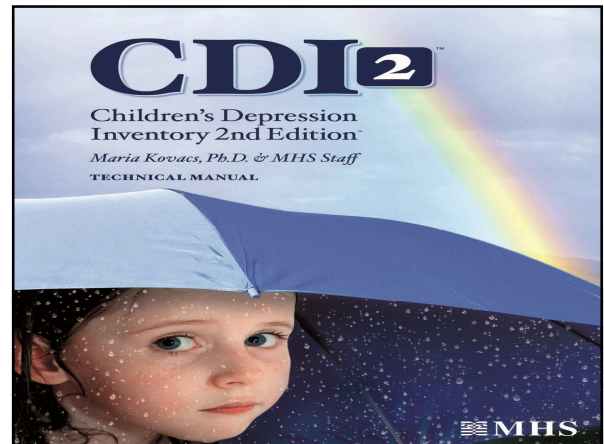


**Children's Depression Inventory,
2nd Edition
(CDI-2)**

Introduction and Application

Danielle M. Politi, Psy.D., NCSP
Education and Clinical Assessment Consultant
Multi-Health Systems (MHS)



“To use behavior rating scales effectively requires more than just a cursory understanding of their characteristics.”

-Kenneth W. Merrell

Overview

- **Childhood Depression**
 - Overview of Four Depression Diagnostic Categories
 - Recovery from and Recurrence of Depressions
 - Some Facts of MDD and DD
 - Comorbid Psychiatric Disorders
 - Rates of Depressive Disorders
- **Introduction to the new Children's Depression Inventory 2nd Edition:**
 - Key Features
 - Standardization, Reliability, and Validity
 - Content and Structure
 - Administration and Scoring
 - Interpretation
- **Case Study**

**DSM-IV-TR
Four Depression Diagnostic Categories**

- Major Depressive Disorder
- Dysthymic Disorder
- Depressive Disorder Not Otherwise Specified (NOS)
- Adjustment Disorder with Depressed Mood

Major Depressive Disorder (MDD)

- Most prevalent form of depression
- Functional impairment or clinical distress
- Cannot be due to: organicity; medical condition, medication/drug abuse; or bipolar disorder
- Meet 5 of 9 criterion including either sadness/irritability or anhedonia (2 wks)

Major Depressive Disorder (MDD)

- The nine symptoms:
 - Persistent depressed mood or irritability
 - Loss of pleasure or markedly diminished interest
 - Significant weight loss/weight gain
 - Persistent increased/decreased appetite or failure to make expected weight gain
 - Persistent insomnia or hypersomnia

Major Depressive Disorder (MDD)

- The nine symptoms continued
 - Persistent feelings of worthlessness or excessive or inappropriate guilt
 - Diminished ability to think, concentrate or make decisions
 - Recurrent thoughts of death
 - Recurrent suicidal ideation; suicide attempt or specific plan

Dysthymic Disorder (DD)

- Less severe but chronic; less common
- Children/adolescents: persistent depressed or irritable mood for at least (1 yr)
- Two or more of the following symptoms:
 - poor appetite or overeating
 - sleep disturbance
 - decreased energy
 - poor self esteem
 - problems with concentration/decision making
 - feelings of hopelessness

Depressive Disorder (NOS)

- Presentations that do not meet criteria for major depression or dysthymia:
 - Recurrent brief depression
 - Minor depressive disorder **within 2 weeks** persistent symptoms but fewer symptoms than in MDD
 - DD that is somewhat shorter than the required 12 month duration

Adjustment Disorder

- Includes depressed mood
- Response/reaction to identifiable stressor (not bereavement)
- Emerge **within 3 months** of onset of stressor
- Duration 6 months or less
- Reactions in excess of what would be expected
- Significant functional impairment

Just for Fun!! Pre-test

1. What year did the DSM, published by APA, first officially acknowledge that diagnosable depressive disorders exist in children?
2. Immediate intervention and treatment is necessary for children to recover from major depression and return to prior level of functioning. True or False
3. Name the most common comorbid condition associated with childhood depression
4. How long does the average episode of MDD last?
5. What is the recurrence rate of MDD in children?



