

Outcome Measure	Children's Depression Scale (CDS)
Sensitivity to Change	Yes
Population	Paediatrics
Domain	Psychological Status
Type of Measure	Parent-report, self-report, practitioner-report, teacher-report
ICF-Code/s	B1
Description	<p>The Children's Depressive Scale (CDS) is a box and card-sort questionnaire, with 66 items displayed on colour-coded cards, and 5 response boxes ranging from 'Very Wrong' to 'Very Right'. The 66 items are divided into 48 depressive items and 18 positive items, yielding 2 main scales and 6 sub-scales.</p> <p>The CDS was devised for use with children and adolescents ranging in age from 9-16 years old, and purports to measure depression in children, as well as providing sub-scales of depressive symptomatology. The different sub-scales of the CDS were developed according to definitions of childhood depression in the mid-1970's (Lang & Tisher, 1978).</p> <p>The Second Research Edition contains a revised format for parents, siblings, teachers, or significant others, namely a paper and pencil questionnaire, and rephrasing of questions from 'I' to 'He / She' (Lang & Tisher, 1983). The CDS can also be used with younger or learning disabled children, with the clinician reading out items as necessary (Lang & Tisher, 1983).</p> <p>The CDS yields two main scales, namely the <u>Depressive scale</u> and the <u>Positive scale</u>. The Depressive scale is composed of 5 sub-scales and miscellaneous depressive items, whereas the Positive scale is composed of 1 sub-scale and miscellaneous positive items. The sub-scales are posited as follows:</p> <p>Depressive sub-scales (D):</p> <ol style="list-style-type: none"> 1) Affective Response – AR (feeling, state, mood of respondent – 8 items) 2) Social Problems – SP (social interaction, loneliness, isolation – 8 items) 3) Self-Esteem – SE (attitudes and concepts in relation to own worth and value – 8 items) 4) Preoccupation with Sickness and Death – SD (7 items)

- 5) Guilt – GL (self-blame – 8 items)
- 6) Miscellaneous D Items – MD (9 items)

Positive sub-scales (P):

- 1) Pleasure and Enjoyment – PE (fun, enjoyment, happiness – 8 items)
- 2) Miscellaneous P Items – MP (10 items)

In addition to the card sort for use with the child or young person, four separate questionnaires are also available.

Parent Questionnaire:

Separate forms for boys and girls. Allows for others to report on the child's behaviour and feelings. It is intended for use with parents to yield another index of the child's depression or wellbeing.

Teacher Questionnaire:

Allows for teachers' assessments of how a child is functioning. Teachers have the opportunity to observe children in a different social context, with awareness of the child's intellectual functioning as well as social interactions outside the family and with different groups of children.

Health Practitioner Questionnaire:

Asks health practitioners a structured set of questions to assist in clarifying the presence and level of depression.

The test was originally designed for English-speaking American children, aged eight-years-old or older. Skills needed for taking the test are the lowest levels of reading and vocabulary comprehension, therefore it is suitable for children aged six-years-old or older. The test is generally administered to children and youth between the ages of 7-17. The CDI has been translated into many languages, and has been administered to children worldwide.

The CDI manual includes comprehensive information about psychometric, norms, and item development. Many relevant charts are also included in the manual relating to reliability, constructs, and other areas. Descriptions of CDI's scales are also provided, including examples of sample tests, along with associated tables of data and information. The directions for administration of the CDI are clear and easy to follow. Information and directions about scoring the CDI, as well as the length of time it takes individuals to complete the CDI, are clear, detailed, and easy to understand.

