their infants had more difficulties with Expressing Emotion and Responding to Change, ts(2) = 16.46 and 22.15, respectively, ps < .05; parents with the lowest level of education reported that their infants had more difficulties with Expressing Emotion, $F(3) = 5.89$, $p < .05$; and parents with the lowest level of income reported that their infants had more difficulties with Expressing Emotion and Responding to Change, Fs(3) = 8.23 and 7.23, respectively, ps < .05.

For more information on the infant tool, see:

Niccols, A., Cunningham, C., Pettingill, P., Bohaychuk, D., & Duku, E. (2018). Infant mental health: The Brief Child and Family Intake and Outcomes System. *International Journal of Behavioral Development, 42*(6), 588-596. https://doi.org/10.1177/0165025417752497

Our consultant Statistician was Dr. Eric Duku. He actively guided us and conducted successive analysis as we developed each of these questionnaires, as described in sections (3-8, from 2014 through 2024). Dr. Duku is an Associate Professor (Part-Time), Psychiatry & Behavioural Neurosciences, Faculty of Health Sciences, McMaster University, Hamilton, Ontario.

Contact info@bcfpi.com for further information

4. Development and Evaluation of the BCFPI Toddler Questionnaire (18 – 35 months (2015)

The Development of the Tool

We consulted experts in early child development and existing diagnostic classification systems to develop items and scales that were relevant to toddler emotional and behavioral regulation. Draft items were pilot tested on approximately 400 children referred to a children's treatment center (Niccols, Cunningham, & Pettingill, 2005). In an iterative process over several years that involved over 25 drafts of the scale, we edited the questionnaire based on feedback from clients' parents, clinicians, and researchers. We conducted exploratory factor analyses, deleted items that did not load on any factor or had multiple or high cross loadings, and shortened the questionnaire to reduce informant burden (cf. Streiner & Norman, 2014).

In a subsequent pilot study, we conducted anonymous online surveys of parents of 201 toddlers 18-36 months old who were representative of the Canadian population in terms of geographic region, marital status, income, and education (cf. Statistics Canada, 2011). Exploratory factor analysis was conducted. The extraction method for the factor analysis was Maximum Likelihood, with Varimax orthogonal rotation. As indicated by examination of the eigenvalues and scree plot, six factors were specified. The total variance accounted for was 47%. One item was deleted because it did not load above 0.35 on any factor and six items were deleted because the research team deemed the items' content redundant with other items that were worded more clearly. Internal consistency (Cronbach's alphas) were adequate, ranging from 0.76 to 0.88 for each of the six factors. Three new items were generated and added to the Responding the Change factor to ensure that each factor was based on six conceptually related items. The final questionnaire contained 36 items, with six scales of six items each: two externalizing scales (Cooperating; Regulating Attention, Impulsivity, and Activity), two internalizing scales (Expressing Emotion; Responding to Change), and two regulatory scales (Eating; Sleeping).

The Normative Study

We again conducted anonymous online surveys of parents of toddlers for the normative study. In addition to demographic information and the toddler questionnaire, we also collected information on family distress and caregiver mood. The sample was stratified by child sex (two levels; boys and girls) and child age (two levels, divided at the midpoint of the age range; 18-26 months, 27-36 months), with approximately 125 children in each of the four strata. The sample also was stratified on demographic characteristics (geographic region, marital status, income, and education) to ensure that it was representative of the Canadian population, as per information from Statistics Canada (2011). To assess test-retest reliability, a subsample of participants received the survey again two weeks later.

Table 1 illustrates the demographic characteristics for toddlers in the normative study.

Table 1
Demographic Characteristics for Normative Sample of Toddlers 18-36 Months
(N = 500)

Region		n	%
	Atlantic	42	8.4
	Quebec	84	16.8
	Ontario	207	41.4
	West	167	33.4
Respondent Marital Status			
	Single	71	14.2
	Married/common law	429	85.8
Family Income/Year			
	< $29,999	65	13.0
	$30,000 - $79,999	198	39.6
	≥ $80,000	212	42.4
	Preferred not to answer	25	5.0
Respondent Education			
	≤High school	181	36.2
	College	204	40.8
	University	113	22.6
	Preferred not to answer	2	0.4
Child gender			
	Male	250	50.0
	Female	250	50.0
Respondent Parent Status			
	Biological Parent	483	96.6
	Adoptive Parent, Foster Parent, Other	17	3.4
Language Survey Completed in			
	English	433	86.6
	French	67	13.4
Primary Language Spoken in the Home			
	English	392	78.4
	French	74	14.8
	Other	34	6.8
Respondent Country of Birth			
	Canada	437	87.4
	Other	63	12.6

Factor Analyses

The Toddler Mental Health subscales described were derived via maximum likelihood factor analyses with varimax rotation. The factor analysis yielded 6 interpretable factors with eigenvalues greater than 1.

Tables 2 through 7 show the factor loadings for Toddler Mental Health subscales. Factor loadings are listed in descending order.

Factor loadings show the strength of the relationship between an individual item and the factor. Factor loadings might be thought of as a correlation between an individual item and the overall factor score. Items with higher factor scores provide a purer estimate of the construct thought to be measured by that factor (Tabachnick & Fidell, 2019). It has been suggested that questions with factor loadings above .71 provide an "excellent" measure of a construct. Those with factor loadings of .63 to .71 are "very good". Factor loadings from .55 to .62 are "good". Factor loadings from .45 to .54 are "fair" and those from .32 to .44 are "poor" (Tabachnick & Fidell, 2019).

In allocating individual questions to the subscales, we required that factor loadings exceed .35 and questions load higher on that scale than other scales.

Regulating Attention, Impulsivity, and Activity

Table 2 shows factor loadings for the Regulating Attention, Impulsivity, and Activity subscale. Three of six items show a good to very good loading while three evidence a poor to fair loading. One item ("*act impulsively or have trouble waiting*") cross-loads on Cooperating .50.

Table 2
Toddler Tool Factor Structure: Regulating Attention, Impulsivity, and Activity

Regulating Attention, Impulsivity, and Activity	Factor Loading
have trouble sticking to an activity	.67
have a short attention span	.63
Scale item 3	.61
Scale Item 4	.49
Scale item 5	.34
Scale item 6	.26

Cooperating

Table 3 shows factor loadings for the Cooperating subscale. All six items have good to very good loadings.

Table 3
Toddler Tool Factor Structure: Cooperating

Cooperating	*Factor Loading*
get easily frustrated	.67
get easily annoyed	.64
Scale item 3	.61
Scale Item 4	.60
Scale item 5	.58
Scale item 6	.57

Expressing Emotion

Table 4 shows factor loadings for the Expressing Emotion subscale. Five of six items show a very good to excellent loading while one evidences a good loading.

Table 4
Toddler Tool Factor Structure: Expressing Emotion

Expressing Emotion	*Factor Loading*
seem generally unreactive or withdrawn	.75
seem overly bland & apathetic or show little emotion	.71
Scale item 3	.67
Scale Item 4	.64
Scale item 5	.63
Scale item 6	.61

Responding to Change

Table 5 shows factor loadings for the Responding to Change subscale. Four of six items evidence good to excellent factor loadings. Two items evidence fair to poor factor loadings.

Table 5
Toddler Tool Factor Structure: Responding to Change

Responding to Change	Factor Loading
get upset by new places	.75
get upset by new people	.62
Scale item 3	.61
Scale Item 4	.59
Scale item 5	.53
Scale item 6	.43

Eating

Table 6 shows factor loadings for the Eating subscale. Five of six items evidence very good to excellent factor loadings, and one showed good factor loading.

Table 6
Toddler Tool Factor Structure: Eating

Eating	Factor Loading
eat too little	.78
resist eating	.72
Scale item 3	.71
Scale Item 4	.69
Scale item 5	.66
Scale item 6	.62

Sleeping

Table 7 shows factor loadings for the Sleeping subscale. Three of six items show very good to excellent factor loadings and three showed good loadings.

Table 7
Toddler Tool Factor Structure: Sleeping

Sleeping	Factor Loading
sleep less than other children of the same age	.70
have an irregular sleep schedule	.67
Scale item 3	.65
Scale Item 4	.62
Scale item 5	.59
Scale item 6	.56

Impact on Family

Using an eigenvalue of .9, one interpretable factor emerged including items on family activities and family comfort. Table 8 shows the factor structure. Three of the seven items show very good to excellent factor loadings and four have good to fair factor loadings.

Table 8
Toddler Tool Factor Structure:
Impact on Family

Impact on Family	Factor Loading
How frequently has your child's behaviour prevented his brothers or sisters from having friends, relatives or neighbours to your home?	.76
How frequently has your child's behaviour prevented you from having friends, relatives or neighbours to your home?	.76
Scale item 3	.69
Scale Item 4	.62
Scale item 5	.54
Scale item 6	.51
Scale item 7	.45

Informant Mood

Table 9 below shows the Informant Mood Scale that was introduced in the first Version of BCFPI. The 6 questions included in BCFPI Informant Mood Scale were derived, with permission, from the Centre for Epidemiological Study of Depression Scale (Radloff, 1977). Norms for this scale are from parents, mostly mothers, participating in the Revised Ontario Child Health Study Scales norming study's population sample (Boyle et al., 1993). On the Informant Mood scale, higher t-scores reflect poorer functioning. The Table below shows the toddler normative study factor loadings for the 6 items included in this scale. Four of six items show very good to excellent factor loadings and two showed good to fair loadings.

Table 9: Toddler Tool Factor Structure: Informant Mood

Informant Mood	*Factor Loading**
I felt sad	.81
I felt depressed	.80
I had trouble keeping my mind on what I was doing	.67
I could not get going	.66
My sleep was restless	.60
I did not feel like eating; my appetite was poor	.54

Reliability Analyses

Table 10 shows internal consistency scores (Cronbach's alpha) for the Toddler Mental Health subscales. Cronbach's alpha represents the average of all possible split half reliabilities (correlating half of the subscale with the other half of the subscale).   Cronbach's alpha scores should generally fall between .70 and .90 (Streiner & Norman, 2014). Scores above .90 suggest that the scale contains redundant questions and may describe a construct too narrowly. Scores below .70 suggest a more heterogeneous set of questions that reflect more than one construct (Streiner & Normal, 2014). Cronbach's alpha (internal consistency) scores ranged from .70 to .87 for the Toddler Mental Health subscales.

Table 10
Toddler Tool Reliability Analyses:
Internal Consistency Scores for Toddler Mental Health Subscales

	Cronbach's Alpha
Regulating Attention, Impulsivity, and Activity	.70
Cooperating	.80
Expressing Emotion	.84
Responding to Change	.80
Sleeping	.83
Eating	.87

Table 11 shows internal consistency scores for the Informant Mood and impact on Family scales.

Table 11
Toddler Tool Reliability Analyses:
Impact on Family and Informant Mood Scales Internal Consistency Scores

	Cronbach's Alpha
Impact on Family	.80
Informant Mood (CES-D)	.84

Test-Retest Reliability
Test-retest analyses results in Table 12 suggest that Toddler Mental Health subscale scores are stable and reliable over a period of 2 weeks.

Table 12
Toddler Tool 2-Week Test-retest Correlations (*n* = 30)

Toddler Subscale	*r*[a]
Regulating Attention, Impulsivity, and Activity	.63
Cooperating	.64
Expressing Emotion	.71
Responding to Change	.57
Sleeping	.78
Eating	.68

[a] Estimates were obtained performing the analysis using scale scores in Mplus with FIML option and controlling for age group, gender, parental education, and family income as auxiliary variables to account for missingness.

Construct Validity: Impact on Family and Informant Mood

The Toddler Mental Health subscale scores are linked to higher scores on the Impact on Family scale and Informant Mood scale.

Table 13
Toddler Tool Construct Validity:

Correlation of Toddler Mental Health Subscales with Impact on Family and Informant Mood Scores	*Correlation*	
Toddler Mental Health Subscale	*Impact on Family*	*Informant Mood*
Regulating Attention, Impulsivity, and Activity	.17**	.06
Cooperating	.36**	.18**
Expressing Emotion	.51**	.12**
Responding to Change	.42**	.18**
Sleeping	.39**	.18**
Eating	.31**	.10*

* $p < 0.05$ ** $p < 0.01$

Construct Validity: Demographic Characteristics

Some scale scores also were related to family demographic characteristics. Single parents reported that their toddlers had more difficulties with Expressing Emotion than married/common law parents, $t(499) = 7.846$, $p = .005$. Parental education was related to toddlers' scores on Cooperating, Responding to Change, and Expressing Emotion, $Fs(3,499) = 3.240, 5.368$, and 8.530, respectively, $ps < .05$. Post hoc Tukey and Games-Howell tests revealed that, compared to parents with university education, parents with high school education reported that their toddlers had more difficulties with Cooperating and Expressing Emotion, and toddlers of parents with college education had more difficulties with Responding to Change, $ps < .05$ (toddlers of parents with high school education were not significantly different from the other two groups, with their scores lying in the middle). Parental income was related to toddlers' scores on Cooperating, Responding to Change, and Sleeping, $Fs(3,499) = 5.449, 2.659$, and 3.361, respectively, $ps < .05$. Post hoc Games-Howell tests revealed that, compared to parents with the highest level of income, middle income parents reported that their toddlers had more difficulties with Cooperating and Responding to Change (toddlers of low income parents were not significantly different from the other two groups, with their scores lying in the middle), and toddlers of low income parents had more difficulties with Sleeping, $ps < .05$.

