

## Diagnostic Interview Schedule for Children: Parent

Grade 12/Year 13

### Fast Track Project Technical Report

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June 26, 2010

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#### Citation

##### *Instrument*

Shaffer, D. and Fisher, P. (1997). *NIMH - Diagnostic Interview Schedule for Children: Parent Informant*. New York: New York State Psychiatric Institute.

Shaffer, D., Fisher, P., Lucas, C., Comer, J. (2003). *Scoring Manual: Diagnostic Interview Schedule for Children (DISC-IV)*. New York: Columbia University.

##### *Report*

Godwin, J. (2010). *Diagnostic Interview Schedule for Children: Parent (Technical Report)* [On-line]. Available: <http://www.fasttrackproject.org/>

#### Data Sources

Raw: p13y

Scored: cds13

#### **I. Scale Description**

The NIMH Diagnostic Interview Schedule for Children (DISC) assesses DSM-IV psychiatric symptoms and diagnoses in children and adolescents aged 6 to 17 years by interviewing parents.<sup>1</sup> The DISC was designed to be given by lay interviewers for epidemiological research. Fast Track administered the measures using a laptop computer (Computerized DISC, or CDISC).

##### *Item Responses*

The DISC items are organized by diagnosis. Parents are asked if their children experienced specific symptoms related to a disorder during the past month or year.<sup>2</sup> If a parent reports that a child experienced a given symptom, additional follow-up questions are asked.

The one exception is conduct disorder. Symptoms of conduct disorder are recorded for the previous 6 months and the previous year. Consequently, the dataset contains 2 criterion count variables, one for the previous 6 months and one for the previous year. The dataset contains only one diagnosis indicator for the previous year.

The possible responses to most of the DISC questions are “No” (0), “Yes” (1), “Not Applicable” (8), or “Don’t Know” (9). During the scoring process, the “Don’t Know” responses are recoded as “No”. Parent responses capture whether the parent knows that their child has experienced a symptom. If a parent does not know if their child experienced the symptom, the symptom should be coded “No”.

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<sup>1</sup> The corresponding measure in year 4 assesses symptom and diagnoses defined by the DSM-III-R.

<sup>2</sup> In year 4, symptoms are reported for the previous 6 months.

Fast Track collected data on the following disorders in year 13/grade 12:

- Attention Deficit/Hyperactivity Disorder (ADHD)
- Conduct Disorder
- Dysthymia
- Eating Disorders (Anorexia Nervosa and Bulimia)
- Generalized Anxiety
- Major Depression
- Oppositional Defiance (OD) Disorder
- Post Traumatic Stress Disorder (PTSD)

## **II. Report Sample**

The explanatory analyses in this report were conducted on the Cohort 1 normative (n=387) and high-risk control samples (n=155, N=463 with overlap) in grade 12/year 13. One-hundred thirty-two students are missing the entire measure (29% of the sample), including 113 from the normative sample (29% of the sample) and 60 from the high-risk control sample (39% of the sample). The respondents who did not complete the measure include 20 from Durham (16%), 45 from Nashville (43%), 31 from Penn State (25%), and 36 from Seattle (33%).

## **III. Scaling**

The DISC group at Columbia University and New York State Psychiatric Institute (overseen by David Shaffer, M.D., Prudence Fisher, Ph.D., and John Piacentini, Ph.D) constructed the scoring programs that correspond to the DSM-IV. Variable names were changed to match the Fast Track format. The three types of summary scores are described below.

### *Criterion Counts*

The scoring program combines the symptom (item) responses to determine whether a child meets a particular DSM-IV criterion. Multiple symptoms are often used to determine whether one criterion is satisfied. The criterion count variable describes the total number of criteria a child meets for each disorder.

### *Diagnosis Indicators*

The individual symptom responses are also used to determine whether a child meets the DSM-IV specification for a diagnosis. The diagnosis indicator equals 1 if the child meets the diagnostic criteria for a given disorder and 0 otherwise.

