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A Measure of Functional Impairment in Children and Adolescents and its Relation to Symptomatology and Diagnosis

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A MEASURE OF FUNCTIONAL IMPAIRMENT IN CHILDREN AND ADOLESCENTS AND ITS RELATION TO SYMPTOMATOLOGY AND DIAGNOSIS

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ABSTRACT

A MEASURE OF FUNCTIONAL IMPAIRMENT IN CHILDREN AND ADOLESCENTS AND ITS RELATION TO SYMPTOMATOLOGY AND DIAGNOSIS

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The purpose of this study was to validate the Functional Impairment Scale for Children and Adolescents (FISCA; Frank & Paul, 1995) by establishing its concurrent, discriminant, and predictive validity. As such, the study also assessed the degree of overlap between functional impairment, as measured by parent report on the FISCA, and patient symptomatology and diagnoses. The total sample consisted of a) 400 children and adolescents inpatients (ages 6-17) and /or their parents in two Midwestern psychiatric hospitals as well as b) 100 parents of patients from two outpatient clinics associated with each of the hospitals. Correlations between the FISCA and other measures of functional impairment and between the FISCA and parent and child reports of children's symptomatology supported the concurrent validity of the FISCA. FISCA scores were able to discriminate between outpatients and inpatients; between patients with no, low and high comorbidity; and in most cases, between patients with and without particular diagnoses. The predictive validity of the FISCA was supported by its ability to predict length of stay. Overall, the study showed that the FISCA is a valid measure of functional impairment and can be a useful addition to traditional assessment protocols that focus only on symptoms and diagnoses in assessing psychological difficulties in children and adolescents.

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INTRODUCTION

The purpose of this study was to validate the Functional Impairment Scale for Children and Adolescents (FISCA; Frank & Paul, 1995) by establishing its concurrent, discriminant, and predictive validity. As such, the study assessed the degree of overlap between functional impairment, as measured by parent report on the FISCA, and patient symptomatology and diagnoses. The FISCA assesses children's and adolescents' functional impairment across a variety of areas and contexts. A major interest of this study was to demonstrate that measures of functional impairment are related but not identical to measures of symptomatology and diagnosis. As such, I hoped to show that measures of functional impairment in children and adolescent are an important if not essential addition to traditional assessment protocols that focus on symptoms and diagnostic categories in assessing psychopathology in children and adolescents.

Child and adolescent inpatient treatment has undergone a profound transformation in the past two decades. Twenty years ago, most inpatient facilities for children and adolescents relied on long-term treatment (Nurcombe, 1989). Treatment focused on a detailed exploration of the patient's psychic conflicts and their origin, and an assessment of ego defenses and ego strengths. However, two major factors are making this model of treatment increasingly "out of date".

First, changes in the economy have led to increased costs of inpatient care and a greater reliance on third-party payers, with accompanying demands for briefer effective treatments, shorter stays and reduction in costs. Second, the incidence of reported cases of children and adolescents with severe psychopathology has increased dramatically in the last two decades. Currently, more than twice as many children and adolescents are being treated in residential centers as compared to almost two decades ago (Taube and Barret, 1985). As a result of both of these factors, inpatient facilities have found themselves with increasingly limited resources to care for increasingly larger numbers of children. Consequently, the criteria for inpatient admission has become more stringent and the length of stay of patients has decreased.

These changes have necessitated significant changes in both treatment goals and in the nature and time frame of treatment procedures for children, adolescents and their families. Whereas traditional, psychoanalytically-oriented, long-term treatment focused on a total reconstruction of the personality (Nurcombe, 1989), the major goal in most facilities today is to get the patient out of the hospital. Long-term treatment required an assessment of such things as prior history, intrapsychic processes (defenses, ego-strength, etc.) and perceptual styles, whereas short-term treatment requires an assessment of clear and specific problems that make it impossible for the patient to function in a non-restrictive environment.

Brief inpatient treatment should create the changes necessary for the child to leave the hospital and continue treatment in a less restrictive and less expensive environment. According to Nurcombe (1989), the central aim of treatment is stabilization of those problems that are preventing the patient from being treated safely

outside of the hospital. Assessment conducted at admission to the hospital should be brief and focused on identifying the pivotal problems. Assessment needs to look at which symptoms, signs, impairment, behaviors, emotions, dispositions, or dysfunctions in the current biopsychosocial pattern must change if the patient is to be treated at a less restrictive level of care (Nurcombe, 1989). An obvious goal of assessment is to identify a patient's current functional difficulties so that the targets of brief hospitalization can be determined and addressed. When these problems have stabilized and it is safe for the patient to be treated in a less expensive and intrusive setting, the child is discharged from the hospital.

To accomplish these kinds of assessment goals, a standardized, well-developed tool for measuring children's and adolescents' functional impairment in a variety of areas is needed. Several measures of functional impairment in children and adolescents have been developed; however these measures have several flaws. In the remainder of this chapter, I critically review the literature on existing tools for measuring children's functional impairment and discuss the development of an instrument that is intended to address a number of flaws found in current measures of children's functioning.

LEVEL OF FUNCTIONING SCALES

In the past decade, there has been a burgeoning interest in studying children and adolescents' functional impairment. In DSM-IV, an entire axis, axis V, is designated to rate functional impairment, and research has indicated that the diagnostic variable most strongly associated with hospitalization is failure in adaptive functioning (Mezzich, Evanczik, Mathias, & Coffman, 1984). The importance of assessing impairment is also supported by research indicating that presence of criteria for making

a diagnosis does not necessarily imply need for treatment (Bird et al., 1990). Researchers have also found that impairment criteria are sensitive predictors of treatment outcome in clinical trials (Gordon, Plutcky, Gordon, & Guerrra, 1988).

A level of functioning scale, when used properly, can provide a systematic , reliable, and efficient form of reference for formulating and communicating how the client is adapting to his or her environment, and what level of care they need. A level of functioning scale is seen as a complement to, rather than a substitute for, a diagnostic system or symptom scale. While diagnostic systems and symptom scales are useful in identifying the nature of a client's disorder and indicative of distress (symptoms), a level of functioning scale can be useful in describing the client's ability to function at one point in time and over time (Newman, 1983). It can be used to identify to what extent the person has difficulty functioning in his or her environment at any given point in time and what level of treatment is necessary so that the person can function at a satisfactory level in the future. In addition it can be used to assess changes in patient functioning over time.

Level of functioning in relation to diagnosis and symptomatology

The importance of the distinction between a patient's impairment in functioning and his or her symptoms or diagnosis has a long history (Weissman et al., 1983). In both theory and current assessment practices, level of functioning scales, diagnosis, and level of symptomatology are all distinct entities, although there is some degree of overlap among the three.

Level of symptomatology typically is assessed using problem or symptom checklists (e.g., Achenbach & Edelbrock, 1983, Quay, 1977) that allow for

comprehensive ratings of problematic and behaviors as well as unpleasant subjective experiences. Although no research has been conducted on the overlap of level of symptomatology and functional impairment, it makes sense to hypothesize that there should be some relation between the two. A relation is expected because functional impairment assesses disruption in a child's ability to function as a result of disruptive and symptomatic behavior. For example, depressive symptoms, such as difficulty with concentration, psychomotor retardation, and anhedonia could affect an adolescent's or child's intellectual achievement, resulting in poor functioning in school. The causality of the relationship between functional impairment and symptoms may go in either direction or in both directions. For instance, severe impairment can result from high levels of symptomatology, but high levels of symptomatology do not necessarily imply severe impairment. A particular patient may have many symptoms, but these symptoms may not interfere with the patient's ability to function in his or her environment. Conversely, impairment in functioning could, but need not necessarily, lead to symptoms. For instance, school failure could (but need not) lead to or predict depression or antisocial behavior.

There is also a certain degree of overlap between symptom groups and diagnosis. The overlap is evident in the criteria used for making a diagnosis. Diagnosis of a disorder is based on several specific criteria that must be met. Typically the criteria include a specified number of symptoms from a larger list, duration requirements for the symptoms, and various exclusion criteria that state that the symptoms are not due to some other condition. In some instances, certain symptom groups are the only or the major defining features of the diagnosis, so that a great deal

of overlap between symptomatology and diagnoses is to be expected. For instance, certain symptom groups or behavior clusters associated with delinquency might relate strongly to DSM-IV diagnosis of conduct disorder. There may also be a correlation between symptom groups and diagnoses, even when the symptom scale contains only one or two items required for the diagnosis and also contains nonrelated items. For instance, there should be a moderate to high correlation between a diagnosis of depression and somatic symptoms, which include not only items such as "overtired" (an item used as a defining criteria for a diagnosis of depression), but also items not used in defining affective disorders, such as nausea, pains and headaches. Researchers have reported substantial overlap between empirically derived symptom syndromes and DSM-III diagnosis (Edelbrock and Costello, 1988; Weinstein, Noam, Grimes, Stone, & Schwab-Stone, 1990). These studies found a significant overlap when the symptoms scales were part of the criteria for diagnosis and also when the symptom groups contained only one or two items that were part of the criteria for diagnosis but contained nonrelated items as well. Not too surprisingly, the overlap was greatest when the symptom groups were part of the criteria for diagnosis.

There should also be an overlap between diagnoses and measures of level of impairment, although far less work has been done in this area. Prior to DSM-IV this overlap might have been more minimal because in order to receive a diagnosis the child or adolescent did not have to be functionally impaired. In fact, many children who met diagnostic criteria, according to DSM-III-R, were not impaired in their ability to function in their environment (Bird et al., 1990). Currently, in order to receive many of the DSM-IV diagnoses the child or adolescent must also be impaired. For

instance, in order to receive a diagnosis of depression the symptoms must cause clinically significant distress or impairment in social, occupational or other important areas of functioning. Impairment, like symptomatology, now is embedded in the criteria for diagnosis; therefore it makes sense that impairment will overlap with diagnosis much as symptomatology does. However, there are no studies assessing the extent to which this is true. In this study, I will assess the relationship between a new measure of functional impairment and level of symptomatology and diagnosis.

PRIOR MEASURES OF FUNCTIONAL IMPAIRMENT

Global Measures of Impairment. An important hypothesis in this work is that the new instrument to be presented here improves in a number of ways on earlier tools used to measure functional impairment in children and adolescents. One advantage is that the FISCA does not depend on clinical judgments based on ambiguous data sources.

The first measure of functional impairment in children and adolescents was the Global Assessment Scale for Children. The GAS-Children rates functioning on a scale of 1 to 100. A descriptive paragraph explains the criteria for each 10-point range. For example, a score from 1-10 is given if the patient "needs constant supervision (24-hr care) due to severely destructive behavior or gross impairment in reality testing, communication, cognition, affect, object relations, or personal hygiene" (Rotham, 1976). Inter-rater reliabilities were .56 for inpatients and .84 for outpatients (Sorenson, 1982). However, the primary rater provided the secondary rater with information about the patient, which could have inflated these reliability coefficients.

As would be expected, the mean score for inpatients was higher for outpatients

(51.8) than for inpatients (32.5). However, Sorenson et al. (1982) looked at how different raters rated the standard vignettes given in training of the GAS and found that inpatient raters rated the standard vignettes as more impaired than the outpatient raters did. This bias easily could have led inpatient subjects to be rated as more impaired. A structured, objective scoring system would of course eliminate this bias.

The validity of the GASC has not been supported in the literature. Sorenson, Hargreaves, & Friedlander (1982), reported nonsignificant correlations between the GASC and the total problem score of the Conners Parent Questionnaire (Conners, 1989) and with total raw score of the Achenbach Child Behavior Checklist (Achenbach & Edelbrock, 1987); and Keraus (1981) found generally insignificant correlations between the GASC and summary scores on the Behavior Problems Checklist (Quay, 1977). Interpretation of these studies is somewhat problematic since symptoms and impairment are not equivalent; however a certain degree of overlap ought to be evident between the two. No other validity studies have been published. A review of recent studies assessing children's impairment, suggest that the GASC is no longer being used. The most widely used measure of functional impairment in children and adolescents is the Children's Global Assessment Scale (Shaffer, Gould, Brasic, Ambrosini, Fisher, Bird, & Aluwahlia, 1983). It is a measure of global impairment in children's functioning during a specified time period. It is based on the Global Assessment Scale, (Endicott, Spitzer, Fleiss, & Cohen, 1976), a measure of overall functional impairment for adults. The Children's Global Assessment Scale (CGAS) is designed to reflect the lowest level of functioning for a child or adolescent during a specified time period. Its values range from 1, representing the most functionally

impaired child, to 100, representing the highest functioning child. Scores above 70 indicate normal functioning. The scale contains behaviorally oriented descriptors at each anchor point that depict behaviors and life situations applicable to children 4 through 16 years of age. Studies of the psychometric properties of the CGAS have used case histories (Shaffer et al., 1983; Steihausen, 1987), video tapes (Bird, Canino, Rubio-Stipee, & Ribera, 1987), in-person interviews (Apter, Orvashel, Laseg, Moses, & Tyano, 1989), and ratings by clinical staff who were directly involved in the clinical care of the patients studied. The intraclass correlation coefficient of different raters in the different studies was high, ranging from .72 to .93. Bird et al., reported satisfactory test-retest stability (.85) over a 19 day interval. The CGAS was also found to discriminate between outpatients (65.4, SD =14.8) and inpatients (46.0, SD =19) (Shaffer et al., 1983). This difference was significant at the .001 level. The concurrent validity of the CGAS was studied in relation to measures of symptom distress and child competence. The correlation between the CGAS and the Conners Abbreviated Scale, which measures symptom distress, was -.25 ($p > .05$, $df=17$) in an outpatient sample (Shaffer et al., 1983). This correlation suggests that the Conners index and the CGAS tap somewhat overlapping but different domains of assessment.

The CGAS was also studied in relation to the total CBCL score (Achenbach and Edlebrock, 1981), but findings on the relationship between these two measures have been inconsistent across studies. A highly structured study using psychiatrists and psychologists ratings of randomly sampled children in a Puerto Rican community, found a Pearson correlation between the CGAS score and the total behavior problem score on the CBCL of -.65 (Bird et al., 1990). However, when data were collected as

part of a clinical assessment, using psychiatrist ratings and milieu staff ratings in an inpatient hospital, the investigators found a nonsignificant correlation of .-05 for the attending psychiatrist's ratings on the CGAS and total CBCL score, and -.11 for milieu staff ratings on the CGAS and total CBCL score (Green, Shirk, Hanze, & Wanstrath, 1994). The differences between these two studies indicate that clinical judgement in a controlled research setting and in a clinical setting may lead to different results.

Findings on the relationship between the CGAS and the Social Competence scale of the CBCL are also inconsistent. Bird et al. (1987) found a significant correlation (.58), whereas Apter et al. (1989), Vandvik (1990), and Green et al. (1994) found nonsignificant correlations.

Green et al., (1994) found that the CGAS correlated significantly with a number of indicators of individual functioning. The CGAS correlated with Activity Competence (.26); Full Scale IQ (.43); and Social Relatedness (.33 for psychiatrist ratings, and .39 for milieu staff ratings). In addition, Vandvik (1990) reported a significant correlation between the CGAS ($r=-.80$, $p < .010$) and the total score from a structured diagnostic interview, the Child Assessment Schedule (Hodges, Kline, Stern, Cytryn, & McKnew, 1982).

While the CGAS appears to have satisfactory reliability, the concurrent validity of the measure varies across studies. Also, the CGAS has been tested only with professionals. One major problem of this instrument is that it would be difficult to implement in a variety of settings because the ability of para-professionals, who often are responsible for intake procedures, to use the scale accurately has not been shown and there are no training manuals.

The Health and Sickness Rating Scale for Children (HSRS-C; Liebowitz, Rembar, Kernberg, Frankel, & Kruger, 1988) is another impairment measure used to assess children's psychiatric disorder. It was modeled after the Health-sickness Rating Scale for adults (HSRS; Luborsky, 1962). It was designed for use with children 6 to 11 years old. The scale ranges from O to 100. The anchored scale points range from 9, a point of extreme disturbance, to 94 which indicates superior adaptive, interpersonal, and academic functioning. The endpoints of 0 and 100 are reserved for theoretical extremes of disturbance and adaptation. Criteria are spelled out for each anchor point. Liebowitz et al. (1988) examined the interrater reliability of clinician's individual ratings and reported a intraclass correlation coefficient of .73. Liebowitz et al. (1988) also studied the validity of this measure. Discriminant validity was assessed by comparing HSRS-C scores for inpatients and outpatients. The mean rating HSRS-C rating for the outpatients was 59.1 and 38.8 for the inpatients. Concurrent validity was assessed with the Child Behavior Checklist (Achenbach and Edelbrock, 1983) and the Child Assessment Schedule (CAS) (Hodges et al., 1982). Negative correlations of -0.71 and -0.75 with the total CBCL behavior problem score and the externalizing scale, respectively, were reported. Only a modest correlation of 0.47 was found with the internalizing scale, possibly indicating that internalizing patients are less likely to be functioning poorly than externalizing patients. A significant negative correlation of -0.48 was found with the CAS.

Although Liebowitz et al. (1988) reported that the HSRS-C has good reliability and validity, there were several flaws in this study. The study was conducted using trained clinicians as raters and the authors assume that only highly trained clinicians

will use this scale. Therefore, the ability of less trained clinicians or paraprofessionals to reliably use this measure has not been studied. In addition, the cases were rated from written protocols of actual case histories or comprehensive reports, which may have contained cues about the level of care the patients were receiving.