Recovery From and Recurrence of Depression

Two interesting characteristics of depression:

1. Associated with a very high rate of recovery
2. But ALSO, associated with a high rate of recurrence

Some Facts about MDD

- MDD in child psychiatric patients (8 to 17 years old) typically lasts about 9 months (Kovacs et al., 1984; Kovacs Obroscoy, Gatsonis & Richards, 1997; McCauley et al., 1993).
- MDD becoming more protracted: recent report stated that the average episode was 17 months in a group of patients 8 to 16 years of age (Birmaher et al., 2004).
- 1 ½ years after the onset of the first major depression, 90% or more young depressed patients will have recovered (Kovacs et al., 1984; McCauley et al., 1993).
- About 55% to 60% (or more) of children who recover from their first MDD episode will have another episode of MDD during the subsequent 5 years (Kovacs et al., 1984, McCauley et al., 1993).

Some Facts about DD

- It is extremely chronic.
- In clinically referred children DD can persist for more than 3 years, on average (Kovacs et al., 1984; Kovacs Akiskal, Gatsonis, & Parrone, 1994; Kovacs et al., 1997).
- Over 90% of dysthymic children eventually recover from their first episode of DD (Kovacs et al., 1997).
- DD in clinically referred children has been shown to be a solid predictor of subsequent major depression (Kovacs, Akiskal et al., 1994).

Comorbid Psychiatric Disorders

- Comorbidity: The rule rather than the exception with pediatric depression.
- Anxiety Disorders: most common lifetime and concurrent comorbid condition in depressed children-40% to 75% (Kovacs et al., 1984, 1989).
- Disruptive Behavior Disorders (Oppositional Defiant Disorder and Conduct Disorder) 2nd most common comorbid disorder (Kovacs, 1996) -up to 30% (Avenevoli et al., 2001).
- Conduct disorders typically emerge as complications of depression (Kovacs, Paulauskas, Gatsonis, and Richards; 1988).

Rates of Depressive Disorders

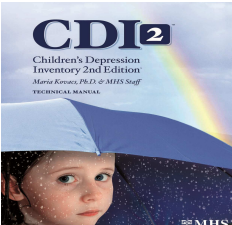
- There has never been an epidemiologic study of psychiatric illness in the U.S. with a fully representative sample of children and adolescents.
- Up until about 1995: .4% to 2.5% of children suffer from depression - point prevalence (Brimaher et al., 1996).
- Recent overview found point prevalence (up to 12 months) of pediatric depression is more likely to be 2.8% and 5.9% up to age 18 depending upon sex (Costello, Erkanli, & Angold, 2006).
- Lifetime History by age 16: 9.5%

Some More Facts

- MD is more frequent than DD in children and adolescents
- Depression rates low during childhood years but evidence a dramatic increase during mid- and late- adolescence
- *Young* boys and girls have similar rates of depression, with boys outnumbering girls at times
- In mid- to late- adolescence, rates of depression in girls becomes to 2 to 3 times higher than boys and remains so into adulthood

Dr. Maria Kovacs

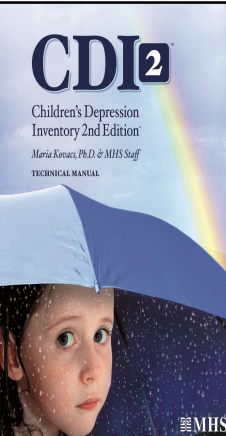
- <http://video.answers.com/childhood-depression-175539380>




**“We want the child to have emotions...
But...
we don’t want emotions to have the child.”**

Maria Kovacs, Ph.D.

[NARSAD Symposium
September 2009]



Children’s Depression Inventory (CDI2)



- Designed to measure symptoms of Depressive Disorders in children and adolescents (age 7-17).
- Potential uses:
 - Screening
 - Treatment monitoring
 - An important part of larger assessments
 - Not a diagnostic tool

Children’s Depression Inventory (CDI2)

- What’s New...The Big Picture:
 - New normative Sample
 - New items to capture characteristics of depression that are particularly common in children and adolescents.
 - Improved psychometric properties.
 - Improved interpretability and interrater consistency (P,T,SR)

Children’s Depression Inventory (CDI2)

