

**The Relationship Between Depression, Sleep Disturbance,
and Cognitive Inefficiency in a Child Psychiatric Sample**

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the Requirements of the Degree of Doctor of Psychology
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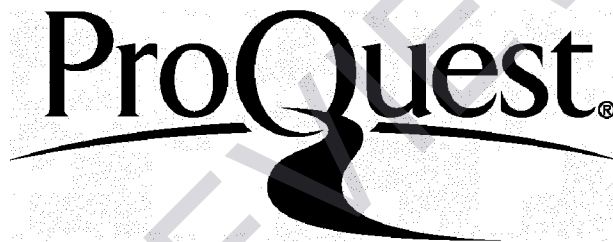
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PREVIEW

ABSTRACT

The present study examined the relationship between depression, sleep problems, and cognitive inefficiency in a sample of 1445 child psychiatric inpatients. The study utilized an archival data set of assessment measures completed by patients during their psychiatric hospitalizations. This study explored three general areas of inquiry: therapist ratings of sleep disturbance within the child psychiatric population and its relationship with other psychiatric diagnoses, the relationship between therapist and parent ratings of sleep disruption and the presence of depressive symptoms, and finally the relationship between sleep disruption, depression, and cognitive inefficiency.

An exploratory factor analysis of therapist rated sleep variables was first gathered from the sample to examine focal measures of sleep disruption. The factor analysis revealed two factors, however, one of the factors included hypersomnia and sleepwalking, which both have extremely low rates of occurrence in the psychiatric population. Thus, future analyses were conducted using the different components of sleep instead of using factor scores. Comparisons of the frequencies of various types of sleep disturbance across groups with depressive disorders, psychotic disorders, anxiety disorders, and behavioral disorders revealed three significant associations: children with psychotic disorders were more likely than children without psychotic disorders to report hypersomnia, and children with anxiety disorders were more likely than children without anxiety disorders to report both early awakening as well as initial insomnia.

Correlational analyses revealed no significant relationships on therapist and parent ratings across symptoms of both depression and sleep. Using therapist ratings, correlational analyses showed that sleep problems and cognitive inefficiency showed that

children with symptoms of restless sleep and initial insomnia showed significantly lower scores on attention scales. Correlational analyses between ratings of depression and cognitive inefficiency also revealed significant relationships: children with more depressed moods were found to have higher general cognitive abilities (GAI) and a larger discrepancy between their GAI and their cognitive processing abilities (CPI), children with increased psychomotor activity were found to have lower general cognitive abilities, and children with higher likelihood of suicidality were found to have higher GAI, and increased planning and attention abilities.

Regression analyses were performed to predict cognitive inefficiency from sleep and depression variables. These results revealed that several variables of sleep and depression were found to be predictive of different measurements of cognitive inefficiency. Children reported to have either a prevailing depressed mood state or interrupted sleep predicted to have a larger GAI and CPI discrepancy. Children reported to have more restless sleep were predicted to have lower scores on the Attention scale of the CAS. Lastly, children reported to have more symptoms of initial insomnia showed more omissions on the CPT.

CHAPTER I.

INTRODUCTION

Cognitive efficiency, the ability to quickly and effectively process information, is a crucial aspect of one's cognitive functioning. It is shown to be associated with various psychiatric and behavioral correlates, though the specific nature of these relationships is uncertain. With respect to childhood depression, current research in this area suggests that there is an estimated comorbidity of 25-50% between childhood depression and cognitive inefficiency (Weiss & Salpekar, 2010). Research has also shown relationships between sleep disturbances and one's cognitive inefficiency. Since comorbidity between sleep and depressive symptoms is common, it is suggested that cognitive inefficiency could be the result of depression, or merely the byproduct of the disruption of sleep cycles associated by depression. This present study will begin by providing a literature review of the depression and sleep in children, as well as an overview of the cognitive inefficiency factors that are evaluated in this study. It will then be followed by an examination of the relationships between depression, sleep, and cognitive inefficiency in a child psychiatric inpatient sample.

CHAPTER II.

