ASSESSMENT OF DEPRESSION AND COGNITIVE BIAS

IN A SAMPLE OF

CLINICALIY DEPRESSED CHILDREN AND ADOLESCENTS

by

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AESTRACT

A review of the literature indicated that, although
controversial, children and adolescents can be reliably
diagnosed by unmodified adult criteria such as the Diagnostic
and Statistical Manual for Mental Disorders (3rd ed.) (DSM-III).
Validity studies employing the DSM-III criteria for depression
with children have found that for the most part, biological
markers, treatment response, course of illness and family
history parallel findings with adult depressions. Little
attention, however, has been given to the ability of the DSM-III
criteria to predict performances on self-report measures of
depression and on measures of related psychological constructs
such as cognitive bias.

This study therefore examined the convergent validity of
childhood depression measures by three independent methods,
psychiatric interview, self and parent report in 37 children and
adolescents. The psychiatric interview consisted of a DSM-III
diagnosis of depression and a severity rating. The self-reports
included the Childrens Depression Inventory (CDI) and the
Childrens Depression Scale (CDS) and two measures of cognitive
bias, a cognitive distortion measure and the Locus of Control
Scale for Children. The parent report consisted of ratings of
their child's depression on the CDS.

Results showed that as expected, the self-report measures,
the CDI and the CDS, were significantly correlated with each
other and with psychiatric ratings. Both the CDI and the CDS

could significantly discriminate the DSM-III depressed group from the nondepressed group. The CDI and the CDS were significantly correlated with the cognitive distortion scale and the locus of control scale. The cognitive distortion scale could significantly discriminate the depressed from the nondepressed children. The parent rated CDS, however, was not related to either psychiatric diagnosis or ratings or the self-report CDI. Parent ratings on the nondepressed measures could discriminate the nondepressed group from the depressed group.

These results were interpreted as supporting the validity of the depression and construct measures and suggests that childhood and adolescent depression share similar characteristics with adult depression. The further implication of these and other results are discussed.

ACKNOWLEDGMENTS

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A. Introduction

Childhood depression as a clinical entity has recently gained attention in the the psychological and psychiatric literature (e. g. Carlson & Strober, 1979; Kashani, Husain, Skekim, Hodges, Cytryn & McKnew, 1981; Lewis & Lewis, 1981; McKnew, Cytryn & Yahraes, 1983; Puig-Antich & Gittelman, 1982; Waller & Rush, 1983; Welner, 1978). Depression as a clinical syndrome analogous to that which occurs in adults was, for a long time, thought simply not to occur in children (Mahler, 1961; Rie, 1966). Recently, however, there are those who consider depression in children similar in most respects to adult depression (e. g., Weinberg, Rutman, Sullivan, Pinick & Dietz, 1973; McConville, Boag & Purahit, 1973) and those who argue that childhood depression is qualitatively different from adult depression in that depressive symptoms are not overtly expressed (Toolan, 1962, 1981; Lesse, 1981; Cytryn & McKnew, 1972).

The first view is the result of a collection of studies (see Kovacs & Beck, 1977 for a review) investigating the characteristics of childhood depression. While most of these studies include some equivalent of sad or dysphoric mood as a symptom, the correlated symptoms vary from study to study. Moreover, it is not clear which symptoms (including sad mood) are deemed essential for a diagnosis or which are age specific

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associated features.

The second view, sometimes referred to as the "masked" or "depressive equivalence" view, postulates that depression does not manifest itself in overt symptoms, rather it underlies or accounts for such expressed behaviours as conduct disorders, hyperactivity, enuresis and somatic complaints. The concept of masked depression has increasingly come into question for its heuristic value and clinical utility for diagnosis or assessment (Carlson & Cantwell, 1980a; Kovacs & Beck, 1977; Kashani, Husain et .al, 1981). These authors argue that since proof of depression is necessary in the diagnosis of depression and that many of the "masked" symptoms are nothing more than presenting complaints, the term "masked" is unnecessary.

Leftkowitz and Burton (1978) question the validity of the concept of a childhood depressive syndrome. The syndrome which clinicians observe, they state, is hard to distinguish from transient developmental depression in normal children. They cite studies suggesting that depression occurs at too high a rate in children to be significant. In other words, the depression which the clinician observes does not deviate significantly from dysphoria in normal children and therefore it does not represent a mental disorder. The authors challenge researchers to develop methods of measuring depression. If childhood depression exists, they argue, then it should ultimately be measurable.

Petti (1978) makes the cogent point that "hard facts are difficult to establish in a system so fluid as that of a

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developing child, 6 to 12 years old, where consensus regarding
even descriptive diagnosis remains unsatisfactory and
elusive"(p. 49). Nevertheless, there is growing consensus that
the clinical picture of depression in children can be found in a
way analogous to the way it is found in adults (Cantwell, 1981;
Kashani et .al, 1981; Kovacs & Beck, 1977; Cytryn & McKnew,
1980; Puig-Antich, 1980).

The Construct

The construct of depression as it exists in adults, refers
to a syndrome and a disorder and not just to the symptom of
dysphoric mood (Mendels, 1970; Becker, 1977). A syndrome is a
set of correlated symptoms and behaviours such as described by
the Diagnostic and Statistical Manual (DSM-III; American
Psychiatric Association, 1980) for a major depressive disorder
or by the Beck Depression Inventory (Beck, 1967). There is
general consensus that adult depression involves distinct
changes in the cognitive/subjective, the
physiological/vegatative and the overt behavioral dimensions of
functioning and experiencing (Kovacs & Beck, 1979). Feeling sad,
down in the dumps, hopeless, worthless and suicidal are
symptoms reflecting changes along the cognitive/subjective
dimension. Symptoms reflecting the physiological/vegatative
dimension include psychomotor retardation, sleep and weight
disturbances. Loss of interest in usual activities, social

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withdrawl and anhedoria are signs of the overt/behavioural dimension. The construct of depression is conjunctive in that symptoms are usually displayed on all three dimensions although any one of these symptoms can occur in non affective disorders.

Some authors (Cantwell & Carlson, 1979) feel the concept of a disorder implies more than than that of a syndrome. It includes the notion that there is a characteristic clinical picture, natural history, response to treatment and possible psychological and biological correlates. Many of these characteristics while not necessary or sufficient for a diagnosis of depression, are theoretically useful in distinguishing between major categories of mental disorders as well as subdisorders of affective illness (e. g. Akiskal, 1983). There is widespread acceptance, for example, of dividing affective disorders into bipolar and unipolar (also called major depressive disorder) disorders (Andreason, 1982; Schatzberg, 1978). Rather than grouping all severe forms of affective disorder under a single heading of manic-depressive illness as has been done in the past, the concensus is to seperate them on the basis of the occurrence of mania into two groups. Patients described as bipolar either exhibit maria or have a history of mania in addition to depressive episodes. Uniplolar patients exhibit only single or recurrent episodes of depression. The rationale for the distinction between bipolar and unipolar disorders, however, rests on many other supporting factors. Bipolar patients typically have an earlier onset, have a greater

tendency to be members of families in which successive generations of affective disorders are found, have a higher concordance rate for affective illness in monozygotic twins and have a better response to lithium carbonate than uniplor or major depressive disorder (Dupue & Monroe, 1978a).

A second major consensus has emerged on subtyping depressions into endogeneous forms. The term endogeneous or melancholia is used to describe a severe form of depression. The clinical features include extreme anhedonia, diurnal variation, early morning awakening, psychomotor retardation, anorexia, and excessive or inappropriate guilt. Several biological correlates have been found which distinguish endogenous from nonendogenous depressions including hypersecretion of cortisol and growth hormone response to various drugs (see Carroll, 1980).

Both the bipolar-unipolar distinction and the endogeneous subtyping were included in the final version of DSM-III criteria for major affective disorders. These criteria are a refinement of the Research Diagnostic Criteria (RDC; Spitzer, Endicott & Robins, 1978) which in turn were a modification of the Feighner criteria (Feighner, Robins, Guze, Woodruff, Winokur, & Monz, 1972).

Two main approaches are extant for classifying depression -categorical and dimensional (Kendell, 1976). Representing the categorical approach are most diagnostic criteria (e. g. DSM-III) which specify certain inclusion and exclusion criteria. The decision is discrete, either the person is depressed or is

not depressed. The dimensional approach, alternatively, does not employ mutually exclusive categories, rather a person is rated on a number of dimensions resulting in multiple ratings. Dimensions are composed of symptoms or behaviours which cluster together. These clusters or dimensions are usually defined by some multivariate statistical procedure such as factor analysis. The dimensional approach results in a profile of symptoms rather than a unitary diagnosis.

It does not follow that dimensional and categorical approaches to classification are incompatible. They certainly can be combined in useful ways to conceptualize psychopathology (e. g. Eysenck, 1970). The categorical approach, although based mainly on clinical observation and theoretical notions, does have support for its categories from empirical and mathematical methods (see MacFayden, 1975 for a review). More recently, Andreasen and Grove (1982) have found mathematically derived clusters that support the RDC and DSM-III major affective and subtype categories.

Achenbach (1980), however, asserts that a dimensional approach is well suited for investigations into childhood psychopathology and that there are too many differences between child and adult symptom expression to warrant the extension of adult procedures to children. He advocates an empirical approach to the defintion of childhood disorders, a position which does not make any assumptions about which symptoms will cluster together prior to investigating the phenomena.

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Based on a multidimensional approach, Achenbach collected ratings from parents on a variety symptoms in a group of disturbed children of all ages (n=2,500). Multivariate analysis revealed a robust depressed syndrome found among 6-to-11 year olds of both sexes and among 12-to-16 year-old girls. No depression factor emerged for boys 12-to-16 year old. Achenbach appears to accept the postion that a depressive syndrome does not occur for adolescent boys.

From a categorical viewpoint, various diverse systems (see Kovacs & Beck, 1977) have been proposed for classifying childhood depression among which the most prominent are the Cytryn and McKnew criteria (1972; 1974) and the Weinberg criteria (Weinberg, Rutman, Sullivan, Penick & Dietz, 1973). Cytryn and McKnew's classification describes three types of depression, acute, chronic and masked. The acute and chronic depressions include standard symptoms such as despair, helplessness, suicidal thoughts, weight and sleep disturbances as well as some non standard symptoms such as impairment of school and social performances. The masked depressive symptoms include hyperactivity, aggression, psychosomatic illness and delinquency among others. The Weinberg criteria requires both dysphoria and low self-esteem as essential criteria and any two of aggressive behaviour, change in school performance, change in school attitude, somatic complaints (i. e. pains & aches) and a number of standard symptoms such as fatigue, appetite changes, sleep disturbances and self-depreciation. More recently the

unmodified RDC and DSM-III criteria for affective disorders have also been proposed for diagnosing childhood depression (Cantwell & Carlson, 1979; Puig-Antich, 1980).

The position put forward in this thesis is that childhood depression can be subsumed under adult affective disorders and meet the same criteria with slight modifications reflecting developmental levels. This assertion implies that childhood depression can be measured in the same manner as the adult form using the interview (e. g. Spitzer et .al, 1978) and self-report inventories (e. g. Beck, 1967) . These measures have been quite successful in establishing the validity of adult depression and thus their extension to childhood should also prove worthwhile.

The Interview

Reliabilty

Typically adult diagnostic judgments are made on the basis of a psychiatric interview. The evaluation can be made without recourse to a formal structured interview, although the interviewer may consult a list of key diagnostic items, necessary, for making a diagnosis. Such lists may be quite broad or quite specific as exemplified by the operational criteria approach to defining mental disorders (e. g. Feighner et .al,

1972). The most prominent of the operational diagnostic criteria

is contained in DSM-III. Table 1 lists the specfic inclusion and

exclusion criteria for a major depressive episode.

Table 1.
DSM-III criteria for a Major Depressive Episode

Inclusion:
A. Either dysphoric mood or loss of interest or pleasure
    in all or almost all usual activities and pastimes.
B. At least four of the following symptoms must be present
    nearly every day for a period of at least two weeks.
    (1) Poor appetite or significant weight loss or
        increased appetite or significant weight gain
    (2) Insomnia or hypersomnia
    (3) Psychomotor agitation or retardation
    (4) Loss of interest or pleasure in usual activities
    (5) Loss of energy; fatigue
    (6) Feelings of worthlessness, self-reproach, or
        excessive or inappropriate guilt (either may be
        delusional)
    (7) Complaints or evidence of diminished ability to
        think or concentrate, such as slowed thinking, or
        indecisiveness not associated with marked loosening
        of associations or incoherence
    (8) Recurrent thoughts of death, suicidal ideation,
        wishes to be dead, or suicidal attempt
    Exclusion:
C. Neither of the following dominate the clinical picture
    when an affective syndrome is not present, that is,
    before it developed or after it has remitted.
    (1) Preocupation with mood-incongruent delusion or
        hallucination
    (2) Bizarre behaviour
D. Not superimposed on either schizophrenia,
    schizophreniform Disorder, or a paranoid Disorder.
E. Not due to any organic mental disorder or
    uncomplicated bereavement.

The most common procedure for determining reliability is

based on independent evaluations by two raters in a joint

interview. Usually one rater conducts the actual interview while the other merely observes. Another procedure, which is less common but which is a better measure of consistency, is to have two raters independently interview the same subject on two seperate occasions. This procedure is loosely referred to as test-retest reliabilty and tends to produce lower reliabilty than the joint interview method. In general, reliabilty refers to the extent to which the measure is consistent or stable (Cronbach, 1970). Interrater concordance is represented by the Kappa co-efficient. The Kappa statistic corrects for chance agreement between raters by considering the base rate or frequency of a particular disorder in the sample (Matarazzo, 1978).