For more information on the toddler tool, please see:

Niccols, A., Cunningham, C., Pettingill, P., Bohaychuk, D., & Duku, E. (2020). Toddler mental health: The Brief Child and Family Intake and Outcomes System. *International Journal of Behavioral Development, 44*(6), 557-564. https://doi.org/10.1177/0165025419880618

Conatct Info@bcfpi.com for further information

5. Development and Evaluation of the BCFPI Preschool Questionnaire (36 months – 5 years (2016)

The Development of the Tool

We consulted experts in early child development and existing diagnostic classification systems to develop items and scales that were relevant to young children's emotional-behavioral regulation.

In a pilot study, we conducted anonymous online surveys of parents of 301 children 3-5 years old who were representative of the Canadian population in terms of geographic region, marital status, income, and education (cf. Statistics Canada, 2011). Exploratory factor analysis was conducted. The extraction method for the factor analysis was Principal Components, with Varimax rotation and Kaiser normalization. As indicated by examination of the eigenvalues and scree plot, 10 factors were derived. The total variance accounted for was 48%. Two items were deleted because they cross loaded on another scale and four items were deleted because the research team deemed the items' content redundant with other items that were worded more clearly. Internal consistency estimates (Cronbach's alphas) ranged from 0.78 to 0.88 for each of the 10 factors.

The final questionnaire contained 60 items, with 10 scales of six items each: three externalizing scales (Regulating Attention, Impulsivity, and Activity; Cooperating; Regulating Conduct), five internalizing scales (Separating from Parents; Managing Anxiety; Managing Social Anxiety; Regulating Compulsive Behaviour; Managing Mood), and two regulatory scales (Eating; Sleeping).

The Normative Study

We again conducted anonymous online surveys of parents of preschoolers for the normative study. In addition to demographic information and the preschool questionnaire, we also collected information on child functioning, family distress, and caregiver mood. The sample was stratified by child sex (boys and girls) and child age (3, 4, and 5 years), with approximately 200 children in each of the six strata. The sample also was stratified on demographic characteristics (geographic region, marital status, income, and education) to ensure that it was representative of the Canadian population, as per information from Statistics Canada (2011). In order to assess test-retest reliability, a subsample of participants received the survey again 6-8 weeks later.

Table 1 on the following page illustrates the demographic characteristics for preschoolers in the normative study.

Table 1
Demographic Characteristics for Normative Sample of Preschoolers 3-5 Years
(*N* = 1200)

Region			n	%
	Atlantic		84	7.0
	Quebec		276	23.0
	Ontario		480	40.0
	West		360	30.0
Respondent Marital Status				
	Single		192	16.0
	Married/common law		1008	84.0
Family Income/Year				
	< $29,999		148	12.4
	$30,000 - $79,999		423	35.2
	≥ $80,000		551	45.9
	Preferred not to answer		78	6.5
Respondent Education				
	≤ High school		300	25.0
	College		527	43.9
	University		360	30.0
	Preferred not to answer		13	1.1
Child gender				
	Male		600	50.0
	Female		600	50.0
Respondent Parent Status				
	Biological Parent		1145	95.4
	Adoptive Parent, Foster Parent, Other		55	4.6
Language Survey Completed in				
	English		924	77.0
	French		276	23.0
Primary Language Spoken in the Home				
	English		875	72.9
	French		281	23.4
	Other		44	3.7
Respondent Country of Birth				
	Canada		1014	84.5
	Other		186	15.5
	Aboriginal		99	8.3

Factor Analyses

The Preschool Mental Health subscales described in were derived via maximum likelihood factor analyses with varimax rotation. The factor analysis yielded 10 interpretable factors with eigenvalues greater than 1.

Tables 2 through 11 show the factor loadings for Preschool Mental Health subscales. Factor loadings are listed in descending order.

Factor loadings show the strength of the relationship between an individual item and the factor. Factor loadings might be thought of as a correlation between an individual item and the overall factor score. Items with higher factor scores provide a purer estimate of the construct thought to be measured by that factor (Tabachnick & Fidell, 2019). It has been suggested that questions with factor loadings above .71 provide an "excellent" measure of a construct. Those with factor loadings of .63 to .71 are "very good". Factor loadings from .55 to .62 are "good". Factor loadings from .45 to .54 are "fair" and those from .32 to .44 are "poor" (Tabachnick & Fidell, 2019).

In allocating individual questions to the subscales, we required that factor loadings exceed .35 and questions load higher on that scale than other scales.

Regulating Attention, Impulsivity, and Activity

Table 2 shows factor loadings for the Regulating Attention, Impulsivity, and Activity subscale. Four of six items show a good to very good loading while two evidence fair loadings.

Table 2
Preschool Tool Factor Structure: Regulating Attention, Impulsivity, and Activity

Regulating Attention, Impulsivity, and Activity	*Factor Loading*
distractible or has trouble sticking to an activity	.68
fails to finish things he/she starts	.61
Scale item 3	.57
Scale Item 4	.57
Scale item 5	.52
Scale item 6	.47

Cooperating

Table 3 shows factor loadings for the Cooperating subscale. Five of six items show a fair to good loading while one evidences a poor loading.

**Table 3
Preschool Tool Factor Structure: Cooperating**

Cooperating	Factor Loading
loses temper	.59
easily annoyed by others	.54
Scale item 3	.54
Scale Item 4	.52
Scale item 5	.45
Scale item 6	.40

Regulating Conduct

Table 4 shows factor loadings for the Regulating Conduct subscale. Three of six items show a good to very good loading while three evidence a fair to good loading. One item (*acts physically aggressive (hits, bites, or kicks))* cross-loads on Cooperating .40.

**Table 4
Preschool Tool Factor Structure: Regulating Conduct**

Regulating Conduct	Factor Loading
acts mean to other children	.64
does things that hurt others	.62
Scale item 3	.57
Scale Item 4	.48
Scale item 5	.47
Scale item 6	.44

Separating from Parents

Table 5 shows factor loadings for the Separating from Parents subscale. Two of six items evidence good to very good factor loadings. Four items evidence fair to poor factor loadings. One item ("*worries bad things will happen to loved ones"*) cross-loads on Managing Anxiety .46.

Table 5
Preschool Tool Factor Structure: Separating from Parents

Separating from Parents	Factor Loading
overly upset when leaving loved ones	.65
overly upset while away from loved ones	.62
Scale item 3	.54
Scale Item 4	.45
Scale item 5	.42
Scale item 6	.34

Managing Anxiety

Table 6 shows factor loadings for the Managing Anxiety subscale. Four of six items evidence good to very good factor loadings. Two items evidence fair factor loadings.

Table 6
Preschool Tool Factor Structure: Managing Anxiety

Managing Anxiety	Factor Loading
afraid of making mistakes	.67
worries about doing better at things	.64
Scale item 3	.64
Scale Item 4	.57
Scale item 5	.50
Scale item 6	.50

Managing Social Anxiety

Table 7 shows factor loadings for the Managing Social Anxiety subscale. Five of six items evidence very good to excellent factor loadings. One item evidences a good factor loading.

Table 7
Preschool Tool Factor Structure: Managing Social Anxiety

Managing Social Anxiety	Factor Loading
avoids groups with unfamiliar children	.80
avoids meeting new children	.76
Scale item 3	.72
Scale Item 4	.71
Scale item 5	.66
Scale item 6	.57

Regulating Compulsive Behaviour

Table 8 shows factor loadings for the Regulating Compulsive Behaviour subscale. Three of six items evidence very good to excellent factor loadings. Three items evidence fair to good factor loadings.

Table 8
Preschool Tool Factor Structure: Regulating Compulsive Behaviour

Regulating Compulsive Behaviour	Factor Loading
insists that things be unusually clean or germ free	.74
worries a lot about dirt and germs	.66
Scale item 3	.64
Scale Item 4	.61
Scale item 5	.56
Scale item 6	.48

Managing Mood

Table 9 shows factor loadings for the Managing Mood subscale. Four of six items evidence good to very good factor loadings. Two items evidence fair to poor factor loadings.

Table 9
Preschool Tool Factor Structure: Managing Mood

Managing Mood	Factor Loading
feels hopeless	.66
not as happy as other children	.64
Scale item 3	.63
Scale Item 4	.62
Scale item 5	.46
Scale item 6	.36

Eating

Table 10 shows factor loadings for the Eating subscale. All six items evidence very good to excellent factor loadings.

Table 10
Preschool Tool Factor Structure: Eating

Eating	Factor Loading
eats too little	.77
not hungry when it its time to eat	.74
Scale item 3	.69
Scale Item 4	.65
Scale item 5	.64
Scale item 6	.63

Sleeping

Table 11 shows factor loadings for the Sleeping subscale. Five of six items show good to very good factor loadings and one showed a fair loading.

Table 11
Preschool Tool Factor Structure: Sleeping

Sleeping	Factor Loading
has an irregular sleep schedule	.68
sleeps less than other children of the same age	.66
Scale item 3	.61
Scale Item 4	.57
Scale item 5	.57
Scale item 6	.51

Child Functioning

Using an eigenvalue of .9, one interpretable factor emerged including six items on day-to-day functioning challenges. Table 12 shows the factor structure. Three of six items show very good to excellent factor loadings and three items had fair to good loadings.

Table 12
Preschool Tool Factor Structure:
Child Functioning

Child Functioning	Factor Loading
Has difficulty with activities such as school, sports, lessons, or playdates	.73
Has trouble getting along with other children	.71
Scale item 3	.67
Scale Item 4	.62
Scale item 5	.56
Scale item 6	.54

Impact on Family

Using an eigenvalue of .9, one interpretable factor emerged including items on family activities and family comfort. Table 13 shows the factor structure. Four of the six items show very good to excellent factor loadings and two items had good loadings.

Table 13
Preschool Tool Factor Structure:
Impact on Family

Impact on Family	Factor Loading
Has your child's behaviour prevented you from having friends, relatives or neighbours to your home?	.73
Have neighbours, relatives or friends expressed concerns about your child's behaviour?	.73
Scale item 3	.70
Scale Item 4	.67
Scale item 5	.60
Scale item 6	.59

Informant Mood

The Table below shows the Informant Mood Scale that was introduced in Version 3.2.6 of the BCFPI. The six questions included in BCFPI Informant Mood Scale were

derived, with permission, from the Centre for Epidemiological Study of Depression Scale (Radloff, 1977). Norms for this scale are from parents, mostly mothers, participating in the Revised Ontario Child Health Study Scales norming study's population sample (Boyle et al., 1993). On the Informant Mood scale, higher t-scores reflect poorer functioning. The Table below shows the preschool normative study factor loadings for the six items included in this scale. Four of six items show very good to excellent factor loadings and two showed good to fair loadings.

Table 14
Preschool Tool Factor Structure: Informant Mood

Informant Mood	*Factor Loading**
I felt depressed	.86
I felt sad	.85
I could not get going	.71
I had trouble keeping my mind on what I was doing	.67
My sleep was restless	.61
I did not feel like eating; my appetite was poor	.51

Reliability Analyses

Table 15 shows internal consistency scores (Cronbach's alpha) for the Preschool Mental Health subscales. Cronbach's alpha represents the average of all possible split half reliabilities (correlating half of the subscale with the other half of the subscale).   Cronbach's alpha scores should generally fall between .70 and .90 (Streiner & Norman, 2014). Scores above .90 suggest that the scale contains redundant questions and may describe a construct too narrowly. Scores below .70 suggest a more heterogeneous set of questions that reflect more than one construct (Streiner & Normal, 2014). Cronbach's alpha (internal consistency) scores ranged from .78 to .88 for the Preschool Mental Health subscales

Table 15
Preschool Tool Reliability Analyses:
Internal Consistency Scores for Preschool Mental Health Subscales

	Cronbach's Alpha
Regulating Attention, Impulsivity, and Activity	.79
Cooperating	.78
Conduct	.81
Separating from Parents	.78
Managing Anxiety	.81
Managing Social Anxiety	.88
Regulating Compulsive Behaviour	.84
Managing Mood	.84
Eating	.87
Sleeping	.83

Table 16 shows internal consistency scores for the Child Functioning, Impact on Family, and Informant Mood scales.

Table 16
Preschool Tool Reliability Analyses:
Child Functioning, Impact on Family, and Informant Mood Scales Internal Consistency Scores

	Cronbach's Alpha
Child Functioning	.80
Impact on Family	.82
Informant Mood (CES-D)	.85

Test-Retest Reliability

Test-retest analyses results in Table 17 suggest that Preschool Mental Health subscale scores are stable and reliable over a period of 2 months.