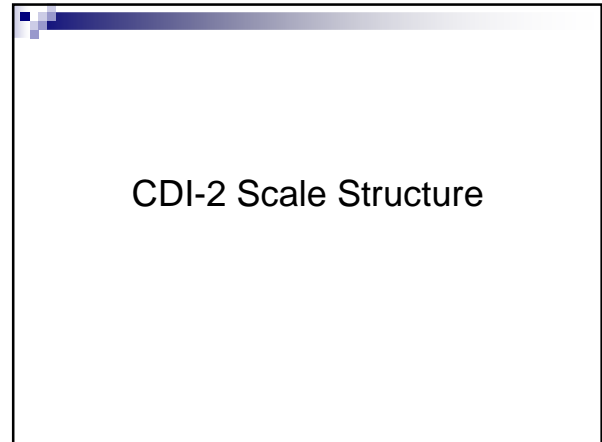
- What’s new...The specifics:
 - Self-Form**
 - New Items
 - New Scales
 - New 12-item Short Form
 - CDI 1 → CDI 2; CDI 2 → CDI 1 conversion charts
 - Teacher and Parent Forms**
 - Restandardization of the Normative Samples

Practical Features of the CDI 2 Tool Kit

Selected Features	Full Length CDI 2:SR	Short CDI 2:SR(S)
Reading grade level	Grade 1.7	Grade 1.5
Number of Items	28	12
Admin. Time	15 minutes	5 minutes
Types of Scores	Total Score	Total Score
	Scale Scores: <ul style="list-style-type: none"> ■ Emotional Problems ■ Functional Problems 	
	Subscale Scores: <ul style="list-style-type: none"> ■ Negative Mood/Physical Symptoms ■ Negative Self-Esteem ■ Ineffectiveness ■ Interpersonal Problems 	

Practical Features of the CDI 2 Tool Kit

Selected Features	Parent CDI 2:P	Teacher CDI 2:T
Reading grade level	Grade 2	Grade 2.2
Number of Items	17	12
Admin. Time	10 minutes	5 minutes
Types of Scores	Total Score	Total Score
	Scale Scores: ■ Emotional Problems ■ Functional Problems	Scale Scores: ■ Emotional Problems ■ Functional Problems



CDI-2 Structure

CDI 2: Self Report

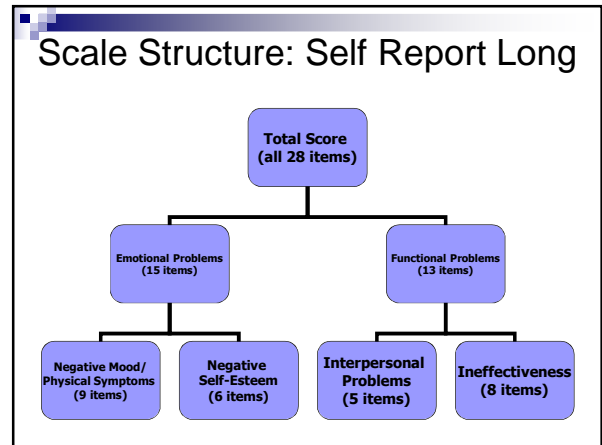
- 28- item for the full-length form
- 12- item for short-length form

■ Each item = 3 sentences to choose:
e.g., Item #1

- I am sad once in a while (0).
- I am sad many times (1).
- I am sad all the time (2).

Item #15

- I have trouble sleeping every night (2).
- I have trouble sleeping many nights (1).
- I sleep pretty well (0).



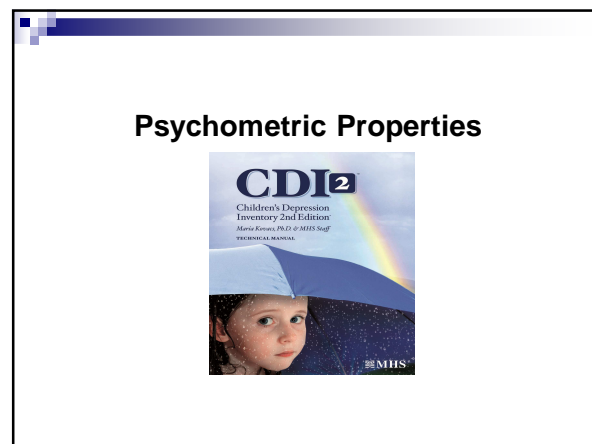
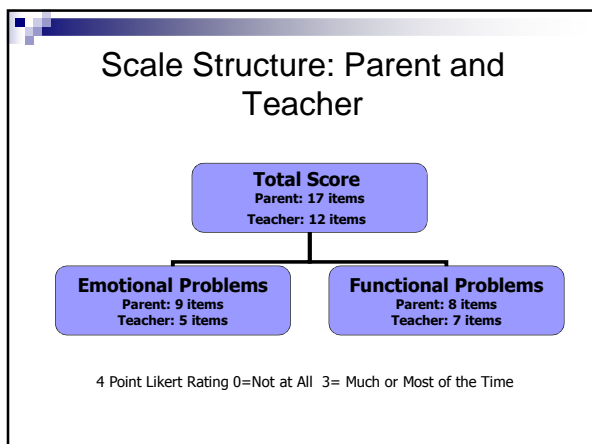
CDI 2: SR Long Subscales

