CIDI-based Screening Scale for Bipolar Spectrum Disorders - Overview

Version 3.0 of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI) was validated as being capable of generating conservative diagnoses of both threshold and sub-threshold bipolar disorder. The CIDI Version 3.0 is a fully structured lay-administered diagnostic interview. DSM-IV criteria are used to define mania, hypomania, and major depressive episode. The referenced article states that for the purposes of the paper, bipolar spectrum was defined as a lifetime history of BP-I, BP-II or sub-threshold bipolar disorder. The results reported suggest that the prevalence of DSM-IV bipolar spectrum disorder is at least 4.0%[1].

In this published study, CIDI–based Bipolar Disorder screening scales were also evaluated. Evaluation of the sensitivity and positive predictive value showed that the CIDI screening scales met the desired requirement of detecting a high proportion of true cases while minimizing the number of false positives.

Clinical Utility

This is a clinician administered screening tool:

- The CIDI-based screening scale is capable of identifying both threshold and sub-threshold bipolar disorder with good accuracy.
- The scale detected between 67-96% of true cases.
- This compares very favorably with the widely-used MDQ screening scale for bipolar disorder, which was found in one study to detect only 28% of true cases in a general population sample, although higher sensitivity (58-73) has been reported in 3 studies using the MDQ in out-patient populations with depression.

Scoring

Scoring information is provided on the following two pages.

Psychometric Properties

- The positive predictive value (PPV) indicates that the proportion of true cases among the screened positives varies across populations as a function of prevalence. PPV may be high in general medical samples and considerably higher in specialty mental health outpatient samples.
- Estimates of PPV have been generated for a number of important sub-populations (e.g. primary care users weighted by number of visits in the past year; low-income residents of urban areas, etc.) and are posted on the NCS web site (www.hcp.med.harvard.edu/ncs/bpdscreen); PPV for 3 populations are provided, for reference, on the second page of the Scoring document.

1. Kessler RC, et al; *Validity of the assessment of bipolar disorder in the WHO composite international diagnostic interview; Journal of Affective Disorders 96 (2006) 259-269*

CIDI 3.0 Bipolar Screening Scales Scoring

The complete set of 12 Questions takes approximately three minutes to complete.

The Scale has 12 Questions

Note: To "endorse" = Answer "yes", in a yes-no response

2 Stem Questions: Question 1 & 2

Respondents who fail to endorse either of these first two questions are skipped out of the remainder of the question series.

1 Criterion B Screening Question: Question 3

- Respondents who fail to endorse this question after endorsing one of the first two stem questions (above) are skipped out of the remainder of the question series.
- Respondents who do endorse this question are then administered the 9 additional symptom questions.

Note: In a general population *sample, it can be expected that as many as 90% of the sample will skip out by the end of this third question.*

9 Criterion B Symptom Questions

- Each of the 9 symptom questions are administered

Note: the first question in this group is asked only if the first Stem Question (above) is endorsed, if this scenario occurs, then only the 8 remaining symptom questions would be administered.

- Based on positive endorsement of the 9 (or 8) questions in this category, the proportion of screened positives that are true cases are indicated in the tables on the following page. Again, positive predictive values vary across populations as a function of prevalence.

    However, the author has indicated that scores may be collapsed for reference purposes, if desired, as follows:
    - Very high risk (80% or more)   9 questions with positive endorsement
    - High risk (50-79%)   7-8 questions with positive endorsement
    - Moderate risk (25-49%)   6 questions with positive endorsement
    - Low risk (5-24%)   5 questions with positive endorsement
    - Very low risk (less than 5%)   0-4 questions with positive endorsement

Diagnoses based on the screening scales have excellent concordance with diagnoses based on the full WHO Composite International Diagnostic Interview (CIDI 3.0). CIDI Diagnoses, in turn, have excellent concordance with clinical diagnoses based on blinded SCID clinical appraisal interviews.

CIDI 3.0 Bipolar Screening Scales Scoring

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Positive Predictive Values in sub-populations for CIDI-based Screening Scales

Number of Questions Endorsed	For respondents who have seen a primary care physician at least 12 times in the year before the interview	For respondents who have seen a primary care physician at least once in the year before the interview	For respondents who have received specialty mental health treatment in the year before the interview.
0 Questions = Y	PPV = 0.0	PPV = 0.2	PPV = 0.0
1 Question = Y	PPV = 0.0	PPV = 0.2	PPV = 0.0
2 Questions = Y	PPV = 0.0	PPV = 0.2	PPV = 0.0
3 Questions = Y	PPV = 3.6	PPV = 3.0	PPV = 10.4
4 Questions = Y	PPV = 3.6	PPV = 3.0	PPV = 10.4
5 Questions = Y	PPV = 17.0	PPV = 20.8	PPV = 39.0
6 Questions = Y	PPV = 33.4	PPV = 37.2	PPV = 39.0
7 Questions = Y	PPV = 52.6	PPV = 50.2	PPV = 55.2
8 Questions = Y	PPV = 54.9	PPV = 53.7	PPV = 71.0
9 Questions = Y	**PPV = 100.0**	**PPV = 84.3**	**PPV = 88.2**
	AUC = .865	**AUC = .854**	**AUC = .800**

PPV = Positive Predictive Value: The proportion of screened positives that are true cases (of bipolar disorder for this scale)

*AUC = **A**rea **U**nder the Receiver Operating Characteristic **C**urve; the area measures discrimination, that is, the ability of the test to correctly classify those with and without the condition. [0.90-1 = Excellent; 0.80-0.90 = Good; 0.70-0.80 = Fair; 0.60-0.70 = Poor]*

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CIDI-based Bipolar Disorder Screening Scale

Stem Questions

Euphoria Stem Question

1. Some people have periods lasting several days when they feel much more excited and full of energy than usual. Their minds go too fast. They talk a lot. They are very restless or unable to sit still and they sometimes do things that are unusual for them, such as driving too fast or spending too much money.
   Have you ever had a period like this lasting several days or longer?
   > *If this question is endorsed, the next question (the irritability stem question) is skipped and the respondent goes directly to the Criterion B screening question*

Irritability Stem Question

2. Have you ever had a period lasting several days or longer when most of the time you were so irritable or grouchy that you either started arguments, shouted at people or hit people?

Criterion B Screening Question

3. People who have episodes like this often have changes in their thinking and behavior at the same time, like being more talkative, needing very little sleep, being very restless, going on buying sprees, and behaving in many ways they would normally think inappropriate.
   Did you ever have any of these changes during your episodes of being excited and full of energy or very irritable or grouchy?

Criterion B Symptom Questions

Think of an episode when you had the largest number of changes like these at the same time. During that episode, which of the following changes did you experience?

1. Were you so irritable that you either started arguments, shouted at people, or hit people?
   > *This first symptom question is asked only if the euphoria stem question (#1 above) is endorsed*
2. Did you become so restless or fidgety that you paced up and down or couldn't stand still?
3. Did you do anything else that wasn't usual for you—like talking about things you would normally keep private, or acting in ways that you would usually find embarrassing?
4. Did you try to do things that were impossible to do, like taking on large amounts of work?
5. Did you constantly keep changing your plans or activities?
6. Did you find it hard to keep your mind on what you were doing?
7. Did your thoughts seem to jump from one thing to another or race through your head so fast you couldn't keep track of them?
8. Did you sleep far less than usual and still not get tired or sleepy?
9. Did you spend so much more money than usual that it caused you to have financial trouble?

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