Table 17

Preschool Tool 2-month Test-retest Correlations (n = 100)

Preschool Subscale	r^a
Regulating Attention, Impulsivity, and Activity	0.56
Cooperating	0.56
Conduct	0.62
Separating from Parents	0.57
Managing Anxiety	0.64
Managing Social Anxiety	0.64
Regulating Compulsive Behaviour	0.50
Managing Mood	0.44
Eating	0.73
Sleeping	0.69

[a] Estimates were obtained performing the analysis using scale scores in Mplus with FIML option and controlling for age group, gender, region, marital status, parental education, and family income as auxiliary variables to account for missingness.

Construct Validity: Child Functioning, Impact on Family, and Informant Mood
Higher Preschool Mental Health subscale scores are linked to higher scores on the Child Functioning scale, the Impact on Family scale, and the Informant Mood scale.

Table 18
Preschool Tool Construct Validity:
Correlations of Preschool Mental Health Subscales with Child Functioning,
Impact on Family, and Informant Mood Scale Scores

	Correlation		
Preschool Mental Health Subscale	*Child Functioning*	*Impact on Family*	*Informant Mood*
Regulating Attention, Impulsivity, and Activity	.43**	.37**	.24**
Cooperating	.51**	.48**	.25**
Conduct	.59**	.52**	.25**
Separating from Parents	.42**	.39**	.27**
Managing Anxiety	.41**	.38**	.22**
Managing Social Anxiety	.41**	.34**	.17**
Regulating Compulsive Behaviour	.44**	.46**	.22**
Managing Mood	.61**	.60**	.24**
Eating	.39**	.37**	.28**
Sleeping	.52**	.49**	.30**

** $p < 0.01$

Construct Validity: Demographic Characteristics

Some scale scores also were related to family demographic characteristics. Single parents reported that their children had more difficulties with Regulating Attention, Impulsivity, and Activity, Separating from Parents, Managing Anxiety, Regulating Compulsive Behaviour, Managing Mood, and Sleeping, $ts(1199) = 4.49$, 43.15, 8.68, 8.70, 3.89, and 7.54, respectively, $ps < .05$. Parental education was related to preschoolers' scores on Regulating Attention, Impulsivity, and Activity, $F(3,1199) = 4.36$, $p = .005$. Post hoc Tukey tests revealed that, compared to parents with university education, parents with college education reported that their preschoolers had more difficulties with Regulating Attention, Impulsivity, and Activity, $p < .05$. Parental income was related to preschoolers' scores on Separating from Parents, Managing Compulsive Behaviour, Sleeping, and Eating, $Fs(3,1199) = 10.80$, 10.49, 4.37, and 3.98, respectively, $ps < .05$, with post hoc Tukey and Games-Howell tests revealing that preschoolers of low income parents had more difficulties in these areas than preschoolers of high income parents, $ps < .05$.

For more information on the preschool questionnaire, please see:

Niccols, A., Cunningham, C., Pettingill, P., Bohaychuk, D., & Duku, E. (2021). Preschool mental health: The Brief Child and Family Intake and Outcomes System. *International Journal of Behavioral Development, 45*(2), 170-178.
https://doi.org/10.1177/0165025420951248

6. Development and Evaluation of the BCFPI V2 <u>Parent Questionnaire (6 to 18 years)</u> (2017)

The Development of the Tool

We consulted experts in child development and diagnostic classification systems (e.g., DSM-5) to develop items and scales that were relevant to the emotional-behavioural issues of school-age children and adolescents.

In a pilot study, we conducted anonymous online surveys of **<u>parents</u>** of 821 children 6-18 years old who were representative of the Canadian population in terms of geographic region, marital status, income, and education (cf. Statistics Canada, 2011). Exploratory factor analysis was conducted. The extraction method for the factor analysis was Principal Components, with Varimax rotation and Kaiser normalization. As indicated by examination of the eigenvalues and scree plot, 11 factors were derived. Internal consistency estimates (Cronbach's alphas) ranged from 0.85 to 0.93 for each of the 11 factors.

The final questionnaire contained 66 items, with 11 scales of six items each: three externalizing scales (Regulating Attention, Impulsivity, and Activity; Cooperating; Managing Conduct; Callous-unemotional), five internalizing scales (Separating from Parents; Managing Social Anxiety; Regulating Compulsive Behaviour; Managing Anxiety; Regulating Managing Mood), and two regulatory scales (Eating; Sleeping).

The Normative Study

We again conducted anonymous online surveys of **<u>parents</u>** of school-age children and adolescents for the normative study. In addition to demographic information and the school-age and adolescent questionnaire, we also collected information on child functioning, family distress, and caregiver mood. The sample was stratified by child sex (boys and girls) and child age (6-9 years, 10-12 years, 13-15 years, 16-18 years), with 330 children in each of the eight strata. The sample also was stratified on demographic characteristics (geographic region, marital status, income, and education) to ensure that it was representative of the Canadian population, as per information from Statistics Canada (2011). To assess test-retest reliability, a subsample of participants received the survey again one month later.

Table 1 (next page) illustrates the demographic characteristics for the parents of school-age children and adolescents in the normative study.

Table 1
Demographic Characteristics for Normative Sample of Parents of School-age Children & Adolescents 6-18 Years
(N = 2640)

Region		n	%
	Atlantic	191	7.2
	Quebec	569	21.6
	Ontario	1108	42.0
	West	772	29.2
Respondent Marital Status			
	Single	576	21.8
	Married/common law	2064	78.1
Family Income/Year			
	< $29,999	315	11.9
	$30,000 - $79,999	910	34.5
	≥ $80,000	1342	50.8
	Preferred not to answer	73	2.8
Respondent Education			
	≤ High school	742	28.1
	College	1000	37.9
	University	885	33.5
	Preferred not to answer	13	0.5
Child gender			
	Male	1320	50.0
	Female	1320	50.0
Respondent Parent Status			
	Biological Parent	2386	90.4
	Adoptive Parent, Foster Parent, Other	254	9.6
Primary Language Spoken in the Home			
	English	2088	79.1
	French	482	18.3
	Other	70	2.7
Respondent Country of Birth			
	Canada	2182	82.7
	Other	458	17.3
	Aboriginal	237	9.0

Factor Analyses

The School-age & Adolescent Mental Health subscales were derived via maximum likelihood factor analyses with varimax rotation. The factor analysis yielded 11 interpretable factors with eigenvalues greater than 1.

Tables 2 through 12 show the factor loadings for School-age & Adolescent Mental Health subscales. Factor loadings are listed in descending order.

Factor loadings show the strength of the relationship between an individual item and the factor. Factor loadings might be thought of as a correlation between an individual item and the overall factor score. Items with higher factor scores provide a purer estimate of the construct thought to be measured by that factor (Tabachnick & Fidell, 2019). It has been suggested that questions with factor loadings above .71 provide an "excellent" measure of a construct. Those with factor loadings of .63 to .71 are "very good". Factor loadings from .55 to .62 are "good". Factor loadings from .45 to .54 are "fair" and those from .32 to .44 are "poor" (Tabachnick & Fidell, 2019).

In allocating individual questions to the subscales, we required that factor loadings exceed .35 and questions load higher on that scale than other scales.

Regulating Attention, Impulsivity, and Activity

Table 2 shows factor loadings for the Regulating Attention, Impulsivity, and Activity subscale. Three of six items show very good loadings while three evidence fair loadings.

Table 2
School-age & Adolescent Tool Factor Structure:
Regulating Attention, Impulsivity, and Activity

Regulating Attention, Impulsivity, and Activity	Factor Loading
distractible or has trouble sticking to an activity	.70
difficulty organizing tasks	.63
Scale item 3	.63
Scale Item 4	.54
Scale item 5	.53
Scale item 6	.51

Cooperating

Table 3 shows factor loadings for the Cooperating subscale. Three of six items show good to very good loadings while three had fair loadings. One item ("*angry and resentful*" cross-loaded on the Regulating Conduct; Callous-unemotional scale.

Table 3
School-age & Adolescent Tool Factor Structure: Cooperating

Cooperating	Factor Loading
argues with adults	.63
defiant or talks back to adults	.62
Scale item 3	.57
Scale Item 4	.51
Scale item 5	.51
Scale item 6	.48

Regulating Conduct; Callous-unemotional

Factor analysis showed one factor that included items from the Regulating Conduct scale and items from the Callous-unemotional scale. Table 4 shows factor loadings for the Regulating Conduct subscale. Five of six items show very good to excellent loadings while one item evidences a fair loading. Table 5 shows factor loadings for the Callous-unemotional subscale. Five of six items show good to very good loadings while one item has a fair loading.

Table 4
School-age & Adolescent Tool Factor Structure: Regulating Conduct

Regulating Conduct	Factor Loading
starts physical fights	.70
bullies others	.70
Scale item 3	.69
Scale Item 4	.68
Scale item 5	.65
Scale item 6	.51

Table 5
School-age & Adolescent Tool Factor Structure: Callous-unemotional

Callous-unemotional	Factor Loading
doesn't care if he/she hurts others	.68
doesn't care about the feelings of others	.61
Scale item 3	.60
Scale Item 4	.57
Scale item 5	.51
Scale item 6	.48

Separating from Parents

Table 6 shows factor loadings for the Separating from Parents subscale. All six items evidence good to very good factor loadings.

Table 6
School-age & Adolescent Tool Factor Structure:
Separating from Parents

Separating from Parents	Factor Loading
scared to sleep without parents nearby	.66
overly upset when leaving loved ones	.65
Scale item 3	.63
Scale Item 4	.62
Scale item 5	.61
Scale item 6	.59

Managing Social Anxiety

Table 7 shows factor loadings for the Managing Social Anxiety subscale. Five of six items evidence very good to excellent factor loadings. One item evidences a good factor loading.

Table 7
School-age & Adolescent Tool Factor Structure:
Managing Social Anxiety

Managing Social Anxiety	Factor Loading
avoids groups with unfamiliar kids	.78
avoids meeting new kids	.76
Scale item 3	.70
Scale Item 4	.65
Scale item 5	.65
Scale item 6	.60

Regulating Compulsive Behaviour

Table 8 shows factor loadings for the Regulating Compulsive Behaviour subscale. Four of six items evidence good to excellent factor loadings. One item evidences a fair factor loading.

Table 8
School-age & Adolescent Tool Factor Structure:
Regulating Compulsive Behaviour

Regulating Compulsive Behaviour	Factor Loading
insists that things be unusually clean or germ free	.77
worries a lot about dirt and germs	.69
Scale item 3	.59
Scale Item 4	.58
Scale item 5	.53
Scale item 6	.51

Managing Anxiety

Table 9 shows factor loadings for the Managing Anxiety subscale. Five of six items evidence good to very good factor loadings. One item had a fair factor loading.

Table 9
School-age & Adolescent Tool Factor Structure:
Managing Anxiety

Managing Anxiety	Factor Loading
afraid of making mistakes	.66
worries about doing the wrong thing	.64
Scale item 3	.64
Scale Item 4	.59
Scale item 5	.55
Scale item 6	.51

Managing Mood

Table 10 shows factor loadings for the Managing Mood subscale. Two of six items evidence good factor loadings. Four items evidence fair to poor factor loadings.

Table 10
School-age & Adolescent Tool Factor Structure: Managing Mood

Managing Mood	Factor Loading
gets no pleasure from usual activities	.60
has no interest in his/her usual activities	.56
Scale item 3	.54
Scale Item 4	.45
Scale item 5	.40
Scale item 6	.36

Eating

Table 11 shows factor loadings for the Eating subscale. All six items evidence good to excellent factor loadings.

Table 11
School-age & Adolescent Tool Factor Structure: Eating

Eating	Factor Loading
eats too little	.72
not hungry when it its time to eat	.72
Scale item 3	.65
Scale Item 4	.63
Scale item 5	.58
Scale item 6	.57

Sleeping

Table 12 shows factor loadings for the Sleeping subscale. Five of six items show good to excellent factor loadings and one showed a fair loading.

Table 12
School-age & Adolescent Tool Factor Structure: Sleeping

Sleeping	Factor Loading
has difficulty staying asleep	.72
has difficulty falling back asleep after waking at night	.68
Scale item 3	.62
Scale item 4	.62
Scale item 5	.61
Scale Item 6	.48

Child Functioning

Using an eigenvalue of .9, one interpretable factor emerged including 12 items on day-to-day functioning challenges. Table 13 shows the factor structure. Nine of 12 items show very good to excellent factor loadings, two items had fair to good loadings, and one item had a poor loading.

Table 13
School-age & Adolescent Tool Factor Structure:
Child Functioning

Child Functioning	Factor Loading
trouble getting along with other students	.76
trouble getting along with other kids	.74
Scale item 3	.72
Scale Item 4	.71
Scale item 5	.70
Scale item 6	.68
Scale item 7	.67
Scale item 8	.65
Scale Item 9	.64
Scale item 10	.61
Scale item 11	.54
Scale item 12	.44

Impact on Family

Using an eigenvalue of .9, one interpretable factor emerged including items on family activities and family comfort. Table 14 shows the factor structure. Five of the six items show very good to excellent factor loadings and one item had a good loading.