### *Impairment Indicators*

The DISC also includes a series of questions designed to determine whether experiencing the symptoms associated with a particular diagnosis impaired the child's ability to participate in normal daily activities. Based on these questions, the scoring program creates three additional indicator variables for meeting the requirements of a diagnosis and experiencing a certain level of impairment. The levels include: experiencing intermediate or severe impairment in regards to at least 1 activity, experiencing intermediate or severe impairment in regards to at least 2 activities, and experiencing a severe impairment in regards to at least 1 activity. The diagnosis with impairment variable equals 1 if the subject meets the diagnostic criteria and experienced a certain level of impairment in his/her life.<sup>3</sup>

## **IV. Differences between Groups**

T-tests for equality of means were conducted between the high-risk control and the low-risk normative samples for the year and month criteria counts for each disorder.

Mean criterion counts differed at the 0.05 significance level for the high-risk control and low-risk normative

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<sup>3</sup> Year 4 includes an alternative measure of impairment.

samples for the following disorders:

- Month: ADHD-Hyperactivity  
 ADHD-Inattention  
 ADHD-Combined  
 Eating Disorder
- Year: ADHD-Hyperactivity  
 ADHD-Inattention  
 ADHD-Combined  
 Oppositional Defiance Disorder

For all disorders except eating disorder, parents of the high-risk control sample reported that their children met more symptoms of a given disorder than did those of the low-risk normative sample. Parents of the low-risk normative sample reported that their children met more symptoms of eating disorder than did those of the high-risk control sample.

Comparison of Means for Normative and Control for Continuous Score Variables								
Variable		Normative		Control		DF	t Value	Pr >  t
		Mean	Std Dev	Mean	Std Dev			
ADHD-H: Month criterion count	cds13hcm	0.21	0.89	0.53	1.44	122	-2.00	0.05
ADHD-I: Month criterion count	cds13icm	0.33	1.12	0.75	1.67	127	-2.24	0.03
ADHD-Combined: Month criterion count	cds13zcm	0.54	1.84	1.28	2.65	130	-2.47	0.01
ADHD-H: Year criterion count	cds13hcy	0.25	0.95	0.76	1.53	122	-2.99	0.00
ADHD-I: Year criterion count	cds13icy	0.54	1.41	1.16	1.97	132	-2.78	0.01
ADHD-Combined: Year criterion count	cds13zcy	0.79	2.10	1.92	3.10	128	-3.24	0.00
Conduct Disorder: 6-month criterion count	cds13ccm	0.16	0.58	0.26	0.67	150	-1.20	0.23
Conduct Disorder: Year criterion count	cds13ccy	0.21	0.66	0.35	0.88	136	-1.44	0.15
Dysthymia: Month criterion count	cds13dcm	0.04	0.47	0.17	0.95	112	-1.29	0.20
Dysthymia: Year criterion count	cds13dcy	0.04	0.47	0.18	0.95	112	-1.39	0.17
Eating Disorder: Month criterion count	cds13ecm	0.23	0.43	0.13	0.33	222	2.31	0.02
Eating Disorder: Year criterion count	cds13ecy	0.14	0.35	0.12	0.35	171	0.56	0.57
GA Disorder: Month criterion count	cds13gcm	0.05	0.30	0.21	1.03	100	-1.53	0.13
GA Disorder: Year criterion count	cds13gcy	0.09	0.54	0.33	1.26	108	-1.74	0.08
Major Depression: Month criterion count	cds13rcm	0.10	0.61	0.22	0.91	130	-1.16	0.25
Major Depression: Year criterion count	cds13rcy	0.25	1.12	0.47	1.51	138	-1.30	0.20
OD Disorder: Month criterion count	cds13ocm	0.31	0.98	0.63	1.50	126	-1.91	0.06
OD Disorder: Year criterion count	cds13ocy	0.42	1.19	0.86	1.71	130	-2.32	0.02
PTSD: Month criterion count	cds13tcm	0.11	0.77	0.18	1.09	134	-0.59	0.55
PTSD: Year criterion count	cds13tcy	0.22	1.17	0.37	1.38	151	-0.90	0.37

Chi-Square tests of independence between the high-risk control and the low-risk normative sample were conducted for the year and month diagnosis and diagnosis plus impairment variables. The results for many of the tests, however, are questionable given the low frequency of diagnoses for many disorders. A test may not be valid if fewer than 5 respondents in a sample (normative or control) were expected to meet the diagnostic criteria (or the diagnosis plus impairment criteria). An \* indicates that fewer than 5 respondents in both samples were expected to meet the criteria, while an \*\* indicates that fewer than 5 respondents in one sample were expected to meet the criteria.