A fourth measure of functional impairment is the Global Level of Functioning Scale (GLOF; Hodges, Bickman, & Kurtz, 1991), a modified version of the Child Global Assessment Scale (Bird et al., 1987). The GLOF is used to generate an overall severity of impairment scores, ranging from 0 to 100. The GLOF has a comprehensive training package which includes detailed scoring instructions and examples. Raters are instructed to consider the child's functioning in four major areas: home/family, school, peer/social relationships, and community. Hodges et al. (1991), looked at the reliability of 13 raters who were not trained in working clinically with children; in a second study she assessed the reliability of ratings from 20 first year graduate students in clinical psychology was assessed. In both studies, the raters scored twenty vignettes which consisted of a brief description of the family constellation and current circumstances and a summary of the child's responses on the CAS (Hodges, 1989). They reported interclass correlations for two studies, .79 and .81 respectively. There have been no studies of the validity of this measure.

All of the scales discussed so far require clinical judgement. Bird, Shaffer, Fisher, Gould, Staghezza, & Hoven (1993) saw the need for a measure of functional impairment that did not require clinical judgement, and hence, developed the Columbia Impairment Scale. A respondent (e.g., parent or caregiver) is asked 13 questions used to assess four areas of functioning: interpersonal relations, broad

psychopathological domains, functioning at work or school, and use of leisure time. Each question is rated by the respondent on a five point continuum of 0-4; 0, no problem; 1-3 some problem; and 4, a very big problem. Factor analysis and the assessment of the internal consistency of this scale using a pilot sample, led Bird et al. (1993) to conclude that the scale assesses a single factor. Although the authors wanted to assess functional impairment in several areas, it appears that this is a measure of global functioning.

There is currently only one study on the CIS and it uses pilot data from a community sample (Bird et al., 1993). Bird et al. (1993) had both parents and children answer the questions. The psychometric properties of the parent instrument appear to be better than those of the child and adolescent instrument. Bird et al. (1993) report good test-retest reliability for parent-report (Cronbach's alpha=0.89) and significantly lower reliability for child-report (Cronbach's alpha=.63). They also report that the Columbia Impairment Scale correlates significantly with a therapist's ratings, r=-0.56. (The negative correlations relate to the fact that the two scales are scored in opposite directions). The CIS also correlates with other indicators of psychological dysfunction. Grades in school correlated with parent CIS (.45) and with child CIS (.30). The parent CIS correlated with whether the child had been expelled from school (.32) but the findings were insignificant for child CIS (0.08). Child's adaptive competence correlated with parent CIS (-0.71) and with child CIS (-0.37). The authors did not analyze the child and adolescent respondents separately and therefore the impact of age on CIS reports provided by children is not known.

The Columbia Impairment Scale does not require clinical judgement, which

allows it to be more easily used by a wide array of individuals; however because the scale does not provide the respondent with clear behavioral or symptomatic criteria it is relatively susceptible to the subjective judgment of the respondent. This could be problematic in the assessment of a clinical sample because some studies have concluded that maternal perceptions of child adjustment and functioning are related to maternal psychopathology, marital discord, expectations for child behavior, self-esteem, stressors and social support (Ferguson & Horwood, 1987; Forehand, Lautenschlager, Gaust, & Graziano, 1986; Mash & Johnston, 1983; Moretti, Fine, Halye & Marriage, 1985). The more open-ended a scale, and the less defined the criteria for making ratings, the more likely that these confounds will occur.

Axis V in DSM-IV is a fifth measure of impairment (American Psychiatric Association, 1993). This axis uses the Global Assessment of Functioning (GAF) Scale to rate both children and adult's overall functioning. It is to be rated with respect only to psychological, social, and occupational functioning. The GAF is rated on a scale from 1, indicating the lowest level of functioning to 100, indicating the highest level of functioning. Each ten point interval has a symptomatically oriented description. The GAF was derived from the GAS and the CGAS. There are no published reliability or validity data for this measure. It is supposed to be rated by a clinician. This could lead to difficulties with the reliability of the rating, since it is difficult for most clinicians to avoid confounding diagnostic speculations with assessments of a patient's functioning.

Axis V was first included in DSM-III (APA, 1980). This was a seven point scale, in which a clinician was asked to rate the client's highest level of adaptive

functioning during the past year. Rey, Plapp, Stewart, Richards, Bashir (1987), found that reliability for Axis V in DSM-III (1980) was similar for younger (.63) and older boys (.56), but reliability for younger girls (0.36) was lower than for older girls (0.51). A validity study by Rey, Stewart, Plapp, Bashir, & Richards (1988) found that, for adolescents, Axis V correlated more highly with premorbid functioning (0.76) than with present social competence (-0.46).

Multidimensional Measures of Functional Impairment

All of the measures discussed thus far are global measures of impairment. Global measures give a description of the child's overall level of functioning, but do not discretely measure the child's functioning in a variety of areas. Multidimensional measures have been developed to provide more elaborate information on children's functioning.

The Children's Impairment Scale, (Sorenson, 1982) is one such measure. It consists of global ratings in four areas: Developmental Status (overall maturity of a child's physical, emotional, and intellectual capabilities), School Adjustment (child's academic performance and behavior at school), Interpersonal Relations (child's ability to relate to others), and Current Living Environment (the ability of the living environment to meet the child's needs), with no overall rating of function. Each of these subscales is scored by assigning a number from one to five, where level five represents severe impairment and level one represents no impairment. A descriptive paragraph explains each level of each scale. The inter-rater reliability for the Developmental Status was .69 for outpatients and .40 for inpatients; .69 for outpatient school adjustment, .38 for inpatient school adjustment; .69 for outpatients interpersonal

relations, .22 for inpatient interpersonal relations ; .81 for outpatient living environment and .39 for inpatient living environment (Sorenson, 1982). All of the scales had higher reliability coefficients for outpatients than for inpatients. This may reflect the greater range of impairment among outpatients compared to inpatients, or it may reflect a true superiority in this scale's performance in outpatient settings. All of the scales except for the Developmental Status scale were able to discriminate between inpatients and outpatients. However, different therapists rated inpatients than those who rated outpatients. Similar to the GAS, Sorenson et al. (1982) found that inpatient raters rated the training vignettes as more impaired than outpatient raters. The different areas of impairment were modestly intercorrelated in adolescents, but among young children, the correlations among the subscales were high, ranging from .60 to .80. The Children's Impairment Scale was not studied in relation to other measures of child psychopathology, so the concurrent validity of this measure has not been established.

The Progress Evaluation Scales for Children (ages 6 to 12), and the Progress Evaluation Scale for Adolescents (ages 13 to 17) (Ihilevich & Gleser, 1982) are also multidimensional measures of functional impairment. The PES rates functioning in a variety of domains including: 1)Family interaction (dependence-independence-interdependence in one's relationship with other family members); 2) occupation (ability to function in school, job, or homemaking role); 3) getting along with others (socialization); 4) feelings and mood (the level of affective modulation); 5) use of free time (ability to participate in and create resources for play and enjoyment); 6) problems (the coping capacity the person can bring to bear on his or her daily problems); and 7)

attitude toward self (self-esteem). Each scale consists of five levels rated from 1 to 5, from the most pathological to the healthiest levels of functioning observed in the community. The scales can be completed by parents, therapists, and the child or adolescent. A study using therapists as informants found that the scales were able to differentiate between outpatients and patients in partial hospitalization, with children in partial hospitalization scoring lower (i.e., more impaired) on all of the PES scales. The adolescent self-report version of the PES was compared to the self-report Adolescent Life Assessment Checklist (ALAC; Gleser et al., 1977), that measures affective distress, unproductivity, sociopathy, peer alienation, somatic complaints, and tolerance of intimacy. All but the last scale of the ALAC, are keyed so that a higher score indicates more pathology. Resulting correlations indicated a high degree of concurrent validity between the two instruments. Family Interaction correlated .26 with Tolerance of Intimacy. Poor Occupation (school adjustment) related significantly with Unproductivity (-0.24), Sociopathy (-0.28), Peer Alienation (-0.32), and Somatic Complaints (-0.51). Difficulty in Getting Along with Others was associated with Sociopathy (-0.20), Peer Alienation (-0.26), and poor Tolerance of Intimacy (0.19). Poor Use for Free Time was also associated with Peer Alienation (-0.31) and poor Tolerance of Intimacy (0.30). Both Feelings and Mood and Problems correlated significantly with five of the six scales.

Although, the PES is noteworthy in its attention to a wide variety of functional areas, it has a number of drawbacks. There is an unduly large inter-rater variance on some scales. The estimated variance due to average differences between ratings of therapists on any one person ranged from .18 to .52 in the outpatient sample and .18 to

.50 for the day hospital. In addition, inter-rater reliability was only assessed on a very small sample of children (N=14). Ihilevich and Gleser (1982) hypothesized that the source of the difficulty lay in the fact that children's behavior is often difficult to interpret and parental reports are frequently inconsistent. To improve the quality of the data, they suggested that clinician ratings of children on the PES should be made after two or three intake sessions, instead of the previously used one hour diagnostic interview. While this would help establish rapport and allow the therapists a greater period of time in which to judge the child, in an inpatient setting, it is too lengthy and laber intensive. It does not briefly assess the pivotal problem, so that a treatment plan can be implemented immediately upon admission to the facility. Another problem with the PES, is that it is not sufficiently behaviorally anchored and items do not have objective referents and hence are vulnerable to subjective interpretations.

In the adult literature, alternative measures have been developed that attempt to identify impairment in multiple areas. One such measure is the North Carolina Functional Assessment Scale (NCFAS; North Carolina Department of Human Resources, 1989). Hodges (1991) used the NCFAS as a model to develop the Child and Adolescent Functional Assessment Scale (CAFAS), a multidimensional measure of functional impairment in children. In developing the CAFAS, extensive modifications were made to the NCFAS so that it would be more applicable for children and adolescents. The CAFAS is a scoring grid and not a questionnaire. Hodges consulted with 40 psychologists and psychiatrists regarding the face validity of the measure. These consultants were able to provide a wide array of perspectives including, child psychopathology, normal development, and the special needs of Hispanic and African-

American children. However, the CAFAS is not based on any particular theory or model of psychopathology and ratings are not intended to reflect the etiology/causes or the dynamics underlying the youth's problems or dysfunctions. Instead the CAFAS mostly measures the degree of impairment in a youth's or the child's current functioning regardless of history, causes, or prognosis of a mental health disorder.

The CAFAS yields a total score as well as scores for subscales, consisting of Role Performance (in home/work, school, and the community), Thinking, Behavior Toward Others, Moods/Emotions, Self-Harm and Substance Use. For each subscale, a rater determines the most severe level of dysfunction within a specified period of time (usually 3 months). Four different levels of impairment can be assigned. These four levels are: 0 for Average (minimal or no impairment); 10 or Mild (significant problems and distress); 20 for Moderate (persistent disruption or incapacitation); and 30 for Severe (severe disruption or incapacitation). For each level, on every scale there are items with specifying criteria for that level. To score each subscale, the rater reviews the items in the Severe category first. If any item describes the child's functioning, the rater assigns a score of Severe or 30 to that subscale. If none of the Severe items describe the child, the rater precedes to the Moderate category, and progresses in this manner until an item that describes the child's functioning is located. The rater uses information obtained from a semi-structured interview with the child's parent to decide on the child's level of impairment. Raters can use additional information from the Child Assessment Schedule (CAS; Hodges, Cools, & McKnew, 1989) and information from case records to rate the level of impairment.

The CAFAS scale originally was used as a guide for rating functional

impairment on the bases of information obtained from the Child Assessment Schedule, a structured diagnostic interview (Hodges et al., 1989). Two studies assessing interrater-reliability used a brief description of the family constellation and current circumstances, and a summary of both mother and child responses on a structured diagnostic interview (i.e., Child assessment schedule; Hodges et al., 1989) to obtain CAFAS scores. The first study used 13 raters, six of these raters had college degrees or less, six had masters degrees, and one had a doctoral degree. The second study used 20 raters who were enrolled at Masters program in a Clinical Psychology. Raters for both studies were trained with a manual. Raters for the second study were also given supplemental guidelines for scoring the CAFAS. The raters rated each subscale and added each level of impairment to obtain a total score. The results for the total CAFAS score (Study 1: r=.82; Study 2: r=.81) and for Role Performance (Study 1: r=.74; Study 2: r=.74) and Behavior Towards Others/Self (Study 1: r=.77; Study 2: r=.78) were satisfactory in both studies. The results for the Moods/Emotions subscale were unsatisfactory in the first study (r=.44), but were slightly better in the second study (r=.69). The results for the Thinking subscale were somewhat unsatisfactory in the first study (r=.64) and very unsatisfactory in the second study (r=.31). The Substance Use subscale was assessed in the second study only (r=.86). Pearson r correlations calculated between the GLOF and the CAFAS total score were significant (r=-.84 for Study 1 and -.83 for Study 2). The negative correlations were expected because high impairment is noted by a low score on the GLOF and a high score on the CAFAS.

The CAFAS Scale uses clearer and more objective referents than its

predecessors. However, while the CAFAS measures a multidimensional level of functional impairment, it still uses raters judgements to obtain scores, and these judgements are still subject to personal biases (as noted by difficulties obtaining adequate reliability on several scales). A new semi-structured interview designed to accompany the CAFAS scale, allows the rater to probe for more information. Reliability of this instrument is currently being assessed (Hodges, personal communication). However, the extent to which each individual rater probes for information could affect the score that the youth is given. No data on this hypothesis is available, but it is a potential flaw in this instrument.

Frank & Paul (1995) recently developed an alternative method of assessing functional impairment that in large part was based on the CAFAS but relied solely on parent report rather than clinicians judgements based on interviews with patients. This method uses an objective questionnaire to assess how impaired a child is in the same 8 areas measured by the CAFAS scale. These areas are School, Home, Community/Legal, Thinking, Being with Others, Moods and Emotions, Self-Harm, and Alcohol and Drug Use. For each area of the FISCA scale, there is a corresponding section in the FISCA questionnaire. The purpose of this study is to examine the psychometric properties of this questionnaire, known as the Functional Impairment Scale for Children and Adolescents (FISCA; Frank & Paul, 1995).

Briefly, the development of the scale entailed taking each scale on the CAFAS (e.g., school) and combining similar criteria (e.g., grade average is lower than "C" and failing at least half of academic courses). The authors also deleted criteria that used prior history or mental illness to rate the child as more impaired (e.g., criteria that

rated the child as more impaired if they had received an attentional disorder diagnosis). Criteria on the CAFAS that were overly detailed or redundant were simplified (e.g., behavior causes removal from regular school (or impending threat of removal) due to potential harm to others related to aggressive behavior or threat of aggressive behavior" is now "behavior is so out of control that the child is practically unmanageable in the classroom"). Criteria on the CAFAS scale that were ambiguous were clarified. For example, "not in school because of impairment" was stated as "not in school because of school refusal or school phobia".

For each of the FISCA criteria Frank and Paul asked an objective question to see if the child met the criteria. For example, for criteria 04 (chronic skipping or truancy resulted in punitive actions or poor academic performance) parents were asked how many times their child had skipped school and if at all, whether skipping resulted in lost course credit, poor grades, complaints from school officials or suspension.

Overlap between Functional Impairment, as measured by the FISCA and measures of Symptom Distress and Diagnosis.

The remainder of this chapter discusses issues inherent in assessing the psychometric properties of the Functional Impairment Scale for Children and Adolescents (FISCA). The FISCA and widely used measures of symptom distress such as the Child Behavior Checklist (CBCL; Achenbach & Edelbroch, 1983) and the Youth Self-Report (YSR; Achenbach & Edelbroch, 1987) measure different dimensions of child and adolescent psychopathology. These measures in certain respects are structurally similar. The FISCA measures specific areas of impairment as well as a total level of impairment; the CBCL and YSR measure groups of symptoms or

syndromes and a total level of symptomatology.

The CBCL and YSR measure eight "core syndromes" or symptom groups. These core syndromes are labeled Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior, and Aggressive Behavior. In addition, the narrow-band Withdrawn, Somatic Complaints, and Anxious/Depressed scales together make up an Internalizing factor and the narrow-band Delinquent Behavior and Aggressive Behavior scales together constitute an Externalizing factor. Most (118 of the 120) individual items are combined to make a total problem score.

The CBCL syndromes were common to nearly all age and sex groups and to both the parent report on the CBCL and child report on the YSR (Achenbach, 1991). In addition to these scales, the CBCL and YSR include scales to measure social competence. The CBCL measures social competence in three areas: activities, social and school. These three areas can also be combined to form a total competence score. The YSR only measures social competence in activities and social settings.

A certain degree of overlap is expected between the FISCA and measures of symptomatology such as the YSR and the CBCL because the FISCA includes some symptoms/behaviors as part of the criteria for measuring impairment. Areas of the FISCA that are in large part defined by the presence of symptoms (e.g., Thinking) should overlap quite a bit with scales on the CBCL and YSR that measure that symptom group (i.e., Thought Problems). However, while a reasonable degree of overlap (i.e., a significant correlation) is expected, a certain degree of independence (i.e., correlation should not be more than .70) between the FISCA and the CBCL and

YSR is also anticipated. Other measures of Functional Impairment have correlated with symptom checklists from .26 to .75. Similar results are expected with the FISCA and measures of symptomatology. Symptom checklists require only that the patient have certain symptoms; while in order to be rated as impaired (in Thinking as well in other symptom areas such as Moods and Emotions) by the FISCA, the patient must not only have the presence of symptoms but the presence of these symptoms must also be linked to impaired functioning.