Table 14
School-age & Adolescent Tool Factor Structure:
Impact on Family

Impact on Family	Factor Loading
Has your child's behaviour prevented you from going out?	.85
Has your child's behaviour prevented you from taking him/her out shopping or visiting?	.80
Scale item 3	.78
Scale Item 4	.74
Scale item 5	.63
Scale item 6	.61

Informant Mood

The Table below shows the Informant Mood Scale that was introduced in Version 3.2.6 of the BCFPI. The six questions included in BCFPI Informant Mood Scale were derived, with permission, from the Centre for Epidemiological Study of Depression Scale (Radloff, 1977). Norms for this scale are from parents, mostly mothers, participating in the Revised Ontario Child Health Study Scales norming study's population sample (Boyle et al., 1993). On the Informant Mood scale, higher t-scores reflect poorer functioning. The Table below shows the school-age & adolescent normative study factor loadings for the six items included in this scale. Five of six items show very good to excellent factor loadings and one showed a good loading.

Table 15
School-age & Adolescent Tool Factor Structure: Informant Mood

Informant Mood	*Factor Loading**
I felt sad	.86
I felt depressed	.85
I could not 'get going'	.76
I had trouble keeping my mind on what I was doing	.69
My sleep was restless	.63
I did not feel like eating; my appetite was poor	.61

Reliability Analyses

Table 16 shows internal consistency scores (Cronbach's alpha) for the School-age & Adolescent Mental Health subscales. Cronbach's alpha represents the average of all possible split half reliabilities (correlating half of the subscale with the other half of the subscale).   Cronbach's alpha scores should generally fall between .70 and .90 (Streiner & Norman, 2014). Scores above .90 suggest that the scale contains redundant questions and may describe a construct too narrowly. Scores below .70 suggest a more heterogeneous set of questions that reflect more than one construct (Streiner & Normal, 2014). Cronbach's alpha (internal consistency) scores ranged from .83 to .90 for the School-age & Adolescent Mental Health subscales.

Table 16
School-age & Adolescent Tool Reliability Analyses:
Internal Consistency Scores for School-age & Adolescent Mental Health Subscales

	Cronbach's Alpha
Regulating Attention, Impulsivity, and Activity	.83
Cooperating	.87
Managing Conduct	.87
Callous-unemotional	.88
Separating from Parents	.86
Managing Social Anxiety	.90
Regulating Compulsive Behaviour	.86
Managing Anxiety	.86
Managing Mood	.89
Eating	.86
Sleeping	.88

Table 17 shows internal consistency scores for the Child Functioning, Impact on Family, and Informant Mood scales.

Table 17
School-age & Adolescent Tool Reliability Analyses:
Child Functioning, Impact on Family, and Informant Mood Scales Internal Consistency Scores

	Cronbach's Alpha
Child Functioning	.90
Impact on Family	.87
Informant Mood (CES-D)	.88

Test-Retest Reliability
Data is pending for Test-retest analyses results intended for Table 18..

Table 18
School-age & Adolescent Tool 1-month Test-retest Correlations

Subscale	*r[a]*
Regulating Attention, Impulsivity, and Activity	
Cooperating	
Managing Conduct	
Callous-unemotional	
Separating from Parents	
Managing Anxiety	
Managing Social Anxiety	
Regulating Compulsive Behaviour	
Managing Mood	
Eating	
Sleeping	

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Construct Validity: Child Functioning, Impact on Family, and Informant Mood

The School-age & Adolescent Mental Health subscale scores are linked to higher scores on the Child Functioning scale, the Impact on Family scale, and the Informant Mood scale.

Table 19
School-age & Adolescent Tool Construct Validity:
Correlations of School-age & Adolescent Mental Health Subscales with Child Functioning, Impact on Family, and Informant Mood Scale Scores

Preschool Mental Health Subscale	Correlation		
	Child Functioning	*Impact on Family*	*Informant Mood*
Regulating Attention, Impulsivity, and Activity	.62**	.54**	.31**
Cooperating	.62**	.56**	.28**
Managing Conduct	.59**	.66**	.28**
Callous-unemotional	.68**	.66**	.30**
Separating from Parents	.48**	.48**	.28**
Managing Social Anxiety	.53**	.41**	.27**
Regulating Compulsive Behaviour	.44**	.52**	.24**
Managing Anxiety	.50**	.42**	.29**
Managing Mood	.73**	.66**	.36**
Eating	.55**	.49**	.31**
Sleeping	.63**	.56**	.36**

** $p < 0.01$

Contact info@bcfpi.com for additional information

7. Development and Evaluation of the BCFPI V2 <u>Youth Self-Report</u> <u>Questionnaire (12 – 18 years) (2023)</u>

The Development of the Tool

Section 2, in the preceding, documented the work that went into developing the items and scales of the V1 BCFPI: Youth Questionnaire. In this section, we describe the work involved in establishing the items and scales used in the current version of the BCFPI: V2 Youth Questionnaire

The scales and items selected for the Youth Questionnaire were derived from the BCFPI Parent Questionnaire to allow for a direct comparison of perspectives of parents and youth on a standardized set of 54 mental health questions. In consultation with child development professionals in Canada and Sweden, additional items and scales were added that seemed to be particularly relevant for an Adolescent CYMH screening questionnaire.

The additional items and two additional scales gave us a total set of 11 mental health scales with a total number of 78 initial items, 6 or 7 items for each scale. A 12 item Youth Functioning scale was also included.

The Normative Study

<u>Two separate studies, one in Canada and one in Sweden</u><u>, were conducted with samples of parents of youth ages 12 to 18</u>. The parents, representative of their respective populations in geographic region, income, marital status, and education, consented to their child completing an anonymous on-line survey. The questionnaire was completed by 1529 Canadian youth and 1534 Swedish youth, with comparable numbers each of male, female, and age.

Test-retest reliability was assessed with a subsample of participants that completed the survey from one week to one month later.

Based on the results of Confirmatory and Exploratory Factor Analysis, we removed items that were not a good fit and retained 6 items for each scale, shortening the questionnaire to reduce informant burden.

The final questionnaire consists of 78 items: 4 Externalizing scales (Regulating Attention, Impulsivity and Activity; Cooperating; Regulating Callous-Uncaring Behaviour; Conduct) and 7 Internalizing scales (Separation from Parents; Managing Anxiety, Regulating Social Anxiety, Regulating Compulsive Behaviour, Managing Mood, Affect Regulation, Adolescent Attachment Anxiety and Avoidance) plus a 12-item scale of youth functioning.

Table 1 illustrates the demographic characteristics of the youth in the normative study.

Table 1
Demographic Characteristics of Youth 12 to 18 years for
BCFPI: Youth Self-Report Norming

	Canada n=1529		Sweden n=1534	
	n	%	n	%
Youth Gender				
Female	764	50.0	735	47.9
Male	755	49.4	789	51.4
Other	10	0.7	10	0.7
Youth Age				
12	223	14.6	302	19.7
13	277	18.1	269	17.5
14	236	15.4	251	16.4
15	239	15.6	249	16.2
16	214	14.0	195	12.7
17	250	16.4	186	12.1
18	90	5.9	82	5.3
Parent Marital Status				
Single	344	22.5	442	28.8
Married/common law	1185	77.5	1092	71.2
Parent Education				
High school/trades	375	24.5	684	44.6
College/University	1151	75.3	839	54.7
Preferred not to answer	3	0.2	11	0.7
Parent Status				
Biological Parent	1441	94.2	1445	94.2
Adoptive, Foster, Other	88	5.8	89	5.8
Survey Language				
English	1185	77.5	-	-
French	344	22.5	-	-
Swedish	-	-	1534	100
Primary Language Spoken in the Home				
English	1112	72.7	51	3.3
Swedish	-	-	1447	94.3
French	353	23.1	-	-
Other	64	4.2	36	2.3

Table 2 illustrates the income, region, and country of birth of the parents of Canadian youth.

Table 3 illustrates the income, region, and country of birth of the parents of Swedish youth.

Table 2
Representative Sample of Parents
Canada-Wide Region and Income

Canada Region		
	n	%
Atlantic	115	7.5
Quebec	369	24.1
Ontario	587	38.4
West	458	30.0
Family Income/Year		
	n	%
≤ $29,999	100	6.5
$30,000 - $39,999	79	5.2
$40,000 - $49,999	105	6.9
$50,000 - $79,999	287	18.8
$80,000 - $99,999	239	15.6
≥ $100,000	649	42.4
Preferred not to answer	70	4.6
Parent country of birth		
	n	%
Canada	1170	76.5
Other	359	23.5
Indigenous Canadians	n	%
First Nations, Metis, Inuk	80	5.2

Table 3
Representative Sample of Parents
Sweden-Wide Region and Income

Sweden Region		
	n	%
Mellersta Norrland	109	7.1
Morra Mellansverige	112	7.3
Östra Mellansverige	240	15.6
Övre Norrland	54	3.5
Småland med öarna	107	7.0
Stockholm	370	24.1
Sydsverige	255	16.6
Västsverige	287	18.7
Family Income/Year		
	n	%
mindre än 249 999 kronor	81	5.3
250 000 till 314 999	134	8.7
315 000 till 374 999	128	8.3
375 000 till 499 999	224	14.6
500 000 till 599 000	209	13.6
600 000 till 699 999	185	12.1
700 000 kronor eller mer	460	30.0
Preferred not to answer	113	7.4
Parent country of birth		
	n	%
Sweden	1381	90
Other	153	10

Factor Analysis

We used a Confirmatory Factor Analysis (CFA) followed by an Exploratory Factor Analysis (EFA) approach for the analysis of the Canadian data.

Factor analysis in general summarizes data so that we can see patterns and relationships between variables easily and form constructs or latent variables. EFA attempts to discover the patterns and relationships by examining the dataset and is considered a data-reduction approach. On the other hand, CFA examines data and help to confirm our a priori hypotheses about the relationships between variables and constructs. CFA specifically, relies on use of multiple statistical tests to determine the adequacy of model fit to the data and non-rejection of our a priori hypothesis. If an unacceptable fit is found, usually an EFA is performed, or the hypothesis respecified.

Thus, in this case, the CFA was used to enable us to assess our initial hypotheses that each of these scales is unidimensional. Where the criteria for a unidimensional scale were not met, the CFA was followed by an EFA to examine the possible multidimensionality of the scale. The analysis of the Canadian data was followed by validation of the tested and or derived scales with the Swedish data. We had made the decision a priori to use the data from Canada as the standard (or reference or test) data set and the data from Sweden as the validation data set.

The detailed steps in the procedure used were as follows:
  (a) The initial analysis involved running a CFA on the 6- or 7-item scale and evaluating the resulting fit statistics and indices.
  (b) For the 7-item scales, the next step involved evaluating the magnitudes of the factor loadings and dropping the item with the lowest factor loading. Next, a CFA was run on the resulting 6-item scale and evaluating the resulting fit statistics and indices.
  (c) Based on the results of the CFAs on the 6-item scales, and the fit statistics and indices obtained, we proceeded to run EFAs to investigate the possibility of the multidimensionality of the scales.
  (d) The last stage involved making decisions on how to use the resulting scales.
  (e) The resulting decisions made on the scales were evaluated in the validation Swedish data set.

The thresholds of the fit statistics and indices used to evaluate the categorical data CFAs performed and the decisions made are as follows:
  (a) A non-significant p-value of the chi-square test of model fit
  (b) Root Mean Square Error of Approximation (RMSEA) <0.08 and non-significant p-value of the test of the probability that the RMSEA<0.05
  (c) Comparative Fit Index (CFI) OR
      Tucker Lewis Index (TLI) and >0.95
  (d) Standardized Root Mean Square Residual (SRMR) <0.08.

As has been recommended, we set our guidelines to accept models that met the suggested thresholds for at least 2 out of the 3 fit statistics and indices we used to

evaluate the models. We opted not to use the chi-square statistic because of the sizes of our samples. We also used pragmatics as well as the examination of the residuals, residual correlations and covariances to guide our decisions on the final scales.

Section A. Analysis of scales using Canadian data

The final sets of 3-item or 6-item scales resulting from the analysis of the Canadian data, their factor loadings and the fit statistics are and indices presented in the tables that follow for each of the mental health scales and for the youth functioning scale.

