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PREVIEW

**Learning Disabilities and Cognitive Functioning
in a Child Psychiatric Population**

By

Lori A. Borelli, M.S.Ed.

**A Doctoral Project Submitted in Partial Fulfillment of
The Requirements of the Degree of Doctor of Psychology
in the Department of Psychology at Pace University**

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PREVIEW

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ABSTRACT

In research there has been a great deal of discussion suggesting the comorbidity between childhood psychopathology, childhood learning disabilities and other cognitive impairments. No clear resolution to how these difficulties are interrelated exists. The purpose of the current study was to further understanding of the relationship between these problems in children.

This study examined 265 children from a private inpatient psychiatric hospital. Children were placed into one of four clinical categories, based on mean scores from the Personality Inventory for Children (PIC), which consisted of an internalizing disorders group, an externalizing disorders group, a mixed internalizing/externalizing disorders group and a group with no clinical elevations. Children were then classified as learning disabled if they had both a standard score below 85 on any subject area of the Wide Range Achievement Test 3 (WRAT3) and also a 15 point discrepancy between that achievement area and their Full Scale IQ score on the Wechsler Intelligence Scale for Children - Third Edition (WISC-III). The frequency of subjects with learning disabilities were computed for the general sample and within the four clinical categories created. Frequencies of learning disabilities were also compared based on severity of parent reported symptomatology on the PIC. MANOVA's were used to compare scores on the WISC-III, Wisconsin Card Sorting Test (WCST), Das Naglieri:Cognitive Assessment System (DN:CAS), and Conner's Continuous Performance Test (CPT) across the clinical groups created.

Subjects with a reading discrepancy were then compared to those without a reading discrepancy within the four clinical groups across the same cognitive and attention measures discussed above.

Results found that arithmetic disabilities were most common in this sample. Significant differences were revealed between the clinical groups in the occurrence of arithmetic disabilities however, no differences were apparent for the remaining spelling and reading disability groups. There were no significant differences in the occurrence of learning difficulties related to the extent of psychopathology although those children with more symptoms consistently had more disabilities in all areas. There were no significant differences between clinical groups across cognitive measures or measures of attention. When clinical category and learning disability status were combined there were significant differences within the externalizing group only, between those children with and without a learning disability, on selective subtests from the Wechsler Intelligence Scale for Children third edition (WISC-III), and the Das Naglieri Cognitive Assessment System (DN: CAS). Limitations and implications for future research are addressed as are applications for the field of school-child clinical psychology.

CHAPTER I

INTRODUCTION

There has been a great deal of discussion suggesting the comorbidity among childhood psychopathology, childhood learning disabilities and other cognitive impairments. No clear resolution to how these difficulties are interrelated exists. The purpose of the current study was to further understanding of the inter relationship among these problems in children. The following literature review begins with research relevant to the classification of psychopathology followed by a discussion related specifically to the identification of internalizing and externalizing disorders in children. Next, literature related to diagnosing learning disabilities and patterns of cognitive functioning is presented, after which an overview discussing perspectives of the relationship between emotional problems and learning disorders is introduced. Finally, research relating the areas of psychopathology and learning disorders first in the general population and second, in inpatient samples will be addressed to indicate where questions in the field exist and why the following study is relevant.

Methods of Classifying Child and Adolescent Psychopathology

In order to study psychopathology in children one must first consider the various methods of assessing various disorders in children. Research has often questioned how to most appropriately identify psychopathology in children and adolescents. This section provides an overview of methods that are currently used in the field of psychology.

The first system to focus extensively on the classification of child psychiatric disorders was the developmental profile based on psychoanalytic concepts described

by Anna Freud in 1965 (Freud, 1965). Shortly after, the document titled “Psychopathological Disorders in Childhood: Theoretical Considerations and a Proposed Classification” was published and an official categorization system was established (Group for the Advancement of Psychiatry, 1966). Since these first systems many methods for diagnosing childhood psychopathology have been developed. Controversy still exists regarding how childhood disorders should be assessed and diagnosed and whether diagnostic categories should exist at all. Major debate surrounding the use of various diagnostic methods including the Diagnostic and Statistical Manual- 4th Edition (DSM-IV), parent report measures, teacher report measures and self-report measures currently exist (American Psychiatric Association, 1994). An abundance of research documents the usefulness of these various diagnostic methods and an overview of this literature will be discussed briefly.