The structure of the FISCA also is similar in some important ways to DSM-IV. Scoring of impairment is based on both symptoms and evidence of functional impairment in the various areas measured by the FISCA. This structure is similar to the DSM-IV in that groups of DSM-IV diagnoses are indicated by a combination of symptoms and functional impairment. Considering these similarities, a significant degree of overlap between the FISCA scores and diagnosis is to be expected as well. However, there are also differences between diagnostic categories and what is measured by the FISCA as a result of difference in emphasis. The FISCA includes symptoms, yet the main focus is on levels of functional impairment in specific areas; in contrast, the main focus of diagnoses are particular clusters of symptoms not areas of impairment. A child who is rated as impaired in only one area in the FISCA could receive several diagnoses. For instance, a child who meets criteria on the FISCA for severe impairment in school could meet criteria for several diagnoses that are often associated with and in part identified with school impairment, including, depression, mania, conduct disorder, and attention deficit disorder. The diagnosis would depend on what other symptoms accompanied the school impairment. Because of these

differences, a certain degree of independence between the FISCA and diagnoses should be expected as well.

Informant Issues

When studying the overlap between functional impairment and symptoms or diagnoses, it is very important to consider from whom the information is being obtained. The question of which informant provides the most valid information as to childhood behavior disorders, has been heavily researched. Consistently low correlations between children, parents, teachers, peers, and mental health professionals have been reported (Achenbach, McConaugh, & Howell, 1987; Verhulst & Van der Ende, 1991; Kolko & Kazdin, 1993). These discrepancies have been found with symptom scales (Moretti, Fine, Haley, & Marriage, 1985; Achenbach, McConaugh, & Howell, 1987; Verhulst & Van der Ende, 1992; Kolko & Kazdin, 1993) and with diagnostic interviews (Edelbrock, Costello, Dulcan, Conover, & Kalas, 1986; Hodges, Gordon, & Lennon, 1990). These differences in reporting may be because one or the other informant is a poor reporter or it may be that different informants contribute different, but in each case, valid information. Parents seem more capable of reporting behavioral manifestations of emotions, such as overt expressions of depressed affect or aggressive behavior, but have more difficulty reporting on their children's internal feelings. Hence higher parent-child agreement has been reported for externalizing than internalizing symptoms (Edelbrock, Costello, Dulcan, Conover, & Kalas, 1986). Several studies have indicated that children are better informants regarding their subjective, internal symptoms, while adults are more likely to over report behavioral problems (Angold et al., 1987; Ivens & Rehms, 1988; and Jensen et al., 1989).

While parents appear less sensitive to internalizing symptoms in their children, their reports are highly specific (i.e., when they do identify depression, they are usually correct) (Angold et al., 1987). In addition, the differences in parent and child report of depression do not mean that children are necessarily better reporters of their depression. While research has shown that children are able to report their emotions accurately and consistently (Reynolds & Graves, 1989), this does not mean parents' report of child's depression is not important. Parent and child report of depression have been shown to relate to different problems (Kazdin, 1990). For instance, child self-report measures of depression correlate with suicidal attempt and ideation, hopelessness, low self-esteem, negative attributional style, and child-rearing practices of the parent such as abuse (Haley, Fine, Mage, Moretti, & Freeman, 1985; Kazdin, French, Unis, Esveldt-Dawson, & Sherick, 1983; J. Kazdin, Moser, Colbus, & Bell, 1985; and Sacco & Graves, 1984). Parental report of their children's depression correlates with diminished social interaction patterns on the part of the child and overt signs of expressive affect (Kazdin, 1985). Thus, it seems that both child and parent reports are valid measures of childhood depression. Overall, the research on child-parent differences indicates that regardless of what measure is used there will be a discrepancy between the child's or adolescent's self-report and parent's reports.

Psychometric evaluation of the FISCA

This study attempts to provide some initial evidence of the FISCA's validity using parent and child report data that primarily but not exclusively were collected in an inpatient setting. This study focused on two types of validity including: construct validity, which assesses the extent to which a test measures a psychological construct or

trait, and criterion-related validity, which measures the extent to which an instrument measures or predicts some behavior as checked against an independent criterion (Sattler, 1988).

Criterion-validity consists of three subtypes of validity: 1)concurrent validity, defined by the strength of the relationship between the instrument and an alternative measure of a similar construct obtained at approximately the same time; 2) discriminant validity, assessed by the ability of the instrument to distinguish between theoretically predicted groups; and 3) predictive validity, measured by the ability of the measure to predict scores on another measure taken at a later point in time (Cronbach & Meehl, 1967). Since the FISCA will be used as an assessment tool, it is important to assess if it is measuring what it is supposed to measure and the appropriateness with which inferences can be made on the basis of the FISCA scores; i.e. the construct validity. Because all three types of criterion-related validity can be used to demonstrate construct validity (Spitzer, Endicott,& Robbins, 1975), this study assesses the criterion-related validity of the FISCA.

Concurrent Validity: The FISCA was examined in relation to measures of symptom distress to establish its concurrent validity. In order to assess the degree of overlap between functional impairment and symptoms, the total FISCA score was examined in relation to the total score on the Child Behavior Checklist (CBCL) and on the Youth Self-Report (YSR). The FISCA total score was hypothesized to correlate significantly with the CBCL and the YSR and with youth report of drug and alcohol use on a substance abuse questionnaire.. The literature indicates that child-parent report discrepancies may result in slightly lower correlations between the FISCA

(parent-report) and the YSR (child-report) than between the FISCA and the CBCL (parent-report). Each individual FISCA scale was hypothesized to correlate significantly with measures of symptomatology that assess conceptually similar problem areas. While, the FISCA and symptomatology measures were hypothesized to be significantly related, correlations are expected to be moderate at best (i.e., around .35 to .40), since the FISCA and the symptomatology measures are not expected to be identical.

In particular (1) the Moods and Emotions scale on the FISCA should relate to the Withdrawn, Somatic Complaints, and Anxious/Depressed narrow-band scales; and to the broad-band Internalizing Scale on both the CBCL and the YSR; (2) the Being with Others scale should relate to the Delinquent Behavior, Aggressive Behavior, Social Problems, and Externalizing scales on the CBCL and the YSR; (3) the Thinking scale of the FISCA should be related to the Thought Problems scale on the CBCL and YSR; (4) the Alcohol and Drug Use scale of the FISCA should correlate with the Adolescent Alcohol Involvement Scale (Mayer & Filstead, 1979) and the Michigan Drug Use Questionnaire (Zucker, Noll, & Fitzgerald, unpublished instrument); (5) the School scale of the FISCA should correlate with the Attention Problems, Aggressive Behavior, and Delinquent Behavior narrow-band scales, as well as the Externalizing scales on the YSR and the CBC; and (6) the Home scale and the Community/Legal scale of the FISCA should correlate with the Aggressive Behavior, Delinquent Behavior, and the Externalizing scale of the CBCL and the YSR.

To assess concurrent validity of the FISCA, the total FISCA score was examined in relation to two other measures of functional impairment: the Columbia

Impairment Scale (CIS; Bird et al., 1993) and the Children's Global Assessment Scale (CGAS; Shaffer et al., 1983) . The total FISCA score was hypothesized to be related to both the CIS score and the CGAS.

Discriminant validity: The second type of validity that was evaluated is discriminant validity. A comparison of ratings of impairment for inpatients and outpatients has been consistently used to provide information pertaining to the development of impairment measures (Shaffer et al., 1982; Bird, 1993; Sorenson et al., 1982; Hodges et al., 1990). To evaluate the discriminant validity of the FISCA, mean scores for inpatients and outpatients will be compared. It was hypothesized that inpatients will have higher levels of impairment than outpatients.

Psychiatric diagnoses generated from the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS; Puig-Antich & Ryan, 1986), will also be used to test the discriminating power of the FISCA. Each of the individual FISCA scales were examined in relation to the scale's ability to discriminate between diagnostic groups that are conceptually similar to the FISCA scale in question.

The Thinking Scale was hypothesized to discriminate between DSM-IV diagnoses classified as psychotic or non-psychotic and the substance-use scale is hypothesized to discriminate between patients who are diagnosed with Substance-Abuse Disorders and those that are not diagnosed with Substance-Abuse Disorders. In addition, the Moods and Emotions Scale was hypothesized to discriminate between those patients diagnosed with internalizing disorders (i.e., Major Depression and Anxiety Disorders) and those who are not diagnosed with internalizing disorders. The Role performance scales (School, Home and Community) and Being With Others scale

were hypothesized to discriminate between those children and adolescents who are diagnosed with externalizing disorders (i.e., conduct disorder, positional defiant disorder, intermittent explosive disorder) and those who are not.

The FISCA also should be able to discriminate between patients with no comorbidity, low comorbidity, and high comorbidity. Patients with greater comorbidity should have a higher level of functional impairment.

Predictive Validity: The last type of validity evaluated in this study is predictive validity, using length of stay (LOS) as the criterion variable. Although LOS is correlated with variables independent of the child's psychopathology, such as insurance coverage (Patrick et al., 1993) and age (Browning, 1986), it nevertheless has been shown to be highly correlated with initial level of impairment as well (Gordon, Jardiolin, & Gordon, 1985; Gordon, Vijay, Sloate, Burket, & Gordon, 1985). It is hypothesized that a child who is more impaired should recover more slowly and thus higher impairment in functioning will show a positive relationship with LOS.

HYPOTHESES

To summarize, a new multidimensional measure of child and adolescent functional impairment, the Functional Impairment Scale for Children and Adolescents, has been presented. The purpose of this study was to assess the degree of overlap between functional impairment as measured by the FISCA and patient symptomatology and diagnosis and, as such, to evaluate the psychometric properties of this measure by establishing concurrent, discriminant, and predictive validity. Hypotheses were as follows:

1. The FISCA scales will demonstrate adequate concurrent validity in that:

   A1. The Total FISCA score and each FISCA scale will correlate significantly with two other global measures of functional impairment, the Children's Global Assessment Scale (Shaffer et al., 1983) and the Columbia Impairment Scale (Bird et al., 1993).

   B1. The total FISCA score will correlate moderately and significantly with a total problem score on the Youth Self Report and Child Behavior Checklist.

   B2. Each of the individual FISCA scales will correlate significantly with measures of symptomatology, especially those assessing conceptually similar problem areas. The literature indicates that somewhat lower

correlations are expected between the FISCA scales and corresponding child-report measures of symptoms than with corresponding parent-report measures of symptoms because of parent-child reporting discrepancies.

2. The FISCA scales will demonstrate adequate discriminant validity as operationalized by the following hypotheses:

   A. The FISCA will be able to discriminate between outpatient and inpatients in that the mean FISCA score for inpatients will be significantly higher than the mean score for outpatients.

   B. The FISCA will be able to discriminate between patients with no comorbidity, low comorbidity, and high comorbidity. Patients meeting criteria for a greater number of diagnoses will have higher functional impairment scores than those meeting criteria for fewer diagnoses.

   C. Each of the individual FISCA scales will be examined in relation to their ability to discriminate between diagnostic groups. The most conceptually similar FISCA scale was hypothesized to be the best discriminator of a particular diagnostic group.

3. The FISCA scales will demonstrate adequate predictive validity in that:

   A. The FISCA will be significantly and positively related to differences in patient's length of stay (LOS).

METHOD

SAMPLE

The participants included both children and adolescents and their parents in an inpatient setting and parents of children and adolescent outpatients. Five subsamples were used to test various hypotheses. Sample I was used to test the relationship between the FISCA and two other measures of functional impairment (the CIS and the CGAS), and between the FISCA and diagnoses. Sample II was used to test the relationship between the FISCA and parent report of symptomatology. Sample III was used to test the relationship between the FISCA and the Youth Self Report (Achenbach, 1991b). Sample IV was used to test the relationship between the FISCA and adolescent report of their alcohol and drug use. Sample V was used to test the ability of the FISCA to discriminate between inpatients and outpatients.

Inpatients

Participants in the inpatient sample were 400 children and adolescents, ages 6 to 17, and their parents. The study consisted mainly of mothers, because mothers were more likely to accompany their child to the hospital and to complete the measures. The patients were consecutive admissions to two private Midwestern psychiatric hospitals, one in Nebraska, and one in Michigan. Demographic information on the subsamples is listed in Table 1. More than half of the total sample are Caucasian (53%), however

this is not surprising because patients in both hospitals came primarily from rural areas with largely Caucasian populations.

The Nebraska facility has a child and an adolescent unit and the Michigan facility has three units: one that treats children that are under 11 years of age and severely developmentally delayed older children; one that treats adolescents with more "internalizing" problems; and one that treats adolescents with more "externalizing" problems. The ratio of males to females was expected to be approximately equal for adolescents, but it was expected that for younger children, there would be substantially more boys than girls. Children and adolescents hospitalized during the study period who do not have a current FISCA were excluded. The diagnostic interview, parent and self-report of symptoms data were collected from the Michigan facility. These data were unavailable for the Nebraska facility. Analyses that utilize adolescent self-report data will be subject to the following inclusion criteria: 1) the child must be at least 11 years old; 2)must have an IQ of 70 or greater or have no record of being developmentally delayed; and 3) have no evidence of thought disorder or organicity.

Outpatients

Participants will be 100 parents of children and adolescents, ages 6 to 17, who are receiving outpatient services in one of two private Midwestern psychological clinics. When subjects first started receiving services at the outpatient clinic they were asked to participate in the study. Both clinics also treat patients who were recently discharged from the hospital. These patients were excluded from the study. Demographic information on this sample is listed in Table 1. Outpatients who initially

Table 1

Demographic Information for all Samples

	Sample *I*	Sample II	Sample III	Sample IV	Sample V	Total Sample (VI)
Age	Range:6-17 M=12.7 (sd=2.9)	Range:6-17 M=13.2 (sd=2.6)	Range:6-17 M=14.4 (sd=1.7)	Range:6-17 M=14.4 (sd=1.7)	Range:6-17 M=12.8 (sd=3.1)	Range:6-17 M=13.5 (sd=2.5)
Sex	32 boys, 43 girls	101 boys, 94 girls	100 boys, 102 girls	97 boys, 103 girls	110 boys, 90 girls	209 boys, 187 girls
Ethnicity	76 % Caucasian, 5% Native Americans, 5% Hispanics, , 4% African-American	49 % Caucasian, 3% Native Americans, 31% Hispanic, 3% Asian, 3% African-American	57% Caucasian, 3% Native Americans, 19% Hispanics 2% Asian, 6% African-American	62 % Caucasian, 3% Native Americans, 17% Hispanics, 1% Asian, 4% African-American	33% Caucasian, 7% Native Americans, 30% Hispanic 5% Asian, 5% African-American	53 % Caucasian, 3% Native Americans, 25% Hispanic 2% Asian, 3% African-American
Income	33% <12,000 28% 12,000-29,999 22% 30,000-69,999 3% > 70,000	33% <12,000 28%12,000-29,999 22%30,000-69,999 3% > 70,000	23% <12,000 28% 12,000-29,999 33% 30,000-69,999 7% > 70,000	27% <12,000 27% 12,000-29,999 32% 30,000-69,999 6% > 70,000	19% <12,000 47% 12,000-29,999 22% 30,000-69,999 3% > 70,000	27% <12,000 30% 12,000-29,999 29% 30,000-69,999 4% > 70,000
Mother Education	7% not a high school graduate, 29% high school graduate, 20% some college, 5% college, 3% graduate degree	12% not a high school graduate, 36% high school graduate, 37% some college,8% college, 5% graduate degree	11% not a high school graduate, 38% high school graduate, 32% some college,7% college, 5% graduate degree	11% not a high school graduate, 38% high school graduate, 30% some college, 5% college, 5% graduate degree	15% not a high school graduate, 31% high school graduate, 37% some college, 6% college, 5% graduate degree	13% not a high school graduate, 35% high school graduate, 34% some college,9% college, 5% graduate degree
Father Education	9% not a high school graduate, 41% high school graduate, 28% some college, 8% college, 3% graduate degree	13% not a high school graduate, 28% high school graduate, 19% some college,6% college, 7% graduate degree	18% not a high school, 27% high school graduate, 21% some college, 6% college, 4% graduate degree	11% not a high school graduate, 28% high school graduate, 20% some college,5% college, 4% graduate degree	18% not a high school graduate, 23% high school graduate, 29% some college,6% college, 4% graduate degree	24% not a high school graduate, 26% high school graduate, 23% some college,6% college, 5% graduate degree
Mother Occupation	Range: 175-764 M=335.9 (sd=179.2)	Range: 154-90. M=340.5 (sd=174.8)	Range: 168-819 M=329.0 (sd=156.9)	Range: 168-819 M=320.3 (sd=157.6)	Range: 152-903 M=343.8 (sd=210.8)	Range:154-903 M=345.3 (sd=179.2)
Father Occupation	Range: 168-660 M=287.3 (sd=157.7)	Range: 135-896 M=346.2 (sd=184.6)	Range: 145-896 M=342.8 (sd=192.7)	Range: 145-896 M=335.5 (sd=185.7)	Range: 168-857 M=344.7 (sd=202.7)	Range: 135-896 M=353.2 (sd=186.8)

came to the hospital requesting inpatient care and were referred to the outpatient clinics were excluded.

Measures

Measures of Functional Impairment

The Functional Impairment Scale for Children and Adolescents (FISCA; Frank & Paul, 1995). The FISCA is a parent-completed questionnaire assessing functional impairment in children ages 6 to 18 (See Appendix A). The FISCA measures a child or adolescent's impairment in eight different areas: School, Home, Community, Thinking, Being With Others, Moods & Emotions, Self-Harm and Alcohol and Drug Use. Development of the FISCA is based in large part on criteria for level of impairment identified by the Child and Adolescent Functional Assessment Scale (Hodges, 1990). The FISCA is a questionnaire that can be filled out by a wide variety of informants including parents in order to provide information needed to assess the presence of impairment criteria like those defined by the CAFAS. The FISCA uses a multiple choice format with specific responses. These responses are keyed to a particular criteria so that scoring is automatic. This is in sharp contrast to scoring of previous measures, including scoring of the interview accompanying the CAFAS, which mostly require clinical judgement.