In three studies reported by Spitzer et .al,(1978) joint interview and test-retest reliabilities for the Research Diagnostic Criteria (RDC) were examined. Using an unstructured interview format with the RDC criteria, the authors found the joint interview kappa coefficient to be quite high (K=.88) for the diagnosis of a major depressive disorder. In the second study reliabilty was increased by employing a structured interview, the Schedule for Affective Disorders and Schizophrenia (SADS, Endicott & Spitzer, 1978). The kappa coefficient for the major depressive disorder under this method increased to .90. Similarly, in the third study, the use of the SADS gave a test-retest kappa coefficient of .90 for the major depressive category. These reliabilities are some of the best

ever obtained for psychiatric diagnoses (See Matarazzo, 1978 for a review) and places the RDC based interview in acceptable psychometric reliablity ranges. In actual field trials, where raters are actually clinicians rather than researchers, the interrater reliabilities for the DSM-III category of affective disorders is lower than in controlled settings (K=.68 and K=.80; American Psychiatric Association, 1980). For research purposes, the DSM-III has satisfactory reliabilty and is virtually interchangable with the RDC criteria for a major depressive disorder.

While the preceeding method works well for adults, interview based assessments of disorders in children have traditionally relied heavily on parent and teacher ratings (Achenbach, 1980). More recently, researchers have placed the emphasis or information from the child himself when it comes to a specific diagnosis of childhood depression (Carlson & Cantwell, 1980a). In general, parents will provide information about chronological history and observable aspects of behaviour, whereas the child is the best source of information of subjective phenomenon and internal feeling states. With this rationale, researchers have systematically interviewed children in a way analagous to the adult interview (Cantwell & Carlson, 1979; Kashani, Labadibi & Jones, 1982).

Strober, Green and Carlson (1981a) investigated the reliability of the DSM-III in an adolescent population. Two experienced child pychiatrists interviewed 95 adolescents with

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the standard SADS and at least one relative was also interviewed. A DSM-III diagnosis was made, based on all available information including the ward observations, relative and child interviews. Major depressive disorder was diagnosed in 17 of the 95 consecutive admissions to a psychiatric inpatient setting. A joint interview kappa coefficient of .75 (p<.000) was obtained for the major affective category. This coefficient is comparable to that obtained for conduct disorders (k=.75) and childhood schizophrenia (k=.82). The authors conclude that the prevalence of depression is consistent with other studies (i. e. about 19%). They caution however, that although depression in juveniles is increasing, it remains to be seen if it is a valid diagnosis in terms of family history and predictive validity.

In a related study, Strober, Green and Carlson (1981b) reported that from 150 consecutive admissions to an adolescent inpatient psychiatric unit, 40 met the DSM-III criteria for a major depressive disorder. Interrater reliability coefficients for each of the SADS items were calculated. The reliability estimates ranged from .51 to .95 with 25 out of 30 items exceeding an r of .60. Moreover, they found a coefficient of .58 for the major subtypes of depression (e. g. psychotic and endogenous). The kappa coefficient for the psychotic subtype was .82 as compared to .87 in adult depressives and for the endogeneous subtype the Kappa was .74 compared to .80 found for adults. The authors note that only the endogenous and incapacitating subtypes occur more frequently in adults. These

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syndromal variants of major depressive disorder are rarely ascribed to adolescence and the reliabilities obtained suggests a far greater convergence with the phenomenology of adult depression than heretofore assumed.

In a third study Stober et .al (1981c) reported interjudge reliabilty of the DSM-III diagnosis as r=.91 for 15 depressed adolescents. Stober et .al have demonstrated that at least with adolescents 12-17, reliabilities for the DSM-III and SADS are comparable to the adult reliabilities. In addition, the identification of subtypes analogous to adult forms add to the validity of the diagnosis.

Kashani and his colleagues (Kashani, Cababidi & Jones, 1982) arrive at a diagnosis of major depression in children only if dysphoric mood or anhedonia are admitted by the child. Kashani et al., (1982) conducted reliability estimates for the DSM-III major depression in subgroup of 15 childern (6 to 18 years) who were consecutive admissions to a cardiology unit. Overall interrater reliabilty between two clinicians was 88%. Only one symptom from the major depression criteria had an agreement percentage less than 85% (psychomotor disturbance). Of the 100 consectutive admissions, 13 children met the criteria for a major depressive disorder. Kashani, Venizhi and Millar (1981) found that of a 100 selected children (7-12 years) admitted to a surgical ward, 23 met the criteria for a major depressive disorder as defined by the DSM-III. Joint interview reliabilty was 93% for 15 depressed cases. Out of a 100 children

of the same age who were consecutive admissions to a regular pediatric ward, however, only 7 met the DSM-III criteria for a major depressive disorder. Joint interview interrater reliability for the diagnosis of depression using the whole sample was 85% (Kashani, Barbero & Bolander, 1981).

These studies by Kashani and his colleagues did not take into account the frequency with which each symptom of major depression did or did not occur in the sample. Almost half of the children studied displayed some dysphoria and as such thus there was a 50% chance of agreeing on the presence of dysphoria. Percent aggreement does not reflect whether agreement was any greater than chance. Nevertheless these studies suggest that the unmodified adult DSM-III criteria can reliably diagnose major depression in prepubertal children.

To aid in reliably diagnosing depression in prepubertal children Puig-Antich and his colleagues have developed a children's version of the SADS, the Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS; Puigh-Antich, Perel, Lupatkin, Chambers, Shea, Tabrizi & Stiller, 1979). In the standard K-SADS method, the K-SADS is first administered to the parents and a severity rating on each symptom is made. The same clinician then interviews the child with the K-SADS and another series of ratings are made. Summary ratings from both the parent and child K-SADS are then recorded for each item and a RDC diagnosis is made. DSM-III criteria can be derived for major depression, minor depression, bipolar disorder,

schizophrenia, autisim, anorexia nervosa, attention deficit disorder, conduct disorder and several anxiety related disorders. Interrater reliability for the K-SADS major depression items range from .65 to .96 (Chambers, Puigh-Antich, & Tabrizi,1978) and test -retest reliabilities over two weeks for 54 major depressed children and 27 mixed other disorders averaged a kappa coefficient of .77 (Hirsch, Paez, Chambers, Davies, & Puigh-Artich, 1980). Kappa coefficients between parents and their children for each K-SADS major depression item exceeded .60. Low Kappas were reported for psychomotor retardation, suicidal ideation and guilt (Orvaschel, Puig-Antich, Chambers, Tabrizi & Johnson, 1982).

In a recent study, Orvaschel et al., (1982) investigated the ability of an alternate form of the K-SADS, the K-SADS-E, to diagnosis major depression in recovered depressed children. Follow up interviews were conducted on 17 children one year after the intial K-SADS diagnosis by a clinician blind to the original diagnosis. The sample selected included 4 children with an original diagnosis of no disorder, and the rest of the sample had original diagnoses of major depression with other concurrent diagnoses such as conduct disorder and seperation anxiety. Results showed that all but one child was given the same diagnosis after one year (K=.86). The authors concluded that prebupertal children can provide information on past behaviour and errors in under reporting are as likely to occur by the mothers as by the children.

In summary, there is support for the position that depression can be reliably diagnosed in both adolescents and prepubertal children and that the interview can be applied without modification of the adult criteria. Reliabilty of the interview is enhanced, like its adult counterpart, when it is structured and the criteria for depression operationally defined.

Validity

While the interview or any test can be reliable, it does not follow that it will be valid. Validity refers to the degree to which the test measures what it purports to measure. Basically, the question is whether predictions can be made based on the results of the test. A DSM-III diagnosis of major depression should, for example predict that upon discharge, that the diagnosis of depression has not changed into some other disorder. Thus, predictive validity can refer to the course of the disorder. The diagnosis should also predict recurrent episodes of depression. It should predict which patients have been similarly diagnosed by an alternate method (e. g. self-report measures). Construct validity refers to the meaning of the assessment scores in terms of psychological concepts or "constructs" (Cronbach, 1970). In general, all validity studies contribute to construct validity, in that the construct is supported of refuted over time by the accumulation of evidence whereas predictive validity refers to results of a single

experiment.

Content Validity

At issue is whether the RDC or DSM-III criteria for depression cover the domain of symptoms reported in empirical studies of depression in children. When the various symptom lists reported in the literature are compared to the adult criteria for depression (i. e. RDC), most of the adult symptoms occur in subadults. In reviewing eight studies, for example, Chiles Miller & Cox (1980) found dysphoric mood as a criterion in all the studies. The percentage of the studies reporting the other RDC criteria for adult depression was as follows: significant weight loss or gain (38%), hypersomnia or insomnia (88%), loss of energy (38%), Psychomotor agitation or retardation (38%), loss of interest in usual activities (50%), guilt feelings (63%), diminished ability to think (25%), suicidal ideation (50%). Thus it appears that the RDC or the DSM-III demonstrates content validity with respect to the literature on observed symptoms.

More specific comparisons have been reported for the Crytryn and McKnew criteria and the Weinberg criteria, which as previously noted are two alternate systems for diagnosing childhood depression. Crtryn, McKnew and Bunney (1980) re-examined the charts of 37 patients (6 to 12 years) originally diagnosed by the Crtyryn and McKnew criteria and rediagnosed these cases by DSM-III criteria. Of the 12 originally diagnosed

as acute, 11 were rediagnosed as major depression; of the 11 orginally diagnosed as chronic, 9 were rediagnosed as major depression. Moreover, of the 14 given a diagnosis of masked depression, 2 were rediagnosed as major depression. The authors concluded that there was more convergence between these two systems than previously thought. Carlson and Cantwell (1982a) compared the DSM-III diagnoses for affective disorder with the Weinberg criteria in 102 patients. The DSM-III identified 28 children as depressed whereas the Weinberg criteria indertified 38 as depressed. Sixteen met the Weinberg criteria but not the DSM-III and only 6 met the DSM-III but not the Weinberg criteria. When the group diagnosed by both the Weinberg and the DSM-III as depressed (n=22) were compared to those who met the Weinberg criteria but not the DSM-III (n=16), the former had significantly higher self-report levels of depression. Carlson and Cantwell are not surprized at the amount of convergence between these two systems since both were derived from the Feighner criteria.

Finally, Cytryn, Mcknew, Barko, Lamour and Hcmdivitt (1982) reported that although the Weinberg criteria identified more children as depressed when compared to the DSM-III criteria for Major depression, there was less difference when the DSM-III dysthymic cases were added to the major depressives. Both the DSM-III criteria for major and dysthymic disorder appear to account for most of the variance in the Weinberg criteria.

The more homogeneous a group, the more likely one can make predictive statements about their behaviour or a least te able to attribute hypothesized correlates to the most "pure" examples of the disorder in question. Alternatively, strict criteria may produce a well validated category which is narrowly defined but will exclude mary patients to a residual category. The residual category may be larger than the "pure" category thus compromising clincal utility (see Helzer, Brckington & Kendell, 1981).

Descriptive Validity

Some authors when referring specifically to diagnostic issues make use of the term descriptive validity to refer tc discriminative validity (Spitzer & Williams, 1980). Descriptive validity refers to the extent to which the characteristic features of the mental disorder are unique to that category relative to other mental disorders. The question is whether the joint occurance of features in a heterogeneous group is more common than by chance.

Carlson and Cantwell (1979; 1980a) selected a subsample of of 102 children (7 to 17 years) from among 210 randomly selected cases on the basis cf all those children and parents whc would agree to a second interview. Frcm the interview with the parents, information about current and past behaviours cf the child was obtained. The infcrmation from the child interview was

given a severity rating on a 5 point scale for each of the RDC items for affective disorders. In addition, a severity rating of depression was made on the assessment of non verbal behaviours observed during the interview and finally a global severity rating of depression was made. A final DSM-III diagnosis was made based on all availble information. Ninety-three of the 102 were given an axis I DSM-III final diagnosis; of these 28 were given the diagnosis of affective disorder, 23 of which met the criteria for a major depressive disorder. Only 12 of these had major depression as a primary diagnosis. The remaining had depressive diagnoses concomitant with behaviour disorders and anorexia nervosa (secondary depression).

The global severity ratings obtained from the child interview were used to predict the final diagnosis. Those with secondary depression obtained higher severity ratings than those with primary depression but this was not a significant difference. The global rating could, however discriminate the affective disorders as a group from the non affective group (p <.001). The non verbal ratings of depression could not distinguish between those with anorexia nervosa (with or without secondary depression) and those with affective disorders but could distinguish children with behaviour disorders (without depression) from the affective disorders.

Carlson & Cantwell (1980a) found that dysphoric mood occurred significantly more frequently in the affective disorders than in the non affective disorder group. This is not

surprising since presence of dysphoric mood is one of two required conditions (the other is anhedonia) for the diagnosis of major depression. Of the other symptoms of major depression only anhedonia, fatigue and suicidal ideation were significantly more frequent in the affective group. Of the non specific symptoms also measured, psychosomatic symptoms and hopelessness were also significantly more frequent in the affective group. When the RDC items for major depression obtained from the child interview were compared in the affective and non affective groups, the child, in addition, reported significantly more low self-esteem, insomnia and poor school performance (Carlson & Cantwell, 1979). In a later report Carlson and her colleagues (Hershberg, Carlson, Cantwell & Strober, 1982) compared the 28 with affective disorder to 14 with anxiety disorder. Similar results were found with dyphoric mood, anhedoria, low self-esteem and suicidal ideation occurring more frequently in the affective group. Somatic complaints were not found to be specfic to depression but were actually more frequent in the anxiety group. In addition, fatigue, weight and sleep disturbances were found with similar frequency. When anxiety related symptoms were compared, only one symptom occurred more frequently in the anxiety group (i. e. situation specfic anxiety). Thus although anxious children reported anxiety symptoms about as often as depressed children, the absence of depressive symptoms makes the anxiety more salient.