One major concern in classifying childhood disorders is comorbidity. Various authors have reviewed problems of comorbidity in child psychopathology (Nottelman & Jensen, 1995; Achenbach, 1991). Evidence from epidemiological studies suggests that comorbidity in child and adolescent psychopathology is quite prevalent. However, Nottelman and Jensen (1995) indicate that developmental considerations and methodological issues may inflate comorbidity in many studies. Research has been conducted with regards to comorbidity and other diagnostic issues using the DSM-IV.

Overall, there is general agreement that most studies show acceptable reliability for major psychiatric disorders using the DSM-IV with the following limitations (Cantwell & Rutter, 1994). Diagnostic criteria utilized in the DSM-IV for

one disorder may not significantly discriminate it from another disorder. This may be true for disorders such as depression and anxiety, and ADD and mania, which share some symptoms. One criticism of DSM-IV categories is that a child may present with symptoms that meet criteria for one diagnoses and meet many criteria for another diagnosis that impairs the patient's functioning yet they are at a level that is subsyndromal for that diagnosis (Costello, 1990). These categories do not adequately describe an individual's level of functioning and often imply characteristics of a certain disorder that a specific child may not present with. There is also the argument that this classification model simply states that a child does or does not have a specific disorder without providing a more thorough understanding of the individual's current functioning. One way to alleviate the problem of comorbidity is by utilizing higher order broader based patterns, such as internalizing disorders versus externalizing disorders, which are indicated in the literature as useful in representing more specific diagnostic categories (Cantwell, 1994). In addition to the DSM-IV research also discusses the use of semi-structured interviews for use with parents and children to identify psychopathology in children.

Research has found that when child reports alone were used results were not as reliable or valid as when child and parent reports were combined (Schwab-Stone et al., 1996). With regard to investigating parent, child and teacher ratings one study found that teachers under identified internalizing disorders when compared to parent and child ratings while they over identified behavior disorders (Kamphaus, Petoskey, Cody, Rowe, and Huberty, 1999). This was explained by the fact that teachers are more focused on a child's behavior that is specifically related to functioning in the

classroom setting and parents may be more accurate at evaluating their child's behavior across many situations. When comparing parent and child ratings to classifications based on DSM-III-R criteria, Fergusson and Horwood (1995) found that dimensionally scored measures for externalizing behaviors had better predictive validity than the DSM-III-R criteria alone.

Although no clear answer exists regarding what method of identifying disorders in children is most accurate the research discussed suggests that due to complications of comorbidity, dimensional categories are more useful than discrete diagnostic categories due to the similar attributes many disorders share and the difficulties documented when using DSM-IV diagnoses and various rating methods. In addition, parents were identified as more accurate raters than teachers although combined parent-child ratings had even stronger predictive qualities. The use of dimensional categories for classifying childhood disorders refers to two broad groups, internalizing disorders and externalizing disorders. The next section specifically discusses these two categories when classifying psychopathology and also introduces measures that are useful when classifying children with internalizing disorders and externalizing disorders.

Internalizing and Externalizing Disorders of Childhood and Adolescence

As the previous section addressed overall concerns when diagnosing psychopathology in children and adolescents, the following research considers the specific use of the two broad categories labeled internalizing disorders and

externalizing disorders. After a discussion of the development of these categories a specific scale used for classification is discussed.

The third edition of the Diagnostic and Statistical Manual (DSM-III) first provided widely used distinct diagnostic categories for childhood disorders (American Psychiatric Association, 1980). Prior to the development of suitable diagnostic terminology researchers utilized classifications based on statistical analyses of child behavior checklists (Kovacs and Devlin, 1998). Two broad groups were found that were termed either under-controlled versus over-controlled or internalizing versus externalizing, both of which accounted for most psychopathology in juveniles (Achenbach and Edelbrock, 1978). The externalizing factor represents behaviors such as aggression, acting out and disorders of conduct. The internalizing factor represents problems often internal to the self such as worries, fears, anxiety, somatic complaints, depression and social withdrawal.