For each area of impairment the CAFAS scale had criteria for mild, moderate and severe levels of impairment. The FISCA also has criteria for mild, moderate and severe levels impairment in each area of impairment (See Appendix A). The development of the FISCA criteria entailed reorganizing, modifying and in some cases deleting CAFAS criteria, as well as adding a few new criteria. Frank & Paul (1995)

deleted CAFAS criteria that used prior history or mental illness to rate the child as more impaired. The authors also modified criteria that were overly detailed, redundant or ambiguous and added relevant criteria dealing with eating problems. The revised criteria were organized to create the FISCA scale (See Appendix A). For each criteria, the authors developed objective questions to assess whether the child would meet each of the various criteria. For instance, for the criteria "set fires with malicious intent" the parent is asked if their child set fires on purpose to destroy property or hurt people. These questions were combined to create the FISCA questionnaire. The FISCA is scored using a scoring key that matches items or combinations of items to relevant criteria.

The Children's Global Assessment Scale (CGAS; Shaffer et al., 1983). The CGAS is a measure of severity of functional impairment which was adapted from the Global Assessment Scale developed for adults by Endicot et al., (1976). The measure has a range of 1 through 100 and provides anchor point descriptions of behavioral and emotional functioning for each decile. Scores above 70 indicate functioning in the normal range. It was designed for use with children 4 through 16 years of age. The scale was designed to be scored by a trained clinical interviewer. Bird et al. (1987) reported satisfactory test-retest stability over a 19 day period (.85). The CGAS was found to discriminate between outpatients (65.4) and inpatients (46.0) (Shaffer et al., 1983). The correlation between the CGAS and the Conners Abbreviated Scale was -.25 ($p > .05$, $df = 17$) in an outpatient sample (Shaffer et al., 1983). Green et al. (1994) found that the CGAS correlated with Activity Competence (.26), Full Scale IQ (.43), Social Relatedness (.33 for psychiatrist ratings, and .39 for milieu staff ratings).

The CGAS has also been found to correlate ($r=-.80$, $p < .01$) with the total score from a structured diagnostic interview, the Child Assessment Schedule (Hodges, Kline, Stern, Cytryn, & McKnew, 1982).

The Columbia Impairment Scale-Parent Form (CIS; Bird et al., 1993). The CIS is a 13-item scale that can be administered by a lay interviewer to provide a global measure of impairment. The scale was developed to tap four major areas of functioning; interpersonal relations (e.g., How much of a problem do you think he/she has with getting along with other kids his or her age?) certain broad areas of psychopathology (How much of a problem do you think he/she has with her behavior at home?); functioning at school or work (How much of a problem do you think he/she has with his/her schoolwork?) and use of leisure time (How much of a problem do you think she has getting involved in activities like sports or hobbies?). Factor analyses reveal that the scale is measuring one dimension. As a result, this study will use only the total score. Parents use a Likert scale ranging from 0, "no problem", to 4, "a very big problem" to respond to each item; the total score can range from a minimum of 0 to a maximum of 52. Bird et al. (1993) report good test-retest reliability for parent-report (Chronbach's alpha=0.89). The parent CIS correlates significantly with a therapist's rating ($r=-0.56$), with grades in school (.45).

Measures of Syptomatology

Child Behavior Checklist Parent Form (CBCL; Achenbach, 1991). The CBCL is a well-known, standardized measure of parent perceptions of behavior problems of children ages 4 to 18. It contains 118 specific behavior problem items and 20 social competence items. Parents are asked to rate behaviors that have occurred during the

last six months using a 3-point scale of 0 (not true), 1 (somewhat true), or 2 (often true). The checklist comprises 8 factor-based "narrow-band" syndromes and two global "broad-band" syndromes, which were developed using second-order factor analysis of the narrow-band syndromes. The narrow-band syndromes are labeled Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior, and Aggressive Behavior. The broad-band syndromes are labeled Internalizing, which includes the narrow-band Withdrawn, Somatic Complaints, and Anxious/Depressed scales, and Externalizing, which includes the Delinquent Behavior and Aggressive Behavior syndromes. In addition, all the items (but two) can be added to compute a total behavior problem score.

Social competence items require the parent to list the sports, hobbies, activities, clubs and jobs that the child is involved in and to rate their skill in each compared to other kids their child's age. In addition, the parent reports on how many friends the child has, how much time they spend with friends, the child's ability to get along with others, and his or her academic achievement. The social competence items form three scales, Activities, Social, and School. The scores from each of these three scales can be summed into a Total Competence score.

The CBCL manual provides evidence for the reliability of the CBCL. The reliability data was analyzed separately for children aged 4 to 11 and 12 to 18, and for boys and girls. The internal reliability of the narrow-band scales was assessed using Cronbach's alpha and ranges from .62 (Thought Problems, for boys, ages 4-11), to .92 (Aggressive Behavior for all groups). Cronbach's alphas are at least .89 for the

Internalizing Scale and at least .93 for the Externalizing scale for the total sample. Alphas for the Social Competence scales were lower than for the other scales, ranging from .42 (Activities for boys ages 4-11) to .64 (Total Competence for boys 12-18). Test-retest reliability over a one week period was .89 for the Behavior Problems scales and .87 for the Social Competence scales.

The CBCL manual also provides evidence for the validity of the CBCL. The CBCL scales have shown moderate to high correlations with similar scales generated from the Conners Parent Questionnaire (Conners, 1973), the Revised Behavior Checklist (Quay & Peterson, 1983) and the Werry-Weiss-Peters Activity Scale (Mash & Johnston, 1983). The CBCL has been shown to discriminate between referred and nonreferred children (Achenbach, 1991b).

Youth Self-Report (YSR; Achenbach, 1991c). The YSR is a widely used self-report measure designed for 11 to 18 year olds. The YSR contains 103 specific behavior problem items and 17 social competence items. The YSR was developed to obtain adolescents' views of their own behavior problems in a manner that would facilitate comparison with parental report on the CBCL. The YSR and the CBCL have 89 items in common. The YSR is scored the same way as the CBCL and contains the same narrow-band and broad-band syndromes. However, the Social Competence items only form two scales, Activities and Social.

The YSR manual provides evidence of the reliability of the YSR. The internal reliability of the narrow-band scales was assessed using Cronbach's alpha and ranges from .59 (Withdrawn for both sexes) to .90 (Anxious/Depressed for girls). Cronbach's alphas for the Internalizing Scale are .89 or greater and for the Externalizing scale are

.89 for both sexes. Alphas for the Social Competence scales were lower than for the other scales, ranging from .32 (Activities for girls) to .60 (Social for girls). Test-retest reliability over a one week period was .72 for the Behavior Problems scales and .76 for the Social Competence scales.

The YSR scales have shown moderate correlations with similar constructs derived from the CBCL parent and teacher forms (Stranger & Lewis, 1993). In addition, the YSR discriminates between children referred for mental health services and nonreferred children (Achenbach, 1991b).

Adolescent Alcohol Involvement Scale (AAIS; Mayer & Filstead, 1979). The AAIS is a 13 item self-report measure of the adolescent's alcohol use and involvement. The items assess the quantity and frequency of alcohol use, negative consequences resulting from excessive drinking (e.g., hangover, drunken driving), and contextual factors indicative of the amount of alcohol involvement (e.g., time of drinking, reasons for drinking, age of first drink, etc.). The items are totaled, with a higher score indicating more serious alcohol involvement. Mayer and Filstead (1979) reported two week test-retest reliability at .89 for controls and .91 for patients at an alcohol rehabilitation center and patients at an inpatient psychiatric hospital who misuse alcohol. They found no significant difference between boys' and girls' scores on the measure. They did find that in both groups the mean score at each year of age (13-18) was significantly different ($p < .01$) except between the ages of 13 and 14. The mean total score for the control group was 19 and the mean total score for the experimental group was 58.

The Michigan Drug Use Questionnaire (Zucker, Noll, & Fitzgerald, unpublished instrument). This is a 41 item self-report measure of adolescent drug use and involvement. It uses a 9-point Likert scale to assess how often the respondent had used marijuana, hash and 10 "hard" drugs (LSD, psychedelics, cocaine, amphetamines, quaaludes, barbiturates, tranquilizers, heroin, and other narcotics). The adolescents also report on negative consequences associated with drug use (e.g., "lost friends"; "been fired"; "had to go to hospital"). The responses were used to compute a total drug use and total drug consequences. Reliability and validity of this scale are currently being studied (Fitzgerald, personal communication). This measure has been used successfully in studies of adolescent inpatients (Frank & Burke, 1992; Frank & Poorman, 1993).

Measures of Diagnoses

The Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present Episode (K-SADS; Puig-Antich & Ryan, 1995). A semi-structured diagnostic interview, the K-SADS-P, will be used to assign diagnoses to a subsample of 75 patients (25 from each of 3 units: a unit that treats children under age 11 and severely developmentally delayed older children; one that treats adolescents with more "internalizing" problems; and one that treats adolescents with more "externalizing" problems).

The K-SADS-P assesses the patient's functioning and symptoms for a variety of psychiatric disorders, including depressive disorders, mania, psychosis, anxiety disorders, attentional disorders, conduct disorders and substance abuse disorders.

Test-retest reliability coefficients for the K-SADS are generally moderate to

high, with anxiety disorders showing the poorest reliability (Chambers et al., 1985).

The K-SADS is designed for use with children ages 6-18. While the validity of the K-SADS at different ages has not been evaluated empirically, evidence has suggested that stability of child self report information increases with age (Edelbrock, Costello, Kalas, Dulcan, & Conover, 1985).

Hodges, McKnew, Burbach & Roebuck (1987), reported that there was good concordance (ranging form .59 to .65) between the CAS (Hodges, 1982) and the K-SADS (Puig-Antich & Chambers, 1978), although low concordance was found for anxiety disorders. This study and other findings in the literature suggest that the poor concordance for anxiety disorder may reflect broader disagreement as to the criteria used to diagnose anxiety disorders (Hodges, 1987; Chambers et al., 1985; Costello et al., 1984).

Green et al. (1987) examined the K-SADS in relation to the Diagnostic Interview Schedule for Children (DISC; Costello, 1984). Agreement on diagnoses based on the K-SADS and the DISC were moderate and significant, with the exception of overanxious disorder which yielded nonsignificant agreement.

Length of Stay

Length of stay will be obtained from hospital discharge records that list the patient's admission date and discharge date.

Demographic Information

Demographic information (i.e., age, sex, mother education and occupation, father education and occupation, income and ethnicity) were obtained from a short demographic questionnaire. This questionnaire was developed by Frank (1995) to

assess basic demographic information for all patients seen at both the inpatient and outpatient facilities. Patients are asked to state how old their child is, and to report what their child's gender and ethnicity and the family income is. Income is rated on a scale from 0 (less than 8,000) to 6 (more than 100,000). Parents are asked to indicate the highest educational degree they have received. This is rated on a scale from 0 (some high school) to 7 (graduate or professional degree). The occupation scores were rated using the Duncan coding system (Mueller & Parcel, 1981). Higher numbers indicate jobs associated with a higher socio-economic status.

Procedures

This study involves two separate procedures; one for an inpatient group, and one for an outpatient group.

Inpatients

Parents of inpatients in the Nebraska facility also only completed the FISCA and Demographic Questionnaires. Michigan participants completed the FISCA and demographic questionnaire. In addition, subsamples of the Michigan group completed other measures. One subsample of Michigan parents also completed the CBCL (Achenbach, 1991a). Another subsample of Michigan parents also completed the diagnostic and impairment measures. A third sample of Michigan patients completed the Youth Self Report (Achenbach, 1991b). A fourth subsample of Michigan patients completed the Drug and Alcohol Questionnaires.

Measures Completed at Intake

Demographic Questionnaire (Frank, 1995). This measure was administered to the parents when they first brought their child to the hospital. This was administered in

both facilities.

The Functional Impairment Scale for Children and Adolescents (FISCA; Frank & Paul, 1995). The first measure that participants were asked to complete is the FISCA. Both the Nebraska and Michigan participants completed the FISCA. The FISCA is used as a part of the intake procedure. As with the outpatient sample, the FISCA is first introduced with a time-line. The FISCA was designed to help staff decide on the appropriateness of a hospital admission, however the FISCA was introduced during the study period and as a result it was often not scored or even consulted until after admission. In addition, during the study period, staff often scored the FISCA incorrectly. As a result, the author used a computer program to rescore all FISCA's used in this study.

Child Behavior Checklist Parent Form (CBCL; Achenbach, 1991). Once a decision to admit had been made, staff provided parents with a parent assessment packet to fill out in the waiting room or at home. The CBCL was a part of this assessment packet. Parents returned the packet either at admission or upon their next visit to the hospital.

Interview measures

The Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present Episode (K-SADS; Puig-Antich & Ryan, 1995). The K-SADS were being conducted as a part of this study, as well as, another study at the Michigan facility. At admission, the purpose of the study was explained to the parents. If the parents agreed to participate, they were asked to sign an informed consent (see Appendix C) and the child was asked to sign an informed assent (see Appendix D).

Participating parents received a $10 gift of appreciation after completing the interview. Since parents complete a lengthy protocol at admission and scheduling timely post-admission contact was difficult, the K-SADS-P interviews were conducted over the telephone within 48 hours of admission. Although no studies have assessed the reliability of this procedure, Hammen (1988) conducted telephone interviews for follow-up diagnoses, and found that subjects responded in a very similar manner over the phone as they did in face-to-face interviews. Within 48 hours after completing the interview with the parent, the interview with the child and adolescent was conducted in person. Interviews were conducted by the author and one other graduate student in clinical psychology who underwent rigorous training in the interviewing and scoring procedure by an experienced interviewer. To determine summary diagnoses based on both parent and child report, the two interviewers independently reviewed the scoring protocol and arrived at the final diagnoses. When there were differences they reviewed the diagnosis together and arrived at a consensus. Twenty parent and twenty child interviews were audiotaped and scored independently by both interviewers to provide a coefficient of interrater reliability.

The Columbia Impairment Scale-Parent Form (CIS; Bird et al., 1993). The CIS was administered over the phone to the parent at the end of the K-SADS interview. The parent was asked each question and presented with the five possible options. The interview was done within 48 hours of the child's admission.

The Children's Global Assessment Scale (CGAS; Shaffer et al., 1983). In this study, the CGAS was completed by the author and one other graduate student in clinical psychology who underwent training in the rating procedure. The students read

vignettes and rated the CGAS scores. When the raters disagreed, they reviewed the vignette together and arrived at a CGAS score. The CGAS was completed using information obtained during the K-SADS interview with both the parent and the child. Twenty parent and twenty child interviews were audiotaped and CGAS scores were independently rated by both raters on a common set of protocols to provide a coefficient of interrater reliability.

Child-report measures

The Youth Self Report (YSR; Achenbach, 1991b), Adolescent Alcohol Involvement Scale (AAIS; Mayer & Filstead, 1979) and the Michigan Drug Use Questionnaire (Zucker, Noll, & Fitzgerald, unpublished instrument) were completed by patients who are 11 to 17 years old. The patients had an IQ of 70 or greater or had no record of being developmentally delayed and they had no evidence of thought disorder or organicity. These measures were administered within 5 days of the child or adolescent's admittance to the hospital. Children who stayed less than five days may not have been able to complete these measures. These measures were given as part of a group testing situation in which trained undergraduate psychology students were available to assist in reading and to answer questions.

Outpatients

All outpatients in this sample came to the clinic to receive outpatient care and none requested inpatient care. Outpatients who initially came to the hospital requesting inpatient care and were referred to the outpatient clinics were excluded, so that the ability of the FISCA to discriminate between outpatients and inpatients could be more clearly examined. Parents of children in the outpatient sample only completed the

FISCA and the demographic information sheet. The other data was not available for this sample. The FISCA was used as part of the initial assessment. The FISCA was first introduced with a time line. The goal was to allow the parent to clearly orient him or herself in time so that the child's functioning can be accurately recorded or described for a specified time period. In particular, parents were asked to concentrate on specific deficits in functioning during the past three months (See Appendix B). Parents were asked to complete the FISCA in the waiting room before their first appointment.

RESULTS

Preliminary Analyses

Before testing each of the hypotheses, I ran preliminary analyses to examine whether any of the demographic variables could confound the results. These analyses were run for each of the 5 samples used to test the various hypotheses. For the most part, the demographic variables assessed in this study (i.e., father occupation, father education, mother occupation, mother education, income, age, gender and ethnicity) were related to both the independent and dependent variables assessed for any given hypotheses. The one exception was in Sample V (the Inpatient-Outpatient sample). In this sample age was related to total FISCA score as well as inpatient vs. outpatient status (i.e., level of care). As a result, age was controlled for in all analyses using the inpatient-outpatient sample (i.e., tests of Hypothesis 2A).

Hypothesis 1A

Hypothesis 1A states that the concurrent validity of the FISCA can be demonstrated by its significant relationship with two other measures of functional impairment: the Columbia Impairment Scale (CIS, Bird et al., 1993) and the Children's Global Assessment Scale (CGAS, Bird et al., 1987). Sample I (the diagnostic sample), consisting of data from 75 Michigan inpatients was used to test this hypothesis. This sample consisted of 53 mothers, 4 step-mothers, and 10 "others" (i.e., aunt,

grandmother and foster mother). Interrater reliability for the CGAS, established by 2 independent raters on 22 protocols, was very satisfactory ($r=.85$, $p<.001$).