Regulation of Attention, Impulsivity, and Activity

Table 4
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Regulation of Attention, Impulsivity, and Activity

Regulation of Attention, Impulsivity, and Activity	1-factor	2-factor
Regulation of Attention		
fail to finish things you start	0.670	0.674
are easily distracted or have trouble sticking to an activity	0.841	0.851
Scale item 3	0.762	0.768
Regulation of Impulsivity and Activity		
Scale item 4	0.662	0.675
Scale item 5	0.698	0.713
Scale item 6	0.648	0.660
Fit Statistics and Indices		
Chi-Square Test of Model Fit	39.055	34.337
Degrees of Freedom	9	8
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.047	0.046
90 Percent C.I.	0.032, 0.062	0.031, 0.063
Probability (RMSEA <= .05)	0.610	0.613
Comparative Fit Index (CFI)	0.994	0.995
Tucker Lewis Index (TLI)	0.990	0.990
SRMR (Standardized Root Mean Square Residual)	0.021	0.019

Based on the results of the CFA on the 6-item scale and then EFA, our decision is to keep "Regulation of Attention Impulsivity and Activity" as a two 3-item factor scale (attention and activity) and report on the total scale along with the two subscales.

Cooperation

Table 5
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Cooperation

Cooperation	1-factor
blame others for your own mistakes	0.709
are irritable and angry	0.832
Scale item 3	0.813
Scale Item 4	0.813
Scale item 5	0.745
Scale item 6	0.750
Fit Statistics and Indices	
Chi-Square Test of Model Fit	79.126
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.071
90 Percent C.I.	0.057, 0.086
Probability (RMSEA <= .05)	0.007
CFI	0.991
TLI	0.985
SRMR (Standardized Root Mean Square Residual)	0.023

Here the results showed that we could keep the 6-item "Cooperation" as a single factor scale with a cautionary note regarding the p-value for the test of the probability that the RMSEA <= .05.

Regulating Callous-Uncaring Behavior

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Table 6
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Regulating Callous-Uncaring Behavior

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Regulating Callous-Uncaring Behavior	1-factor
don't care about the feelings of others	0.688
don't care when you get into trouble	0.669
Scale item 3	0.769
Scale Item 4	0.844
Scale item 5	0.669
Scale item 6	0.683
Fit Statistics and Indices	
Chi-Square Test of Model Fit	60.435
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.061
90 Percent C.I.	0.047, 0.076
Probability (RMSEA <= .05)	0.094
CFI	0.984
TLI	0.973
SRMR (Standardized Root Mean Square Residual)	0.030

The final model chosen from the original 7-item "Regulating Callous-Uncaring Behavior" was a one-factor model. The item dropped was "don't feel bad or guilty when you've done something wrong".

Conduct

Table 7
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Conduct

Conduct	1-factor
steal valuable things at home, or elsewhere	0.852
destroy valuable things belonging to others	0.878
Scale item 3	0.931
Scale Item 4	0.964
Scale item 5	0.843
Scale item 6	0.973
Fit Statistics and Indices	
Chi-Square Test of Model Fit	26.039
Degrees of Freedom	9
P-Value	0.002
RMSEA (Root Mean Square Error of Approximation)	0.035
90 Percent C.I.	0.020, 0.051
Probability (RMSEA <= .05)	0.933
CFI	0.998
TLI	0.997
SRMR (Standardized Root Mean Square Residual)	0.020

The final selected model here from the original 7-item scale was a well-fitting one-factor model for "Conduct". The item dropped was "verbally attack people (swear, scream, threaten, use degrading language)".

Separation From Parents

Table 8
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Separation From Parents

Separation From Parents	1-factor
When separated from parents, have frightening thoughts or dreams about being apart	0.805
When separated from parents, feel unwell, shaky, or agitated	0.860
Scale item 3	0.855
Scale Item 4	0.898
Scale item 5	0.882
Scale item 6	0.785
Fit Statistics and Indices	
Chi-Square Test of Model Fit	21.706
Degrees of Freedom	9
P-Value	0.010
RMSEA (Root Mean Square Error of Approximation)	0.030
90 Percent C.I.	0.014, 0.047
Probability (RMSEA <= .05)	0.976
CFI	0.999
TLI	0.998
SRMR (Standardized Root Mean Square Residual)	0.010

Since the model was well-fitting after dropping the item "When separated from parents, worry that something bad will happen to them" from the original 7-item scale, the decision was made to keep "Separation From Parents" as a one-factor scale.

Managing Anxiety

Table 9
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Managing Anxiety

Managing Anxiety	1-factor
feel anxious or nervous about things in general	0.702
worry about doing better at things	0.810
Scale item 3	0.765
Scale Item 4	0.836
Scale item 5	0.768
Scale item 6	0.803
Fit Statistics and Indices	
Chi-Square Test of Model Fit	66.799
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.065
90 Percent C.I.	0.051, 0.080
Probability (RMSEA <= .05)	0.042
CFI	0.994
TLI	0.986
SRMR (Standardized Root Mean Square Residual)	0.022

After dropping the item "avoid or delay tasks because of anxiety" the model for the 6-item scale was well-fitting and the decision was made to keep "Managing Anxiety" as one factor scale. It should be noted that the p-value for the test of the probability that the RMSEA <= .05 was significant.

Regulating Social Anxiety

Table 10
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Regulating Social Anxiety

Regulating Social Anxiety	1-factor
worry about, or feel very embarrassed in social situations	0.816
feel uncomfortable, because you feel that others could see you are nervous or anxious	0.853
Scale item 3	0.857
Scale Item 4	0.917
Scale item 5	0.891
Scale item 6	0.837
Fit Statistics and Indices	
Chi-Square Test of Model Fit	275.361
Degrees of Freedom	9
P-Value	0.010
RMSEA (Root Mean Square Error of Approximation)	0.139
90 Percent C.I.	0.125, 0.153
Probability (RMSEA <= .05)	<0.001
CFI	0.986
TLI	0.976
SRMR (Standardized Root Mean Square Residual)	0.037

We decided to accept and keep "Regulating Social Anxiety" as a one factor scale after dropping the item "feel self-conscious and worry about how others would see you". It should be noted that the RMSEA obtained was above 0.08 and that the p-value for the test of the probability that the RMSEA <= .05 was significant. A possible 2 factor scale is suggested in the appendix based on the results of the EFA.

Regulating Compulsive Behavior

Table 11
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Regulating Compulsive Behavior

Regulating Compulsive Behavior	1-factor
do things like washing your hands or checking doors and lights over and over	0.830
spend a lot of time ordering and reordering things in a special way	0.831
Scale item 3	0.821
Scale Item 4	0.892
Scale item 5	0.859
Scale item 6	0.787
Fit Statistics and Indices	
Chi-Square Test of Model Fit	251.939
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.133
90 Percent C.I.	0.119, 0.147
Probability (RMSEA <= .05)	<0.001
CFI	0.972
TLI	0.953
SRMR (Standardized Root Mean Square Residual)	0.054

Again, here, we decided to accept and keep "Regulating Compulsive Behavior" as a one factor scale after dropping the item "have difficulty completing task because they 'need to be perfect'". It needs to be noted here that the RMSEA was above 0.08 and that the p-value for the test of the probability that the RMSEA <= .05 was significant.

Managing Mood

Table 12
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Managing Mood

Managing Mood	1-factor
are unhappy, sad, or depressed	0.857
don't get pleasure from things you once enjoyed or feel you should enjoy	0.874
Scale item 3	0.844
Scale Item 4	0.905
Scale item 5	0.896
Scale item 6	0.910
Fit Statistics and Indices	
Chi-Square Test of Model Fit	29.774
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.039
90 Percent C.I.	0.024, 0.055
Probability (RMSEA <= .05)	0.868
CFI	0.999
TLI	0.998
SRMR (Standardized Root Mean Square Residual)	0.011

As the model for the 6-item scale was well fitting, we decided to keep "Managing Mood" as one factor scale.

New Affect Regulation and Adolescent Attachment Scales

Our project Consultant, Dr. Moretti, suggested the addition 2 **Affect Regulation** subscales, and 2 **Adolescent Attachment and Avoidance** subscales, to this Youth Questionnaire update:

The *Affect Regulation subscales* are derived from the *Affect Regulation Checklist* (Morretti 2003) These two - 3 item subscales assess two dimensions of affect regulation:

> **Affect Dysregulation** refers to problems controlling internal feelings of distress and reestablishing a state of equilibrium or calm.
> **Affect Suppression** refers to the tendency to distance oneself or avoid experiencing, thinking about, or expressing uncomfortable feelings. Both (or either) affect dysregulation and affect suppression maybe features of previously discussed DSM related conditions. (V2 Youth Questionnaires, and V2 Parent Questionnaires)

The *Adolescent Attachment and Avoidance* subscales are derived from the *Adolescent Attachment Anxiety and Avoidance Inventory* (AAAAI, Moretti 2003). These two - 3 item - subscales, assess the two underlying dimensions of parent-child attachment:

> **Adolescent Attachment Anxiety** refers to hyperactivation of the attachment system expressed in fear of parental rejection and abandonment, and a persistent need for reassurance. **Adolescent Attachment Avoidance** refers to suppression of the attachment system and expressed in reluctance to seek closeness or share feelings or thoughts with parents, and persistence on independence. Both (or either) attachment anxiety and attachment avoidance may be features of previously discussed DSM related conditions. (V2 Youth Questionnaires, and V2 Parent Questionnaires) for kids 6 -17 years old)

See Simon Fraser University/Research (www.adolescenthealth.ca/measures-1) for details regarding the Affect Regulation Checklist and the Adolescent Attachment and Avoidance Checklist.

See SFU Attachment Programs (www.adolescenthealth.ca/connect-attachment-programs) regarding related Attachment treatment programs

See SFU /journal-articles-and-books (www.adolescenthealth.ca/journal-articles-and-books) for a helpful list of research and programming related to Affect Regulation and Attachment programs.

Affect Regulation

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Table 13
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Affect Regulation

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Affect Regulation - Dysregulation	2-factor
have a hard time controlling your feelings	0.884
find it very hard to calm down when you get upset	0.902
find your feelings just taking over, and you can't do anything about it	0.919
Affect Regulation - Suppression	
try hard not to think about your feelings	0.958
believe it is best to keep your feelings in control and not to think about them	0.749
keep your feelings to yourself	0.679
Fit Statistics and Indices	
Chi-Square Test of Model Fit	195.401
Degrees of Freedom	8
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.124
90 Percent C.I.	0.109, 0.139
Probability (RMSEA <= .05)	<0.001
CFI	0.985
TLI	0.971
SRMR (Standardized Root Mean Square Residual)	0.038

Note: the 1st 3 items are "Affect Regulation – dysregulation" & the last 3 items are "Affect Regulation – suppression" scales

Based on the results obtained, our decision was to keep the 6-item scale "Affect Regulation" as two separate 3-item scales "Affect Regulation – dysregulation" & "Affect Regulation – suppression", and report on these two scales. It should be noted that the RMSEA was above 0.08 and that the p-value for the test of the probability that the RMSEA <= .05 was significant.

Adolescent Attachment Anxiety & Avoidance

Table 14
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Adolescent Attachment Anxiety & Avoidance

Adolescent Attachment Anxiety & Avoidance - Anxiety	2-factor
need a lot of reassurance that you are loved by your parents	0.766
worry that your parents won't care about you as much as you care about them	0.907
wish that your parent's feelings for you were as strong as your feelings for them	0.810
Adolescent Attachment Anxiety & Avoidance - Dysregulation	
avoid discussing your problems and concerns with your parents	0.848
avoid turning to your parents for many things, including comfort and reassurance	0.920
find that it doesn't help to turn to your parents for comfort, in times of need	0.821
Fit Statistics and Indices	
Chi-Square Test of Model Fit	77.994
Degrees of Freedom	8
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.076
90 Percent C.I.	0.061, 0.091
Probability (RMSEA <= .05)	0.003
CFI	0.991
TLI	0.983
SRMR (Standardized Root Mean Square Residual)	0.028

Note: The 1st 3 items are "Adolescent Attachment Anxiety & Avoidance– anxiety" & the last 3 items are "Adolescent Attachment Anxiety & Avoidance– dysregulation" scales

Similar to "Affect Regulation", our decision was to keep the 6-item scale "Adolescent Attachment Anxiety & Avoidance" as two separate 3-item scales "Adolescent Attachment Anxiety & Avoidance– anxiety" & "Adolescent Attachment Anxiety & Avoidance– dysregulation", and report on these two scales. It should be noted that the RMSEA was above 0.08 and that the p-value for the test of the probability that the RMSEA <= .05 was significant.

Youth Functioning

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Table 15
BCFPI V2 Youth Self Report Factor Structure, Canadian data:
Youth Functioning

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Youth Functioning	3-factor
Youth Functioning - Quality of Relationships	
have difficulty keeping friends	0.834
have trouble getting along with other people your age	0.891
Scale item 3	0.770
Scale item 4	0.842
Youth Functioning - Routines, Activities, Isolation	
Scale item 5	0.791
Scale Item 6	0.762
Scale item 7	0.787
Scale item 8	0.580
Youth Functioning – School Participation, Achievement	
Scale item 9	0.873
Scale Item 10	0.804
Scale item 11	0.571
Scale item 12	0.666
Fit Statistics and Indices	
Chi-Square Test of Model Fit	751.190
Degrees of Freedom	51
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.095
90 Percent C.I.	0.089, 0.101
Probability (RMSEA <= .05)	<0.001
CFI	0.958
TLI	0.945
SRMR (Standardized Root Mean Square Residual)	0.056

Note: The 1st 4 items are "Youth Functioning - Quality of relationships", the next 4 items are "Youth Functioning - Routines, activities, Isolation" and the last 4 items are "Youth Functioning – School participation, achievement" scales

Based on the results of our analyses we made the decision to keep the 12-item "Youth Functioning Scale" as a 3-factor scale and report on the 3 4-item subscales as well as the one 12-item scale as we need single scale for use with the Children's Global

Assessment Scale (CGAS). It should be noted that the RMSEA was above 0.08 and that the p-value for the test of the probability that the RMSEA <= .05 was significant.