It is important that not only do depressed children show more depressed symptoms but they also must demonstrate less symptoms not purported to be part of the depressive syndrome. Using a matched control of various diagnostic groups, Strober et .al (1981b) compared the frequency of non affective behaviours which putatively mask or are considered depressive equivalents (e. g. school avoidance, drug problems, enuresis) in a group of adolescents who met RDC criteria for depression. They found that the depressive equivalents occurred significantly more often in the control group. Moreover, when these non affective behaviours did occur in the depressed group they tended not to antedate the onset of the depressive symptoms.

Kuperman and Stewart (1979) employing modified Feighner criteria requiring the presence of both low self-esteem and dysphoric mood as necessary conditions in the diagnosis, found 12 patients (7-16 years) who met the criteria from among 175 consecutive admissions. The authors found low self-esteem, low mood, social withdrawl and suicidal ideation significantly distinguished the depressed group from the total sample (including the depressed cases). The symptoms of fatigue and weight disturbances while present in the depressed group, were not consistently recorded in the non depresssed patients and thus could not not compared to the total sample.

In a population of juvenile delinquents, Chiles et .al (1980) found 28 subjects who met the RDC criteria for a major depressive disorder drawn from a randomly selected sample of 120

subjects. The comparison group was the 92 remaining juveniles, who did not differ from the depressed group on any demographic variables. Dysphoric mood, difficulty concentrating, anhedonia, fatigue, excessive guilt, suicidal ideation, psychomotor agitation and insomnia significantly distinguished the groups. Psychomotor retardation, hypersomnia, hyperphagia and weight or appetite change did not significantly distinguish depressed from non depressed. Notice should be taken that through the process of selection, children showing psychotic features were eliminated or more than likely were not admitted to a correctional centre in the first place. Thus severe depressions which tend to demonstrate more endogeneous disturbances were not measured. In addition these authors found that from a inclusive list of "depressive equivalent behaviours", there were remarkably few significant differences between those with a diagnosis of major depression and the remaining juveniles.

These studies consistently demonstrate that while dysphoric mood is common in non affective disorders, it occurs more frequently in the depressed groups. Of the other major depressive symptoms, only anhedonia and suicidal ideation were consistently discriminating and the least discriminating symptoms were psychomotor retardation and appetite changes. Discriminative validity was evidenced in that a diagnosis of depression was not related to a high frequency of masked or depressive equivalent behaviours such as delinquency or aggression; however depression was related to anxiety in those

diagnosed as depressed but depressive symptoms were not related
to those diagnosed as anxious.

The PDC or the DSM-III interview measures should also
predict those diagnosed by an alternate method such as
self-report. Self-report measures in turn, must also show
reliability and validity. The development of sound psychometric
self-report measures has done much to delineate the syndrome of
depression in adults and it now remains to examine the use of
self-report measures in childhood depression.

Self Report Scales

One of the most widely used and psychometrically sound
self-report instruments in assessing adult depression has been
the Beck Depression Inventory (BDI; Beck, 1967). The BDI is a 21
item measure of the severity of depression. These items reflect
21 manifestations of the depressive syndrome in adults,
including dysphoric mood, pessimism, sense of failure, crying
spells, self-dislike and many vegetative symptoms. Self-report
measures are designed to evaluate severity rather than diagnose
presence or absence of a disorder. Some disagreement has arisen
over this issue. Some, (Kazdin, 1981) believe that with a
cut-off score severity scores can act as diagnostic instruments,
whereas others, (e.g. Kovacs, 1980) state that these scales
should only be employed as severity measures (also see Dupue &
Monroe, 1978b).

In any event, the BDI has recently been applied unmodified to a group of 78 adolescents (12-16 years), admitted to an inpatient service (Strober, Green & Carlson, 1981c). The DSM-III criteria identified 20 of these as meeting the major depression classification criteria. A global rating based on the SADS interview was employed as a interview measure. In terms of reliability, the BDI showed good internal consistency and test-retest coefficients (r=.79 & r=.69 respectively). Moreover, the stability coefficient was significantly greater in those with a diagnosis of major depression than those with non affective disorders. The SADS severity measure correlated significantly with the BDI (r=.67) and a point biserial correlation between total BDI scores and the diagnosis of depression was also significant (r=.72). Patients with a diagnosis of major depression had significantly higher BDI scores than those not so diagnosed.

Chiles, Millar and Cox (1980), however found that the BDI used with a delinquent population of juveniles, could not distinguish depressed (based on RDC criteria) from non depressed. BDI scores were found not to relate to independent ratings by counsellors or RDC diagnosis.

A Modified version of the BDI, the Childrens Depression Inventory (CDI; Kovacs, 1980/1981)) has recently been developed for use with children 8-17 years. The CDI has 27 items graded from 0 to 2 in the direction of increasing depression. The content of the CDI remains similar to that of the BDI and thus

reflects the adult concept of depression. The 27 item version of the CDI has been administered to 875 school children (10-17 years) and the internal consistency has been reported to be .86 with a mean score of 9.3. Test-retest reliability for 28 subjects over one month period was reported be moderately high (r=.72). This version remains to validated by independent clincian ratings.

The earlier 21 item CDI (kovacs & Beck, 1977) has been employed in clinical settings. Hersberg et al., (1982) found that those who met the DSM-III criteria for an affective disorder had significantly higher CDI scores than those given a diagnosis of anxiety disorder. Carlson & Cantwell (1982b) found a significantly higher mean CDI (21 item) score for suicide attempters than for non suicide attempters. The former group were found to be significantly more depressed based on interview ratings. Seriousness of suicidal ideation was highly correlated with high CDI scores and high interview scores. Using a short version of the CDI, the SCDI, Carlson and Cantwell (1979; 1980b) found that children scoring high (> 8) had significantly higher interview ratings and were significantly more likely to be diagnosed with an affective disorder than those scoring low on the CDI. The CDI, thus appears to possess acceptable psychometric properties.

The Childrens Depression Scale (Lang & Tisher, 1978) is designed for children ages 9 through 16. The items were derived from observations, literature reviews, and responses to

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projective tests. Thus, this test was not based on the adult concept. The CDS has 66 items, 48 of which are totalled to form the depression score. The remaining 18 positive items are totalled to form the pleasure scale which measures anhedonia. Each item is printed on a seperate card and presented to the child one at a time. The child is required to place the item in one of five boxes representing a five point severity scale from "very wrong" or not true to "very right" or always true.

The CDS has an accompanying manual which reports an internal consistency coefficient of .96 for the 48 item depression scale. Content validity was assesed by independent judges who categorized CDS items as belonging to depression and not to anxiety. The correlation between the total depression score and the pleasure score was .53 indicating that they tap into different concepts.

A factor analysis of the total items using both responses from parents and children, revealed a general factor accounting for 32% of the variance. This factor appeared to resemble a depression factor. Convergent validity was demonstrated by showing a moderate correlation between the parent ratings of their child's depression on the parent version of the CDS and the self-report CDS ($r=.49$). The self-report CDS also correlated significantly to such personality factors as shyness and a tendency to be reserved and correlated at a low level with a tendency to be uncontrolled. However the scale also correlated significantly with neuroticism ($r=.45$) and with anxiety ($r=.45$)

suggesting some discrimination problems. Discriminative validity was further demonstrated by showing that those rated as depressed (school refusal) by clinicians had significantly higher CDS scores than clinical and normal controls. Although parent reports on the CDS discriminate between the depressed and the normal control group, it was not evident that parent reports could distinguish between depressed and other psychiatric groups. The clinical control group was not rated by the parents on the CDS. A recent report found the CDS to be stable over 7 to 10 days (r=.74; Tisher & Lang, in press).

Out side of this manual, there have been few reported studies with this interesting scale. A simple correlation between the CDI and the CDS would demonstrate how much the tests are alike, and if indeed they tap the same construct, derived as they are from diverse sources.

Birleson (1981) recently developed an 18 item self- report questionniare; items were selected based on a literature search. From the orginal pool of 37 items, those items which significantly discriminated the depressed from the nondepressed group were included in the final version. Test-retest reliabilites were reported to be .80 and internal consistency was represented by a coefficient of .86. Validity was demonstrated by the ability of the test scores to seperate the depressed group into a clear distribution quite distinct from a clinical control group, a maladjusted school group, and a normal school control. The depressed group produced significantly

higher scores than than the comparison groups. The author notes the similarities of his items to the BDI. He concludes that the validity of the concept of a depressive disorder in children is confirmed by the fact that a self report rating scale can even be produced for children 7 to 13 years.

Kazdin (1981) and Kazdin and Petti (1982) in reviewing these same measures as well as a number of clinician rating scales concludes that few of the childhood depression scales have demonstrated convergent and discriminative validity. Convergent validity refers to evidence that a depression measure correlates significantly with other measures purporting to measure the same construct. Discriminative validity refers to evidence that a depression measure does not correlate significantly with procedures purporting to measure nondepressive symptoms such as anxiety or aggression scales (Campbell & Fiske, 1959). Only research with the CDS has attempted to show convergent and discriminative validity. Nevertheless, there is some evidence that the DSM-III diagnosis of depression can predict high scores on some versions of the CDI.

Construct Validity

While the RDC and the DSM-III interview measures and the self-report measures (e. g. CDI) demonstrate good reliability and some discriminative validity, construct validity remains to be to be evaluated. Performances on these measures should also

predict criterion used in validating adult depressive disorders, including biological markers, treatment response, course of illness, family pattern of illness and psychological correlates. If similar correlates are found with childhood depression, it would lend support to the thesis that the construct of depression is the same in both children and adults.

Biological Markers

studies with adult depressives have shown that while actively depressed, they hypersecrete cortisol compared to normals (Carroll, 1982). Studies on cortisol levels in depressed patients are thought to indirectly reveal hypothisized disturbances in brain biogenic amines (see Charney, Menkes & Henniger, 1981; Ettigi & Brown, 1977). Cortisol hypersecretion is one of the strongest markers of endogeneous or melancholic depressions (Carroll, 1982). It is studied by measuring plasma cortisol every 20 minutes for 24 hours and by the ability of dexamethasone to suppress cortisol excretion .

Puig-Antich (1980) analyzed 24 hour cortisol secretion in 20 prepubertal children who met the RDC criteria for a major depressive disorder. Twenty percent of those who met the endogeneous criteria (n=15) hypersecreted cortisol while none of the remaining nonedogeneous types showed hypersecretion. Puig-Antich notes that this rate is about half the reported rate for adults.

Pozanski, Carroll, Banegas, Cook, and Grassman (1982) studied the response of 18 depressed and non depressed prepubertal children to the dexamethasone suppression test (DST). The K-SADS identified 8 of these children as having major depression, endogeneous type, one as having major depression, and the remaing dysphoric children as having nonaffective diagnoses. Dexamethasone was administered at 11 p.m. and next day samples of cortisol were taken at 4 p. m. The results revealed that 5 of the children with major depression (all endogeneous) had abnormal cortisol values whereas only one of non depressed children had abnormal values in response to the DST. The depressed children were significantly more depressed on a global interview rating and demonstated significantly greater DST plasma cortisol levels (p<.05). The sensitivity (the ability of the DST to correctly identify major depression) in the depressed group was 56% compared to 49% found in adults. The specificity (the ability to rule out depression) was 89% compared to 96% found with adults. The authors concluded that the DST results add validity to the clinical diagnostic assessemnts of children. It should also be noted that in studies conducted by Carroll et al., (1981), the frequency of positive DST results in a group of 15-24 year olds was also 56%. Thus the possibility of similarly diagnosing adolescents with major depression appears likley.

An alternative to indirectly assessing the functional status of biogenic amines in adult depressed patients is the

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growth hormone (GH) challenge test to various drugs (Carroll, 1980). Typically adult depressed patients display low levels of GH while non depressed patients display high levels of GH in response to these tests.

Puigh-Antich, Tabrizi, Davis, Goetz, Chambers, Halpern & Sachar, (1981) investigated the GH response to the insulin tolerance test in 10 endogeneous, 10 non engogeneous major depressed children and 7 "non depressed neurctics" all diagnosed by the K-SADS-RDC method. Significant differences were found between groups at time sampling intervals. At 60 minutes, 90% of the endogeneous, 50% of the non endogeneous and 0% of the neurotic children showed abnoramally low GH levels. The sensitivity for endogeneous depression was 90% and for all the children with major depression the sensitivity was 70%. These figures compare to a 50% sensitivity found in adult studies. The authors suggest that the early onset of depression is possibility an indication of a severe form of depression and may account for the high sensitivity found in this study.

Overall the studies of endocrine disturbances with prebubertal children are consistent with the adult literature and lend validity to the diagnostic interview measures.

The literature on sleep correlates indicates that adult depressives when compared to non depressed controls take longer to fall asleep, awake more often, experience more early morning awaking and display a short rapid eye-movement (REM) latency (time between sleep onset and the first REM period) and a

increased REM density (Caroll, 1980). The REM latency criterion alone has been reported to have a 83% sensitivity in identifying adult depressions (Kuper, 1976).