The 27 items of the CDI are grouped into five factor areas, including 'Negative Mood,' 'Interpersonal Problems,' 'Ineffectiveness,' 'Anhedonia,' and 'Negative Self Esteem.' The 27 items include statements related to the following areas: sadness, pessimism, self-deprecation, anhedonia, misbehaviour, pessimistic worrying, self-hate, self-blame, suicidal ideation,

	<p>crying spells, irritability, reduced social interest, indecisiveness, negative body image, school-work difficulty, sleep disturbance, fatigue, reduced appetite, somatic concerns, loneliness, school dislike, lack of friends, school performance decrement, self-depreciation (via peer comparison), feeling unloved, disobedience, and fighting.</p> <p>The CDI is an objective and empirical test. Individuals can score 0-54 on the CDI, with those results being converted to T-scores. A cut-off score of 19-20 is generally accepted on the CDI, but is not an absolute. Studies of the CDI have reported lower cut-off scores; therefore, individual cases must be taken into consideration. Additionally, the CDI was designed for individual rather than group administration. A score of 36 or higher on the CDI is generally accepted to reflect a person who has relatively severe depression.</p>
<p>Properties</p>	<p>CONTENT</p> <p>The CDS is a reliable and valid instrument for assessing and treating depression in young people across diverse cultures. This fully revised third edition includes a shortened scale of 50 items to use with children and their parents, and two new 10-item questionnaires for teachers and health practitioners. The CDS covers two scales: Depression and Pleasure. The revised report form provides an excellent means of gathering information from multiple informants, allowing users to summarise and compare responses of children and a variety of adult respondents. The Children's Depression Scale can be used by suitably qualified psychologists, counsellors and medical practitioners.</p> <p>TIME</p> <p>The time it generally takes for an individual to complete the CDI is 15 minutes or less, while scoring time is 5–10 minutes.</p> <p>SCORING</p> <p>The examiner is required to remove the cards from the boxes, and score them accordingly:</p> <p style="text-align: center;"> Very Wrong = 1 Wrong = 2 Don't Know/Not Sure = 3 Right = 4 Very Right = 5 </p> <p>These scores are then transferred to the record form, where items are reproduced in numerical order. Cooperative scoring with the child may also be useful as a clinical tool.</p> <p>Scores for each sub-scale are added together to provide the sub-scale scores, with raw scores entered on the front page of the record form. The Total D score is obtained by adding the five D scales and miscellaneous D, and the Total P score is obtained by adding the PE sub-scale to the miscellaneous P items. On the front of the record form, two tables of deciles are provided, one for children and one for parents. Deciles are presented as 'Normal' scores, and lines can be drawn to produce profiles of depression if necessary. Corresponding decile scores are provided on the form, with deciles ≥ 8 being regarded as significant and indicative of</p>

depressive symptomatology.

PSYCHOMETRIC PROPERTIES

As a norm-referenced test, the CDI was normed with public school students. The standardisation sample included the "responses of 1,266 : Florida public school students in grades 2 through 8," including 674 girls aged 7–16 and 592 boys aged 7–15. Individual data on the test-takers' ethnicity or race are unavailable. Based on the total demographics of the school districts that were sampled, however, approximately "77% of the children were Caucasian and 23% were African American or Black, American Indian, or Hispanic." "The population was largely middle class, although a wide range of socio-economic backgrounds were included." Further, about 20% of the respondents came from single-parent families.

Reliability

Split Half/Cronbach's Alpha

Internal consistency for the CDS is reportedly high, ranging from 0.82 to 0.97, depending on the age of the sample, and the person completing the questionnaire. Lang & Tisher (1983) analysed 226 children record forms, reporting an alpha coefficient of 0.96. The total raw scores have yielded alpha scores of 0.92 (Tonkin & Hudson, 1981; cited in Tisher, Lang-Takac & Lang, 1992) to 0.94, with a Guttman split-half coefficient of 0.90 (Bath & Middleton, 1985). Rotundo & Hensley (1985) reported an alpha of 0.97 for the child D score, and 0.96 for the parent D score. Knight, Hensley, & Waters (1988) reported coefficients for the child D score = 0.94, child P score = 0.82, parent D score = 0.95 and parent P score = 0.82 in a prepubertal sample. Kazdin (1987) reported similar results with psychiatric inpatients, with a child D score = 0.94, child P score = 0.85, parent D score = 0.92 and parent P score = 0.84.