Correlations between the FISCA and the CIS, and between the FISCA and the CGAS, supported the hypotheses (See Table 2). Higher scores indicative of greater impairment on the CIS correlated with higher scores (i.e., more impairment) on the FISCA. The FISCA and the CGAS also correlated significantly, with lower CGAS scores (indicative of more impairment) associated with higher FISCA scores. Among the FISCA subscales, School, Self-Harm, and Alcohol and Drug Use correlated significantly with the total CIS score, whereas, the School, Thinking, Mood, and Self-Harm FISCA subscales correlated significantly with the CGAS. In short, the FISCA , as expected, was related to two other measures of functional impairment, the CIS and the CGAS. These finding support the concurrent validity of the FISCA.

Hypotheses 1B and 1C

CBCL Sample

The total FISCA score was also expected to correlate in meaningful ways with scores on the Child Behavior Checklist (Hypothesis 1B). Sample II, used to test this hypothesis, consisted of 150 mothers, 21 fathers, 4 step-mothers, and 20 "others" (i.e., grandmother, aunt, foster-mother and legal guardian) of 195 children and adolescents at the Michigan inpatient facility. The FISCA was hypothesized to correlate with the total CBCL score and the internalizing and externalizing CBCL scales. Correlational analysis supported this hypothesis. The analyses indicated that the total FISCA score correlated significantly with both the CBCL internalizing ($r=.25$, $p<.000$) and CBCL

Table 2

The Correlations Between the FISCA and the CIS and CGAS

	CIS	CGAS
SCHOOL	.40[b]	-.24[a]
HOME	-.10	.15
COMMUNITY	.17	-.16
THINKING	.03	-.34[b]
BEING WITH OTHERS	.18	-.10
MOOD	.15	-.24[a]
SELF-HARM	.29[a]	-.34[a]
ALCOHOL & DRUG	.23[a]	-.04
TOTAL FISCA	.41[b]	-.41[b]

[a] $p \leq .05$
[b] $p \leq .001$

externalizing ($r=.51$, $p<.000$) scores as well as with the total CBCL score ($r=.21$, $p<.000$); notably the relationship between the total FISCA score and the externalizing scale was somewhat stronger than the relationships between the total FISCA score and either the CBCL internalizing scale or the total CBCL problem score.

A third hypothesis (1C) was that each of the individual FISCA scales would correlate with CBCL narrow-band scales measuring conceptually similar problem areas. Overall, most of the expected correlations between the CBCL and the FISCA were significant. These findings support the concurrent validity of the FISCA.

A total of 19 correlations were expected to be significant (these associations are shown in bold numbers in Table 3). 18 of the predicted relationships were significant at $p<.05$. By chance alone only one of 19 correlations should be significant at the .05 level; however, as many as 16 of the predicted relationships were still significant using a more conservative alpha of .003 established according to the Bonferonni correction procedure (Dunn, 1961). The one exception was failure to find a significant relationship between the FISCA school scale and the CBCL aggression scale. The additional exceptions were the relationships between the FISCA mood scale and the CBCL somatization scale and between the FISCA school scale and the CBCL externalizing scale.

Several unpredicted relationships between the FISCA subscales and the CBCL scales also were statistically significant (See Table 3). These correlations typically made theoretical sense but were somewhat lower than those predicted on an a priori basis.

Table 3

Correlations Between Narrow-Band CBCL Scales and FISCA Scales*

	FISCA SCALES						
CBCL SCALES	School	Home	Community	Thinking	Being with others	Moods & Emotions	Total FISCA
Withdrawn	.13	.06	-.10	.15	.09	**.22[a]**	.20[a]
Somatic Complaints	.08	.01	-.06	.07	-.02	**.15[a]**	.11
Anxious/ Depressed	.06	.05	-.01	.21[a]	.23[a]	**.24[b]**	.26[b]
Social Problems	.14	.12	.02	**.31[b]**	**.28[b]**	.13	.19[a]
Thought Problems	.14	.11	.11	**.39[b]**	**.18**	.17[a]	.30[b]
Attention Problems	**.24[b]**	.24[a]	.12	.30[b]	.30[b]	.20[a]	.30[b]
Delinquent Behavior	**.29[b]**	**.39[b]**	**.35[b]**	.16[a]	**.31[b]**	.12	.47[b]
Aggressive Behavior	**.12**	**.44[b]**	**.24[b]**	.35[b]	**.53[b]**	.21[a]	.42[b]
Internalizing	.11	.05	-.05	.19[a]	.15	**.26[b]**	.25[b]
External-izing	**.22[a]**	**.48[b]**	**.32[b]**	.32[b]	**.51[b]**	.21[b]	.51[b]
CBCL Total	.18[a]	.19[a]	.11	.11	.19[a]	.13	.28[b]

[a] $p \leq .05$
[b] $p \leq .001$

* Hypothesized correlations are in bold

YSR Sample

The FISCA was also expected to correlate in meaningful ways with scores on the Youth Self Report. These findings partially support the concurrent validity of the FISCA. Sample III, consisting of 192 children from the Michigan inpatient facility, was used to assess the relationship between adolescent patient's reports of symptom behaviors and the FISCA. Only the relationship between the FISCA total score and the YSR externalizing scale was significant ($r=.21$, $p<.01$).

The total FISCA did not correlate significantly with either the total Youth Self Report (YSR) score ($r=.06$) or the YSR internalizing scale ($r=-.05$). These findings indicates that the FISCA is more related to child report of externalizing problems than to internalizing problems.

Each of the FISCA subscales were hypothesized to relate to conceptually similar problem areas on the YSR. Overall, child reports on the YSR scales were less likely to be associated with the FISCA scales than parent reports of child problems on the CBCL, even though the number of significant FISCA-YSR correlations were greater than what would be expected by chance. A total of 19 correlations were expected to be significant (these associations are shown in bold numbers in Table 4). By chance only one would be expected to be significant. In fact, 6 of the 19 predicted correlations were significant. Five of the six significant relationships ($p<.05$) are with the School, Home and Community scales. A few meaningful non-hypothesized relationships also were significant. Overall, these findings provided only weak support for the concurrent validity of the FISCA.

Table 4

Correlations between FISCA scales and YSR scales*

	FISCA SCALES						
YSR SCALES	School	Home	Community	Thinking	Being with others	Moods & Emotions	Total FISCA
Withdrawn	-.04	-.14[a]	-.24[b]	-.06	-.07	**.03**	-.09
Somatic Complaints	.01	-.09	-.19[a]	.04	.04	**-.00**	-.03
Anxious/ Depressed	-.11	-.21	-.25[b]	.05	-.03	**.08**	-.05
Social Problems	.02	-.04	-.06	.09	**.05**	-.05	-.01
Thought Problems	-.06	-.05	-.04	**.15[a]**	-.05	.06	.09
Attention Problems	**.07**	-.04	-.09	.13	.08	.05	.12
Delinquent Behavior	**.19[a]**	**.15[a]**	**.19[a]**	.03	**.03**	-.02	.25
Aggressive Behavior	**.16[a]**	**.08**	**.02**	.12	**.12**	.01	.16
Internalizing	-.07	-.18	-.26	.03	.03	.05	-.05
Externalizing	**.19[a]**	**.11**	**.09**	.09	.09	-.00	.21[a]
YSR Total	.03	-.08	-.14	.08	.08	.05	**.06**

[a] $p \leq .05$
[b] $p \leq .001$

* Hypothesized correlations are in bold

Substance Abuse Sample

The FISCA was also hypothesized to correlate with adolescent patients' reports of their own drug and alcohol use. Sample IV, consisting of 200 adolescents from Michigan was used to test the hypothesis that the Alcohol and Drug use FISCA subscale in particular would be related to youth self-report of alcohol and drug use. Results substantial this hypothesis; and as such strongly supported the FISCA's concurrent validity. The Alcohol and Drug use FISCA subscale did correlate significantly with all 5 alcohol and drug use variables from the youth self report measures of substance use (see Table 5). The total FISCA score also correlated with youth self-report of substance use. Notably, of 35 possible correlations between the other FISCA subscales and the adolescents scores for the alcohol and drug variables, only 5 were significant at $p < .05$ (2 would be expected by chance).

Hypothesis 2A

The FISCA was expected to discriminate between inpatients and outpatients. Sample V, consisting of 50 outpatients and 50 inpatients for the Michigan facility and 50 outpatients and 50 inpatients for the Nebraska facility were used to test whether this prediction (Hypotheses 2A). Reporters in this sample consisted of 148 mothers, 25 fathers, 3 step-fathers and 24 "others" (e.g., grandmother, foster mother, foster father and legal guardian). Because age was associated with both level of care (M for outpatients was 12.05, M for inpatients was 13.52, $t(196) = 3.39$, $p < .05$) and the total FISCA score (older patients were more impaired, $r = .25$, $p < .01$) analyses testing this hypothesis included age as a covariate. As expected inpatients scored significantly higher on the FISCA ($M = 138$) than outpatients ($M = 103.2$) even after controlling for

Table 5

Correlations between Alcohol Drug Questionnaire Scores and the FISCA

	School	Home	Community	Thinking	Being with others	Moods & Emotions	Self-Harm	Alcohol & Drug	Total FISCA
Alcohol Abuse Impairment	.11	.07	.10	-.02	-.04	.12	.10	**.36[b]**	.23[b]
Alcohol Use	.12	.11	.14	.04	-.02	.13	.11	**.37[b]**	.29[b]
Monthly Pot Use	.15[a]	.06	.15[a]	-.18[a]	-.01	.08	-.16	**.48[b]**	.18[a]
Yearly Pot Use	.19[a]	.08	.17[a]	-.13	-.07	.13	-.06	**.53[b]**	.26[b]
Hard Drug Use	.07	.06	.10	.04	-.01	.07	.14[a]	**.28[b]**	.23[b]

[a]p≤.05

[b]p≤.001

* Hypothesized correlations are in bold

age ($F(1,195)=33.7$, $p<.01$). Additional analyses indicated that differences in the FISCA score associated with level of care did not differ as a function of facility location (Michigan vs. Nebraska) ($F(1,194)=.15$, p=n.s.).

Two discriminant analyses examined which FISCA scale or combination of FISCA scales would best discriminate between outpatient and inpatients. Results from both analyses supported the research prediction. Findings for the first analysis which first controlled for age and then tested all of the FISCA scales in a stepwise fashion are shown in Table 6. After entering age, the Home, Self-Harm, and Alcohol and Drug subscales met criteria for entry into the analysis and correlated most highly with the discriminant function. This function had a canonical correlation of .59 ($p<.001$) and correctly classified 70.2% of the participants into their actual level of care.

In a second analysis only age and the total FISCA score were entered into the discriminant analysis, resulting in a discriminant function with a canonical correlation of .44 ($p<.001$). As can be seen in Table 7, classification results for the FISCA subscales were very similar to results for total FISCA score. Both functions were able to successfully categorize between 66 and 69% of the sample into the appropriate level of care; however the total score was able to predict inpatient status somewhat better than the subscales whereas the subscales were somewhat better at predicting outpatient status than the total score.

Hypothesis 2B

Hypothesis 2B, arguing that the total FISCA score would be able to discriminate tested with Sample I consisting of 75 parents and their children from the Michigan

Table 6

Stepwise Discriminant Analysis of Level of Care using the FISCA Scales

Variables in Analysis after final step	Canonical Discriminant Function Coefficient	Correlation with Function
AGE	.36	.54
SCHOOL	*	.16
HOME	.53	.66
COMMUNITY	*	.39
THINKING	*	.14
BEING WITH OTHERS	*	.24
MOODS & EMOTIONS	*	.24
SELF-HARM	.48	.50
ALCOHOL & DRUG	.39	.56

* Scale did not meet F-value criteria for entry into the analyses.

Table 7

Age, Home, Self-Harm, and Alcohol-Drug FISCA scales Discriminant Function's Ability to Predict Inpatients and Outpatients

	Age, Home, Sharm & Alcdrug Discriminant Function			Age, Total FISCA Discriminant Function		
	# of Cases	Predicted Outpatient	Predicted Inpatients	# of Cases	Predicted Outpatient	Predicted Inpatients
Outpatients	98	58 59.2%	40 40.8%	98	67 68.4%	31 31.6%
Inpatients	100	27 27.0%	73 73.0%	100	30 30%	70 70%

facility. To test this hypothesis, patients were divided into several (overlapping) diagnostic groups based on results from the diagnostic interview (K-SADS; Puig-Antich, 1995). The Internalizing group consisted of individuals who had a diagnosis of Panic disorder, Major Depressive Disorder, Depressive Disorder Not otherwise specified, Separation Anxiety Disorder, Dysthymia, Generalized Anxiety Disorder or Phobic Disorder (N=56). The Externalizing group consisted of individuals with diagnoses of Oppositional Defiant Disorder, Attention-Deficit Hyperactivity Disorder, Intermittent Explosive Disorder, or Conduct Disorder (N=66). The Substance Abuse group consisted only of individuals with a Substance Abuse diagnoses (N=17). The Thought Disorder group consisted of individuals who had a diagnoses of Schizophreniform or Schizoaffective Disorder (N=3). Individuals could be in more than one diagnostic group. Interrater reliability for the diagnostic interview established for 22 protocols was satisfactory. Two raters had perfect agreement as to the presence or absence of Internalizing and Externalizing diagnostic categories (kappa=1). The raters were also able to reliably diagnose substance disorders (kappa=.90). Reliability for thought disorders was not possible to examine since none of the 22 patients in the reliability sample had a diagnoses of thought disorder.

Hypothesis 2B stated that patients with greater degrees of comorbidity would have higher FISCA scores. The data supported this prediction. Preliminary analyses indicated that mean FISCA total scores for individuals with 3,4, or 5 diagnoses were very similar; hence these individuals could be conceptualized as a single "High comorbidity" group. In this sample, 5 patients had no comorbidity, 18 had low comorbidity (2 diagnoses) and 52 had high comorbidity (3 or more diagnoses).

A Sex x Comorbidity Group ANOVA of the total FISCA score resulted in a non-significant F for the two-way interaction between sex and comorbidity. Hence the final test of Hypothesis 2B used a 1-way analysis of variance.

Results of this analysis indicated that the total FISCA scores could in fact discriminate between patients with different levels of comorbidity ($F(1,72) = 8.2$, $p < .05$). Mean total FISCA scores for each comorbidity group were 110.0 ($SD = 33.91$) for the single diagnoses group, 132.78 ($SD = 34.09$) for the low comorbidity group and 156.2 ($SD = 28.06$) for the high comorbidity. The linear trend analysis also resulted in a highly significant $F(1,72) = 10.8$, $p < .002$. A post-hoc comparison test using Newman Keul's test indicated that the single diagnostic group differed significantly from high comorbidity sample ($p < .05$).

Hypothesis 2C

Each of the individual FISCA scales were hypothesized to be able to discriminate between diagnostic groups. Specifically the most conceptually similar FISCA scale was hypothesized to be the best discriminator of a particular diagnostic group. Sample I was used to test Hypothesis 2C. In general, the FISCA scales were relatively successful at classifying cases into diagnostic groups. With the exception of the Moods and Emotions scale and internalizing diagnoses, these findings support the discriminant validity of the FISCA.

The hypothesis that the Moods and Emotions scale would be able to discriminate between patients with and without an internalizing diagnoses was not supported. A discriminant analysis using only the Moods and Emotions subscale failed

to discriminate between these patients. A stepwise discriminant analyses indicated that the School subscale for the FISCA alone among the various subscales was able to best discriminate between these groups; however the Moods and Emotions scale correlated .37 with this function (See Table 8). The School scale resulted in more true positive classifications than true negative classifications (See Table 9).

Since the Mood Scale alone was unable to discriminate between individuals with and without an internalizing diagnoses, additional analyses of the scale's ability to discriminate between specific internalizing diagnoses was conducted. The mood scale was not able to discriminate between individuals with and without a diagnoses of Depression or those individuals with and without an Anxiety Disorder. However only 7 of the 58 individuals diagnosed with Internalizing disorder did not also have an externalizing diagnosis.

The hypothesis that the Being With Others, School, Home and Community subscales would be able to discriminate between patients with and without an externalizing diagnoses was partially supported by the data. A discriminant analysis, in which the School, Home, Community and Being with Others subscales were entered simultaneously into the analyses, resulted in a function with a canonical correlation coefficient of .39, $p < .05$. School (canonical function coefficient=.63, correlation with function =.73) and Being with Others subscales (canonical function=.63, correlation with function=.76) were better discriminators than either the Home subscale (canonical function=.24, correlation with function=.23) or Community subscale (canonical function=.06, correlation with function=.24). The School, Home, Community and Being with Others function accurately predicted group membership for

Table 8

Results of Analyses Using FISCA Scales to Distinguish Between Diagnostic Groups

	Internalizing Diagnoses		Externalizing Diagnoses		Substance Abuse		Thought Disorder	
	Canonical Discriminant Function Coefficient	Correlation with Function	Canonical Discriminant Function Coefficient	Correlation with Function	Canonical Discriminant Function Coefficient	Correlation with Function	Canonical Discriminant Function Coefficient	Correlation with Function
School	1.0	1.0	.63610	.78	*	.15	*	.05
Home	*	-.05	*	-.00	*	.08	*	-.05
Community	*	.33	*	.19	*	.13	*	-.03
Thinking	*	.09	*	.26	*	-.15	-.82995	-.60
Being with Others	*	.22	.67343	.78	*	-.01	.83591	.60
Moods & Emotions	*	.37	*	.37	*	.02	*	.08
Self-Harm	*	.15	*	.10	*	.05	*	-.02
Alcohol & Drug	*	.13	*	.12	1.0	1.0	*	.18

* Scale did not meet F-value criteria for entry into the analyses.