Puig-Antich, Goetz, Davies, Thompson, Chambers, Tabrizi, and Weitzman (1982) found no significant differences on any sleep continuity variables (i.e. early, middle and late insomnia) or REM variables in 27 endogenous major depressed, 27 non endogenous major depressed, 27 non depressed neurotic and 11 normal children. Moreover, while two thirds of the depressed children and their parents reported sleep disturbances on the K-SADS at two seperate interviews, non of these children displayed sleep distubances during the study. Similar non significant results were found for a group of 12 depressed children and 12 matched controls on both sleep continuity and REM variables diagnosed by the the broader Weinberg criteria (Young, Knowles, Maclean, Boag & McConville, 1982). In a follow up study, (Puig-Antich, Goetz, Hanlon, Tabrize, Davies and Weitzman ,1983) on 28 fully recovered depressed children, REM latency was found to be significantly shorter than when these children were actively depressed and when compared to non depressed neurotics. Recovered depressed children also showed significant improvement on sleep continuity variables. These results are consistent with a the few reported studies with recovered adult depressives but the implications of these findings are unclear.

These studies indicate that adult and depressed children differ whith respect to sleep measures and do not support construct of depression or the K-SADS-RDC measures.

Treatment Response

With adult depressed patients, studies have shown a 65% response rate for imipramine compared to a 30% response rate in placebo controls (Davis, 1980). In the absence of other biological markers, drug response is felt to be a weak validator in children. Tricyclic antidepressant have multiple physiological effects and different mechanisms may be responsible for the clinical effects. Thus the assumption that two disorders share the same physiological mechanism because they respond to the same treatment is unwarrented (Puig-Antich & Gittleman, 1982). Nevertheless, treatment response studies can add to the validity of the disorder when they a viewed in light of other validity studies.

Only two published studies have appeared using either the RDC or the DSM-III criteria for depression. The first study (Puig-Antich et .al, 1978; 1979), assessed the the response to imipramine in 13 prepubertal children diagnosed as suffering from major depression by the K-SADS-RDC method. Forty-six percent (6 children) showed a favourable response to the medication at the end of 5 weeks, while 7 children were non-responders. Outcome was assessed by pre- and-post K-SADS ratings. The responders had significantly higher plasma levels

of imipramine and desimipramine than the nonresponders. After removing one delusional case, the authors found that post treatment K-SADS ratings were significantly correlated to the mean maintenance plasma levels (n=231 ng/ml). Correlations between the plasma levels and the SADS items ranged from .73 to .83 with higher plasma levels being associated with improvement. The authors interpret these results as showing effectiveness for imipramine treatment in children with major depression. The finding that the delusional case did not respond to treatment is entirely consistent with the adult literature demonstrating the same phenomenon (Davis, 1980). In a reanalysis (Puigh-Antich 1980), with the sample size increased to 26 children with major depression treated with imipramine, the favourable response rate was 62%. Moreover when the 16 responders were compared to to the 10 nonresponders, the responders had a significantly higher mean steady state plasma level. These results confirm the relationship between high plasma levels and improvement.

In the second study (Preskorn, Weller & Weller, 1982) 20 hospitalized prepubertal children who after 2 weeks did not respond to counselling or psychotherapy, were given imipramine treatment. Improvement was assessed by two cliniciar rated scales and the 27 item CDI (Kovacs, 1980/1981). The mean pre treatment CDI score was 28.2. All 20 children recieved a starting dose of 75 mg for 3 weeks and if no improvement was found at the end of this time, the dosage was increased. Plasma levels of imipramine were asessesed by clinicians blind to

dosage. At the end of the first 3 week period, 4 completely remitted and one partially remitted. These 5 patients showed a significantly lower CDI score (M=9.6). The CDI showed a significant curvilinear relationship to plasma levels of imipramine and desimipramine (polynomial reg=.72; p<.01). Thus high plasma levels up to 255 ng/ml predicted significant improvement. Four of the non-responders were transferred before the second evaluation. Of the 16 children evaluated at 6 weeks, 12 achieved steady state plasma levels of between 125-255 ng/ml and 11 of these demonstrated complete response. Only one patient outside this range responded. The overall response rate at 6 weeks was 80%. The authors note that the lower limit of 125 ng/ml for response is consistent with that found for adult depression. However, imipramine in adults shows a linear relationship between response and plasma levels and the curvilinear relationship found in this study is not consistent with the adult literature.

While the efficacy of tricyclic treatment has yet to be demonstrated with depressed children, the results of these two sets of studies are for the most part in keeping with the adult literature. It should be pointed out that Puigh-Antich did not use a self-report measure in assessing out come. As noted by Gittleman & Klein (1973) self-report measures provided a better distinction of improvement when compared to either parent or psychiatric ratings in evaluating the outcome of imipramine in a group of school phobics. The better response rate for the

Perskorn et al., study may be in part due to the use of the CDI. Self-report measures of depression are clearly an asset in outcome research.

Course of Illness

The diagnosis by DSM-III should predict those who have a second episode of depression and as well the diagnosis should not predict the development of any other disorder other than depression. The DSM-III manual states that approximately 50% of adults diagnosed as depressed will have recurring episodes.

Stober and Carlson (1982) followed 60 adolescent patients who met the RDC criteria for major depression over a period of 3- to -4 years. Assessments were conducted at 6 month intervals. Follow up data revealed that 55% of these patients remained symptom free for entire course. Twelve of the 60 developed mania with an average onset at 7 months and thus had a bipolar outcome. Of the 48 unipolars, one never recovered from the index episode, 10 had further episodes of major depression and 4 had intermittent depressive symptoms but did not meet the criteria for Major depression. Interestingly, while in hospital 45 of these patients were treated with tricyclics and the response rate at 2 weeks was 53%. However, of the 11 patients who had bipolar outcomes during the follow up, only 2 showed a tricyclic response. The authors note that the high incidence of psychotic features in the bipolar outcome group probably mediated the treatment response. The outcomes in this study are consistent

with a diagnosis of major depression including a bipolar outcome. The 45% relapse rate is comparable to adult estimates.

Another syndrome, which often overlaps with major depression in prepubertal children, is conduct disorder. The question is whether the diagnosis is valid in assigning major depression as the principal diagnosis (secondary depression) rather than conduct disorder. Puig-Antich (1982) found that of 43 boys with a RDC diagnosis of major depression, 16 or 37% also met the RDC criteria for conduct disorder as assessed on the K-SADS. While there was no differences between those with major depression with conduct disorder and those with primary major depression in terms of depressive symptomatology, in 14 of the 16 secondary cases, the onset of depression preceded conduct symptoms. Thirteen of the 16 with secondary depression were treated with imipramine and all of these showed an antidepressant response between the 5th and 18th week of treatment. In 11 of these patients, there was also no evidence of conduct disorder. Follow up on 7 of those who had major depression with conduct disorder over a 2 year period, revealed that all had a relapse of major depression and in every case conduct behaviour problems reappeared shortly after the onset of depression. Thus the diagnosis of depression as the principal syndrome appears to be valid.

These two studies support the validity of the diagnosis of major depression in children diagnosed by the unmodified adult criteria.

Family Pattern of Illness

The hypothesis under study is that child and adult depressions aggregate in families. This is usually interpreted as an indicator of genetic transmission.

Only one published study exists in which the offspring of depressed adults were assessed by the RDC or DSM-III criteria for depression. In this study (Crytryn, McKnew, Barko, Lamour & Hamovitt, 1982) 19 children between the ages of 5 and 15 who were offspring of 13 hospitalized depressives admitted consecutively, were assessed for the presence of depression. For comparison, 21 children from 13 normal parents were matched to the index group by sex, age and socioeconomic status. Of the index families, 3 had children with a DSM-III diagnosis of major depression, 6 had children with a dysthymic disorder and 4 families had no affective disorder. In the control families, one had a child with major depression, 2 had a child with a dysthymic disorder and 10 had no affective disorder. This difference was significant (p=.05). When the broader Weinberg criteria were applied to the index families, 11 had depressed children compared to 9 identified by the DSM-III criteria. This suggests that even the DSM-III dysthymic criteria is less inclusive than the Wienberg criteria. The authors suggest that the high incidence of affective disorders in the index families is either due to the hardship of living with an affectively disordered adult or due to genetic vulnerability.

In Stober and Carlson's (1982) study of 60 depressed adolescents, data was obtained from 200 first degree relatives and 422 second degree relatives by the SADS method. Forty-six or 77% of the 60 adolescents had at least one first or second degree relative with an affective disorder. Moreover, the precentage of relatives with a bipolar illness was significantly higher for those adolescents with a bipolar outcome than for those who were unipolars (50% vs 10%; p<.005). The calculated risk for affective disorders in the bipolar group was 32.3% and for the unipolar group it was 18.4% (p=.01). The lifetime risk for major depression in first degree relatives of adult depressions is about 30%. Puig-Antich (1980) found the lifetime risk for major depression in first degree relatives of of 54 prepubertal major depressed children, to be 42%. Puig-Artich suggests that prepubertal major depression is likely to be highly genetically loaded and partially explains the early onset.

These data for both adolescents and children while not conclusive in supporting a genetic hypothesis, are consistent with the adult literature.

Psychological Correlates

Beck (1967) and Kovacs and Beck (1979) have postulated that adult depressives show particular cognitive distortions, they selectively attend to and process information in

self-derogatory and self-blaming ways. Beck has delineated a number of sytematic errors in cognition implicated in the depressive's invariant, stereotypic conclusions. "Selective abstraction", for example, is the error of ignoring the salient aspects of a situation and attending to only those elements that are consistent with the depressive's overall negative and pessimistic cosmology. Based on this model of depression Krantz and Hammen (1979) found that adult depressived patients who met the RDC criteria for a major or minor depression chose significantly more depressed-distorted but not adaptive nondepressed-nondistorted responses to imaginary stories when compared to non depressed patients. Moreover, these authors have found cognitive distortions to be stable even after treatment for depression in a clincal treatment group. More recently, Norman, Miller and Klee (1983) employing the Krantz and Hammen cognitive distortion questionnaire, found that the depressed-distortion scale significantly distinguished a large group of clinically depressed patients (n=60) from a nondepressed group. All patient were diagnosed by the RDC criteria. College women who score high on the Beck Depression Inventory have also shown significantly more cognitive distortions than those that score low on the BDI. In addition, high BDI scores predicted signficantly fewer nondepressed nondistorted responses (Hammen & Krantz, 1976).

Seligman (1975) and Abramson, Seligman and Teasdale (1978) have argued that a history of repeated exposure to

uncontrollable events leads to the belief that outcomes are not contingent upon behaviour. Outcome independence is the basis of "learned helplessness". Individuals who attribute their helplessness to internal factors (e.g. lack of ability) will show more low self esteem and depression than those who make external attributions (e. g. luck or chance). Various studies with mildely depressed college students have shown that expectancies for future success will be impaired if the person believes that positive outcomes are not contingent on performance in skill and problem solving tasks (Garber & Hollon, 1980). Abramson, Garber, Edwards and Seligman, (1978) found that unipolar adult patients exhibited smaller expectancies for future success on a skill task, even after successful performance, than a group of schizophrenic patients and a normal control. In other words, depressed patients view skill tasks as chance tasks because they view outcomes as non contingent or uncontrollable. Moreover, Garber and Hollon have found that the depressive's expectancies for success are specfic to their belief about their own skilled action rather than a general belief in the independence between all response and outcomes. Thus outcome beliefs or expectancies are idiocyncratic and represent cognitive bias consistent with Beck's (1967) hypothesis.

Cognitive biases have to a limited extent, been examined in non psychiatric children. Lefkowitz, Tesiny and Gordon (1980) have correlated the Locus of Control Scale (Nowicki &

Strickland, 1973) which measures a generalized belief in response independence or helplessness, with the CDI in a large group of school age children. They found that the more depressed (high CDI scores) a child was, the more likely he was to perceive events as uncontrollable (r=.34, n=398). Similar results were found by Moyal (1977), again with normal school age children. Moyal administered a self-report measure of depression, the LCS, and the Moyal-Miezitis stimulus appraisal scale to grade 5 and 6 school children. The stimulus apprasial scale measures the child's tendency to choose a adaptive, self-blaming and helplessness response to a number of imaginary situations. Moyal found that those children who scored high on the self-report measure of depression also chose significantly more self-blaming (r=.30), helpless (r=.24) responses and significantly less adaptive responses (r=-.37). The LCS was also significantly correlated to the depression scale (r=.47), and the helpless response (r=.40) and moreover was less correlated to the other response options indicating that the LCS is related to helplessness. The author interpreted the correlations with the self-blaming responses as consistent with Beck's cognitive distortion theory and the correlations with the LCS as supporting the helplessness theory.

Leon, Kendall & Garber (1980) assessed the attributions of depressed and non depressed children using a self-report measure of attribution administered verbally. They found that children scoring high on the CDI attributed significantly more negative

events to internal factors (self-blame) than those scoring low on the CDI (p<.05). Finally, Schwartz, Freidman, Lindsay and Narrol (1982) found that depressed school children showed significantly longer latencies on a decision task than non depressed children. Depression in this study was defined as a high scores on any one of the CDI, the LCS, the stimulus appraisal task or a self-esteem scale. The mean CDI score was 24.7 whereas the mean CDI score for the nondepressed group was 2.3. Like adult depressives, depressed children also show cognitive deficits on problem solving tasks.