Reynolds (1994) suggested that high internal consistency of the CDS could be expected due to the large numbers of items on the scale. Patton & Burnett (1993) stated that the high levels of alpha for the CDS might be indicative of significant item redundancy.

Test-retest Reliability

Tonkin & Hudson (1981; cited in Tisher et al., 1992) administered the CDS twice to their subjects (9-13 year old Australian children), within a period of 7-10 days, reporting a correlation of 0.74. However, no other test-retest analyses have been completed with the CDS (Costello & Angold, 1988).

Alternate Form and Inter-rater Reliability

The CDS does not provide an alternate form measure, aside from the possibility that the Children and Parent forms may be analysed as alternate forms (Lang & Tisher, 1983). However, the significant differences between child self-reports and parental reports of depression in children suggest

that these reports are not particularly compatible (Tisher et al, 1992). Coefficients for alternate or inter-rater reliability are not reported in the numerous research studies for the CDS (Costello & Angold, 1988).

Validity

Criterion (Predictive) Validity

Lang & Tisher (1983) highlighted the difficulties in selecting appropriate criteria for childhood depression, as measures did not exist prior to the CDS, and there was incomplete agreement regarding the meaning of 'childhood depression' (Kovacs, 1977). Initially, Lang & Tisher (1983) utilised the relationship of scores of the same persons, and relationship to other measures. Hence, the IPAT (Personality Assessment) was used as a predictor of childhood depression, based on empirical and theoretical literature regarding correlations between depression and personality factor scores. The CDS demonstrated significant correlations with many of the personality factors associated with depression (Lang & Tisher, 1983). Significant correlations ($p < .001$) were also reported with regard to psychiatric diagnoses, obtained by experienced clinicians who knew the subject via detailed case histories and discussion with colleagues (Lang & Tisher, 1983).

Rotundo & Hensley (1985), in a teenage sample of one control and three experimental groups, reported that the CDS discriminated significantly between normal vs clinical groups, depressed vs other clinical diagnoses, and sad vs non-sad children. Kazdin (1987) also reported significant discrimination between depressed and non-depressed clinical children on the CDS, with Knight et al. (1988) demonstrating that depressed children endorsed more items on the CDS than non-depressed children.

Costello & Angold (1988) suggest that criterion validity is strongly related to the ability of a measure to screen for 'cases' of depressive disorder in children. In this regard, there are no studies that give a measure of 'screening efficiency' for the CDS, possibly due to the lack of clarity regarding depressive symptoms in children (Costello & Angold, 1988). Tisher et al. (1992) concede that the parent form of the CDS is not as predictive as the child version, hypothesising that parents may be less willing to accept depression in their children. However, Tisher et al. (1992) concluded that the CDS has good criterion validity across a range of studies, which seems an accurate assessment of the literature.

Content Validity

Lang & Tisher (1983) cited three main sources of content validity for the CDS. Firstly, that the CDS items were developed from the 'universe of knowledge' regarding childhood depression at the time. Secondly, a pilot study was performed with a group of depressed clinic patients, who stated

that the items of the CDS validated their depressive feelings, and suggested modifications to specific items. Finally, independent judges (7 child psychiatrists) rated 53% of CDS items to be consistent with depression, in comparison to separate items measuring anxiety. Tisher & Lang (1983) also cited many references in the literature regarding the 'universe of knowledge' that led to the development of specific sub-scales and items.

Bath & Middleton (1985) suggested that 10 of the 66 items should be dropped, as they displayed correlations <0.30 with the total score, whereas Rotundo & Hensley (1985) found negative loadings for 4 specific items, recommending that they also be dispensed with. Tisher et al. (1992) highlighted that the CDS was based on DSM-III definitions of childhood depression, and that further development of item construction needed to occur.

Interestingly, Costello & Angold (1988) warn that content and criterion-related validity may be opposing factors in measures of childhood depression, suggesting that the CDS is more of a 'symptom checklist' (content validity), rather than a screening device for 'cases' of depression (criterion validity).