Table 9

Ability of FISCA Scale Discriminant Functions to Classify Diagnostic Group Membership

	Internalizing		Externalizing		Substance Diagnosis		Thought Disorder	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
True Positive	39	69.6%	52	78.8%	11	64.7%	3	100%
True Negative	8	47.1%	5	71.4%	51	91.1%	59	84.3%
False Positive	9	52.9%	2	28.6%	5	8.9%	11	15.7%
False Negative	17	30.4%	14	21.2%	6	35.3%	0	0%
Grouped Cases Correctly Classified		64.38%		78.08%		84.93%		84.93%

79.45% of Sample I.

In a second stepwise discriminant analyses using all of the FISCA scales, only the Being with Others and the School subscales for the FISCA were able to discriminate between individuals with and without externalizing diagnoses (See Table 8). Both Community and Home had very low correlations with this function, but interestingly, the correlation between the FISCA Moods subscale and this function was relatively substantial (.37) (See Table 8). The discriminant function for this analysis successfully predicted 78.1% of group membership.

The hypothesis that the Alcohol and Drug scale would be able to discriminate between those individuals with and without Substance Abuse diagnosis was supported. A discriminant analysis in which only the Alcohol and Drug subscale was entered in the analysis was able to significantly discriminate between those patients with and without a Substance Abuse diagnosis. A stepwise discriminant analysis, simultaneously entering all FISCA scales still showed that only the Alcohol and Drug FISCA scale was able to discriminate between the groups (See Table 8). This scale was able to accurately classify 84.9% of the Diagnostic sample as in or out of the Substance Abuse diagnostic group (See Table 9).

Finally, the hypothesis that the Thinking scale on the FISCA would be able to discriminate between patients with and without Thought Disorder Diagnoses was supported. A discriminant analysis using only the thinking scale indicated that the thinking scale alone was able to correctly classify 64.4% of this sample. The Moods and Emotions function had a canonical correlation of .24 with this function. A stepwise discriminant analyses showed that the Thinking subscale and also the Being

with Others subscale together discriminated between the groups (See Table 8). The discriminant function correctly predicted group membership for 84.9% of the sample. The correlation with the total function was somewhat higher for the Being with Others scale than the Thinking scale.

Hypothesis 3

Hypothesis 3 stated that scores on the FISCA would predict length of stay for inpatients. Sample VI consisting of 396 patients, 346 from the Michigan facility and 50 from the Nebraska facility was used to test this hypothesis. This sample consisted of 285 mothers, 7 step-mothers, 53 fathers, 7 step-fathers, and 44 "others" (e.g., aunt, grandmother, and legal guardian). Notably, the location of the facility was related to both length of stay ($t = -2.23$, $p < .05$) and total FISCA score ($t = -2.6$, $p < .01$). In addition, regressing LOS on the FISCA X location interaction variable (after controlling for the two main effects) resulted in a significant interaction ($R^2 = .05$, $p < .05$). Length of stay was more strongly related to the total FISCA score for the Nebraska facility ($r = .47$, $p < .01$) than for the Michigan facility ($r = .13$; $p < .05$).

DISCUSSION

The aim of this study was to validate the Functional Impairment Scale for Children and Adolescents (FISCA) by establishing its concurrent, discriminant, and predictive validity. As such, the study assessed the degree of overlap between functional impairment as measured by the FISCA, and patient symptomatology and diagnoses. This discussion will summarize and comment on the validity findings and then discuss what the data suggests as to relation between functional impairment and symptomatology, as well as functional impairment and diagnoses.

Concurrent Validity of FISCA

Relation to other measures of functional impairment. One way of examining the FISCA's construct validity was by assessing its association with two other measures of functional impairment: the Columbia Impairment Scale (CIS) and the Children's Global Assessment Scale (CGAS). As expected, the FISCA total score was correlated significantly with both the CIS and CGAS. Patients showing more impairment on the FISCA showed more impairment on the CIS and CGAS. Correlations between the FISCA score on the one hand and scores on the CIS and CGAS on the other hand, were higher for the FISCA total score than for any of the FISCA subscale scores.

Close examination of correlations with the two global measures of functional impairment indicate that each of these measures was linked to somewhat different

aspects of the FISCA, with correlations between the CGAS and FISCA subscales more often significant than correlations between the CIS and the FISCA subscales. One way of explaining this pattern is that the CIS uses very global and ambiguously anchored questions about functioning (e.g., How much trouble does the child have getting along with his/her mother?), w hereas the FISCA and the CGAS rely more on descriptions of specific behaviors (e.g., skips school, hit someone, tried to hurt self, etc.).

More generally, correlations with the CIS and CGAS generally support the validity of the FISCA (especially total FISCA score) as a measure of functional impairment. Notably the FISCA's advantage over both of the other global impairment measures is that it allows the clinician and researcher not only to measure overall impairment, but also to pinpoint specifically where the child's impairment lies.

Relationship to symptoms and problem behaviors (hypothesis 1B and 1C): Parent report. The FISCA was also hypothesized to be related to parent's reports of child symptoms. First, the total FISCA score was hypothesized to correlate with the total Child Behavior Checklist Score (CBCL). Secondly, each of the FISCA subscales were hypothesized to correlate with specific CBCL scales measuring similar or closely related constructs.

As expected, the total FISCA score correlated significantly and positively with the total CBCL score. The total FISCA scores also correlated with scores for the CBCL internalizing scale and the CBCL externalizing scale. However, the total FISCA score was more correlated with the externalizing scale than with the internalizing scale.

The FISCA subscales also were examined in relation to the narrow-band CBCL scales. These data supported the FISCA's concurrent validity. Eighteen of 19 a priori

predictors were substantiated, i.e., the FISCA subscales and the CBCL scales measuring conceptually similar problem areas, did in fact appear to assess similar and related phenomena.

The individual FISCA subscales were also correlated with the CBCL broad-band scores. In short, the FISCA appears to assess impairments in functioning in relation to externalizing behaviors more strongly than it does with functioning in relation to internalizing behaviors. Most of the FISCA individual scores were more highly correlated with the CBCL externalizing scale than the CBCL internalizing scale. As would be expected, the only scale that was more correlated with the internalizing CBCL score was the Moods and Emotions scale.

This may be due in part to construction of the FISCA, in that the only scale that focuses exclusively on functional impairment as evidenced by internalizing behaviors is the Moods and Emotions Scale. The Home, Community, Being with Others and Alcohol and Drug FISCA scales mainly assess impairment in functioning in relation to externalizing difficulties. In addition, the School and Thinking scales also tend to emphasize externalizing problems; although internalizing problems' contributions to impairment in these areas are tapped as well. On a more theoretical plane, there is a plethora of evidence in the research literature that externalizing problems have a more chronic and pathonomic influence on functioning than internalizing problems (See Kazdin, 1985).

Nine correlations between the FISCA subscales and the CBCL subscales that had not been hypothesized were also statistically significant. Although these association (e.g., between home and attention problems and thinking and social

problems) made theoretical sense, predicted relationships between the FISCA subscales and corresponding CBCL scales generally were stronger than significant but not predicted relationships. Notably, 4 of the 9 non-hypothesized correlations were between various FISCA subscales (e.g., Thinking, Home, Being with Others, and Mood) and the Attentional Problems scale of the CBCL. Attentional problems undoubtedly disrupt functioning in many areas of children's lives. In fact the attention problems scale on the CBCL correlated significantly with almost all of the FISCA subscales with the one exception of the Community subscale. The Attention Problem Scale correlated most strongly with the Being with Others FISCA subscale and the Thinking FISCA subscale. This finding is consistent with the literature that shows that children with ADHD are impulsive, inattentive (which the Thinking scale taps with items such as, "find it difficult to remember things") and often engage in antisocial behavior (e.g., Hechtman & Weiss, 1983; Ross & Ross, 1982).

Relation to child reports of behavioral problems and symptoms of emotional distress. The FISCA was hypothesized to be correlated with child report of behavior problems and symptomatology. However, lower correlations were expected between the FISCA and child report of symptoms than with the FISCA and parent report of symptoms. The importance of informant differences has been discussed elsewhere (Achenbach et al., 1987). Generally, the literature indicates that parents seem more capable of reporting on behavioral manifestations of emotional difficulties in their children but have more difficulty identifying the nature and intensity of their child's internal feelings (Edlebrock et al., 1986). A similar finding was reported here. The School, Home, Community subscales of the FISCA assess overt behavioral difficulties

(as observed by the parent), and it was these scales that correlated most strongly and consistently with youth report of problem behaviors. However, findings for the Being with Others subscale were inconsistent. This scale highly correlated with parent report of child aggression and child externalizing behavior but was unrelated to youth report of aggression and externalizing behavior. This may have to do with differences in child and parent report of aggression across different settings. The CBCL does not specify which context the aggression is occurring in, whereas even more importantly, parents are probably less aware of their children's aggressive behavior with peers, than their behaviors at home; this can help to explain why the Being with Others FISCA subscale and youth report of aggression do not correlate. Overall, the correlations between the FISCA and the YSR were low and provided relatively weak support for the concurrent validity of the FISCA. This may be a result of parent-child informant differences. In addition, it may be that parent report of functional impairment does not relate to child report of symptoms and instead relates to other factors (such as family relations or number of hospilizations).

The FISCA also was expected to correlate with adolescents' report of their own alcohol and drug use. Youth reports of alcohol and drug use consistently and positively correlated with parent report of child substance use on the FISCA (r's ranged from .18 to .53). Relationships between the FISCA and the alcohol and drug measures generally were stronger and more consistent then relationships between the FISCA and the YSR. These results suggest that the relative influence of informant differences may depend on what is being reported. The FISCA alcohol and drug scale asks about not only how much children drink, but also about whether children are drinking or doing drugs to

such an extent that they are having legal problems, are injuring themselves, or are addicted. It looks at impairment in functioning due to alcohol or drug use rather than at underlying motivations or emotional difficulties that could result in alcohol or drug use. The youth self-report alcohol and drug measures also asses not just quantity but also consequences of using alcohol and drugs. Parents may be more aware of child behavior when it results in social disruption, so while they may not precisely know what or how much alcohol or drugs their child is using, they will know when it is disrupting the child's functioning.

Discriminant Validity

Inpatient versus Outpatient FISCA scores. The FISCA's discriminant validity was demonstrated by the ability of the total FISCA score to discriminate between inpatients and outpatients. That the FISCA Home, Self-Harm, and Alcohol and Drug subscales in particular, discriminated best between patients and outpatients makes a good deal of theoretical sense; suicidality is a major criteria for admission, also parents of those who are severely impaired in the home are more likely to seek an out of home placement. Similarly, if a child is addicted to alcohol or drugs or is in legal trouble because of drug or alcohol use, parents are more likely to feel their child needs to be hospitalized. Inpatient facilities typically use these problems in their admission criteria, especially when outpatient treatment has failed. An obvious caution in interpreting these results is that the FISCA to some extent was used by the participating facilities to make level of care decisions. However, the FISCA was one among a number of factors used to make this decision. Other factors, such as available insurance, whether or not the parent was asking for inpatient care, and history of failure of outpatient

efforts played a large role as well. Moreover, the FISCA has only recently been introduced to the facilities and during the study period was frequently not scored or even consulted until after admission. In addition, care was taken to exclude patients from the study who had been assessed for inpatient care but referred to the outpatient clinics.

Diagnoses. The FISCA was hypothesized to be able to discriminate between patients with no, low, and high comorbidity, as well as between patients with and without a particular diagnoses. This study showed that the FISCA could in fact discriminate between patients with different levels of comorbidity. As expected, individuals with more diagnoses presented as more impaired on the FISCA.

Shaffer et al. (1989) hypothesizes that comorbidity is the rule rather than the exception in childhood disorders. This study supports his theory. In this study, only 5 out of 75 (6.7%) children had no comorbidity. Most importantly, number of diagnoses (one, two, more than two) related in a linear fashion to impairment scores on the FISCA, so that while comorbidity may be the rule, extent of comorbidity may also be important.

In general, the FISCA also was able to discriminate between children with or without specific diagnoses. Many of the findings were as predicted; i.e., the School, Home, Community and Being With Others scales discriminated between patients with and without an externalizing diagnoses; the Alcohol and Drug scale discriminated between patients with and without a Substance Abuse diagnoses; and also the Thinking scale discriminated between patients with and without a Thought Disorder diagnosis. Because there were only three individuals with a diagnoses of a thought disorder this

last result is not very definitive.

The mood scale was the one subscale that did not discriminate as predicted, i.e., between the presence and absence of an internalizing diagnosis. However only 7 of the 58 children receiving an internalizing diagnoses did not also have an externalizing diagnoses. Some theorists argue that the negative social consequences of aggression cause depression (Patterson & Stoolmiller, 1991). For example, there is evidence (Pope, Bierman, & Mumma, 1991) suggesting that one consequence of hyperactivity may be peer rejection, which in turn may lead to internalizing problems (Hymel, Rubin, Rowden, & LeMare, 1990). Therefore, one reason the Mood and Emotions Scale may not have been able to discriminate between patients with internalizing disorders and patients without internalizing disorders is that the internalizing diagnoses group in this study was not accurately assessing "pure" internalizers. Many children with internalizing diagnoses may have been experiencing the secondary effects of externalizing problems and even those qualifying only for an externalizing diagnosis may have suffered from depressed or anxious mood.

The inability of the Moods and Emotions scale to discriminate between the internalizing (and not-internalizing) groups also may be related to informant issues. The FISCA is completed by the parent only, whereas the diagnosis is given based on interviews with both parent and child. If a child denies being depressed across the board, the child would not receive a diagnosis of depression (even if the parent reports depression). Therefore, there may be children whose parent report would lead to a diagnosis of depression (and would show mood problems on the FISCA), however the child would not have received a diagnoses of depression because the child denied being

depressed.

In general, the FISCA scales were relatively successful at classifying cases into diagnostic groups. However, the results also support the hypothesis that functional impairment and diagnoses are not identical. Often, it was not a particular scale, but rather a combination of scales that was able to discriminate so that multiple impairments were likely to be related to diagnostic groups.

Predictive Validity

Length of Stay. As expected, the FISCA score at the initial assessment was able to predict length of stay, substantiating the predictive validity of the FISCA. However, this relationship was stronger for the Nebraska facility than it was for the Michigan facility. This may be due to the fact that the Michigan health care market is almost twice as penetrated by managed care organizations than the health care market in Nebraska (19% versus 9.9%; HMO-PPO Digest, 1995). The way in which managed health care views psychological treatment has begun to affect the ways in which hospitals work with their patients. Managed care has put less emphasis on initial level or changes in functioning, but instead has examined the patients on social support and sought to decrease acuity of the problems so that the child can be moved the child to a lower level of care. More recently, the aim of inpatient treatment has changed from "a total reconstruction of the personality", to stabilizing the patient so that they can receive less restrictive and less expensive treatment (Nurcombe, 1988). These sorts of changes in health care policy are likely to weaken the relationship between functional impairment and length of stay. The fact that external factors such as insurance company policies affect length of treatment has important implications for

both research and clinical work. Researchers must be aware of this confounding factor and clinicians must assess the effects that external demands (such as managed care) are having on the treatment goals as well as on the quality of care their patients receive.

Future Directions

In sum, this study supports the validity of the FISCA as a measure of functional impairment. Three main theoretical questions need further exploration. The first question is how much parents and children agree on functional impairment. Studies are needed to unravel the importance of differences in child and parent report of the child's functional impairment. It has been shown that both children's and parents' reports of child behavior are valid, but that they relate to different things (Kazdin, 1985). Future studies need to focus on ways in which this is true, for example how child and parent report of child functioning relate to number of hospitalizations, number of criminal offenses, etc.

Consistent with previous research, this study shows that parents and children agree more on externalizing difficulties than internalizing difficulties (i.e., child report on externalizing problems correlated with the FISCA subscales, whereas child report of internalizing problems did not correlate with FISCA subscales). This study was not able to directly assess if parents and children agree on functional impairment, since children did not complete a functional impairment measure. In addition, because the data came mostly from mothers, this study could not assess whether or not the relationship of the person who reported (i.e., mother, father, etc.) affected the relationship between parent-child agreement. Future studies assessing the relationship between child report on the FISCA (a youth form was recently developed) and parent

report on a FISCA with a large sample of both mothers and fathers are needed to address this issue.

A second theoretical question has to do with the interrelationships between functional impairment and symptomatology and functional impairment and diagnoses. It is important in light of the original assumptions with which this study began, to realize that, while the FISCA does indeed relate to measures of parent symptomatology, none of the correlations between the FISCA scales and the CBCL were greater than .52. Hence, it would appear that the FISCA is indeed measuring something overlapping with but also conceptually distinct from symptomatology. The relationship between diagnoses and functional impairment is less clear because of the smaller sample size used to assess these associations. For instance, only three individuals had a thought disorder which made it impossible to reliably assess the relationship between the FISCA thinking scale and diagnoses. Membership in the externalizing, internalizing and substance abuse categories were larger, making those results more reliable.

A second difficultly in drawing conclusions from the results for the diagnostic sample is that approximately half of the patients had both internalizing and externalizing diagnoses (and most internalizers were also externalizers). This made it impossible to assess the distinctions between "pure" internalizes verses "pure" externalizes in functional impairment. Future studies using a larger sample are needed to examine these questions. It is also important to note that the relationships between the FISCA and symptomatology, and the FISCA and diagnoses were only tested and supported in the inpatient sample. Symptom data and diagnoses for the outpatient

sample was not available. In addition, relationships between diagnoses and symptoms could not be assessed in this study because less than half of the patients in the diagnostic sample also had parent or child symptom report data.