Although these results parallel those found in the adult literature, it is not clear in any of these studies whether the scales successfully identified depression or some non specfic child emotional problem. Only studies employing the DSM-III or RDC criteria for depression will determine whether these same findings are specific to depression. Nevertheless, the results on psychological correlates are encouraging enough to examine the these correlates in clirically depressed children.

Summary & Conclusions

While much controversy has ensued over the validity of the construct of childhood depression, there is growing support for its existence as a clinical syndrome. The most difficult challenge facing researchers has been in finding methods to measure depression in children. Some believe that an empirical

approach is the best method in establishing validity. Others, however, have extended the adult concept of depression to children and thus advocate the employment of similar diagnostic methods. Two such methods were examined in detail--the interview and self-report measures.

The evidence reviewed has suggested that both adolescent and prepubertal forms of depression mimic adult depression remarkably well. The unmodified RDC and DSM-III criteria for major depression have demonstrated adequate reliability for both adolescent and prepubertal depression. The standard SADS and the K-SADS have aided in establishing these reliabilities and indicate that children can accurately report their own depression. The effect of developmental levels does not appear to interfere in the ability of the child to interpret questions and to accurately self-reflect. These adult criteria have shown discriminative validity with respect to other diagnoses and with putative masked symptoms.

The diagnosis of depression has to a limited extent predicted those scoring high on early versions of the CDI. Self-report measures provide a more accurate assessment of the child's ability to self-reflect on depressive symptoms. Clearly much more work is needed with self-report measures as only a few studies have ultilized these measures. The development of alternate self-report measures offers unique oppcrtunuties to demonstrate convergent validity with interview ratings.

In terms of construct validity, the evidence from studies employing RDC and DSM-III criteria for major depression have for the most part paralleled findings for the adult disorder with respect to biological, treatment, course and family factors. However it remains to seen whether these interview measures can also predict psychological factors such as cognitive distortions which also have been demonstrated to correlate with adult depression. With one exception in which the CDI was shown to correlate with plasma levels of imipramine, self-report measures of depression have yet to show construct validity in clinical samples. Their use in non clinical samples has, however, paralleled findings with adult depression with respect to cognitive distortions but again, intercorrelations between contructs, psychiatric and self-reports of depression have yet to be undertaken.

Finally, the bulk of the studies reviewed, have focused on major depression to the relative exclusion of dysthymic disorder. As Freidman, Clarkin, Corn, Aronoff, Hurt and Murphy (1982) have found, dysthymic disorder in adolescents can have serious consequences including suicide attempts and the development of major depression.

The construct of childhood depression should continue to be amenable to established psychometric methods that have been successful in establishing the adult counterpart.

The Present Study

The purpose of this investigation is to compare, in a clinical sample of children and adolescents, three approaches to the assessment of depression: Psychiatric interview, self-report and parent-report. As previously noted, the DSM-III diagnosis of affective disorder has demonstrated promising validity as an interview measure of depression with children. Few studies have examined the ability of DSM-III interview severity ratings to predict self-report ratings of depression. The self-rated CDI although widely used, lacks validation with respect to interview severity ratings and with respect to other self-report measures. The card-sort format of the CDS makes it an interesting self-report measure to compare to the CDI. The CDS lacks validation with respect to DSM-III diagnosis and severity ratings. Therefore, the DSM-III interview diagnosis and severity ratings, the CDI and CDS were included in the present study to investigate their convergent validity with respect to each other and to parent ratings of their child's level of depression.

It is important not only to examine the intercorrelations among the depression measures, but also to examine the relation between the depression measures and constructs with which they would be expected to correlate. Therefore, a measure of cognitive distortion and a measure of locus of control were also included.

As noted in the review, cognitive distortions have characterized clinically depressed adults and as yet have not

been examined in children or adolescents. Thus if the adult and child forms of depression are similar, children diagnosed as depressed should also show similar cognitive distortions.

Children in nonclinical samples of children have shown a relationship between depression and an external locus of control and it is expected that a similar relationship would be found with a clinical sample of children

Thus the second purpose of this study is to assess the cognitive correlates of depression in children.

B. Method

SUBJECTS

The subjects consisted of 37 patients (20 males; 17
females) ranging in age from 7 to 17 years ($\underline{M}$=13.1; $\underline{SD}$=2.6) who
were recent admissions to the psychiatric units of Vancouver
General Hospital. The subjects were consecutive referrals over a
one year period from the inpatient psychiatric, the psychiatric
emergency, the adolescent psychiatric and the outpatient child
psychiatric units to the childhood depression research unit. All
subjects were referred for assessment of depression by the
referring clinician and as such the sample represents a
selection of those children displaying at least some affective
symptoms. None or the subjects displayed any signs of organicity
of mental retardation.

Procedure

All subjects were assessed by means of:

a. A psychiatric interview, which yielded a diagnosis and a
    clinician rating of affective symptomatology conducted
    by one of two child psychiatrists.

b. Self-report measures of affective symptoms and general
    behavior problems administered by a psychology intern.

c. Where a parent or primary caretaker was available, a

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structured interview with a questionnaire measure of the
child's psychopathology and level of depression
administered by a alternate psychological interr.

In some cases, the psychiatric interview was administered
first and in some cases, the parent and self-report measures
were obtained first. Nevertheless, in all three methods, the
interviewers were blind to the results of the other procedures.

Thirty parents or primary caretakers were recruited to
evaluate their child's psychopathological state. The parents
were contacted by phone and asked to participate in a study on
depression in children. All the parents, except one, agreed to
participate while the remaining 7 children either had no primary
caretaker or their parents could not be contacted. In no
instances were the parents and the children interviewed
together.

Measures

The Psychiatric Interview

Each child was interviewed in a semi-structured format. At
the end of the interview the interviewing psychiatrist made a
DSM-III Axis I diagnosis. The psychiatrists were free to use any
referral information in making a diagnosis. Regardless of
diagnosis, each child was rated on the Dysthymic Checklist (DCL)
designed specifically for this study (appendix A). The DCL was a

checklist containing the DSM-III criteria for dysthymic disorder modified for a severity rating. The dysthymic criteria consist of 14 symptoms including dysphoria, sleep disturbance, fatique, suicidal ideation, anhedonia, social withdrawal and hopelessness. Each symptom was rated on a 3 point severity scale and totalled to give an interview depression rating.

Interrater reliability between the two psychiatrists was measured on a subsample of 11 cases. These cases consisted on the first 11 cases in which the parents and child agreed to a second interview. In all but 3 cases the interviews were conducted seperately in a "test-retest" method. The remaining 3 subjects were assessed by joint interview. Subjects were classified as having an affective disorder if they met the criteria for either major depression or dysthymic disorder and non affective if they met any other DSM-III criteria or presented with no disorder. In 4 cases there was complete agreement on the presence of affective disorder and in three cases there was complete agreement on no affective disorder. In one case there was complete disagreement and the remaining three cases had an affective disorder secondary to or in conjunction with a nonaffective disorder. With these three secondary cases classified as affective disorder, the Kappa coefficient was found to be .79 for all 11 cases. When the three secondary cases were classified as nonaffective the kappa coefficient was .85. These results indicated adequate reliability for the psychiatric interview. All cases of disagreement or secondary depression,

were resolved by joint agreement by both psychiatrists as either affective or nonaffective. This consensus constituted the final diagnosis.

Self-Report Measures

To assess the level of depression in the sample, the 27 item Childrens Depression Inventory (Kovacs, 1979, 1980/1981) and the Childrens Depression Scale (Lang & Tisher, 1978) were administered to all children. The psychometric properties of these two measures have already been detailed . Each subject was read the instructions on the cover of each CDI form and when the child indicated an understanding of what was required he or she then filled out the inventory silently. With a few young children the items were read aloud. Each child was read the instructions recommended in the manual for the CDS and when the child understood the task he or she then read the items silently and placed them in the selected box. In some cases the items were read to the child who was however required to place the item in the selected box by himself.

The Youth Behavior Checklist, YBCL

The YBCL (Achenbach & Edelbrock, 1981) was administered to all children to assess the overall level of psychopathology. The YBCL is a recently developed self-report measure composed of a 113 items covering a wide range of symptoms and behaviour problems rated on a 0-2 severity scale and represents the

self-report version of the parent-rated Child Behavior Checklist (Achenbach, 1979). At present the only psychometric data indicates the total behavior problem score has a stability co-efficient of .69 (Achenbach, personal communication, 1981).

Two scales were derived from the YBCL. First, all items that appeared to reflect the DSM-III criteria for depression were totalled to form a depression score. These items included sad mood, sleep disturbance, fatigue, guilt and suicidal items. Second, all items that are included in the externalizing scale for all age and sex groups of the parent rated version, were summed. This cluster reflects a mixture of aggressive and delinquency symptoms and thus would provide a measure to evaluate discriminative validity (see appendix B).

The YBCL is recommended for children 11 through 18, however, an attempt was made to administer to all children. Those children below age 11 were administered all items verbally with guided explanations of the more difficult items. This resulted in only 30 valid YBCL reports.

Cognitive Distortions

An incomplete stories task was specifically designed to test Beck's (1967) hypothesis that depressed individuals selectively distort events in self-derogatory ways. The task was similar in design to measures used with depressed adults (c. f. Hammen & Krantz, 1976; Krantz & Hammen, 1979) and consisted of 10 short paragraphs describing a school, home or social

situation familar to children and adolescents (appendix C). Each situation was followed by four response options . The subjects were instructed to try and imagine themselves in the described situation and pick the response that best describes how they would respond. Like the adult cognitive distortion measures the four response options covered one of the following categories: depressed-distorted (DD), depressed-nondistorted (DN), nondepressed-distorted (ND), nondepressed-nondistorted (NN). The depressed-nondistorted and the nondepressed-distorted categories "controlled" for the possibility that depressed children may select a depressively toned option without regard to the distortion content or alternatively select a distortion option without regard to depressive content.

An example was a single paragraph in which a boy discovers that he has failed a spelling test which is followed by the question : what does he say to himself? (a) It doesn't bother me because I figure I'll succeed in all the rest of the spelling tests even if I do not study (an example of a nondepressed-distorted option), (b) I feel annoyed at myself and start to imagine that I am a complete failure (an example of a depressed-distorted option); (c) It upsets me and makes me feel no good (an example of a depressed-nondistorted option); (d) It doesn't bother me because one failure is not that important. I'll study harder and do better next time (an example of nondepressed-nondistorted option).

Independent judges assessed the content validity of the categories. Five clinical psychology graduate students were presented with the incomplete stories, plus a definition of cognitive distortions with several examples of Beck's distortion typology. The graduate students were asked to judge whether the response options reflected a DD, DN, ND or NN category. For the initial qestionnaire which contained 12 stories there was 96% agreement for the depressed-distorted category and 87% agreement for the nondepressed-nondistorted category. The remaining two categories obtained 78% agreement. Based on the judges recommendations, two stories were eliminated.

All the stories were administered verbally to each child allowing the child to choose the option silently. In 4 of the 37 subjects this scale was not administered because contraints on the length of the testing precluded this measure.

The Locus of Control Scale for Children (LCS-C)

As in other studies the LCS (Nowicki & Strickland, 1973) was employed to tap the "helplessness" hypothesis proposed by Seligman (1975). The LCS has been viewed as an adequate personality equivalent of the states of helplessness (Lefcourt, 1980). The LCS-C is a 40 item questionnaire that is answered either yes or no. The items describe reinforcement situations across interpersonal and motivational areas such as affiliation, achievement and dependency. The scale is scored in the direction of an external locus of control. Internal consistency for

various school grade levels were reported to range from .63 for the low grades to .81 for the high grades. Test-retest reliabilities conducted six weeks apart ranged from .63 to .71 (Nowicki & Strickland, 1973). Moyal (1977) reported an internal consistency of .71 for a large group of grades 5 and 6.

Nowicki and Strickland report adequate reliabilities as well as norms for grades 3 through 12. The LCS-C was administered to each subject verbally.

Parent Report Measures

The Childrens Depression Scale (CDS)

The CDS (Lang & Tisher, 1978) is the modified version of self-report scale to allow parents to rate the severity of depression in their child or adolescent . As noted previously the parent and child forms of the CDS correlated significantly $(r=.49; n=77)$.

The Child Behavior Checklist (CBLC)

The CBCL (Achenbach, 1979) like the self-report version is a 113 item questionnaire which asks parents to rate a range symptoms in their child on a 0-2 point severity scale. The CBCL has been standardized with normal and clinical samples and it provides patterns of both behavioural problems and adaptive social competencies (Achenbach, 1978; Achenbach & Edelbrock,

1979). The profile also derives scores on Internalization-Externalization, total behavior problems, and nine age- and sex- specfic factors. The reported Kappa coefficients between clinician ratings on the externalizing and internalizing scales ranged from .56 to .57 (Edelbrock & Achenbach, 1980).

Since the depression scale on the CBCL changes with age and sex and does not exist for adolescent boys, all subjects were scored on the adolescent girl's depression factor (appendix D). Scales that are consistent across sex and age, including the internalizing, the externaizingl, the aggression, and the delinquency scales were scored using T-scores. The externalizing, delinquency and aggression factor scores were derived to represent "masked" symptoms and as such were expected to provide discriminative validity for the depression measures.