Section B. Replicating and validating the results with <u>Swedish data.</u>

Based on the results obtained with the Canadian data, <u>the data from Swedish youth were used as a replication and validation sample to evaluate the final models selected and fitted</u>. As was done with the Canadian data we performed CFAs and used thresholds for the various fit statistics and indices used as well as examination of residual covariances and correlations for decisions on the scales.

Regulation of Attention, Impulsivity, and Activity

Table 16
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Regulation of Attention, Impulsivity, and Activity

Regulation of Attention, Impulsivity, and Activity	1-factor	2-factor
Regulation of Attention		
fail to finish things you start	0.612	0.626
Scale item 2	0.820	0.856
Scale item 3	0.706	0.724
Regulation of Impulsivity and Activity		
jump from one activity to another	0.656	0.683
Scale item 5	0.687	0.720
Scale item 6	0.652	0.682
Fit Statistics and Indices		
Chi-Square Test of Model Fit	37.365	55.672
Degrees of Freedom	9	8
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.075	0.062
90 Percent C.I.	0.061, 0.090	0.047, 0.078
Probability (RMSEA <= .05)	0.002	0.084
CFI	0.980	0.995
TLI	0.967	0.990
SRMR (Standardized Root Mean Square Residual)		0.026

In the preceding, the 2-factor model was better fitting than the single factor model and supported our decision to keep "Regulation of Attention Impulsivity and Activity" as a 2-factor scale.

Cooperation

Table 17
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Cooperation

Cooperation	1-factor
blame others for your own mistakes	0.629
are irritable and angry	0.835
Scale item 3	0.828
Scale Item 4	0.750
Scale item 5	0.728
Scale item 6	0.666
Fit Statistics and Indices	
Chi-Square Test of Model Fit	292.287
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.143
90 Percent C.I.	0.129, 0.158
Probability (RMSEA <= .05)	<0.001
CFI	0.958
TLI	0.929
SRMR (Standardized Root Mean Square Residual)	0.056

It is interesting to note that for "Cooperation", the results confirm the results obtained with the Canadian data and in addition the p-value for the test of the probability that the RMSEA <= .05 was significant.

Regulating Callous-Uncaring Behavior

Table 18
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Regulating Callous-Uncaring Behavior

Regulating Callous-Uncaring Behavior	1-factor
don't care about the feelings of others	0.643
don't care when you get into trouble	0.722
Scale item 3	0.778
Scale Item 4	0.822
Scale item 5	0.687
Scale item 6	0.595
Fit Statistics and Indices	
Chi-Square Test of Model Fit	88.239
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.079
90 Percent C.I.	0.062, 0.091
Probability (RMSEA <= .05)	0.001
CFI	0.977
TLI	0.962
SRMR (Standardized Root Mean Square Residual)	0.036

The results obtained here confirmed the results obtain with the Canadian data and in addition the p-value for the test of the probability that the RMSEA <= .05 was significant.

Conduct

Table 19
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Conduct

Conduct	1-factor
steal valuable things at home, or elsewhere	0.879
destroy valuable things belonging to others	0.902
Scale item 3	0.895
Scale Item 4	0.944
Scale item 5	0.801
Scale item 6	0.929
Fit Statistics and Indices	
Chi-Square Test of Model Fit	36.492
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.054
90 Percent C.I.	0.030, 0.060
Probability (RMSEA <= .05)	0.694
CFI	0.997
TLI	0.996
SRMR (Standardized Root Mean Square Residual)	0.018

The results confirmed the earlier results obtained with the Canadian data.

Separation From Parents

<div align="center">

Table 20
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Separation From Parents

</div>

Separation From Parents	1-factor
When separated from parents, have frightening thoughts or dreams about being apart	0.745
When separated from parents, feel unwell, shaky, or agitated	0.840
Scale item 3	0.791
Scale Item 4	0.872
Scale item 5	0.911
Scale item 6	0.814
Fit Statistics and Indices	
Chi-Square Test of Model Fit	35.929
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.044
90 Percent C.I.	0.030, 0.060
Probability (RMSEA <= .05)	0.711
CFI	0.998
TLI	0.996
SRMR (Standardized Root Mean Square Residual)	0.014

The results confirmed the earlier results obtained with the Canadian data.

Managing Anxiety

Table 21
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Managing Anxiety

Managing Anxiety	1-factor
feel anxious or nervous about things in general	0.753
worry about doing better at things	0.770
Scale item 3	0.680
Scale Item 4	0.807
Scale item 5	0.777
Scale item 6	0.790
Fit Statistics and Indices	
Chi-Square Test of Model Fit	77.190
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.070
90 Percent C.I.	0.056, 0.085
Probability (RMSEA <= .05)	0.009
CFI	0.991
TLI	0.986
SRMR (Standardized Root Mean Square Residual)	0.022

The results obtained here confirmed the results obtain with the Canadian data and in addition, the p-value for the test of the probability that the RMSEA <= .05 was significant.

Regulating Social Anxiety

Table 22
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Regulating Social Anxiety

Regulating Social Anxiety	1-factor
worry about, or feel very embarrassed in social situations	0.810
feel uncomfortable, because you feel that others could see you are nervous or anxious	0.773
Scale item 3	0.806
Scale Item 4	0.873
Scale item 5	0.854
Scale item 6	0.789
Fit Statistics and Indices	
Chi-Square Test of Model Fit	291.320
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.143
90 Percent C.I.	0.129, 0.157
Probability (RMSEA <= .05)	<0.001
CFI	0.975
TLI	0.959
SRMR (Standardized Root Mean Square Residual)	0.045

The results obtained here confirmed the results obtain with the Canadian data and in addition, the RMSEA was above 0.08 and the p-value for the test of the probability that the RMSEA <= .05 was significant.

Regulating Compulsive Behavior

Table 23
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Regulating Compulsive Behavior

Regulating Compulsive Behavior	1-factor
do things like washing your hands or checking doors and lights over and over	0.824
spend a lot of time ordering and reordering things in a special way	0.758
Scale item 3	0.780
Scale Item 4	0.873
Scale item 5	0.893
Scale item 6	0.793
Fit Statistics and Indices	
Chi-Square Test of Model Fit	206.215
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.120
90 Percent C.I.	0.106, 0.134
Probability (RMSEA <= .05)	<0.001
CFI	0.982
TLI	0.970
SRMR (Standardized Root Mean Square Residual)	0.041

The results obtained here confirmed the results obtain with the Canadian data and in addition, the RMSEA was above 0.08 and the p-value for the test of the probability that the RMSEA <= .05 was significant.

Managing Mood

Table 24
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Managing Mood

Managing Mood	1-factor
are unhappy, sad, or depressed	0.853
don't get pleasure from things you once enjoyed or feel you should enjoy	0.798
Scale item 3	0.789
Scale Item 4	0.860
Scale item 5	0.864
Scale item 6	0.862
Fit Statistics and Indices	
Chi-Square Test of Model Fit	67.261
Degrees of Freedom	9
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.065
90 Percent C.I.	0.051, 0.080
Probability (RMSEA <= .05)	0.040
CFI	0.996
TLI	0.993
SRMR (Standardized Root Mean Square Residual)	0.018

The results obtained here confirmed the results obtain with the Canadian data and in addition, the p-value for the test of the probability that the RMSEA <= .05 was significant.

Affect Regulation

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Table 25
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Affect Regulation

</div>

Affect Regulation - Dysregulation	2-factor
have a hard time controlling your feelings	0.846
find it very hard to calm down when you get upset	0.870
find your feelings just taking over, and you can't do anything about it	0.895
Affect Regulation - Suppression	
try hard not to think about your feelings	0.912
believe it is best to keep your feelings in control and not to think about them	0.725
keep your feelings to yourself	0.557
Fit Statistics and Indices	
Chi-Square Test of Model Fit	75.607
Degrees of Freedom	8
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.074
90 Percent C.I.	0.059, 0.090
Probability (RMSEA <= .05)	0.004
CFI	0.993
TLI	0.987
SRMR (Standardized Root Mean Square Residual)	0.024

Note: The 1st 3 items are "Affect Regulation – Dysregulation" & the last 3 items are "Affect Regulation - Suppression" scales

The results obtained here confirmed the results obtain with the Canadian data and in addition, the p-value for the test of the probability that the RMSEA <= .05 was significant.

Adolescent Attachment Anxiety & Avoidance

Table 26
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Adolescent Attachment Anxiety & Avoidance

Adolescent Attachment Anxiety	2-factor
need a lot of reassurance that you are loved by your parents	0.648
worry that your parents won't care about you as much as you care about them	0.892
wish that your parent's feelings for you were as strong as your feelings for them	0.825
Adolescent Attachment Avoidance	
avoid discussing your problems and concerns with your parents	0.811
avoid turning to your parents for many things, including comfort and reassurance	0.885
find that it doesn't help to turn to your parents for comfort, in times of need	0.813
Fit Statistics and Indices	
Chi-Square Test of Model Fit	148.500
Degrees of Freedom	8
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.107
90 Percent C.I.	0.092, 0.122
Probability (RMSEA <= .05)	<0.001
CFI	0.978
TLI	0.959
SRMR (Standardized Root Mean Square Residual)	0.041

Note: the 1st 3 items are "Adolescent Attachment Anxiety", and the last 3 items are "Adolescent Attachment Avoidance" subscales

The results obtained here confirmed the results obtain with the Canadian data and in addition, the RMSEA was above 0.08 and the p-value for the test of the probability that the RMSEA <= .05 was significant.

Youth Functioning

Table 27
BCFPI V2 Youth Self Report Factor Structure, Swedish data:
Youth Functioning

Youth Functioning	3-factor
Youth Functioning - Quality of Relationships	
have difficulty keeping friends	0.785
have trouble getting along with other people your age	0.840
Scale item 3	0.673
Scale item 4	0.798
Youth Functioning - Routines, Activities, Isolation	
Scale item 5	0.856
Scale Item 6	0.762
Scale item 7	0.758
Scale item 8	0.516
Youth Functioning – School Participation, Achievement	
Scale item 9	0.832
Scale Item 10	0.753
Scale item 11	0.688
Scale item 12	0.747
Fit Statistics and Indices	
Chi-Square Test of Model Fit	845.228
Degrees of Freedom	51
P-Value	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.101
90 Percent C.I.	0.095, 0.107
Probability (RMSEA <= .05)	<0.001
CFI	0.950
TLI	0.935
SRMR (Standardized Root Mean Square Residual)	0.058

The results obtained here confirmed the results obtain with the Canadian data and in addition, the RMSEA was above 0.08 and the p-value for the test of the probability that the RMSEA <= .05 was significant

Contact info@bcfpi.com for additional information

8. Development and Evaluation of the BCFPI V3 Parent Questionnaire (12 – 18 years) (2024)

Background

Why did we Update the V2 Parent Survey?

The objectives of the V3 <u>Swedish Parent Survey</u> were to obtain <u>Swedish</u> V3 Parent questionnaire scale norms, and to enable the addition of the 4 new subscales previously developed for the Canadian and Swedish V2 <u>Youth</u> Questionnaires.

We then needed to conduct a <u>Canadian Parent survey</u>, to update the Canadian V2 Parent questionnaire to Canadian V3 norms and scores, and to add the 4 new V3 subscales.

These surveys included repeat measures for subsets of respondents, which provided test-retest data for the Canadian and Swedish V3 Parent Questionnaire scales.

The <u>Canadian</u> V3 Parent Survey also provides the opportunity to examine changes between the 2018 and 2024 Canadian Parent norms and scores.

Finally, we can compare Swedish and Canadian V3 Parent Survey data and norms

The V3 Parent Surveys

We surveyed Swedish parents, (n= 2645 with 302 repeats) to obtain Swedish Norms and to obtain Swedish Test-Retest data for the Swedish Parent Survey. The same process was used with Canadian parents, (n= 2647 with 306 repeats) to obtain Canadian Norms and to obtain Canadian Test-Retest data for the Canadian Parent Survey.

In doing this, we aimed to retain field consistency with Swedish and Canadian V2 Parent Questionnaires re DSM-5 related scales in field use. We retained the 9 DSM-5 scales with 6 items each, corresponding to existing Parent V2 scales, to keep field consistency with current Parent questionnaires.