The final question is how the FISCA can be used by clinicians. The FISCA's ability to discriminate between inpatients and outpatients suggests that the FISCA could be very useful to hospital admission and intake staff. The FISCA could be used to effectively and quickly decide the appropriate level of care for patients. Studies are needed to assess what score on the FISCA indicates a need for inpatient treatment. Future studies could assess wether or not the FISCA is more useful than diagnoses or symptom measures in making level of care decisions.

In addition, this study suggests that the FISCA could be used to make effective treatment plans. Currently, the emphasis in inpatient treatment is on problem focused treatments. The FISCA could be used by therapists to quickly identify the problem area. This information could be used at face value and the therapist could design a treatment plan to lower the child's impairment level. In addition, it might be useful for therapist to look at contrasts in child's functioning. For instance, if a child is impaired at home and not school, this would indicate that there is something about the home setting and/or the family that is contributing to the child's difficulties. As a result, it would be important to include changing maladaptive family patterns into the treatment plan, if long-term change is desired. However, if the child was impaired in school and not home, goals of how to improve child's functioning at school would be included in the treatment and therapists would want to consult with the child's teachers. The FISCA does look at the context of the problems (e.g., home, school, community),

whereas diagnoses and symptom checklists do not. This suggests that the FISCA might be more useful in treatment planning than symptom checklists or diagnoses, in that the FISCA allows the clinician to learn not only about the child but also about the child's environment.

Methodological Problems

Several other methological problems need to be addressed. The sample consisted mainly of Caucasian children. This limits the generalizability of the findings. A study using a more racially diverse sample is needed to assess if the FISCA is a valid instrument of functional impairment in different ethnic groups. The study also lacked a control group of "normal" children in the community. This study was not able to show that the FISCA can discriminate between "normal" children (non-clinical samples) and those receiving outpatient services. An analysis of these differences would be confounded by the fact that not all children who need psychological services actually receive them. Nevertheless, one would expect less impairment in a normal (i.e., non-clinical) group.

Conclusions

While this study did have several flaws, it is an important first step in validating the Functional Impairment Scale for Children and Adolescents (FISCA). This study shows that the FISCA scales are related to both symptoms and diagnoses, but are not merely measuring the same construct. This study helps clarify the differences between functional impairment on the one hand and symptomatology and diagnoses on the other hand. Functional impairment, as measured by the FISCA, focuses not on symptoms per se, but rather on what areas of the child's life are disrupted by symptoms. These data

show that a child with a particular diagnosis may be impaired in several different areas of functioning so that there is not one direct link between an area of impairment and a particular diagnosis. For instance, a child with an externalizing diagnoses is likely to be impaired in school as well as his or her relation to peers and also may (or may not) have impairment in thinking associated with ADHD.

This study is unique in that it looked at a multi-dimensional measure of functional impairment. Most existing measures of functional impairment assess global impairment rather than specific areas of impairment. Global impairment does not allow the clinician or the researcher to focus on the precise areas in which the child's difficulties lie. This study showed that the FISCA is able to accurately assess impairment in functioning in a variety of areas. Its advantage over more global measures make the FISCA a better instrument for treatment planning and level of care decisions, as well as for evaluating specific treatment outcomes. In conclusion, this study shows not only that the FISCA has concurrent, discriminant, and predictive validity but also that measures of global impairment, such as the FISCA, are an important and needed addition to traditional assessment protocols that focus only on symptoms and diagnoses in assessing psychological difficulties in children and adolescents.

APPENDICES

APPENDIX A

APPENDIX A

FISCA Criteria

SCHOOL

	Severe Impairment	Moderate Impairment	Mild Impairment
SCHOOL	Not attending school because of school refusal or phobia (too anxious or worried to go to school) 01 Expelled from school 02 Dropped out of school and not working 03 Chronic skipping or truancy resulted in punitive actions or poor academic performance 04 Failing all academic classes; unlikely to go on to the next grade 05 Seriously harmed a teacher or peer or put others at risk by bringing a weapon to school 06 Behavior is so out of control that child is practically unmanageable in the classroom 07	Frequently skipped or refused to go to school (approximately once every two weeks or more) 08 Poor academic performance; grade point is below average, or failing most, but not all academic courses 09 Chronically non-compliant, disruptive or inappropriate behavior resulted in frequent and/or serious sanctions by school authorities 10	Occasionally skips or is truant from school (once a month or less) 11 Performing below ability in school because of failure to complete or hand in assignments or careless or sloppy work 12 Frequently reprimanded, or required close supervision by teacher because of inattentive, non-compliant, disruptive, or inappropriate behavior 13 Minor and occasional rule violations 14

HOME

	Severe Impairment	Moderate Impairment	Mild Impairment
HOME	Ran away from home overnight two times or more and whereabouts unknown to parents or guardians 15 Child was so unmanageable or impaired, he/she had to be removed from the home or may soon have to be removed from the home 16 Child can only be maintained in the home with outside assistance 17	Ran away from home overnight one time only, or whereabouts were known to the parents 18 Persistently refused to comply with requests for age appropriate behavior in the home; chronically failed to meet age appropriate expectations. Requests repeatedly resulted in conflict, resistance, or defiance. 19 Repeatedly failed to mind rules about safety 20	Frequently refuses to do age-appropriate chores; intermittently responds with defiance to other expectations and demands for reasonable behavior in the home 21

COMMUNITY

	Severe Impairment	Moderate Impairment	Mild Impairment
COMMUNITY/ LEGAL	Intentionally and severely damaged property outside the home 22 Set fires with malicious intent 23 Severely delinquent or criminal behavior involving confrontation or harm to a victim or severe law violation (e.g. auto theft, robbery, mugging, purse snatching, dealing or carrying drugs, threatening with a weapon, break-ins, physical assault, murder,sexual assault) 24 Delinquent or criminal behavior resulted in incarceration or confinement in a jail or detention center 25	Serious and/or repeated violations of the law not involving confrontation with a victim (e.g. frequent shoplifting, vandalism, or unruly conduct leading to a complaint; joyriding) 26 Repeatedly played with fire 27 On probation, or under court supervision 28	Occasional and minor violations of the law 29

THINKING

	Severe Impairment	Moderate Impairment	Mild Impairment
Thinking	Cannot be in a normal school classroom AND does not have normal friendships OR cannot interact adequately in the community due to any of the following: Often severely disoriented to time or place; or frequent short term memory loss 30 Severe impairment in reality testing evident in hallucinations and "crazy" or "bizarre" behavior 31 Confusion is so great that child is often unaware of the consequences of his/her behavior and role behavior or interpersonal relations are seriously impaired 32 Bizarre communications which are impossible or extremely difficult to understand due to incoherent thought, language, or speech (e.g. loose associations, echolalia, idiosyncratic language or "word salad") 33	Thinking or behavior more bizarre or impaired than other same age children AND child requires a special school program or special supervision because of any of the following: Lack of control over mentation;34 frequent obsessions, repetitive involuntary thoughts or images, or rote-like repetition of words or phrases At times disoriented, or suffering from short term memory loss 35 Bizarre preoccupations or thoughts with gross, destructive, or occult themes 36 Reality testing impaired by delusions (e.g. paranoia, belief in magical powers) or intermittent hallucinations 37 Child's confusion often interferes with his/her ability to think about the consequences of his/her behavior 38	Thinking or behavior more bizarre or impaired than other same age children because of any of the following: Intermittent obsessions, intrusions or involuntary thoughts, or repetition of words or phrases 39 Occasional lapses in reality testing (tends to be somewhat paranoid, has odd beliefs or unusual perceptual experiences); If older than 8 years, engages in magical thinking (believes he or she can make things happen just by thinking about them) 40 Child occasionally becomes so confused he or she has difficulty thinking about consequences 41 Speech is occasionally odd or idiosyncratic 42

BEING WITH OTHERS

	Severe Impairment	Moderate Impairment	Mild Impairment
BEING WITH OTHERS	Child has no age-appropriate friends 43 because behavior is chronically hostile, belligerent, or exploitative Frequently very cruel to 44 animals Frequent and/or serious 45 physical aggression; threatened or used a weapon against others, attacked and/or seriously hurt others; or behavior is so dangerous or out of control that child has been removed from home or school Sexually abused, molested, or 46 assaulted someone of the same or opposite sex	Persistent difficulty in being 47 liked or getting along with peers because of hostile or manipulative behavior Sometimes cruel to animals 48 Intentionally and persistently 49 annoying, spiteful, or mean towards others (e.g. verbally abusive, intentionally damages belongings of others, harasses or bullies others) Markedly poor impulse 50 and/or anger control Inappropriate sexual behavior 51 around others	Tends to have difficulty 52 interacting with peers because of aversivebehaviors Sometimes harasses or is very 53 mean or spiteful towards others Inadequate controls; poor 54 impulse or anger control or inadequate frustration tolerance Frequently acts immature 55 around same-age peers or prefers to play with younger children

MOODS & EMOTIONS

	Severe Impairment	Moderate Impairment	Mild Impairment
MOODS/ EMOTIONS	Mood problems are 56 accompanied by suicidal intent Extreme emotional 57 dysregulation; Unusual or very intense expression of emotions that others see asodd or strange Depression or anxiety are 58 associated with academic incapacitation (school absences, poor grades, performance deficits, etc.) Depression or anxiety are 59 associated with social isolation or withdrawal	Persistent emotional 60 dysregulation; marked mood swings, blunted affect, or little or no emotional expressiveness Severe separation anxiety; 61 child may require special arrangements (e.g. sleeping with parents) to minimize distress Persistent depression or 62 anhedonia (loss of pleasure) accompanied by somatic complaints, poor concentration, or sleep difficulties Persistent anxiety accompanied 63 by somatic complaints, poor concentration, or sleep difficulties Extreme weight 64 preoccupation accompanied by symptoms of anorexia or bulimia (e.g. weight loss, vomiting, binging and purging, use of laxatives)	Periodic fluctuations in mood 65 or difficulties expressing emotions Periodically experiences 66 sadness, dysphoria, or anhedonia Overly self-critical, 67 perfectionistic or sensitive to criticism by others Periodically experiences 68 intense anxiety symptoms, or has fearsor worries that are accompanied by somatic complaints Extreme and persistent 69 weight preoccupation

SELF-HARM

	Severe Impairment	Moderate Impairment	Mild Impairment
SELF-HARM	Child attempted to kill or hurt her/himself in a way likely to result in serious self-injury or death if not stopped 70	Child attempted to kill or hurt her/himself in a way suggesting serious self-harm tendencies; includes non-life-threatening but non trivial gestures; suicidal gestures or behavior without intent to die, or self-mutilation that is likely to result in serious injury or self-harm, e.g. burning or cutting oneself 71	Repeated non-accidental behavior suggesting self-harm tendencies, but very unlikely to cause serious injury, e.g., repeatedly pinching or scratching the skin with a dull object 72

ALCOHOL & DRUG USE

	Severe Impairment	Moderate Impairment	Mild Impairment
ALCOHOL & DRUG USE	Frequently intoxicated or high (at least two times a week) 73 If age 12 or younger, uses alcohol or drugs once a week or more 74 Severe physical or emotional dependency on alcohol or drugs (e.g. physical cravings, uses in morning, has withdrawal symptoms if tries to stop, experiences blackouts) 75 Use of alcohol or drugs resulted in severely impaired role functioning or injury (e.g. school failure or expulsion, loss of job, car accident, serious health problems, committing a felony, or injuring others) 76 Misuse of alcohol or drugs during pregnancy put fetus at risk 77	High or intoxicated once a week 78 If age 12 or younger, intoxicated or high at least some of the time 79 Alcohol or drug use resulted in impairment in role functioning at home, in school or community (e.g. doesn't do chores, breaks important rules at school or work, commits a minor crime or gets picked up by the police, violates curfew 80 Alcohol or drug use led to negative social consequences (e.g. conflicts with family or friends, social isolation or withdrawal, or friends became mostly users) 81 Alcohol or drug use resulted in situations that put self or others at risk (e.g. driving under the influence, child was taken advantage of sexually, he/she experienced minor health problems) 82	Regular use (at least once a week) but without intoxication or becoming high 83 If age 12 or younger, uses occasionally (e.g. a few times a month) 84 Occasionally intoxicated, but without any serious consequences 85

APPENDIX B

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APPENDIX B

Time Line for the Functional Impairment Scale for Children and Adolescents (FISCA)

Instructions: During this assessment we are going to ask you a number of questions about things that may have happened during the past three months. The time line will help you locate the past three months in your mind by helping you to remember important things that happened during that time. Use the following steps to fill in the time line.

1. Write in today's date on the line that says **Today.**

2. Write in the dates for each of the past three months on the lines below the time line.

3. Have any major holidays occurred in the past three months? Write the holidays on the time line.

4. Has your family had any birthdays in the past three months? Write in any birthdays on the time line.

5. Have any important things happened in your life in the past three months? Write any important things that happened in your life on the time line.

3 months ago	2 months ago	1 month ago	Today is:
_____	_____	_____	_____
Date	Date	Date	Date

APPENDIX C

APPENDIX C

Rivendell Diagnosis Study: Parent or Guardian Informed Consent Agreement

We are asking you to participate in a study to evaluate an assessment instrument called the Child Behavior Rating Form (CBRF) that we are using at Rivendell of Michigan Hospital. We are using this instrument each day to monitor the negative and positive behaviors of child and adolescent patients admitted to our facility. The present study looks at the ways that behaviors exhibited by children and patients during their hospital stay relate to diagnoses obtained at the time they are admitted to the hospital. Information that you provide during a structured diagnostic interview will be used for this study, and will also be given to the mental health team to assist in determining the most appropriate treatment approach for your child.

Please carefully review the information below. If you have any questions at all, be sure to ask the person who is requesting your participation so that you fully understand the procedures involved. If you do agree to participate, as a token of our appreciation, you will receive a gift of $10 after the telephone interview is completed, even if your child declines to participate.

I, _____, parent and/or legal guardian of _____, a minor child who is currently received psychiatric services at Rivendell of Michigan Hospital, have been fully informed of the purposes and procedures of the diagnostic study in which I am agreeing to participate. I have been informed of and understand each of the following points (any references below to "my child" refer to the above named child):

1. By signing this agreement, I am giving permission for a staff member from Rivendell to telephone me within the next 48 hours with the intent of interviewing me about my child's emotional and behavioral functioning prior to entering treatment at Rivendell of Michigan Hospital. I am also giving permission for a staff member from Rivendell to interview my child within 48 hours of completing the interview with me. The interviews will each take approximately 1 hour to complete. I understand that the process to select parents to be called is random, and that I may not necessarily be called.

2. I will receive a $10 gift of appreciation for participating in the study when the telephone interview is completed. I will receive this gift even if my child declines to participate in the interview or does not complete the interview when approached by the interviewer.

3. I have the right when called to decide not to participate in the study, or to decline to answer any specific question(s) that I am asked, or to discontinue my participation at any point in the interview. I have the right, regardless of whether or not I decide to participate, to decline to permit my child to participate should he or she be asked to do so. My child also has the right to decide not to participate in the study, to decline to answer specific questions, or to discontinue participation at any point.

4. The interview with myself and/or my child may be audiotaped in order to establish interrater reliability in determining my child's diagnosis. No one other than members of the research team will have access to these tapes. The tapes will be destroyed no later than 5 months after the interviews have been completed. In the interim, the tapes will be kept in a locked file cabinet in the hospital's research office.

5. Any information I or my child provide in the interviews will be transformed into numbers and entered into a computer data file. The written record of the diagnostic interview will then be destroyed. I also understand that the hospital is obligated to report to the appropriate authorities any information that I or my child might provide that suggests that my child or another minor is being subjected to or has been subjected to physical or sexual abuse.

6. I understand that if my child participates in the study, to protect his or her confidentiality, I will not be informed of any information that he or she provides, including information about any transgressions or illegal behaviors that might be unknown to me unless, in the judgment of hospital staff designated to review this information, my child clearly and with minimal doubt is in imminent and serious danger of harming him/herself or others. If this situation should occur, then a hospital staff member will inform my child's therapist of these concerns and the therapist will meet with me and my child to discuss the reasons for these concerns.

7. If I decide not to participate or decline to permit my child to participate, or my child declines to

participate, in any or all aspects of this study, my decision will in no way affect the possibility or quality of care at Rivendell Hospital.

8. If I have any questions or concerns about the study or I would like to receive any publications that might follow from this study, I can contact Laurie Van Egeren or Dr. Susan Frank at Rivendell Hospital by calling 517-224-1177 or by writing to 101 W. Townsend Road, St. Johns, MI 48879.

_____ _____

Parent or Legal Guardian Date

APPENDIX D

APPENDIX D

Rivendell Diagnosis Study: Minor Child Informed Assent Agreement

(To be reviewed with minor patients who are at least 8 years of age and are deemed competent of voluntary consent.)

I, _____, have been told all about the study and I understand what I will be asked to do. I understand that the purpose of the study is to see how well the hospital is doing in helping children and families. I also understand that:

1. By signing this agreement, I am giving permission for someone from Rivendell to talk to me a day or two after talking to my parents or guardian on the phone about my feelings and behavior before coming to the hospital.

2. I have the right to decide not to talk to the interviewer, or not to answer a question that I am asked, or to stop answering questions at any time during the interview. I know the interview will take approximately 1 hour to complete.

3. I also understand that the interviewer will not talk to anyone outside the hospital about what I say during the interview unless staff at the hospital are quite certain that I am in danger of seriously hurting myself or others, or I or others with whom I am connected are in danger of serious harm by others. If this happens, then the hospital staff will inform my therapist, parent or guardian, or other appropriate authorities that they are worried about me. My therapist will then meet with me and my parents to explain why the hospital is concerned and will try to help me and my family get some help.