C. Results

Eight patients were given a DSM-III diagnosis of major depression and 10 were given diagnosis of dysthymic disorder, totalling 18 patients with a diagnosis of affective disorder. The breakdown of the 19 patients receiving non depressed diagnoses is as follows: Conduct disorder (n=10), Adjustment disorder (n=4), separation anxiety (n=2), no disorder (n=2), attention deficit disorder (n=1). There were no significant differences between those diagnosed as major depression and those diagnosed as dysthymic on sex ratio, age, interview depression rating or on any self-report measures of depression. Of the 14 symptoms measured on the DCl, there is a tendency for the major depression group to display more suicidal ideation at interview than the dysthymic group, $\chi^2 = 3.44$, p=.06. Given these considerations and the small group sizes, both the major depression group and the dysthymic group were collapsed into one group of affective disorders for all subsequent analyses. All other diagnoses comprised the non affective group. While there is no differences in sex ratio between the affective and non affective groups, the affective group is significantly older ($\underline{M}$=14.9; $\underline{SD}$=1.7) than the non affective group, ($\underline{M}$=11.3; $\underline{SD}$=2.0), $\underline{F}$(1, 35)=33.9, p<.001.

Depressive Symptomatology

Six depressive symptoms common to both major depression and dysthymic disorder are significantly more frequent at interview in children with an affective diagnosis , including dysphoria, χ^2 =16.7, p=.000, sleep disturbance, χ^2=5.2, p=.02, fatigue, χ^2=8.9, p=.002, anhedonia, χ^2=3.6, p=.06, and suicidal ideation, χ^2=9.9, p=.001. Three symptoms specfic to dysthymic disorder are also significantly more frequent including inability to respond with pleasure to reward, χ^2=4.9, p=.03, decreased effectiveness at school or home, χ^2=6.8, p=.009, and crying, χ^2=5.2, p=.02 (Table 2) . From table 2, it is clear that the non affective group report a high number of depressive symptoms at interview. In fact, the non affective group report more low self-worth than the affective group. Sixty-two percent of the total sample report dysphoria, 62% report anhedonia, 73% report social withdrawal and 83% report low self-worth. The high number of depressive symptoms reported at interview for both the nonaffective group and the total sample suggest the present sample is a select group of those with least some affective symptoms.

Table 2.

Proportion of affective and nonaffective
subjects reporting dysthymic symptoms at
interview on the Dysthymic checklist

	Affective	Nonaffective	Prob
	% n	% n	
Dysphoria	100(18)	37(07)	.000
Sleep trouble	83(15)	47(09)	.022
Fatigue	89(16)	42(08)	.002
Self-Worth	78(14)	89(17)	n.s.
Decreased efficacy	100(18)	68(13)	.009
Concentration trouble	78(14)	53(10)	n.s.
Social withdrawal	78(14)	68(13)	n.s.
Anhedonia	78(14)	47(09)	.057
Excess anger	83(15)	63(12)	n.s.
Inability to respond with pleasure	50(09)	16(03)	.026
psychomotor disturbance	50(09)	26(05)	n.s.
hopelessness	78(14)	58(11)	n.s.
Crying	83(15)	47(09)	.022
Suicidal ideation	67(12)	16(03)	.002

Convergent Validity for the depression measures

Convergent validity is established by examining the intercorrelations among two or more measures of the same trait (multi-trait) within and across two or more different methods (multi-method; Campbell & Fiske, 1959). In the present context, convergence refers to the extent to which the psychiatric interview, the self-report and the parent report methods of assessment agree on the level of the child or adolescent's depression. Pearson product-moment correlations were calculated between the depression measures with the exception that the psychiatric diagnosis was evaluated by point-biserial correlations. To reduce the probability of type I errors, the minimum probability value for testing the significance of correlations was set at $p=.01$ for a two-tailed test. The resulting multi-trait multi-method correlation matrix is presented in table 3.

Of initial interest in examining convergence, are the correlations within methods (represented in brackets). These correlations evaluate how well the raters agree with themselves on different depression measures and as such are estimates of reliability (Campbell & Fiske, 1959).

The Total severity rating obtained from the psychiatric interview significantly predicted the final DSM-III diagnosis of affective disorder, $r=.72$, $p<.001$. Although, total severity ratings on the DCl were not used in determining a diagnosis, the presence or absence of DCL symptoms was used in part in forming

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a diagnosis. Thus this correlation is not all that surprising. Alternatively, the lack of a perfect correlation suggests that severity of symptoms are not sufficient in making an diagnosis.

The two self-report measures of depression are significantly correlated, $r=.77$, $p<.001$, indicating that these two measures tap into the same construct. The second total score obtained from the CDS, the pleasure score, is also significantly correlated with the CDI, $r=.78$, $p<.001$, and with the CDS, $r=.58$, $p<.001$. These results indicate that those who self-report higher levels of depression also report more anhedonia.

Parents who rate their child or adolescent as depressed on the CDS, also rate them as significantly more depressed on the depression scale from the CBCl, $r=.58$, $p<.01$. The parent rated CDS pleasure scale is also significantly correlated to the CDS, $r=.51$, $p<.01$, and tends to be correlated, although nonsignificantly, with the CBCL-depression scale, $r=.38$. Thus parents who view their child as depressed also view them as experiencing more anhedonia.

Table 3
Correlations between the depression
measures

	Psychiatric Interview (n=37)		Self Report (n=37)		Parent Report (n=30)	
	DCL	Affect	CDI	CDS	CDS	Dep
Psych						
DCL						
Affect	(.72**)					
Self						
CDI	.64**	.59**				
CDS	.51*	.46*	(.77**)			
Parent						
CDS	-.03	-.19	.02	.34		
Dep	.12	.06	-.02	.13	(.58*)	

DCl=Dysthymic Checklist; Affect=DSM-III diagnosis of
affective disorder; CDI=Childrens Depression Inventory;
CDS=total depression score from the Childrens Depression
Scale; Dep=depression scale from the Child Behavior
Checklist.
*p<.01
**p<.001

Of critical importance is the relation between the
depression measures _across_ methods. These correlations control
for method variance, that is the amount of variance between the
depression measures that can be accounted by the fact the
measure is rated by the same method.

Table 3 indicates that those who are rated at interview as
more depressed on the DCL also self-report more depression on
the CDI, r=.64, p<.001, and on the CDS, r=.51, p<.01. Both the

CDT and the CDS are significantly correlated to a DSM-III diagnosis of affective disorder. The CDS pleasure scale is moderately correlated to the DCL, $r=.38$, and to diagnosis, $r=.40$, but these correlations fail to reach the .01 level of significance. Nevertheless, a significant level of agreement is obtained between psychiatric and self-ratings of depression.

In contrast, parent ratings on the CDS and the CBCL depression scale are not related to either psychiatric or self-ratings. There is a tendency for the self-report CDS and the parent rated CDS to be correlated, $r=.34$, $p<.10$ but the self-rated CDS-pleasure and the parent rated CDS-pleasure scales are clearly not related, $r=.09$. Thus the parents disagree with both the psychiatric and the self-report estimates of their child's depression. These results also suggest that the source of information, the parent, accounts for the significant relationship between the CDS and the CBCL-depression scale.

In summary results indicate that while different measures of the child or adolescent's depression are consistently correlated within assessment method, only the psychiatric interview and the self-report are correlated across methods.

Discriminative Validity for the depression measures

One approach to discriminative validity is to examine the correlations between the depression measures and measures with which they would not be expected to correlate. The correlations should be as close to zero as possible and certainly not higher

than those obtained for the depression measures (see campbell &
Fiske, 1959).

The self-rated YBCL scales were used to discern whether the
depression measures were more associated with the
YBCL-depression scale than with YBCL-externalizing scale (table
4). Although the YBCL-depression scale has the highest
correlation with both the psychiatric and self-report measures
of depression, the externalizing scale is also significantly
correlated to the depression measures. This result indicates
that those children who view themselves as depressed also view
themselves as experiencing more nondepressed behavioural
pathology.

Table 4.
Correlations between the depression
measures and the YBCI scales (n=30)

	Depression	External
Psych		
DCL	.67**	.60**
Affect	.51*	.44*
Self		
CDI	.84**	.67**
CDS	.79**	.75**
Parent		
CDS	.04	.14
Dep	.05	.01

*p<.01
**p<.001

More important in terms of discriminative validity, are the
correlations with the parent rated CBCL scales. The CBCI scales
unlike the YBCI scales are well validated with clinical samples.
Examining the pattern of correlations in table 5, it can be seen
that the parent rated CDS is significantly correlated to the
CBCL-externalizing scale r=.67, p<.001, the CBCL-delinquency
scale, r=.50, p<.001, and the CBCL-aggression scale, r=.65,
p<.001. Thus parents who rate their child as depressed also rate
them as having more conduct and behaviour problems, indicating
little discrimination. The pattern of correlations for both the
psychiatric and self-report measures of depression indicates

good discrimination with parent ratings of nondepressed
behaviour problems.

Table 5
Correlations between the depression
measures and the subscales from the
parent rated Child Behavior Checklist
(n=30).

	Int	Ext	Del	Agg	Tot
Psych					
DCI	-.11	-.18	.07	-.16	.05
Affect	-.23	-.39	-.24	-.34	-.11
Self					
CDI	-.17	-.18	.04	-.20	.06
CDS	.07	-.11	.29	.12	.33
Parent					
CDS	.61**	.67**	.50*	.65**	.74**
Dep	.76**	.52*	.30	.52*	.71**

Int=Internalizing ; Ext=Externalizing; Del=Delinquency;
Agg=Aggression; Tot=total score on the CBCL.
 *p<.01
**p<.001

Another approach to discriminative validity is to select a
criterion with which to compare the depression measures (see
Cronbach, 1970). In this case the DSM-III final diagnosis of
affective disorder was selected as a criterion. Discriminative
validity in this approach is the ability of the depression
measures to discriminate the affective group from the
nonaffective group.

Table 6 presents the means and standard deviations for the
depression measures in the affective and nonaffective groups.

Analysis of variance (alpha level=.01) indicates that those with a diagnosis of affective disorder demonstrate significantly higher mean scores on the psychiatric severity rating (DCL) than those with a nonaffective diagnosis, $F(1, 35)=38.49$, $p<.001$. The mean CDI score for the affective group is 19.4 and for the nonaffective group the mean is 6.9, $F(1, 35)=18.5$, $p<.001$. Because the CDI scores appear to violate the homogeneity of variance assumption, a Mann-Whitney Test was conducted. The results confirm those of the analysis of variance, $U=285.5$, $p<.001$, in indicating significant discrimination for the CDI. The CDS also significantly distinguishes the affective group, $M=153$, from the nonaffective group, $M=118$, $F(1, 35)=9.53$, $p=.004$. The affective group also exhibited higher CDS-pleasure scores, but this difference is not significant at the .01 level, $F(1, 35)=6.56$, $p=.02$. Parent ratings on both the CDS and the CBCL-depression scale are not discriminating and in fact there is a tendency for the nonaffective group to receive higher depression ratings.

Table 6
Means and standard deviations for
depression measures in the
affective and nonaffective groups

	Affective (n=18)		nonaffect (n=19)		
	M	SD	M	SD	F-prob
Psych					
DCL	15.9	4.3	7.8	3.6	p=.000
Self					
CDI	19.4	11.3	06.9	5.7	p=.000
CDS	153.4	37.2	118.2	32.3	p=.003
CDS-P	54.4	13.0	44.8	9.9	p=.02
Parent					
CDS	138.1	33.5	142.0	36.2	p=n.s.
CDS-P	50.1	8.0	50.5	9.8	p=n.s.
Dep	11.7	4.3	12.4	6.2	p=n.s.

note: Means for the parent ratings are
based on an n=15 for the affective
and an n=15 for the nonaffective group

However analysis of variance does reveal a tendency for
those diagnosed as nonaffective to have higher CBCL-externalzing
scores ($F_{(1, 28)}=5.05$, P=.03) compared to those diagnosed as
affective disorder. All other comparisons with parent report
CBCL variables are non significant (Table 7).

Table 7

Means and standard deviations for the
CBCL scales in affective and non affective
groups

	Affective (n=15)		Nonaffect (n=15)		
	M	SD	M	SD	
Internal	68.3	7.7	72.0	9.1	p=n.s.
External	60.5	7.9	69.1	12.5	p=.03
Aggress	61.0	8.8	68.8	13.0	p=.06
Delinq	63.5	8.7	68.1	10.5	p=n.s.
Total	68.2	7.6	70.4	12.2	p=n.s.

note: means are T-score averages which have
a mean of 50 and a standard deviation
of 10

To further evaluate whether parent reports can distinguish between behavioral pathology and depression, analysis of variance was performed between the affective group and those with a diagnosis of conduct disorder. Eight of the 10 with conduct disorder had parent ratings on the CBCL scales. This analysis reveals that compared to the affective group, the conduct disorder group have significantly higher delinquency T scores ($F(1, 21)=8.27$, $p=.009$), significantly higher aggression T scores ($F(1, 21)=14.07$, $p=.001$) and significantly higher externalizing T scores ($F(1, 21)=22.87$, $p=.000$). The conduct disorder group does not differ on the CDS depression rating or on the internalizing T score from the CBCL. These results suggest that while parent ratings do not distinguish the affective from the nonaffective groups based on their depression

ratings, they can make the distinction based on more observable behaviors such as delinquency and aggression. Thus the validity of parent ratings on nondepressed behavioral ratings is enhanced. This finding supports the use of the CBCL in assessing the discriminative validity of the depression measures as presented in table 5.

Age was found to be significantly correlated with the psychiatric rating on the DCL, $r(35)=.57$, $p<.001$, the CDI, $r(35)=.49$, $p<.01$, and with the CDS-pleasure scale, $r(35)=.44$, $p<.01$. Age is not significantly correlated to the self-rated CDS or to any parent rated variables. To determine whether age is significantly influencing the relationships between the depression measures, partial correlations were calculated. Examining the partial correlations in table 7, it can be seen that age has little effect on the correlations between the self-report measures of depression but does have an effect on the correlations between the self-report measures and the psychiatric ratings on the DCL. The magnitude of the correlations are somewhat reduced for the CDI and CDS with the DCI, but remain, nevertheless, significantly correlated. The CDS-pleasure scale, is reduced, however, from a simple correlation of .38 to .19.