The hypothesis of independence between risk category (high-risk control and normative) and diagnosis was rejected at the 0.05 significance level for the following disorders:

- Month: ADHD-Inattention\*\*  
 ADHD-Any

GA Disorder  
OD Disorder

Year: GA Disorder  
OD Disorder

As expected, the students in the high-risk control group showed higher instances of diagnosis than the low-risk students in the normative sample.

The table below also includes the results for the indicators for diagnosis plus impairment.

Chi Square Test for Normative and Control for Dichotomous Scored Variables								
Variable		Percent Diagnosed		DF	N	Chi Square Statistic	P-value	
		Normative	Control					
ADHD-H: Month diagnosis	cds13hdm	0.00	0.01	1	322	2.47	0.12	*
ADHD-I: Month diagnosis	cds13idm	0.00	0.02	1	322	4.96	0.03	*
ADHD-Combined: Month diagnosis	cds13zdm	0.01	0.01	1	322	0.03	0.86	*
ADHD-Any: Month diagnosis	cds13ydm	0.01	0.04	1	322	4.25	0.04	*
ADHD-H: Year diagnosis	cds13hdy	0.00	0.01	1	322	2.47	0.12	*
ADHD-I: Year diagnosis	cds13idy	0.00	0.02	1	322	2.10	0.15	*
ADHD-Combined: Year diagnosis	cds13zdy	0.01	0.01	1	322	0.03	0.86	*
ADHD-Any: Year diagnosis	cds13ydy	0.02	0.04	1	322	1.78	0.18	**
Conduct Disorder: 6-month Diagnosis	cds13cdm	0.03	0.05	1	330	1.61	0.20	**
Conduct Disorder: 6-month impairment int1	cds13cim	0.02	0.05	1	331	2.29	0.13	**
Conduct Disorder: 6-month impairment int2	cds13cjm	0.01	0.05	1	331	4.58	0.03	**
Conduct Disorder: 6-month impairment severe	cds13ckm	0.02	0.05	1	331	2.29	0.13	**
Conduct Disorder: Year Diagnosis	cds13cdy	0.03	0.06	1	330	2.83	0.09	**
Conduct Disorder: Year impairment int1	cds13ciy	0.02	0.06	1	331	3.71	0.05	**
Conduct Disorder: Year impairment int2	cds13cyj	0.01	0.06	1	331	6.52	0.01	**
Conduct Disorder: Year impairment severe	cds13cky	0.02	0.06	1	331	3.71	0.05	**
Dysthymia: Month diagnosis	cds13ddm	0.00	0.00	-	329	-	-	
Dysthymia: Month impairment int1	cds13dim	0.00	0.00	-	329	-	-	
Dysthymia: Month impairment int2	cds13djm	0.00	0.00	-	329	-	-	
Dysthymia: Month impairment severe	cds13dkm	0.00	0.00	-	329	-	-	
Dysthymia: Year diagnosis	cds13ddy	0.00	0.00	-	329	-	-	
Dysthymia: Year impairment int1	cds13diy	0.00	0.00	-	329	-	-	
Dysthymia: Year impairment int2	cds13djy	0.00	0.00	-	329	-	-	
Dysthymia: Year impairment severe	cds13dky	0.00	0.00	-	329	-	-	
Eating Disorder: Month diagnosis	cds13edm	0.00	0.00	-	331	-	-	
Eating Disorder: Month impairment int1	cds13eim	0.00	0.00	-	331	-	-	
Eating Disorder: Month impairment int2	cds13ejm	0.00	0.00	-	331	-	-	
Eating Disorder: Month impairment severe	cds13ekm	0.00	0.00	-	331	-	-	
Eating Disorder: Year diagnosis	cds13edy	0.00	0.00	-	331	-	-	
Eating Disorder: Year impairment int1	cds13eiy	0.00	0.00	-	331	-	-	
Eating Disorder: Year impairment int2	cds13ejy	0.00	0.00	-	331	-	-	
Eating Disorder: Year impairment severe	cds13eky	0.00	0.00	-	331	-	-	
GA Disorder: Month Diagnosis	cds13gdm	0.00	0.02	1	331	5.00	0.03	*
GA Disorder: Month impairment int1	cds13gim	0.00	0.02	1	331	5.00	0.03	*
GA Disorder: Month impairment int2	cds13gjm	0.00	0.02	1	331	5.00	0.03	*
GA Disorder: Month impairment severe	cds13gkm	0.00	0.01	1	331	2.49	0.11	*
GA Disorder: Year Diagnosis	cds13gdy	0.00	0.04	1	331	10.06	0.00	*
GA Disorder: Year impairment int1	cds13giy	0.00	0.04	1	331	10.06	0.00	*
GA Disorder: Year impairment int2	cds13g jy	0.00	0.03	1	331	7.52	0.01	*
GA Disorder: Year impairment severe	cds13gky	0.00	0.03	1	331	7.52	0.01	*