Construct Validity

Lang & Tisher (1983) emphasised that the Depressive scale and Positive scale correlated well negatively ($r=0.53$), with both discriminating between experimental and control groups. On all the scales and sub-scales, depressed children obtained the highest scores, normal children obtained the lowest scores, and clinical children scored between these groups as expected, providing a 'clear statement of support for the construct validity of the CDS' (Lang & Tisher, 1983). Factor analyses demonstrated strong support for a general 'D' factor, with most items showing acceptable levels of loading on the general factor (56 items $> .04$). Lang & Tisher (1983) also reported that 35/48 'D' items discriminated between depressed and normal children, and that 11/18 'P' items also discriminated between depressed and normal children, suggesting that the CDS measures a relatively homogeneous property.

However, the 6 sub-scales of the CDS are not well supported in the literature, with many and varied factors reported within the overall scores. Bath & Middleton (1985) found 9 different factors accounting for the variance, with little correspondence to the sub-scales identified by Lang & Tisher (1978). Rotundo & Hensley (1985) found a 13-factor solution to the CDS, again displaying little support for the sub-scales presented in the CDS. The Dutch version of the CDS has constructed four sub-scales, namely Listlessness, Lability, Guilt, and Positive (Tisher et al., 1992). Patton & Burnett (1993) presented a revised CDS based on four distinct factors, namely Loneliness/Death, School related depression, Positive Self-Esteem,

	<p>and Self-Downing.</p> <p>The variability of the sub-scale factors prompted Tisher et al. (1992) to conclude that the sub-scales of the CDS in their current form need to be reviewed, due to the lack of empirical support. However, they maintain that the scales are still reportedly useful in a clinical, qualitative, or descriptive context (Tisher et al., 1992). By far the strongest feature of the CDS appears to be the 'D' score (Reynolds, 1994), suggesting that this should be the primary clinical score for the CDS.</p> <p><u>Convergent Validity</u></p> <p>The CDS has been compared to several different measures in the literature, with the Childrens Depression Inventory (CDI) prominent. Comparisons of the CDS and CDI have yielded correlations of 0.48 (Kazdin, 1987), 0.76 (Knight et al, 1988), and 0.84 (Rotundo & Hensley, 1985). The latter study used an adolescent sample, as opposed to prepubertal children, which may account for the higher correlation reported. Lang & Tisher (1978) demonstrated high correlations with the IPAT and EPQ personality questionnaires related to depression. Kazdin (1987) reported significant correlations with the Bellevue Index of Depression – Revised (0.51), Hopelessness Scale (0.38), Child Behaviour Check-list (0.57), and Self-Esteem Inventory (-0.69). Rotundo & Hensley (1985) also correlated sub-scale scores with therapist ratings of child functioning in six areas, reporting significant correlations in all areas. Tisher et al. (1992) concluded that the CDS correlates highly with other measures of depression, implying good convergent validity.</p> <p><u>Discriminant Validity</u></p> <p>Whilst the CDS is able to discriminate between depressed and non-depressed children, there may be a high false positive rate of up to 25% (Knight et al., 1988). Tisher et al. (1992) suggested that further research was warranted due to high correlations with self-esteem and self-concept scales, with the concern that they may be measuring similar constructs.</p>
Advantages	<ol style="list-style-type: none"> 1) The scale has a game-like quality which facilitates the children's ability to communicate more fully their experience. 2) This scale has been extensively used in many countries to research depression in children, and has been translated into several different languages, including Spanish, Italian, Dutch, Japanese, Hindu and Arabic.
Disadvantages	<ol style="list-style-type: none"> 1) CDI factorial structure and internal consistency have variations in differing juvenile cohorts. 2) The CDI tends to reflect a greater number of false negatives than false positives. 3) As with any test, the CDI is not perfectly valid. It is possible for test-takers of the CDI to "fake good." 4) Individuals who take the CDI whose reading level is not age-