Table 8

Partial correlations between the psychiatric
and self-report measures of depression after
removing the effects of age.

	DCL	CDI	CDS
DCL			
CDI	.50**		
CDS	.42*	.75***	
CDS-P	.19	.72***	.53***

*p<.02
**p<.01
***P<.001

Convergence with measures of Cognitive Bias

As in studies with adults, the scale of interest from the
incomplete stories task, is the depressed-distorted scale (DD).
As predicted the DD scale is significantly correlated with
psychiatric ratings on the DCL, $r(31)=.59$, p<.001, and with both
the CDI, $r(31)=.71$, P<.001, and the CDS, $r(31)=.48$, p<.01. Thus
children and adolescents who present at interview with more
depression and who self-rate themselves as more depressed, are
more likely to choose more depressed-distorted response options
on the stories task. The depression measures are not related to
either the depressed-nondistorted (DN) or the
nondepressed-distorted (ND) option indicating discriminative
validity for the DD scale. The nondepressed-nondistorted (NN)
response option is significantly negatively correlated to both
the CDI and CDS indicating that those who rate themselves as

depressed are less likely to choose an NN response. (table 9).

Also as expected, those who rate themselves higher on the CDI and the CDS also self-report a significant tendency to be externally orientated in locus of control, ($r(35)=.55$, p<.001 & $r(35)=.49$, p<.01, respectively). The LCS is not significantly related to either the DCL or a diagnosis of affective disorder.

The DD scale and the LCS are moderately but nonsignificantly correlated, $r(31)=.37$, suggesting that these two scales tap into different cognitive biases.

Table 9
Correlations between the scales from
incomplete stories task and the
depression measures (n=33)

	DD	DN	ND	NN
Psych				
DCI	.59**	-.20	.05	-.30
Affect	.51*	-.05	.00	-.18
Self				
CDI	.71**	.29	-.16	-.69**
CDS	.48*	.31	-.20	-.50*
CDS-P	.54*	.31	-.09	-.61**
Parent				
CDS	-.17	-.05	-.46	.37
CDS-P	.00	.01	-.25	.09
Dep	.10	-.15	.04	.13

DD=depressed-distorted; DN=depressed-nondistorted;
ND=nondepressed-distorted; NN=nondepressed-nondistorted;
DCl=Dysthymic Checklist; Affect=diagnosis
of affective disorder; CDI=Childrens Depression
Inventory; CDS=Childrens Depression Scale, total
depression score, CDS-P=Childrens Depression
Scale, total pleasure score; Dep=depression
scale from the CBCI
**$p < .01$
***$p < .001$

To evaluate the ability of the cognitive bias measures to
discriminate the affective from the nonaffective group, analysis
of variance was performed. The resulting means are presented in
table 10. The affective group choose significantly more DD but
not more DN or ND response options than the nonaffective group,
$F(1, 31) = 10.8$, $p = .003$. Because the DD scale violated the
homogeneity of variance assumption, it was further evaluated by

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the Mann-Whitney Test. The results support those of the analysis
of variance, $\underline{U}=2C4.5$, $\underline{p}=.003$. In contrast to the affective
group, the nonaffective group choose significantly more NN
response options, $\underline{F}$ (1, 31)$=6.82$, p$=.01$.

Although the affective group terd to have higher LCS
scores, this difference is not significant.

Table 10

means and standard deviations for the
cognitive bias measures in affective
and nonaffective groups

	Affective		Nonaffect		
	(n=17)		(n=16)		
	M	SD	M	SD	
DD	2.1	1.9	0.5	0.6	p=.003
DN	3.5	2.1	3.3	1.4	p=n.s.
ND	1.1	1.C	1.1	1.C	p=n.s.
NN	3.4	2.2	5.1	1.6	p=.01
LCS	16.2	4.3	14.5	4.9	p=n.s.

note: The means for the LCS are based on an N=18 for
the affective group and 19 for the nonaffective
group.

Because age is significantly correlated to the DD scale,
$\underline{r}(31)=.48$, p<.C1, partial correlations were computed between the
depression measures and the DD scale, controlling for age. The
results are presented in table 11. While the simple correlation
between the DD scale and the DCl is reduced from .59 to .46, it
remains significant, P<.01. Interestingly the simple correlation
between the LCS scale and the DCl is increased from .28 to .35

suggesting that age acts as a suppressor variable with the LCS.
Again age has little effect between the self-report measures but
does show some effects between the self-report measures and the
psychiatric ratings. Nevertheless the DD scales remains
consistently and significantly correlated to the depression
measures.

Table 11

Partial correlations between the cognitive
bias measures and the depression measures
controlling for the effects of age

	DD	LCS
DCL	.46**	.35
CDI	.63***	.62***
CDS	.41*	.52***
CDS-P	.44*	.55***

note: partial correlations for the DD scale are based on
      a df=30 and for the LCS are based on a df=34
*P<.02
**p<.01
***p<.001

Ancillary analyses

To compare the DSM-III criteria and self-report measures in
terms of diagnostic convergence, cut-off scores for the CDI and
the CDS were employed. A cut-off score of greater than 10 was
chosen for the CDI as Kovacs (1981) has found 9.3 to be the mean
CDI score in normal samples. With this cut-off, 17 are
classified as depressed (CDI mean=22.4) and 20 are classified as
nondepressed (CDI mean=5). The CDI depressed group receive

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significantly higher interview DCL ratings, $F(1, 35)=54.4$, p=.000), significantly higher CDS scores, $F(1, 35)=54.4$, p=.000, and significantly higher CDS pleasure scores ($F(1, 35)=24.8$, p=.000) than the CDI nondepressed group. Those who score high on the CDI also show an external locus of control ($F(1, 35)=5.74$, p=.02), choose significantly more depressed-distortions ($F(1, 30)=12.5$, p=.001). However the CDI depressed group tends to be older than the CDI nondepressed group ($F(1,35)=4.03$, p=.053). With a cut-off score of 10, the CDI indentifies 72% of those diagnosed as affective by the DSM-III criteria and 79% of those with a DSM-III diagnosis of nonaffective disorder (Chi Square(1)=9.7, p=002).

The cut-off score for the CDS was set at greater than 120 which is the fifth decile score reported for the normal control group by Lang and Tisher (1978). This analysis results in 19 subjects classified as depressed (CDS mean=166.6) and 18 subjects classified as nondepressed (CDS mean=102.3). The CDS depressed group is not significantly older than the nondepressed group. Nevertheless, the CDS depressed group obtain significantly higher DCL scores ($F(1, 35)=10.6$, p=.003) and significantly higher CDI scores ($F(1, 35)=25.6$, p=.000). Although the depressed group choose more depressed-distortions ($F(1, 30)=4.70$; p=.04), and obtain higher LCS scores ($F(1, 35)=5.49$, p=.03), these differences fail to meet the .01 level of significance. The CDS also significantly identifies 72% of those receiving a DSM-III diagnosis of affective disorder and

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68% of those with a nonaffective disorder (Chi Square(1)=6.11, p=.01).

To further evaluate the effects of age, all subjects were divided into a young age group (8-13 years) and an older age group (14-17). Twenty subjects fall in the young age group and are primarly of prepubertal age (mean=11 years) and 17 are clearly adolescent (mean=15.4 years). The DSM-III classifies only 20% of the prepubertal children as depressed and 82% of the adolescents as depressed. This difference is highly significant (Chi Square=14.3, p=.002). The CDS however classifies 45% of the prepubertal age group as depressed and 59% of the adolescent group as depressed; this difference is clearly nonsignificant. Similarly, the CDI classifies 35% of the prepubertal age group as depressed and 59% of the adolescent group (p=n.s.). These data indicate that prepubertal children are capable of self-reporting depression even though the DSM-III criteria does not classify them as depressed.

To evaluate whether younger children are capable of expressing severe levels of depression, a cut-off score of greater than 18 was used for the CDI (the top 10% of Kovac's normal score distribution) and a cut-off score of greater than 165 was used for the CDS (the top 10% of Lang & Tisher's CDS distribution). Nine of the 17 CDI depressed subjects recieve CDI scores in the severe range; these subjects range in age from 13 to 17 years with a mean age of 15.5 compared to a mean age of 12.3 for those who score less than 19. This difference is highly

significant ($F(1,35)=13.8$, $p=.001$). Of the nine who report severe levels of depression on the CDI, only one is from the prepubertal age group and 8 are from the adolescent age group (Chi Square=8.8, p=.003). Those who score in the severe range on the CDS (n=10) range in age from 8 to 17 with a mean age of 13.5 compared to a mean age of 13 for the rest of the sample (p=n.s.). Of the 10 subjects who score in the severe range, 4 are from the prepubertal group and 6 are from the adolescent group (p=n.s.). Three of the prepubertal high CDS scores come from children under the age of 12. It appears that younger children are capable of expressing depression on the CDS more so than on the CDI.

In summary the CDI, the CDS and the DSM-III identify similar numbers of subjects as depressed suggesting significant convergence between the three systems. However both the CDI and the DSM-III tend to diagnosis more adolescents than prepubertal children as depressed than the CDS system.

D. Discussion

This study investigated the convergent validity of psychiatric interview, parent report and self-report measures of depression. As hypothesized, the Childrens Depression Inventory (CDI) was correlated significantly with the Childrens Depression Scale (CDS) and both the CDI and the CDS were significantly correlated with psychiatric ratings on the DCL. These findings support the validity of all three measures. These same scales also demonstrated some discriminative validity by the low and insignificant correlations with measures of nondepressed behaviour problems as rated the on the CBCL. The CDI, the CDS and the DCL were found to significantly discriminate those diagnosed by DSM-III criteria as depressed from those diagnosed as nondepressed. Using cut-off scores for the CDI and the CDS resulted in significant convergence with the DSM-III diagnosis of affective disorder. These findings are consistent with studies with the short CDI (Carlson & Cantwell 1979; 1980b), with the 21 item CDI (Carlson & Cantwell, 1980a; Hersberg, Carlson, Cantwell & Strober, 1982) and with the CDS (larg & Tisher, 1978). All of these studies demonstrated that the self-report and in some cases the interview rating discriminated a depressed group from an nondepressed group. None of these studies, however, reported a correlation between self-report measures and interview ratings and thus, the extent to which severity is comparable across measures cannot be determined

adequately. The present study indicated that the CDI and the CDS are comparable in measuring severity, suggesting that children are reliable reporters of their own level of depression. The correlations with the interview DCl although significant are moderate in magnitude and after the effects of age are partialled out, account for approximately 25% of the variance. Nevertheless, given the diversity of both the content and the time frame of the three measures, these findings support their validity.

One recent study, published after completion of the present study, did not find that the current 27 item CDI distinguished between those diagnosed by DSM-III criteria as depressed or nondepressed (Kazdin, French, Unis, Esveldt-Dawson, 1983). Kazdin et al.'s study, however, differed from the present and other studies by administering the CDI to a relatively younger age group (5-13 years). The influence of a younger age group may account for for the failure to find discrimination for the CDI. The mean CDI score in the Kazdin et al., study was 15.1 for the depressed group compared to 19.4 found in the present study. The results of the present study suggest that adolescents are more likely to report severe levels of depression on the CDI while younger children are more likely to report severe levels of depression the CDS. It is interesting to speculate that had Kazdin et al., employed the CDS, they may have found a significant discrimination. Whether the relation between age and the CDI and CDS remains consistent, is for future research to

determine.

The present study found that the DSM-III criteria identifies more adolescents as depressed than prepubertal children, while the CDS does not demonstrate this discrimination with age. The diagnosis of depression in the present sample appears to be more likely if the subject is adolescent. This may reflect a bias on the part of psychiatrists not to diagnosis depression in younger children or alternately, the high proportion of adolescents in the affective group may be due to sampling procedure. The adolescents in the present sample were primarily inpatient while the majority of younger children were outpatient. This imbalance occurred when half-way through the study the inpatient child psychiatric unit moved to a different location outside of Vancouver General Hospital, thus limiting referrals from this source.

Contrary to prediction, the present study did not find convergence for parent reports of depression with either self-report report or psychiatric ratings. Although the self-report CDS correlated with the parent CDS, the parent CDS was even more highly correlated with parent ratings on the nondepressed scales of the CBCL, suggesting poor discriminative validity. A number of studies have found similar results. Weissman, Orvaschel and Padian (1980) found that the 27 item CDI was not significantly correlated to parent ratings of depression (r=-.19). However, parent ratings of depression were significantly correlated to the total score on the CBCL (r=.59)

and other measures of global psychopathology. Similarly, Leon, Kendall and Garber, (1980) found that although parent ratings of depression were significantly correlated with the 21 item CDI (r=.33), they were even more significantly correlated with measures of anxiety (r=.56), conduct problems (r=.40) and muscular tension (r=.36). Finally, Kazdin et al., reported that the 27 item CDI and the parent rated CDI were not related (r=.03).

What is clear and consistent across studies is that parent and self-report measures of depression demonstrate little correspondence and that parents who view their child as depressed also view them as having more psychopathology in general.