We dropped the 6-item 'Eating' and 'Sleeping' DSM5 scales from the Parent questionnaire.
These scales were replaced by single questions in the descriptive 'Other concerns' section of BCFPI Parent questionnaires.
We added four new, non-DSM5 specific 3-item 'subscales' measuring Affect Regulation, and Adolescent Attachment... (see pg.58 for details introducing these scales, in the V2 Youth Questionnaire update)

Section A. Demographic Characteristics of Canadian and Swedish Parents of School-age Children & Adolescents 6-18 Years for Sweden and Canada

In Table 1 we present the demographic characteristics of the representative sample of parents and their school-aged child or adolescent 6-<u>18</u> years in the normative Parent survey. Note that for the sample from Sweden, the parents' school-aged children and adolescents were aged 6-<u>17</u> years.

Table 1
Demographic Characteristics of Parents and School-age Children & Adolescents 6-18 years for the BCFPI Parent Survey V3 by Country

	Canada n=2647		Sweden n=2645	
	n	%	n	%
Gender				
Female	1314	49.6	1314	49.7
Male	1318	49.8	1314	49.7
Other	15	0.6	17	0.6
Age				
6 - 11	1091	41.2	1359	51.4
12 -18	1556	58.8	1286	48.6
Parent Marital Status				
Single	544	20.6	561	21.2
Married/common law	2103	79.4	2084	78.8
Parent Education				
No certificate/diploma	38	1.4	61	2.3
High school/trades	518	19.5	999	37.8
College/University	2077	78.5	1577	59.6
Preferred not to answer	14	0.5	8	0.3
Parent Status				
Biological Parent			2424	91.6
Adoptive, Foster, Other			221	8.4
Survey Language				
English	2071	78.2		
French	576	21.8		
Swedish			2645	100.0
Primary Language Spoken in the Home				
English	1951	73.7	28	1.1
Swedish	-	-	2564	96.9
French	588	22.2	-	-
Other	108	4.1	53	2.0

Tables 2 and 3 show the frequency distributions of income, region, and country of birth of the representative sample of parents of school-age children and adolescents aged 6-18 years from Canada and Sweden, respectively.

Table 2
Representative Sample of Parents
Canada-Wide Region and Income

Canada Region		
	n	**%**
West	835	31.5
Ontario	1008	38.1
Quebec	628	23.7
Atlantic	176	6.6
Family Income/Year		
	n	**%**
< $29,999	179	6.8
$30,000 - $39,999	91	3.4
$40,000 - $49,999	129	4.9
$50,000 - $79,999	479	19.1
$80,000 - $99,999	388	14.7
> $100,000	1204	45.4
Preferred not to answer	177	6.7
Parent country of birth		
	n	**%**
Canada	1944	73.4
Other	703	26.6
Indigenous Canadians	**n**	**%**
First Nations, Metis, Inuk	127	4.7

Table 3
Representative Sample of Parents
Sweden-Wide Region and Income

Sweden Region		
	n	**%**
Mellersta Norrland	108	4.1
Morra Mellansverige	238	9.0
Östra Mellansverige	449	17.0
Övre Norrland	158	6.0
Småland med öarna	238	9.0
Stockholm	554	20.9
Sydsverige	397	15.0
Västsverige	503	19.0
Family Income/Year		
	n	**%**
Mindre än 230 999 kronor	81	3.1
231 000 till 307 999 kronor	109	4.1
308 000 till 384 999 kronor	195	7.4
385 000 till 615 999 kronor	617	23.3
616 000 till 769 999 kronor	398	15.0
770 000 kronor eller mer	973	36.8
Preferred not to answer	272	10.3
Parent country of birth		
	n	**%**
Sweden	2408	91.0
Other	237	9.0

Section B. Factor Analysis for Canada and Sweden BCFPI Parent Survey V3

A previous section of this document (pg. 33) describes the work done to develop the items and scales of the V2 BCFPI Parent Survey. In this section, we describe the methods used to examine many of the same items and scales used in V3 of the BCFPI Parent Questionnaire

We used a Confirmatory Factor Analysis (CFA) for the analysis of the Swedish and Canadian data. Factor analysis in general summarizes data so that we can see patterns and relationships between variables easily and form constructs or latent variables. Using CFA enables us to examine the data and help to confirm our a priori hypotheses about the relationships between variables and constructs. CFA specifically, relies on use of multiple statistical tests to determine the adequacy of model fit to the data and non-rejection of our a priori hypothesis. Thus, in this case, we used CFA to enable us to assess our initial hypotheses that each of these scales is unidimensional or two-dimensional. The collection of data and analysis of the Swedish 2024 data was then followed by the same process for the Canadian 2024 data.

The thresholds of the fit statistics used to evaluate the categorical data CFAs performed and the decisions made are as follows:
   (a) A non-significant p-value of the chi-square test of model fit;
   (b) Root Mean Square Error of Approximation (RMSEA) < 0.08 and non-significant p-value of the test of the probability that the RMSEA < 0.05;
   (c) Comparative Fit Index (CFI) OR Tucker Lewis Index (TLI) > 0.95;
   (d) Standardized Root Mean Square Residual (SRMR) < 0.08.

We set our guidelines to accept models that met the suggested thresholds for at least 2 out of the 3 fit statistics we used to evaluate the models. We opted not to use the chi-square statistic because of the sizes of our samples. We examined the residuals, residual correlations and covariances as well as pragmatics to help guide our decisions on the final scales.

The results of the analysis for the BCFPI Parent Survey V3 Mental Health scales are presented side-by side in the following sections 1 to 9 for both Sweden and Canada. The overall results of the analysis showed that for all scales and subscales,
a. the factor loadings were good;
b. the RMSEAs were usually not satisfactory (indicated with a flag "F" for values not meeting the thresholds in tables);
c. the CFIs and TLIs were always satisfactory; and
d. all SRMRs were acceptable.

We recommend continuing and ongoing examination of the psychometrics and test-retest validity of these scales and subscales.

1. Regulation of Attention Impulsivity and Activity

items	Canada	Sweden
Regulation of Attention		
distractible, has trouble sticking to an activity	0.896	0.846
Has difficulty following directions or instructions	0.880	0.843
Scale item 3	0.812	0.841
Regulation of Impulsivity and Activity		
Scale Item 4	0.825	0.819
Scale item 5	0.760	0.785
Scale item 6	0.742	0.804
Fit Statistics		
Chi-Square Test of Model Fit	52.956	55.293
Degrees of Freedom	8	8
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.046	0.047
90 Percent C.I.	0.035, 0.058	0.036, 0.059
Probability (RMSEA <= .05)	0.685	0.623
CFI	0.998	0.997
TLI	0.995	0.994
SRMR (Standardized Root Mean Square Residual)	0.014	0.015

Note: red items are "Regulation of Attention Impulsivity and Activity – attention" and black items are "Regulation of Attention Impulsivity and Activity - activity" subscales

2. Cooperativeness

items	Canada	Sweden
defiant, talks back to adults	0.856	0.800
blames others for his/her own mistakes	0.766	0.657
Scale item 3	0.762	0.747
Scale Item 4	0.874	0.920
Scale item 5	0.844	0.911
Scale item 6	0.865	0.825
Fit Statistics		
Chi-Square Test of Model Fit	268.188	557.893
Degrees of Freedom	9	9
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.104 F	0.152 F
90 Percent C.I.	0.094, 0.115	0.141, 0.163
Probability (RMSEA <= .05)	<0.001 F	<0.001 F
CFI	0.988	0.978
TLI	0.981	0.963
SRMR (Standardized Root Mean Square Residual)	0.029	0.046

The RMSEA > 0.08 and the p-value for the test of the probability that the RMSEA <= .05 was significant for both countries.

3. Regulating Callous-Uncaring Behavior

items	Canada	Sweden
doesn't care about the feelings of others	0.881	0.914
doesn't care if he/she hurts others	0.922	0.919
Scale item 3	0.837	0.821
Scale Item 4	0.826	0.816
Scale item 5	0.825	0.848
Scale item 6	0.707	0.666
Fit Statistics		
Chi-Square Test of Model Fit	119.097	338.015
Degrees of Freedom	9	9
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.068	0.118 F
90 Percent C.I.	0.057, 0.079	0.107 0.128
Probability (RMSEA <= .05)	0.003 F	<0.001 F
CFI	0.993	0.980
TLI	0.989	0.966
SRMR (Standardized Root Mean Square Residual)	0.024	0.052

It should be noted that the RMSEA >0.08 and the p-value for the test of the probability that the RMSEA <= .05 was significant for Sweden.

4. Conduct

items	Canada	Sweden
acts physically aggressive (hits, bites, or kicks)	0.907	0.915
starts physical fights	0.931	0.956
Scale item 3	0.886	0.918
Scale Item 4	0.867	0.872
Scale item 5	0.846	0.793
Scale item 6	0.700	0.622
Fit Statistics		
Chi-Square Test of Model Fit	110.857	131.288
Degrees of Freedom	9	9
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.065	0.072
90 Percent C.I.	0.055, 0.077	0.061, 0.083
Probability (RMSEA <= .05)	0.009 F	<0.001 F
CFI	0.993	0.991
TLI	0.989	0.986
SRMR (Standardized Root Mean Square Residual)	0.029	0.041

Here the p-value for the test of the probability that the RMSEA <= .05 was significant for both countries.

5. Managing Separation Anxiety

items	Canada	Sweden
scared to sleep without parents nearby	0.851	0.860
overly upset when leaving loved ones	0.86	0.876
Scale item 3	0.79	0.799
Scale Item 4	0.888	0.897
Scale item 5	0.816	0.827
Scale item 6	0.856	0.870
Fit Statistics		
Chi-Square Test of Model Fit	609.195	533.145
Degrees of Freedom	9	9
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.159 F	0.148 F
90 Percent C.I.	0.148, 0.170	0.138, 0.159
Probability (RMSEA <= .05)	<0.001 F	<0.001 F
CFI	0.968	0.970
TLI	0.947	0.950
SRMR (Standardized Root Mean Square Residual)	0.064	0.080

For this scale, the RMSEA > 0.08 and the p-value for the test of the probability that the RMSEA <= .05 was significant for both countries.

6. Managing Social Anxiety

items	Canada	Sweden
shy around other kids	0.826	0.787
avoids meeting new kids	0.926	0.923
Scale item 3	0.911	0.915
Scale Item 4	0.865	0.907
Scale item 5	0.891	0.925
Scale item 6	0.833	0.897
Fit Statistics		
Chi-Square Test of Model Fit	240.767	276.451
Degrees of Freedom	9	9
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.099 F	0.106 F
90 Percent C.I.	0.088, 0.110	0.095, 0.117
Probability (RMSEA <= .05)	<0.001 F	<0.001 F
CFI	0.994	0.994
TLI	0.990	0.991
SRMR (Standardized Root Mean Square Residual)	0.021	0.022

The RMSEA > 0.08 and the p-value for the test of the probability that the RMSEA <= .05 was significant for both countries.

7. Regulating Compulsive Behaviour

items	Canada	Sweden
does things like washing hands or checking doors or lights over and over again	0.806	0.780
spends too much time ordering or arranging things in a particular way	0.837	0.782
Scale item 3	0.906	0.928
Scale Item 4	0.796	0.735
Scale item 5	0.882	0.872
Scale item 6	0.799	0.762
Fit Statistics		
Chi-Square Test of Model Fit	207.863	247.974
Degrees of Freedom	9	9
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.091 F	0.100 F
90 Percent C.I.	0.081, 0.102	0.090, 0.111
Probability (RMSEA <= .05)	<0.001 F	<0.001 F
CFI	0.985	0.973
TLI	0.976	0.954
SRMR (Standardized Root Mean Square Residual)	0.034	0.055

The RMSEA obtained was above 0.08 and the p-value for the test of the probability that the RMSEA <= .05 was significant for both countries.

8. Managing Anxiety

items	Canada	Sweden
worries about past behaviour	0.764	0.708
worries about doing the wrong thing	0.828	0.764
Scale item 3	0.822	0.798
Scale Item 4	0.831	0.856
Scale item 5	0.769	0.739
Scale item 6	0.857	0.861
Fit Statistics		
Chi-Square Test of Model Fit	195.809	186.638
Degrees of Freedom	9	9
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.089 F	0.086 F
90 Percent C.I.	0.078, 0.100	0.076, 0.097
Probability (RMSEA <= .05)	<0.001 F	<0.001 F
CFI	0.989	0.986
TLI	0.982	0.977
SRMR (Standardized Root Mean Square Residual)	0.029	0.030

The RMSEA was above 0.08 and that the p-value for the test of the probability that the RMSEA <= .05 was significant for both countries.