Negative Mood/Physical Symptoms	Ineffectiveness
I am sad all the time	I do most things ok
I feel like crying everyday	I have fun in many things
I feel cranky all the time	I cannot make up my minds about things
I have trouble sleeping every night	I have to push myself all the time to do my school work
I am tired once in a while	I never have fun at school
Most days I do not feel like eating	my schoolwork is alright
I do not worry about aches and pain	I can never be as good as other kids
I fall asleep during the day all the time	It's easy for me to remember things
Most days I feel like I can't stop eating	
Negative Self-Esteem	Interpersonal Problems
nothing will ever work out for me	I am important to my family
I hate myself	I like being with people
all bad things are my fault.	I do not feel alone
I want to kill myself	I have plenty of friends
I look ok	It's easy for me to get along with friends
Nobody really loves me	

CDI 2: SR Short Subscale

■ New 12-item Short Form

I am sad all the time
nothing will ever work out for me
I do most things ok
I do not feel alone
Most days I do not feel like eating
I am tired once in a while
I am important to my family
Nothing is fun at all
I hate myself
I feel cranky all the time
I have to push myself all the time to my school work
I cannot make up my minds about things



- ### Standardization
- 1,100 children aged 7 to 17 years
 - Teacher: 600
 - Parent: 800
 - Stratified to match the race/ethnic distribution of the U.S. (within 5% of census figures)
 - Stratified by age and gender.

Reliability

- Internal Consistency** - the extent to which all items on the scale measure the same construct; Cronbach's alpha (0.0 to 1.0, higher values = more reliable)

Scale		Alpha
Total Score		.91
Higher Order Scales	Emotional	.85
	Functional	.83
Subscales	Negative Mood/Physical	.75
	Negative Self-Esteem	.77
	Interpersonal	.73
	Ineffectiveness	.76
Short Form		.82

- Original CDI subscales alpha = .59 - .68

Internal Consistency Values CDI 2:T and CDI 2:P

Form	Variable	Total Sample
CDI 2:T	Total Score	.89
	Emotional Problems	.82
	Functional Problems	.85
CDI 2:P	Total Score	.88
	Emotional Problems	.86
	Functional Problems	.79

Test-Retest Reliability - 2 to 4 weeks; Pearson's correlation (r) from time 1 to time 2 (0.0-1.0)

Scale		Time 1 - Time 2 correlation (r)
Total Score		.98
Higher Order Scales	Emotional	.98
	Functional	.92
Subscales	Negative Mood/Physical	.97
	Negative Self-Esteem	.97
	Interpersonal	.92
	Ineffectiveness	.92
Short Form		

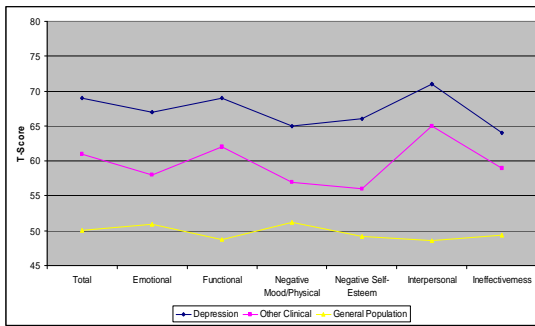
Validity

- Discriminative validity
 - an instrument's ability to discriminate between relevant participant groups
 - i.e., the ability of the CDI-2 to differentiate between Depressed and General Population (GP) cases or Other Clinical cases