Since childhood psychiatric diagnoses were first officially introduced into the diagnostic system created by the American Psychiatric Association (APA) multiple changes have occurred. Prior to the most recent edition, the DSM-III and DSM-III-R (APA, 1987) defined multiple depressive and anxiety disorders which constitute the internalizing disorders. In both versions of the DSM more than 10 anxiety disorders were identified. Generalized anxiety disorder was the one diagnosis that is assigned only after age 18. The remaining diagnoses were assigned regardless of age these included separation anxiety disorder, avoidant anxiety disorder, overanxious disorder, simple phobia, social phobia, obsessive compulsive disorder, panic disorder, agoraphobia, post-traumatic stress disorder, and atypical anxiety disorder. The three

major categories of depression major depressive disorder, dysthymic disorder and atypical depressive disorder could each be assigned irrespective of age. Both editions also listed several disruptive behavior disorders that constitute the category of externalizing disorders. These included conduct disorder (CD), attention-deficit hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD).

The most recent edition, the DSM-IV (APA, 1994) designates slightly different diagnostic categories. For internalizing disorders, under the heading of Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence only separation anxiety is listed. Additional anxiety disorders include panic disorder with and without agoraphobia, agoraphobia, specific phobia, social phobia, obsessive-compulsive disorder, posttraumatic stress disorder, acute stress disorder, generalized anxiety disorder, anxiety disorder due to a general medical condition and anxiety disorder not otherwise specified. In clinical samples as many as 75% of children and adolescents were found to have comorbid anxiety disorders while only 36% had an anxiety disorder alone while in the general population estimates range from 6% to 17% dependent upon the criteria and diagnoses used (Coleman and Hoyle, 1999). Under the mood disorders, children can be diagnosed with major depressive disorder, dysthymic depressive disorder, depressive disorder not otherwise specified, bipolar disorder (various types), cyclothymic disorder and mood disorder not otherwise specified. Prevalence in children and adolescents has not been well established. Incidence rates range from 2-50% of children who exhibit symptoms, depending on the population studied (Coleman and Hoyle, 1999).

Unlike the diagnoses that constitute the internalizing disorders, those that make up the externalizing disorders have undergone fewer changes as the DSM-IV was revised. The current diagnoses of Attention-Deficit Hyperactivity Disorder is listed in the DSM-IV with multiple types including a combined type, a predominately inattentive type, a predominately hyperactive-impulsive type and a not otherwise specified subtype. This diagnosis underwent multiple changes. The DSM-III included Attention Deficit Disorder (ADD), with and without hyperactivity, which evolved after a previous diagnosis of hyperkinetic reaction of childhood or adolescence. As researchers debated whether two distinct subtypes could be distinguished the next edition, the DSM-III-R, paralleled the present edition and included the diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) but it did not include subtypes. Additional diagnoses found in the DSM-IV that constitute the externalizing disorders are conduct disorder (CD), oppositional defiant disorder (ODD) and disruptive behavior disorder-not otherwise specified.

By combining discrete diagnostic categories the possibility of overlooking nuances between disorders becomes less crucial and reduces possible confounds in research. One scale identified in the literature as useful when delineating between children with internalizing disorders and externalizing disorders is the Personality Inventory for Children (PIC) (Wirt, Lachar, Klinedinst and Seat, 1977; Lachar, 1982; Lachar, 1990).

The Lachar (1990) version of the PIC is a multidimensional objective instrument designed for use with children ages 6-16 (Lachar, 1990). It includes 3 validity scales, four factor scales that consist of 12 clinical scales and 1 general

screening scale. The validity scales, Lie (L), Fake (F), and Defensiveness (Def) are designed to identify response sets and tendencies. The four factor scales are, I. Undisciplined/Poor Self-Control (Adjustment, Delinquency, Hyperactivity, Social Skills); II. Social Incompetence (Social Skills, Depression, Adjustment, Psychosis); III. Internalizing/Somatic Symptoms (Somatic Concern, Depression, Anxiety, Withdrawal); and IV. Cognitive Development (Development, Intellectual Screening, Achievement, Psychosis). The general screening scale or the Adjustment scale (ADJ) serves as a measure of overall psychological adjustment. The original PIC scales were derived by contrasting normal versus clinically diagnosed groups and were intended for diagnostic use in the evaluation of children's personality characteristics (Wirth, Lachar, Klinedinst and Seat, 1977).

Lachar (1982) indicates that the 12 clinical scales were designed to reflect specific aspects of child psychopathology but it is unlikely that the individual scales can be used directly for diagnostic purposes. Research that guided revisions of the original 1977 version of the PIC indicates that the specific scales, when factor analyzed, produce broader more useful diagnostic categories including an internalizing disorders category and an externalizing disorders category. The factor analysis of the first versions of the PIC created the presently used four-factor model and the original research indicates that two of the four scales reflect the broad bands of internalizing disorders and externalizing disorders.