Contrary to findings in the present study, Kazdin et al., found that the parent rated CDI as well as the CBCL-internal and CBCL-depression scales significantly discriminated the depressed group from the non depressed group. The present study did not find that parent rated depression, or the CBCL-internalizing scale could distinguish between depressed and non depressed groups. The present study did however find that the CBCL-external scores were significantly higher in the nondepressed group. Kazdin et al., did not report on the external scale so comparisons cannot be made. The Kazdin study, as noted before, differed from the present study in the age groups studied. Further research is needed to clarify the relationship between psychiatric and parent ratings.

The results of the present study are consistent with the clinical observation that children are more valid reporters of their internal states while parents are more valid reporters of their child's external behaviors (Carlson & Cantwell, 1980a; Kasahni, Iababidi & Jones, 1982; Puig-Antich & Gittleman, 1982).

As hypothesized, those defined as depressed both by self-report measures and by psychiatric interview measures displayed more cognitive distortions. This finding parallels findings with adult depressives (Krantz & Hammen, 1979; Norman, Miller & Klee, 1983) and supports Beck's (1967) emphasis on the cognitive aspects of depression. This finding with a clinically depressed sample of children and adolescents supports the generality of the phenomenon. That depressed children did not choose more depressed-nondistorted responses suggests that the differences in performance reflect a qualitative and not merely a quantitative difference in cognitions of depressed and nondepressed children. Convergent validity of the depressed distorted scale was demonstrated by the high correlations with the CDS, the CDI and the DCL. Discriminative validity was evidenced by the ability of the DD scale to distinguish the affective from the nonaffective group. However, age was postively correlated to the depressed-distorted scale suggesting that cognitive bias may be related to developmental level. Whether this an artifact of the methodology or a true relation remains to be confirmed in future research. The items on the depressed-distorted scale are a heterogeneous mixture of

internal attributions, future expectations and various errors in logical thinking postualted by Beck. Thus in future research, this scale should be refined to reflect single dimensions of cognitive bias such as internal attribution, overgeneralization and the like. The findings with cognitive bias are robust enough to persue this area of research further in depressed children.

The fact that depressed subjects in this study also reported more non depressed behavioral pathology on the YBCL may be explained by reference to cognitive distortions. Depressed children may selectively attend to items that are negative in content, unrealistically distorting their behaviors in self-biasing ways on the YBCL. Alternatively, nondepressed children may view themselves in positive distorting manner and simply not admit to negative behaviors on the YBCL. The YBCL scales however were included in this study on an experimental basis and conclusions regarding this scale are limited as no data has accumulated on exactely what this scale measures.

Also as predicted the Locus of Control Scale (LCS) was significantly correlated to the CDI and the CDS and weakly correlated to the DCL. Similar findings are reported for depressed college women, (Calhoun, Cheney & Dawes, 1974) and for school age children (Lefkowitz & Tesiny, 1980; Lefkowitz, Tesiny & Gordon, 1980; Moyal, 1977) . Similar findings in a clinical sample of depressed children supports the generality of the correlation between depression and an external locus of control and supports Seligman's (1975) thesis that depression is

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related to a general belief in uncontrollability of positive events. The LCS scale was not as discriminating as the depressed-distortion scale which may reflect age differences in response styles or a lack of specificity for the LCS. General feelings of helplessness were common in the sample and may be common to child psychopathology in general. A general belief in helplessness may not be specfic to depression unless the person attributes the helplessness to internal factors (i.e. self-blame). The depressed-distortion scale appears to measure more internal attributions and thus is more consistent with Abramson et al., 1978 reformulated helplessness hypothesis.

Both the distortion and the locus of control scales lend construct validity to the self-report measures of depression and to the DSM-III interview measure of depression.

In summary the present findings suggest that the DSM-III interview of depression can predict those diagnosed by self-report measures of depression but not those diagnosed by parent report measures of depression. The adult criteria for depression as well as self-report measures of depression also predicted those displaying more cognitive distortions. These results support the position that childhood and adolescent depression is virtually the same disorder as that which occurs in adults.

Dysthymic Checklist
Instructions:

Circle the zero if the symptom
is absent.
Circle the 1 if the symptom is present
but of mild severity.
Circle the 2 if the symptom is present
but of severe intensity

During the depressive periods
there is either prominant depressed mood or
marked loss of interest or pleasure in all
or almost all, usual activities and pastimes......0 1 2

During the depressive periods at least three of
the following are present:
(1) Insomnia or hypersomnia........................0 1 2
(2) Low energy level or chronic tiredness..........0 1 2
(3) Feelings of inadequacy, loss of self-esteem,
    or self-depreciation...........................0 1 2
(4) Decreased effectiveness or productivity at
    school, work, or home..........................0 1 2
(5) Decreased attention, concentration, or ability
    to think clearly...............................0 1 2
(6) Social withdrawl...............................0 1 2
(7) Loss of interest in or enjoyment of
    pleasurable activities.........................0 1 2
(8) Irritability or excess anger (in children
    expressed toward parents or caretakers)........0 1 2
(9) Inability to respond with apparent pleasure
    to praise or reward............................0 1 2
(10)Less active or talkative than usual, feels
    slowed down or restless........................0 1 2
(11)Pessimistic attitude toward the furture,
    brooding about past events, or feeling sorry
    for self.......................................0 1 2
(12)Tearfulness or crying..........................0 1 2
(13)Recurrent thoughts of death or suicide.........0 1 2

APPENDIX B: COGNITIVE DISTORTION

Cognitive Distortion Questionnaire
for Children & Adolescents

Instructions

I am going to read some short stories
about kids in some situations that
might occur. I want you to put yourself
in the boy or girl'place and try to
imagine as clearly as possible how the
boy or girl might think and feel.

Each story ends with a question. The
answer is up to you, there are no
right or wrong answers. Choose
one sentence of the four that best
describes how you might respond if
you were the person in the story.

G. Haley, Simon Fraser University, 1981

(1)   This boy is in a class of twenty children.
                They have to do a spelling test every week.
                This week he finds out that he failed the test.
                What does he say to himself?

(a) It doesn't bother me because I figure I'll suceed in all
the rest of the spelling tests even if I do not study.
(b) I feel annoyed at myself and start to imagine that I am
a complete failure.
(c) It upsets me and makes me feel no good.
(d) It doesn't bother me because one failure is not that
important. I'll study harder and do better next time.

(2)   A girl is walking by herself from school
                one day and she is thinking about her school
                work. She suddenly notices a boy with a frown
                on his face walking towards her. When the
                boy passes her by, what does she think?

(a) I think everyone should be happy all the time.
(b) I feel bad because he must think I look pretty
awful.
(c) It doesn't bother me that he looks that way.
Some people have a lot on their minds.
(d) I feel sad that some people are not happy.

(3)   This girl has a younger sister and an older
                brother. One saturday afternoon she finds out
                that her brother and sister have been invited
                to a birthday party. She has not been invited
                has to stay home alone. what does she say to
                herself?

(a) It upsets me and makes me feel sad.
(b) It doesn't upset me. Everyone is probably alone
once in a while.
(c) I feel lonely and imagine endless weekends of being
alone.
(d) It doesn't bother me because I'll be invited to a party
next week for sure.

(4)   Jane and Sue are best friends. They always go
            downtown on saturday. One saturday afternoon
            Jane phones to say to Sue that she is going
            downtown with a new girl she has met.
            What does Sue think?

(a) It doesn't bother me that Jane has another friend.
It will be nice to meet a new friend.
(b) It makes me feel bad that she did not ask me
to go with them.
(c) I don't feel bad that she did not ask me to
go with them. I should never feel hurt.
(d) It makes me feel bad that she found a new friend
because she doesn't want me for a best friend
anymore.

(5)   This girl is the youngest in a family of three
kids. Her parents fight with one another now
and then. Her older brother and sister tell
her that mom and dad never fought when they
were growing up. One night her parents
have a long fight: what does she feel?

(a) It doesn't make me feel bad that they fight.
Parents should always love each other and never
fight, like when my brother and sister were
growing up.
(b) I feel down and hope things will turn out
OK for them.
(c) I wish my parents got along better.
(d) If it were not for me, things would be better
around the house, like they were for my
brother and sister. I feel like a bad person.

(6)   A girl was listening to her records after
school one day. Her mom came into her room
and started yelling at her to clean up her
room and put her clothes away. When mom
was gone, what did she feel?

(a) If mom yells at me it makes me feel like a bad person.
I can't live without love.
(b) It doesn't bother me that my mom yells at me.
Mothers should never get angry or upset at their
children.
(c) I can't stand it when mom yells at me, but even moms
can get upset once in awhile.
(d) I wonder what is bothering my mother, I suppose
I could try harder to be more neat.

(7)   In the english class everyone has to read aloud
an english composition. Finally, it came time
for this girl to read her composition. While
she was reading, she heard giggles from the back
of the class. She finished her reading and her

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friends said later that she had done well.
When she was by herself after school, what does
she think?

(A) My friends liked my composition and I feel good
about that.
(b) My friends were just trying to make me feel good.
I really did badly because I heard giggles. It makes
me feel no good.
(c) I feel kinda bad that some kids can be rude.
(d) It doesn't bother me that some kids giggled.
I should never be upset about things like that.

(8)   This girl has passed most of her math quizzes during
the school term. The final exam is coming up and
if she doesn't pass this exam she will not be placed
in the next grade. What does the girl expect will
happen?

(a) I've done OK this far, there is no reason why I cannot
pass the final.
(b) Why should I even try to study hard. I know I am going
to fail the final and end up crying or miserable.
(c) I'll feel miserable if I fail.
(d) This exam is going to be easy. It will be the teacher's
fault if I fail this exam.

(9)   A girl was looking forward to going to a party
with her friends. They had made plans for a long
time. But, a few days before the party, she
caught the flu and became really sick and could
not go to the party. When the flu had gone,
what did she think?

(a) Its too bad I missed the party but everyone gets
sick now and then. I feel OK now.
(b) I feel really down. I probably made myself sick.
(c) I should never feel sick.
(d) I feel bad about missing the party but things like
that just can't be helped.

(10)   A boy is away from home at a summer camp with
other kids. On the first night at camp he is
lying in his sleeping bag. What is he thinking?

(a) I feel lonely, but once I get to know someone things
will be OK.

(b) It is nice to be by myself once in awhile. I hope
    I meet some interesting kids.
(c) I feel unhappy. I am not a likeable person, nobody
    at this camp will like me.
(d) It doesn't bother me not knowing anybody. Everyone
    here should like me and I should have a good time.

	Scale items			
	DD	DN	ND	NN
1	b	c	a	d
2	b	d	a	c
3	c	a	d	b
4	d	b	c	a
5	d	b	a	c
6	a	c	b	d
7	b	c	d	a
8	b	c	d	a
9	b	d	c	a
10	c	a	d	b

APPENDIX C: YPCI SCALES

YPCI Depression Scale

Dysphoria	103.	I am unhappy, sad, or depressed
	14.	I cry alot
	12.	I feel lonely
Appetite	24.	I don't eat as well as I should
Sleep	76.	I sleep less than most kids
	100.	I have trouble sleeping
	77.	I sleep more than most kids
Anhedonia	42.	I like to be alone
Energy	102.	I don't have much energy
	54.	I feel overtired
Self	35.	I feel worthless or inferior
	32.	I feel I have to be perfect
	33.	I feel noone loves me
	52.	I feel too guilty
Think	8.	I have trouble concentrating
Suicidal	91.	I think about killing myself
	18.	I deliberately try to hurt or kill myself.

Total possible score is 34

YEC1 Externalizing scale

item no.

8	can't concentrate
22	disobedient at home
23	disobedient at school
26	lacks gulit
39	bad friends
41	impulsive
43	lies cheats
61	poor school work
63	perfers older kids
67	runs away
69	secretive
81	steals at home
82	steals outside the home
90	swearing
101	truant
105	alcohol, drugs
3	argues
7	brags
16	cruel to others
19	demands attention
27	jealous
33	feels unloved
34	feels persecuted
37	fights
57	attacks people
68	screams
74	shows off
86	stubborn
89	suspicious
93	excess talk
94	teases
95	temper tantrums
97	threatens people
104	loud

APPENDIX D: CBCL-DEP

CBCL Depression Scale

item no.
42.   likes to be alone
54.   overtired
65.   won't talk
69.   secrective
71.   self-conscious
75.   shy, timid
77.   sleeps much
80.   stares blankly
86.   stuborn
88.   sulks
102.   slow-moving
103.   sad, depressed
111.   withdrawn
100.   can't sleep
18.   harms self
76.   sleeps little
91.   suicidal talk

APPENDIX E: MEANS & STANDARD DEVIATIONS

Depression Measures

	Mean	SD	Range
Psychiatric			
DCL	11.8	5.6	2-24
Self			
CDI	13.0	10.8	0-38
CDS	135.3	38.7	52-216
CDS-P	49.5	12.4	30-78
Parent			
CDS	140.1	33.5	60-188
CDS-P	50.3	8.8	31-66
Dep	12.0	6.0	0-25

General Psychopathology

	Mean	SD	Range
YBCL			
Dep	13.4	8.9	1-32
Externalizing	24.3	14.1	3-57
CBCL			
Internalizing	70.2	8.5	52-82
Externalizing	64.7	11.2	36-88
Aggression	64.9	11.6	37-86
Delinquency	65.8	9.8	50-86
Total	69.2	10.1	36-87

Cognitive Bias Measures

	Mean	SD	Range
LCS	15.4	4.7	6-25
DD	1.3	1.6	0-06
DN	3.4	1.8	0-08
ND	1.1	1.0	0-03
NN	4.2	2.1	0-07

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