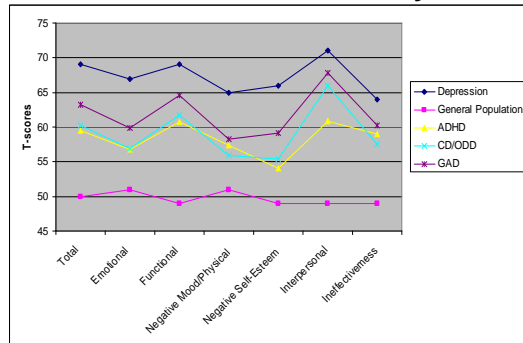
Classification Accuracy

Classification Statistic	Total Score	Higher Order Scale Scores (average %)
Overall correct classification Rate (OCCR)	78%	80%
Sensitivity	83%	84%
Specificity	73%	75%
Positive Predictive Power	76%	77%
Negative Predictive Power	81%	83%
False Positive Rate	27%	26%
False Negative Rate	17%	17%
Kappa	0.57	0.59

Discriminative Validity



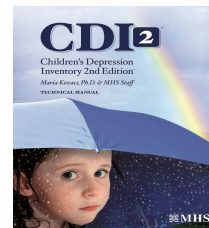
Discriminative Validity



Convergent Validity

CDI 2: SR	BDI-Y Total Score	Conners CBRS DSM-IV-TR MDE Score
Total Score	.37	.58
Emotional Problems	.34	.58
Negative Mood/Physical Symptoms	.28	.59
Ineffectiveness	.36	.44
Functional Problems	.37	.50
Interpersonal Problems	.30	.44
Negative Self-Esteem	.37	.38

Administration and Scoring



Administration Guidelines

- Consider symptoms during the past 2 weeks
- Individually or in small groups
- Paper-and-Pencil and Online

Scoring Options

- CDI 1 and CDI 2 Conversion Charts.
 - Ease the user's transition from CDI 1 and CDI 2 (e.g., allow progress monitoring without interruption)
- Hand score
- Software
- Online

Case Study: Jennifer K.

- 16 year old female, 11th grade
- Referred by mother due to concerns regarding recent changes in behavior
- Historically well-adjusted, active, socially skilled, good student
- Recently losing weight, eating less, sleeping more, no longer wanted to participate in activities that she always enjoyed, irritable, withdrew from family and friends

Assessment Plan

- CDI 2: Parent, Teacher, & Self-Report
- Comprehensive behavioral rating scale
- Clinical interview with parent (s) and Jennifer
- Monitor

Interpretation

Raw Scores, Percentiles, T-Scores, 90% or 95% CI

T-Score	Guideline
70+	Very Elevated Score (Many more concerns than typical)
65-69	Elevated Score (More concerns than typical)
60-64	Slightly Elevated Score (Somewhat more concerns than typical)
40-59	Average Score (Typical levels of concern)
<40	Low Score (Fewer concerns than typical)

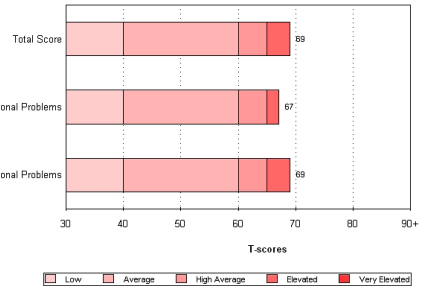
Interpretation

Scale	Interpretive Guidelines	
Total Score	Overall depressive symptoms across the areas discussed below.	
Scale Scores	Emotional Problems	This scale reflects symptoms of Negative Mood, Physical Symptoms, and Negative Self-Esteem.
	Functional Problems	This scale reflects issues with Ineffectiveness and Interpersonal Problems.
Subscale Scores	Negative Mood/Physical Symptoms	This subscale assesses depressed mood that may manifest in the form of sadness or irritability, as well as physical symptoms related to problems with sleep, appetite, fatigue, and aches/pains.
	Negative Self-Esteem	This subscale assesses low self-esteem, self-dislike and feelings of being unloved.
	Ineffectiveness	This subscale assesses negative evaluation of one's ability and worsening school performance, as well as an impaired capacity to enjoy school activities and other things.
	Interpersonal Problems	This subscale assesses problems in interacting with peers, as well as feelings of being lonely and unimportant to one's family.