4. If I decide not to speak to the interviewer, my family and I can still get help from Rivendell Hospital and no one will hold it against us.

5. If I have any questions or concerns about the study or I would like to receive information about the findings from this study, I can contact Laurie Van Egeren or Dr. Susan Frank at Rivendell Hospital by calling 517-224-1177 or by writing to 101 W. Townsend Road, St. Johns, MI 48879.

_____ _____

Child/Adolescent signature Date

REFERENCES

References

Achenbach, T.M. (1983). Manual for the Child Behavior Checklist and Revised Child Behavior Profile. Burlington, VT: University of Vermont, Department of Psychiatry.

Achenbach, T.M. (1987). Manual for the Youth Self-Report and Profile. Burlington, VT: University of Vermont, Department of Psychiatry.

Achenbach, T.M. (1991a). Manual for the Child Behavior Checklist and Revised Child Behavior Profile. Burlington, VT: University of Vermont, Department of Psychiatry.

Achenbach, T.M. (1991b). Manual for the Youth Self-Report and 1991 Profile. Burlington, VT: University of Vermont, Department of Psychiatry.

Achenbach, T.M. & Edelbrock C.S. (1983). Manual for the Child Behavior Checklist and Revised Child Behavior Profile. Burlington: University of Vermont, Department of Psychiatry.

Achenbach, T.M., McConaughy, S.H., & Howell, C.T. (1987). Child/Adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. Psychological Bulletin, 101, 213-232.

American Psychiatric Association (1985). Diagnostic and statistical manual of mental disorders (3rd ed.). Washington, D.C.:Author.

American Psychiatric Association (1994). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, D.C.:Author.

Angold, A. Weissman, M., Merkangas, K. (1987). Parent and child reports of depressive symtpoms in children at low and high risk of depression. Journal of Child Psyhcology and Psychiatry Allied Disciplines, 28, 901-915.

Apter, A., Orvaschel, H., Laseg, M., Moses, T. & Tyano, S. (1989). Psychometric properties of the K-SADS-P in an Israeli adolescent inpatient population. Journal of the American Academy of Child and Adolescent Psychiatry, 28(1), 61-65.

Bird, H., Canino, G., Rubio-Stipec, M. & Ribera, J.C.(1987). Further measures of the psychometrric properties of the Children's Global Assessment Scale (CGAS). Archives of General Psychiatry, 44, 821-824.

Bird, H.R., Shaffer, D., Fisher, P., Gould, M.S., Staghezza, B., Chen, J.Y., & Hoven, C. (1993). The Columbia Impairment Scale (CIS): Pilot findings on a measure of global impairment for children and adolescent's. International Journal of Methods in Psychiatric Research, 3, 167-176.

Bird, H.R., Yager, T.J., Staghezza, B., Gould, M.S., Canino, G., & Rubio-Stipec, M.(1990). Impairment in the epidemiological measurement of childhood psychopathology in the community. Journal of the American Academy of Child and Adolescent Psychiatry, 29 (5), 796-803.

Browning, D.L. (1986). Psychiatric ward behavior and length of stay in adolescent and young adult inpatients: A developmental approach to prediction. Journal of Consulting and Clinical Psychology, 54, 227-230.

Chambers, N.J., Puig-Antich, J., Hirsch, M., Paez, P., Ambrosini, P., Tabrizzi, M.A., Davies, M. (1985). The assessment of affective disorders in children and adolescents by semistructured interview: Test-retest reliability of the Schedule for Affective Disorders and Schizophrenia for School-Age Children, Present Episode. Archives of General Psychiatry, 42, 696-702.

Conners, C.K. (1989). Manual for Conners' Ratings Scales. Multi-Health Systems, Inc. Toronto, Ontario.

Costello, E.J., Edelbrock, C.S. & Costello, A.J. (1984). Validity of the NIMH Diagnostic Interview Schedule for Children: a comparison between psychaitric and pediatric referalls. Journal of Abnormal Child Psychology, 16, 219-231.

Cronbach, L.J., && Meehl, P.E. (1967). Construct validity in psychological tests. In W.A. Mehrens & R.L. Ebel (eds.), Priniciples of educational and psychological measurement, (pp. 243-270). Chichago, IL: Rand McNally & Company.

Division of Mental Health, Mental Retardation & Substance Abuse Services of North Caolina (1989). North Carolina Adult Functional Assessment Scale. Unpublished instrument.

Dunn, O. (1961). Multiple comparisons among means. Journal of the American Statistical Association, 56, 52-64.

Edelbrock, C., & Costello, A.J. (1988). Convergence between statistically derived behavior problem syndromes and child psychiatric diagnoses. Journal of

Abnormal Child Psychology, 16, 219-231.

Edelbrock, C., Costello, A.J., Dulcan. M.K., Kalas, R., & Conover, N.C.(1985). Age Differences in the Reliability of the Psychiatric Interview of the Child. Child Development, 56, 265-275.

Edelbrock, Costello, A., Dulcan, M.K., Conover, N.C., & Kalas, R. (1986). Parent-child agreement on child psychiatric symptoms assessed via strucutred interview. Journal of Child Psychiatry and Psychology, 27, 181-190.

Edelbrock, C., & Achenbach, T.M. (1980). A typlogy of Child Beahivor Profile patterns: Distribution and correlates for disturbed children aged 6-16. Journal of Abnormal Child Psychology, 8, 441-470.

Endictott, J., Spitzer, R.L., Fleiss, J.L., & Cohen, J. (1976). The Global Assessment Scale. Archives of General Psychiatry, 33, 766-771.

Fergusson, D.M., & Horwood, L.J. (1987). The trait and method components of ratings of conduct disorder-Part II. Factors related to the trait component of conduct disorder scores. Journal of Child Psychology and Psychiatry, 28, 261-272.

Forehand, R., Lautenschlager, G.J., Faust, J. & Graziano, W.G. (1986). Parent perceptions and parent-child interactions in clinic-referred children: A preliminary investigation of the effects of maternal depressive moods. Behaviour Research and Therapy, 24, 161-172.

Frank, S. & Burke, L. (1992). Deidealiazation and autonomy in late adolescence: Republications and extensions of earlier findings. Paper presented at the Bi-annual meeting of the Soicety for Research on Adolescence, Washington, DC.

Frank, S., & Paul, J. (1995). The Functional Impairment Scale for Children and Adolescents. Unpbulished manuscript.

Frank, S. & Poorman, M. (1993). The parenting alliance as a moderator of risks and benefits associated with late adolescent separation processes. Paper presented at the Society for Research in Child Developemnt, New Orleans, LA.

Gleser, G.C, Seligman, R., Winget, C., & Rauh, J.L. (1977). Adolescents view their mental health. Journal of Youth and Adolescence, 6, 249-263.

Gordon, R.E. , Jardiolin, P., & Gordon, K.K. (1985). Predicting length of hospital stay of psychiatric patients. American Journal of Psychiatry, 142, 235-237.

Gordon, R.E., Vijay, J., Sloate, S.G., Burket, R.,& Gordon, K.K. (1985). Aggravating stress and functional level as predictors of length of psychiatric

hospitilization. Hospital and Community Psychiatry, 36(7), 773-774.

Gordon, R.E., Plutzky, M., Gordon, K.K, & Guerra, M. (1988). Using the Axis V scale to evaluate therapeutic outcome of psychiatric treatment. Canadian Journal of Psychiatry, 33, 194-196.

Green, R.S., & Gracely E.J. (1987). Selecting a rating scale for evaluating services to the chronically mentally ill. Community Mental Health Journal, 23 (2), 91-102.

Green, B., Shirk, S., Hanze, D., & Wanstrath, J. (1994). The Children's Global Assessment Scale in Clinical Practice: An Empirical Evaluation. Journal of the American Academy of Child and Adolescent Psychiatry, 33, 1158-1164.

Hammen, C. (1988). A longitudinal test of the attributional vulnerability model in children at risk for depression. British Journal of Clinical Psychology, 27 (1), 37-46.

Haley, G., Fine, S., Marriage, K., Moretti, M., & Freeman, R. (1985). Cognitive bias and depression in psychiatrically disturbed children and adolescents. Journal of Consulting and Clinical Psychology, 53, 535-537.

Hechtman ,L., Weiss, G., Perlman, T., Hopkins, J., & Werner, A. (1981). Hyperactivity as young adults: Prospective ten-year follow-up. In K.D. Gadow & Loney (Eds.), Psychological aspects of drug treatment for hyperacitivty. Boulder, CO: Westview Press.

HMO-PPO Digest: Managed Care Digest Series. Kansas City: Hoechst Marion Russell Inc. (1995).

Hodges, K., Cools, J., & McKnew, D. (1989). Test-retest reliability of a clinical research interview for children: The Child Assessment Schedule (CAS). Psychological Assessment: Journal of Consulting and Clinical Psychology, 1, 317-322.

Hodges, K., Gordon, Y., & Lennon, M. (1990). Parent-child agreement on symtpoms assessed via a clinical research interview for children: The Child Assessment Schedule (CAS). Journal of Child Psychology and Psychiatry, 31, 427-436.

Hodges, K., Bickman, L., & Kurtz, S. (1991). Multidimensional measure of level of functioning for children and adolescents. In A. Algarin & R.M. Friedeman (Eds), Proceedings of the Fourth Annual Research Conference on a system of care for children's menatlo helath (pp. 149-154). Tampa, Florida: Research and Training Center for Children's Mental Health, University of South Florida.

Hodges, K. (1990). Manual for the Child and Adolescent Functional Assessment Scale. Unplublished manuscript.

Hodges, K., Kline, J., Sterns. L., Cytryn, L. & McKnew, D. (1982). The development of a child assessment interview for research and clinical use. Journal of Abnormal Child Psychology, 10, 173-189.

Hymrel, S., Rubin, K.H., Rowden, L,, & LeMare, L., (1990). Children's peer relationships: Longitudinal precieion of internalizing and externalizing problems from middle to late childhood. Child Development, 61, 2004-2021.

Ihilevich, D., & Gleser, G. (1982). Evaluating mental health programs: The Progress Evaluation Sclaes. Lexington, MA: D.C. Heath.

Ivens, C., & Rehm, L. (1988). Assessment of childhood depression: Corresondence between reports by child, mother, and father. Journal of the American Academy of Child and Adolescent Psychiatry, 23, 91-98.

Jensen, P.S., Traylor, J., Xenakis, S., & Davis, H. (1989). Child psychopathology and rating scales and interrater agreement; I. Parents' gender and psychiatric symptoms. Journal of the American Acadmy of Chi ld and Adolescent Psychaitry, 27, 442-450.

Kazdin, A. & Esveldt-Dawson, K. (1983). Assessment of childhood depression. Journal of the American Academy of Child Psychiatry, 22, 157-164.

Kazdin, A. (1985). Treatment of Antisocial Behavior in Children and Adolescents. Homewood, IL: Dorsey Press.

Kazdin, A., Moser, J., Colbus, D. & Bell, R. (1985). Depressive symptoms among physically abused and psychiatrically disturbed children. Journal of Abnormal Psychology, 94, 298-307.

Keraus, J.W. (1981). Evaluation of a Global Assessment Scale for Children in an outpatient setting. Unpublished Master's Thesis. University of Arkansas, Fayetteville, AK.

Kolko, D.J. & Kazdin, A.E. (1993). Emotional/Behavioral problems in clinic and nonclinic children: Correspondence among child, parent and teacher reports. Journal of Child Psychology and Psychiatry, 34 (6), 991-1006.

Liebowitz, J.H., Rembar, J.C., Kernberg, P.F., Frankel, A.K. & Kruger, R.S. (1988). Judging mental health-sicknesss in children: Development of a rating scale. Journal of the American Academy of Child and Adolescent Psychiatry, 27(2), 193-199.

Luborsky, L. (1962). Clinicians' judments of mental health: A proposed scale. Archives of general psychiatry, 7, 407-417.

Mash, E.J., & Johnston, C. (1983). Parental perceptions of child behavior problems, parenting self-esteem, and mothers' self-reported stress in younger and older hyperactive children. Journal of Consulting and Clinical Psychology, 51, 86-99.

Mayer J.E. & Filstead, W. (1979). The Adolescent Alcohol Involvement Scale (AAIS): An instrument for measuring adolescents' use and misuse of alcohol. Journal of Studies on Alcohol,40,291-300.

Mezzich, J.E., Evanszuck, K.J., Mathias, R.J., Coffman. G.A. (1984). Admissions decisions and multiaxial diagnosis. Archives of General Psychiatry, 41, 1001-1004.

Moretti, M.M., Fine, S., Haley, G., & Marriage, K. (1985). Child and adolescent depression: Child-report versus parent-report information Journal of the American Academy of Child Psychiatry, 24, 298-302.

Mueller, C. & Parcel, T. (1981). Measures of Socioeconomic Status: Alternatives and Recommendations. Child Development, 52, 13-30.

Newman, F. & Rinkus, A. (1978). Level of functioning, clinical judgment, and mental health service evaluation. Evaluation and the Health Professions, 1(4), 175-194.

Newman, F,. (1985). Level of functioning scales: Their use in clinical practice. Innovations in Clinical Practice: A source Book.

Nurcombe, B. (1989). Goal-Directed Treatment Planning and Prinicples of Brief Hopstilization. Journal of American Academy of Child and Adolescent Psychiatry, 28, 26-30.

Patrick, C. (1993). Use of inpatient services by a national population: Do benefits make a difference? Journal of the American Academy of Child and Adolescetn Psychiatry,29, 144-152.

Puich-Antich & Ryan (1995). The Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present Episode (K-SADS). Unpublished Manuscript.

Quay, H.C. (1977). Measuring Dimensions of deviant behavior: The behavior problem checklist. Journal of Abnormal Child Psychology, 5, 277-289.

Rey, J.M., Plapp, J.M., Stewart, G., Richards, I., & Bashir, M. (1987). Reliability of the psychosocial axes of DSM-III in and adolescent popluation. British Journal of Psychiatry, 150, 228-234.

Rey, J.M., Stewart, G.W., Plapp, J.M., Bashir, M.R., & Richards, I.N. (1988). Validity of Axis V of DSM-III and other measures of adaptive functioning. Acta Pscychiatria Scandanvia, 77, 535-542.

Reynolds, W.M. & nGraves, A. (1989). Reliability of children's reports of depressive syptomatology. Journal of Abnormal Child Psychology, 17, 647-655.

Ross, D.M. & Ross, S.A. (1982). Hyperactivity. NY: Wiley.

Rotham, D., Sorrells, J., Heldaman, P. (1976). A Global Assessment Scale for Chldren. Oakland, California, Alameda County Mental Health Services.

Sacco, W. & Graves, D. (1985). Correspondence between teacher ratings of childhood depression and child self-ratings. Journal of Clinical Child Psychology, 14, 353-355.

Sattler, J.M. (1988). Assessment of Children. Jerome Sattler Publications, San Diego, CA.

Shaffer, D. Gould, M.S., Brasic, J., Ambronsini, P., Fisher, P., Bird, H. & Aluwahlia, S. (1983). A Children's Global Assessment Scale (CGAS). Archives of General Psychiatry,40, 1228-1231.

Shaffer, D., Cambell, M., Cantwell, D., Brandley, S., Carlson, G., Cohen, D., Denckla, M., Frances, A., Garfinkel, B., Klein, R., Pincus, H., Sptizer, R., Volkmar, F., & Widiger,T. (1989). Child and adolescent psychaitric disorders in DSM-IV: Issues facing the work group. Child and Adolescent Psychiatry, 53, 830-835.

Sorensen, J.L., Hargreaves, W.A. & Friedlander, S. (1982). Child Global Rating Scales: Selecting a measure of client functioning in a large mental health system. Evaluation and Program Planning, 5, 337-347.

Sorrels, J., Rothman, D., & Heldman, P. (1976). A global assessment scale for children. Unpbulished manuscript. Aladeda County Child and Family Mental Health Services. Oakland, CA.

Spitzer, R.L., Endicott, J., & Robins, E. (1975). Clinical criteria for psychiatric diangosis and DSM-III. American Journal of Psychiatry, 132, 1187-1192.

Steinhausen, H. (1987). Global Assessment of Child Psychopathology. Journal of the American Academy of Child and Adolescent Psychiatry, 26, 203-206.

Stranger, C., & Lewis, M. (1993). Agreement among parents, teachers, and children on internalizing and externalizing behavior problems. Journal of Clinical Child Psychology, 22, 107-115.

Taube, C.A., & Barrett, S.A. (1985). Mental Health, United States. Rockville, MD: National Institute of Mental Health.

Vandvik, I.H. (1990). Mental Health and psychosocial fnctioning in chilren with recentonset of rheumatic disease. Journal of Child Psychology and Psychiatry,31, 961-971.

Verhulst, F.C., & Van der Ende, J. (1992). Agreement between parents' reports and adolescents self-reports of probem behavior. Journal of Child Psychology and Psychiatry, 33 (6), 1011-1023.

Weinstein, S.R., Noam, G.G., Grimes, K., Stone, K. & Schwab-Stone, M. (1990). Convergence of DSM-III diagnoses and self-reported symptoms in child and adolescent inpatients. American Academy of Child and Adolescent Pscyhiatry, 29, 627-634.

Weissman, M.M., Warner, V. & Fendrich, M. (1990). Applying impairment criteria to children's psychiatric diagnosis.Journal of the American Academy of Child and Adolescent Psychiatry, 29, 789-795.

Weissman, M., Sholomskas, D. & John, K. (1983). The assessment of social adjustment: an update. Archives of General Psychiatry, 38, 1250-1258.

Zucker, R., Noll R., Fitzgerald, H. (unpublished instrument). The Michigan Drug Use Questionnaire.