	<p>appropriate may have difficulty with it, and therefore, their results may be incorrect.</p> <ol style="list-style-type: none"> 5) It is important to account for and consider additional information about the individual rather than solely-using CDI test scores on which to base decisions. 6) A variety of individuals may administer the CDI, however, as a caution and for ethical purposes, only those professionals who are trained to interpret assessments should do so.
Additional Information	<ol style="list-style-type: none"> 1) The CDS is used by clinicians for therapy as well as assessment. In counselling and psychotherapy the CDS helps children acknowledge their sadness or depression. 2) It is also used in family therapy to help children and parents talk to each other about their feelings. <p>SPECIAL CONSIDERATIONS</p> <ol style="list-style-type: none"> 1) Most research on the CDI has been conducted with Caucasian participants of middle to lower class socio-economic status throughout the world. The CDI can be given to children and youth across cultures, though its "internal consistency and factorial structure vary somewhat in different juvenile cohorts." Kovacs and other researchers have reported obtaining higher CDI scores for African-Americans (particularly boys), Japanese (substantially higher), Hispanic (significantly higher), and Egyptian individuals when compared to Caucasians. 2) Additionally, test scores for older children (aged 13 years old or older) tend to be higher than those of younger children (under 12 years old), though the difference is small and not significant. This is explained with the consideration of the development and maturation of children at this age level, with changes occurring in brain structure occurring at these ages. One study, however, reported that the CDI scores of younger (aged 6–11) children were higher than those of older (aged 12–18) children. 3) In an analysis of interview data of children who are diabetic, CDI score results may mimic those of having depressive symptoms. However, important to keep in mind is that diabetes "elicits noticeable emotional upheaval (mostly in the depressive symptoms domain) that nonetheless resolves in about six months." 4) CDI test data is "sensitive to changes in independently determined psychiatric diagnostic status." Test data also reflects that the test is sensitive to changes over time in depressive symptoms. There are main effects in the constructs of 'Interpersonal Problems,' 'Ineffectiveness,' and 'Anhedonia' between boys and girls. Girls scored higher than boys on these constructs, based on Kovacs'

	<p>studies performed on the CDI as of 1992, reflecting that girls had a tendency for having greater distress in these areas. While some studies have reported significant differences between CDI scores of girls and boys, and/or more depressive symptoms in girls than boys, other studies have found no significant differences. Yet other studies have reflected higher CDI scores for boys than girls, including those in single-parent families. Children of divorced parents were found to score significantly higher on the CDI than children of non-divorced parents.</p> <p>5) Additional studies have found significant differences in CDI scores of children who have experienced sexual abuse; and those who have Attention Deficit Disorder; or learning disabilities, in comparison with controls. Children who were rejected by their peers, when compared with controls, had significantly higher CDI scores in one study, but not in another when compared with children who were considered "average." Children of individuals who are substance abusers also scored significantly higher on the CDI than children of non-substance abusers.</p> <p>6) Another study researched levels of depression and self-esteem in gifted children, and found that boys were significantly more depressed than girls, based on their CDI scores. Further, obese children scored as being more depressed on the CDI than their non-obese counterparts in one study. Children who have Posttraumatic Stress Disorder (PTSD) and anxiety were more depressed, based on their CDI score results, than children who did not have PTSD or anxiety. Females, aged 12–17, who had attempted suicide scored significantly higher on the CDI than psychiatric controls; and girls who were repeat attempters of suicide scored higher on the CDI than first-time suicide attempters.</p> <p>7) A 2012 study researched the potential relationship between pediatric inflammatory bowel diseases (IBD), such as Crohn's disease and ulcerative colitis, and depressive symptoms. A significant positive correlation was found between IBD and somatic complaints that reflect depressive symptoms. Therefore, the researchers in this study stated that the CDI test item, "somatic complaints" could potentially be recognized as a sixth and separate factor on the test.</p>
Reviewers	<p>Vicki Anderson Cathy Catroppa</p>

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