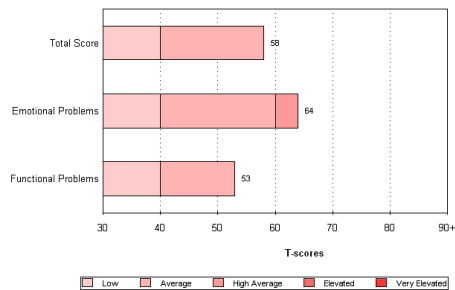
Step 1: Interpret Scale Scores: Self-Report



Parent Report (Mrs. K)



Teacher Report (Mr. B)



Step 2: Examine Overall Profile

Scale	Raw Score	T-score (90% CI)	Percentile	Classification	Interpretive Guideline
TOTAL SCORE	24	71 (65-77)	94	Very Elevated	The child may be experiencing an elevated number of depressive symptoms. Further analysis of the scale and subscale scores will identify which components of depression are most problematic.
EMOTIONAL PROBLEMS	14	71 (64-78)	93	Very Elevated	The child may be experiencing negative mood, physical symptoms, and negative self-esteem. Further analysis of the subscale scores will identify which kinds of emotional problems are most evident.
Negative Mood/Physical Symptoms	10	73 (65-81)	95	Very Elevated	The child may have depressive symptoms that manifest as sadness or irritability, as well as physical symptoms related to sleep, appetite, fatigue, and aches/pains.
Negative Self-Esteem	4	63 (54-72)	89	High Average	No problem indicated.
FUNCTIONAL PROBLEMS	10	66 (58-74)	92	Elevated	The child may be experiencing issues with ineffectiveness and interpersonal problems. Further analysis of the subscale scores will identify which kinds of functional problems are most evident.
Ineffectiveness	4	53 (42-64)	62	Average	No problem indicated.
Interpersonal Problems	6	90 (80-100)	98	Very Elevated	The child may have problems interacting with peers and may feel lonely and unimportant to her own family.

Mother's

Scale	Raw Score	T-score (90% CI)	Percentile	Classification	Interpretive Guideline
Total Score	26	69 (63-75)	95	Elevated	The child may be experiencing an elevated number of depressive symptoms. Further analysis of the scale scores will identify which components of depression are most problematic.
Emotional Problems	12	67 (60-74)	92	Elevated	The child may be experiencing negative mood, sleep problems, and negative self-esteem. The child may appear sad, irritable, fatigued, or lonely.
Functional Problems	14	69 (60-78)	95	Elevated	The child may be experiencing issues with ineffectiveness and interpersonal problems. Specifically, the child may have problems interacting with peers and maintaining school performance. The child may also have an impaired capacity to be cooperative and to enjoy school activities.

Teachers

Scale	Raw Score	T-score (90% CI)	Percentile	Classification	Interpretive Guideline
Total Score	12	58 (52-64)	79	Average	No problem indicated.
Emotional Problems	6	64 (57-71)	91	High Average	No problem indicated.
Functional Problems	6	53 (47-59)	68	Average	No problem indicated.

Interpretation

- Step 3: Examine Item-level Responses
 - Pay attention to the critical suicide item: "I want to kill myself". (Item #8)
 - Review the individual items that contribute to an elevated T-Score.

Item Responses by Scale

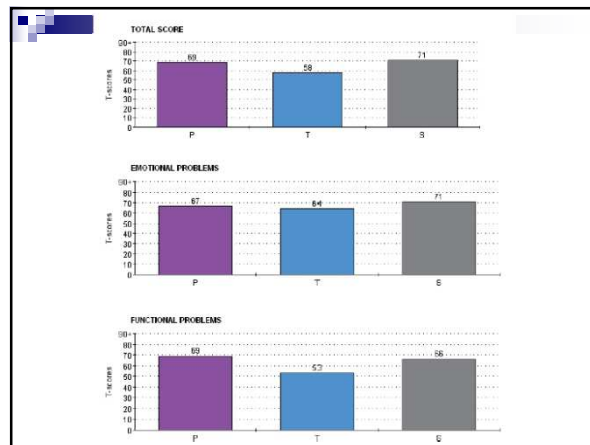
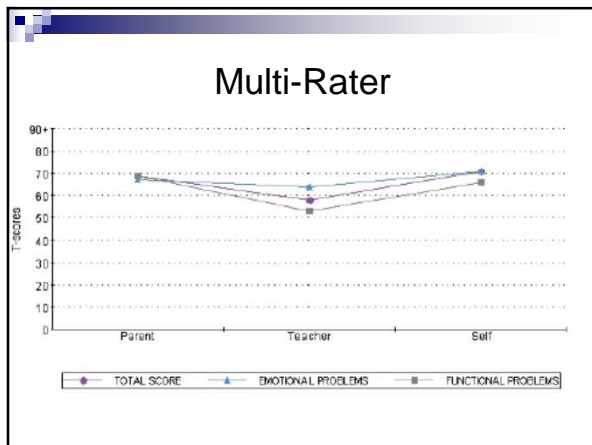
Text of Item Responses by Scale
 This section of the report contains copyrighted items and information that are not intended for public disclosure. If it is necessary to provide a copy of the report to anyone other than the assessor, this section must be removed.