Major Depression: Month Diagnosis	cds13rdm	0.01	0.01	1	329	0.03	0.86	*
Major Depression: Month impairment int1	cds13rim	0.01	0.01	1	330	0.03	0.86	*
Major Depression: Month impairment int2	cds13rjm	0.01	0.01	1	330	0.03	0.86	*
Major Depression: Month impairment severe	cds13rkm	0.01	0.01	1	330	0.03	0.86	*
Major Depression: Year Diagnosis	cds13rdy	0.02	0.05	1	329	2.24	0.13	**
Major Depression: Year impairment int1	cds13riy	0.02	0.04	1	330	1.11	0.29	**
Major Depression: Year impairment int2	cds13rjy	0.02	0.04	1	330	1.80	0.18	**
Major Depression: Year impairment severe	cds13rky	0.02	0.03	1	330	0.30	0.58	**
OD Disorder: Month Diagnosis	cds13odm	0.03	0.09	1	330	4.76	0.03	**
OD Disorder: Month impairment int1	cds13oim	0.03	0.07	1	331	3.24	0.07	**
OD Disorder: Month impairment int2	cds13ojm	0.02	0.07	1	331	6.79	0.01	**
OD Disorder: Month impairment severe	cds13okm	0.02	0.05	1	331	3.26	0.07	**
OD Disorder: Year Diagnosis	cds13ody	0.05	0.11	1	330	4.03	0.04	
OD Disorder: Year impairment int1	cds13oiy	0.05	0.09	1	331	2.76	0.10	
OD Disorder: Year impairment int2	cds13ojy	0.03	0.08	1	331	3.73	0.05	**
OD Disorder: Year impairment severe	cds13oky	0.03	0.06	1	331	2.01	0.16	**
PTSD: Month diagnosis	cds13tdm	0.00	0.00	-	331	-	-	
PTSD: Month impairment int1	cds13tim	0.00	0.00	-	331	-	-	
PTSD: Month impairment int2	cds13tjm	0.00	0.00	-	331	-	-	
PTSD: Month impairment severe	cds13tkm	0.00	0.00	-	331	-	-	
PTSD: Year diagnosis	cds13tdy	0.01	0.00	1	331	0.81	0.37	*
PTSD: Year impairment int1	cds13tiy	0.00	0.00	1	331	0.40	0.53	*
PTSD: Year impairment int2	cds13tij	0.00	0.00	1	331	0.40	0.53	*
PTSD: Year impairment severe	cds13tky	0.00	0.00	1	331	0.40	0.53	*

## V. Recommendations for Use

It is recommended that the analyst use categorical-type analyses when examining diagnosis and diagnosis plus impairment variables and continuous-type analyses for criterion count variables. Analysts should refer to the numerous previous studies that have used the CDISC for examples of methods used to analyze these data.

Analysts should also examine how many participants met diagnostic criteria (or diagnosis plus impairment criteria) before generating descriptive statistics or using outcomes in statistical models. In general, most items will have a high frequency of participants who did not meet criteria (i.e., zeros), so examination of individual response distributions is highly advised.