Goh, Nee and Cody (1987) studied the 1977 version of the PIC and found four factors. The first factor identified was labeled Internalized Personality Disturbance and consisted of clinical scales Depression, Withdrawal, Anxiety, Psychosis, Social

Skills and Somatic Concern. The second factor found represented a Cognitive Development Dimension and consisted of Development, Achievement and Intellectual Screening. The third factor termed Externalized Behavior Disorder included the Hyperactivity, Delinquency, Family Relations and Social Skills clinical scales. The fourth factor comprised of Defensiveness and Somatic Concerns was not labeled due to its rather limited clinical content. The results of this study indicate that the Internalized Personality Disturbance factor and the External Behavior Disorder Factor contain discrete clinical scales that do not co-occur on both factors. Although the present version of the PIC has labeled the factors differently, Internalized/Somatic Concerns and Undisciplined/Poor Self Control, the clinical scales within these factors represent similar characteristics that were studied after the original version of the PIC was released.

More recent research has also factor analyzed the PIC and with consistent results. Fuerst, Fisk and Rourke (1990) examined clusters on the PIC and found six subtypes. These profiles were assigned descriptive labels of normal, mild anxiety, mild hyperactivity, somatic concerns, internalized psychopathology and externalized psychopathology. These results were nearly replicated in a study by Feurst and Rourke (1993) that also factor analyzed the PIC. This study revealed six factors, five of which were identical to those identified by Feurst, Fisk and Rourke in their 1990 study. The 1993 study labeled the six factors normal, somatic concerns, conduct disorder, mild anxiety, externalized psychopathology and internalized psychopathology (Feurst and Rourke, 1993). The one factor that was not replicated was the mild hyperactivity factor and a sixth conduct disorder factor was revealed.

These studies indicate that the PIC delineates between children with internalizing disorders and those with externalizing disorders, and that additional factors may exist within these broad categories that address specific somatic concerns, mild anxiety, conduct disorder or mild hyperactivity. Overall, the PIC has been documented as a reliable and valid method of identifying internalizing disorders and externalizing disorders in children.

Similar to the difficulty in identifying psychopathology in children is the trouble of accurately identifying learning disabilities. The following section addresses many of the problems faced when diagnosing childhood learning disabilities and discusses what method is suggested as most appropriate.

Defining Learning Disabilities

In order to study psychopathology and learning disabilities in children, methods of identifying learning disabilities in children must be considered. Definitions of learning disabilities may date back as far as 1887, when dyslexia was first diagnosed and documented in Berlin (Silver and Hagin, 1990). Since that time, various definitions have existed that are often imprecise, reflecting a lack of knowledge about the learning process and frequently changing due to advances in research. Definitions have used such terminology as brain injured, minimal brain dysfunction, perceptually handicapped and the present widely used term learning disabled.

Kirk, in 1962, first proposed the term learning disability to refer to a retardation, disorder or delay in the development of speech, language, reading, spelling, writing or arithmetic. His definition further explained that these delays

resulted from possible cerebral dysfunction, and/or emotional or behavioral disturbances and were not a result of mental retardation, sensory deprivation, cultural factors or instructional factors. This early definition provided the basis for early legislation in congress and was eventually incorporated into the 1975 Public Law 94-142, which mandated the education of all handicapped children. The final law however eliminated emotional and behavioral disturbance as possible causative factors and included a widely heterogeneous group of symptoms that made diagnosing a learning disability problematic (Silver and Hagin, 1990). Many attempts at redefinition were made but the original law with some minor additions remains as government policy. Thus the problem of identifying and diagnosing children as learning disabled remains a challenge.

One method proposed suggests that the decision to identify a child as learning disabled be based on a discrepancy between actual achievement and expectant level of achievement (Cone and Wilson, 1981; Wilson and Reynolds, 1984). It was proposed that a child who performed at a level which was 50% below that which was expected would meet standards for classification as learning disabled. The discrepancy was calculated using both mental age also called intelligence score and chronological age to compute an expected level at which a child should achieve in any academic area. Various flaws were found with this method including the assumption that IQ and achievement are correlated. In addition, it also over-identified those children with high IQ scores and under-identified those with lower IQ scores. However, Mercer, King-Sears, and Mercer (1990) report that 86% of states still utilize some type of discrepancy between aptitude and achievement, for example,