The following applies to the tables in this section:
 Shaded sentence indicates the child's response. (R) = This item is reverse scored.

Emotional Problems scale		Functional Problems scale	
Item #	Response	Item #	Response
Negative Mood/Physical Symptoms subscale			
1	I am sad once in a while.	3	I do most things O.K.
	I am sad many times.		I do many things wrong.
	I am sad all the time.		I do everything wrong.
9R	I feel like crying every day.	4	I have fun in many things.
	I feel like crying many days.		I have fun in some things.
	I feel like crying once in a while.		Nothing is fun at all.
10R	I feel cranky all the time.	12R	I cannot make up my mind about things.
	I feel cranky many times.		It is hard to make up my mind about things.
	I am almost never cranky.		I make up my mind about things easily.

Step 4: Integrate Results from Multiple Sources


- Multiple-raters
- Multiple-modes
- Examine results over time, i.e. multiple administrations



Are there significant differences between raters' responses?

Scale		P	T	S	Reliable Differences Between Raters
TOTAL SCORE	T-score	69	58	71	S > T; P > T
	90% CI	63-75	52-64	65-77	
	Percentile	95	79	94	
EMOTIONAL PROBLEMS	T-score	67	64	71	No reliable differences
	90% CI	60-74	57-71	64-78	
	Percentile	92	91	93	
FUNCTIONAL PROBLEMS	T-score	69	53	66	P > T; S > T
	90% CI	60-78	47-59	58-74	
	Percentile	95	68	92	

Conners Comprehensive Behavior Rating Scales (Conners CBRS)



- Parent, Teacher, and Self-completed
- DSM-IV TR symptoms scales T-scores and symptom counts were elevated for Major Depressive Disorder.
- Social withdrawal, apathy, and physical symptoms (including sleep, appetite, and weight problems) were endorsed, and are consistent with depression.
- The Self-Harm Critical items were not endorsed, which is consistent with the lack of endorsement of the suicide ideation item on the CDI-2.
- No other scales had significant elevations.

Interview with Jennifer

Diagnosis? Classification?

Step 5: Report Results

- Assessment Report
- Comparative Report
- Progress Report
- Feedback Handout
- Written Report

Intervene & Monitor Progress

- Psychotherapy

Scale/Subscale	Pre-treatment Evaluation (Time 1)			Post-treatment Evaluation (Time 2)			Reliable Change (p = .10)
	T-score	90% CI	Classification	T-score	90% CI	Classification	
Total	71	65-77	Very Elevated	62	56-68	High Average	Time 1 > Time 2
Emotional Problems	71	64-78	Very Elevated	67	60-74	Elevated	Time 1 = Time 2
Functional Problems	66	58-74	Elevated	52	44-60	Average	Time 1 > Time 2
Negative Mood/ Physical Symptoms	73	65-81	Very Elevated	67	59-75	Elevated	Time 1 = Time 2
Negative Self-Esteem	63	54-72	High Average	63	54-72	High Average	Time 1 = Time 2
Ineffectiveness	53	42-64	Average	49	38-60	Average	Time 1 = Time 2
Interpersonal Problems	90+	80-100	Very Elevated	60	50-70	High Average	Time 1 > Time 2

Questions????????????????????
?????

Thank you!

danielle.politi@mhs.com
1-800-456-3003 x276