9. Managing Mood

items	Canada	Sweden
has no interest in usual activities	0.860	0.727
gets no pleasure from usual activities	0.880	0.947
Scale item 3	0.858	0.922
Scale Item 4	0.876	0.881
Scale item 5	0.875	0.903
Scale item 6	0.847	0.889
Fit Statistics		
Chi-Square Test of Model Fit	449.568	125.091
Degrees of Freedom	9	9
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.136 F	0.070
90 Percent C.I.	0.125, 0.147	0.059, 0.081
Probability (RMSEA <= .05)	<0.001 F	0.001 F
CFI	0.982	0.996
TLI	0.969	0.994
SRMR (Standardized Root Mean Square Residual)	0.046	0.019

The RMSEA was above 0.08 for Canada and the p-value for the test of the probability that the RMSEA <= .05 was significant for both countries.

Section C. Factor structure for new scales and subscales for Canadian and Swedish data

Continuing from our earlier work with the Youth Self-Report (pg. *47*) we re-examined the factor structure of the new Parent scales in the representative samples of Parent reports regarding children and adolescents aged 6-18 years from Canada and Sweden. The results are presented in the next two subsections.

10. Affect Regulation

<u>items</u>	Canada	Sweden
has a hard time controlling their emotions	0.901	0.873
finds it very hard to calm down when upset.	0.913	0.902
finds that their feelings just take over and they can't do anything	0.914	0.939
tries hard not to think about their feelings	0.938	0.973
believes it is best to keep feelings in control and not to think about them	0.799	0.788
keeps their feelings to themselves.	0.713	0.639
Fit Statistics		
Chi-Square Test of Model Fit	360.214	270.626
Degrees of Freedom	8	8
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.129 F	0.111 F
90 Percent C.I.	0.118, 0.141	0.100, 0.123
Probability (RMSEA <= .05)	<0.001 F	<0.001 F
CFI	0.984	0.985
TLI	0.970	0.972
SRMR (Standardized Root Mean Square Residual)	0.041	0.042

Note: red items are "Affect Regulation – dysregulation" & black items are "Affect Regulation – suppression" scales

The RMSEA was above 0.08 and that the p-value for the test of the probability that the RMSEA <= .05 was significant for both countries.

11. Adolescent Attachment Anxiety & Avoidance

items	Canada	Sweden
needs a lot of reassurance that they are loved by me love them.	0.806	0.691
worries that I don't care about them as much as they care about me.	0.948	0.960
wishes that my feelings for them were as strong as their feelings for me	0.841	0.846
avoids discussing problems with me	0.822	0.847
avoids turning to me for many things, including comfort and reassurance.	0.923	0.887
finds that it's unhelpful to turn to me, in times of need.	0.874	0.834
Fit Statistics		
Chi-Square Test of Model Fit	63.482	143.400
Degrees of Freedom	8	8
P-Value	<0.001	<0.001
RMSEA (Root Mean Square Error of Approximation)	0.051	0.080
90 Percent C.I.	0.040, 0.063	0.069, 0.092
Probability (RMSEA <= .05)	0.409	<0.001 F
CFI	0.996	0.987
TLI	0.993	0.976
SRMR (Standardized Root Mean Square Residual)	0.019	0.040

Note: red items are "Adolescent Attachment Anxiety & Avoidance– anxiety" & black items are "Adolescent Attachment Anxiety & Avoidance– dysregulation" scales

The RMSEA was above 0.08 and the p-value for the test of the probability that the RMSEA <= .05 was significant for Sweden.

Section D. Examining norms for Parent Surveys for Canada 2018, 2024 and Sweden 2024

Using data from the Canada V2 (2018) Parent Survey, and the Sweden V3 (2024) and Canada V3 (2024) surveys, we examined (1) changes in the norms between the Canada V2 (2018) Parent Survey and the Canada V3 (2024) Parent Survey; (2) differences in normative data between the Sweden V3 Parent Survey and the Canada V3 Parent Survey, and (3) within the V3 (2024) BCFPI Parent Survey data for each country, we examined differences in means (i) between males and females, and (ii) between age groups 6-11 years and 12-18 years .

1. **Differences in samples means for BCFPI scales**

We examined differences in means between the 3 representative samples using one-way analysis of variance (ANOVA) for each scale and performed pairwise post hoc tests of differences in means with Dunnett's post-hoc test. These are presented in the table below. **Except for two scales, Conduct and Callous-uncaring behaviour, the differences of in scale means between the Canada 2018 data and the Canada 2024 data are not statistically significant, indicating no change in scale norms and scores.**
It should be noted that the differences in means between the Sweden 2024 data and the Canada 2024 data were statistically significant for all scales except for Regulation of attention impulsivity and activity.

scales	Canada 2018 vs. Canada 2024	Sweden 2024 vs. Canada 2024
Regulation of attention impulsivity and activity	0.152	0.085
Cooperativeness	0.161	0.469*
Conduct	0.195*	-0.387*
Callous-uncaring behaviour	0.275*	-0.368*
Managing Separation Anxiety	0.088	-0.363*
Managing Social Anxiety	-0.193	-0.339*
Regulating Compulsive Behaviour	0.087	-0.333*
Managing Anxiety	-0.033	-0.306*
Managing Mood	0.099	-0.325*

* post hoc p<0.05

2. Differences between sample means: <u>males vs females</u> for V3 Sweden and V3 Canadian Parent Survey data

In this section using independent t-tests we examined differences in mean scores of the scales between males and females within the data for each country. On the average, for each of the representative samples, males had lower scores on the scales except for Regulation of attention impulsivity and activity, Conduct, and Callous-uncaring behaviour where males had higher scores.

Scales	Sweden 2024	Canada 2024
Regulation of attention impulsivity and activity	0.450***	0.321**
Cooperativeness	-0.196*	-0.021
Conduct	0.308***	0.279***
Callous-uncaring behaviour	0.116	0.181*
Managing Separation Anxiety	-0.191*	-0.360***
Managing Social Anxiety	-0.120	-0.623***
Regulating Compulsive Behaviour	-0.200**	-0.123
Managing Anxiety	-0.583***	-0.652***
Managing Mood	-0.132	-0.148

* p<0.05, ** p<0.01, *** p<0.001

3. Differences between sample means for age groups 6-11 years and 12-18 years for V3 Sweden versus V3 Canadian Parent Survey data

In this section, using independent t-tests we examined differences in mean scores of the scales between the age groups (6-11 years and 12-18 years) within the data for each country. Children in the younger age group of 6-11 years had higher scores on the scales than adolescents aged 12-18 years on average except for Callous-uncaring behaviour for Sweden and Managing Social Anxiety, Managing Anxiety, and Managing Mood for both countries.

scales	Sweden 2024	Canada 2024
Regulation of attention impulsivity and activity	0.655***	0.679***
Cooperativeness	0.071	0.533***
Conduct	0.251***	0.273***
Callous-uncaring behaviour	-0.120	0.124
Managing Separation Anxiety	1.716***	1.472***
Managing Social Anxiety	-0.494***	-0.229
Regulating Compulsive Behaviour	0.025	0.019
Managing Anxiety	-0.333***	-0.256*
Managing Mood	-1.077***	-0.530***

* p<0.05, ** p<0.01, *** p<0.001

Section E. Validity tests for Canada 2024 and Sweden 2024 BCFPI Parent Survey V3

Using Structural Equation Modeling (SEM), test-retest analysis were performed with the data from Canada 2024 main sample of 2647 parents, a Canada 2024 retest sample of 306 parents. The same approach was used for the Sweden 2024 data with the main sample of 2645 parents and a retest sample of 302 parent. We examined differences in means with a paired analysis between test and retest samples within the SEM framework which allowed us to account for variables that could potentially influence the recruitment of the retest sample by including these measures as "auxiliary" variables in the software used for the analyses. Next, we examined the internal consistency of each of the scales in the Swedish and Canadian data. Last, we performed tests of validity of the constructs by examining correlations of each of the scales with the four outcomes from the BCFPI Survey.

The results of the analysis in section1 below, show that correlations between the test and retest sample for both countries are greater than 0.5 and differences in means of the scales were not statistically significantly different. **These results indicate good test-retest reliability of the scales.**

1. Paired samples correlation and p-values for test in difference in means

scales	Canada 2024		Sweden 2024	
	Correlation	p-value for test of difference in means	Correlation	p-value for test of difference in means
Regulation of attention impulsivity and activity	0.754	0.131	0.802	0.069
Cooperativeness	0.759	0.331	0.782	<0.001
Conduct	0.515	0.230	0.720	0.190
Callous-uncaring behaviour	0.624	0.949	0.786	0.963
Managing Separation Anxiety	0.686	0.459	0.810	0.355
Managing Social Anxiety	0.738	0.795	0.828	0.619
Regulating Compulsive Behaviour	0.673	0.413	0.736	0.193
Managing Anxiety	0.686	0.432	0.733	0.504
Managing Mood	0.666	0.804	0.796	0.376
Adolescent Attachment - Anxiety	0.689	0.124	0.659	0.515
Adolescent Attachment - Avoidance	0.643	0.615	0.727	0.708
Adolescent Attachment Anxiety & Avoidance	0.697	0.270	0.726	0.882
Affect Regulation - Dysregulation	0.698	0.334	0.821	0.865
Affect Regulation - Suppression	0.506	0.572	0.670	0.456
Affect Regulation - Dysregulation & Suppression	0.633	0.697	0.793	0.592

The results of examination of the internal consistencies of the scales using Cronbach' alpha are shown in subsection 2 and these were of magnitude 0.7 and higher. **These also indicate that the internal consistency of the scales were good and acceptable**

2. Internal consistency – Cronbach's alpha

scales	Canada 2024	Sweden 2024
Regulation of attention impulsivity and activity	0.866	0.852
Cooperativeness	0.877	0.863
Conduct	0.860	0.833
Callous-uncaring behaviour	0.858	0.839
Managing Separation Anxiety	0.861	0.837
Managing Social Anxiety	0.908	0.914
Regulating Compulsive Behaviour	0.858	0.808
Managing Anxiety	0.860	0.840
Managing Mood	0.881	0.897
Adolescent Attachment - Anxiety	0.794	0.729
Adolescent Attachment - Avoidance	0.812	0.772
Adolescent Attachment Anxiety & Avoidance	0.827	0.762
Affect Regulation - Dysregulation	0.871	0.862
Affect Regulation - Suppression	0.758	0.718
Affect Regulation - Dysregulation & Suppression	0.836	0.808

3. Informal test of scale validity (2024)

For our informal tests of validity of the scales we used Spearman correlations to evaluate the strengths of association of the scales with outcomes child functioning, impact on family, informant mood and family functioning. **The results are presented in the table below for the Swedish and Canadian 2024 Parent Survey data. Most of the correlations are of magnitude 0.3 or higher for scales and for data from both countries indicating good validity of the scales.** However, correlations of lesser magnitude were found between the scales with the Family Functioning measure. (see note below)

scales	Child Functioning		Impact on Family		Informant Mood		Family Functioning	
	SW	CA	SW	CA	SW	CA	SW	CA
Regulation of attention impulsivity and activity	0.574	0.597	0.544	0.558	0.378	0.419	0.208	0.194
Cooperativeness	0.548	0.571	0.521	0.567	0.344	0.356	0.263	0.269
Conduct	0.401	0.471	0.456	0.517	0.269	0.287	0.242	0.276
Callous-uncaring behaviour	0.539	0.580	0.549	0.573	0.308	0.324	0.310	0.290
Managing Separation Anxiety	0.246	0.392	0.344	0.386	0.280	0.274	0.073	0.116
Managing Social Anxiety	0.476	0.527	0.387	0.399	0.274	0.308	0.227	0.156
Regulating Compulsive Behaviour	0.366	0.423	0.394	0.428	0.225	0.257	0.150	0.162
Managing Anxiety	0.429	0.487	0.370	0.424	0.345	0.376	0.171	0.127
Managing Mood	0.645	0.706	0.555	0.611	0.369	0.423	0.344	0.278
Adolescent Attachment - Anxiety	0.457	0.555	0.435	0.531	0.305	0.324	0.200	0.192
Adolescent Attachment - Avoidance	0.546	0.585	0.464	0.514	0.301	0.354	0.392	0.302
Adolescent Attachment Anxiety & Avoidance	0.618	0.658	0.554	0.595	0.373	0.392	0.367	0.278
Affect Regulation - Dysregulation	0.587	0.632	0.601	0.604	0.395	0.410	0.259	0.208
Affect Regulation - Suppression	0.525	0.556	0.444	0.463	0.335	0.340	0.315	0.218
Affect Regulation - Dysregulation & Suppression	0.670	0.692	0.643	0.625	0.446	0.435	0.339	0.241

Entries are correlation coefficients, all two-tailed p-values < 0.01
SW = Sweden 2024; CA = Canada 2024

Note: re Family Functioning, in right hand column of above table. This is a 6-item scale derived from the McMaster Family Assessment Device's (FAD) 12-item General Functioning scale (Epstein, Baldwin, & Bishop, 1983). High T scores on this scale suggest difficulties with problem solving, communication, support, or general relationships. V2 and V3 Parent survey data, and V2 field data reflect low parent self-report rates of Family Dysfunction.

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For further information, contact info@bcfpi.com