LITERATURE REVIEW

Childhood Depression

Prevalence

Today, 3-5% of children and adolescents experience depressive symptoms at some time throughout their development (Bhatia & Bhatia, 2007). The rate of depression changes throughout time, since depression is a mood disorder which changes throughout one's life. However, during any given time, approximately 15% of children and adolescents have some depressive symptoms. Of the children 9-17 years of age, approximately 5% of them meet criteria for Major Depressive Disorder, the most severe and debilitating of the depressive disorders (Birmaher et al., 1996). By adolescence, this group of children tends to experience varying lengths of chronic depression, with a two to fourfold risk of continuing the depressive symptoms into adulthood (Pine, Cohen, Cohen, & Brook, 1999).

Currently, misdiagnosis and underdiagnosis of depression is still a problem in children, especially those seven years or younger, due to their lack of language and thus the lack of an ability to communicate emotions and feelings adequately (Bhatia, S. & Bhatia, S., 2007). The depressive symptoms of infants and preschoolers are gathered from overt behavior, such as withdrawal from caregivers, delay or regression of developmental milestones, or a failure to grow without a biological cause. The presentation of depressive symptoms in school-aged children is usually expressed through somatic complaints, anxiety, and irritability. Of importance, many children who are suffering from depression tend to compensate for their low self-esteem by pleasing

others, such as well behavior and academic excellence. However, these children are often unnoticed by teachers and parents, thus unable to receive appropriate treatment (Son, S. & Kirchner, J., 2000). Consequently, children with depression are often left undetected and untreated.

Furthermore, the prevalence of MDD increases to 20% in children and 40% in adolescents among hospitalized populations. This population of children and adolescents have an increased likelihood of experiencing academic failure, truancy, substance abuse, family problems, and suicidal behavior (Kessler, Avenevoli, & Merikangas, 2001). In addition, the probability of recurrence in adulthood in this population is 40% after two years, and 70% after five years (Favre et al., 2009).

Dearth of Childhood Depression Research

Prior to the 1960s, the literature on childhood depression was limited. Though childhood depression is a relatively new concept, evidence of depressive symptoms in children has been displayed in the literature as early as the beginning of the 1900s (Blanchard, 1949). At that time, there has been some writing on affective problems in children and the effect of these problems on the child's everyday functioning. During the early 1900s, children showing difficulties learning has sparked interest in psychoanalytic theorists (Blanchard, 1949). Since that time, theorists of varying orientations have developed concepts around the idea of childhood depression, and more recently, around the idea of childhood depression and cognitive inefficiency.

In the 1960s, research on childhood depression greatly increased. At that time, the estimate of childhood depression prevalence was not as high as it was later

believed to be (Kaye, 1994). About a decade after, McConville (1977) has shown that approximately 50-60% of children in psychiatric clinics express depressive symptoms, and this increased the interest on research about childhood depression. Carlson and Cantwell (1980) showed that one reason for the under representation of children with depression is due to diagnostic criteria. The diagnostic criteria for children and adolescents were the same as the criteria for adult depression – both of which were underreported. They reported that even for the adult population, depression was under diagnosed by 60%. This fact suggested that the diagnostic criteria and instruments used for assessment needed to be reevaluated, as well as taking into consideration the developmental levels of individuals.

As interest in the area of childhood depression grew, researchers began to find more relationships between childhood depression and cognitive inefficiency. McConville (1977) has noted that there existed a strong tendency to diagnose symptoms of childhood depression as attention deficit disorders. In fact, a considerable amount of historical literature shows that there is a link between affective mood and cognitive inefficiency, with childhood depression hypothesized as being the most commonly associated emotional disorder with attention – and not attention deficit disorders (Livingston, 1985). Literature from 30 to 40 years ago began the discussion of the complex relationship between depression and cognitive inefficiency, and newer research is still responding to that area (Kaye, 1994).

The impact of childhood depression on cognitive inefficiency began to drive research in this area to flourish within the literature. Several theories of this relationship were proposed around the 1980s, including psychoanalytic-oriented

theories, biological factors, and cognitive –behavioral theories (Allen-Meares, 1987). However, it is important to note that childhood depression, like many disorders, is of multifactorial etiology, and most likely involves several different routes of causes for its symptoms.

Theories of the Development of Childhood Depression

The first theories of the relationship between childhood depression and cognitive inefficiency came from psychoanalytic theorists, who noted the importance of ego psychology in children. Blanchard (1949) had written about psychogenic factors in children with reading difficulties, reflecting the concern about ego dysfunction in children. Pearson (1952) further supported this concern by recognizing that the decreased ability of some children to learn as effectively as their peers is highly related to the concept of ego psychology and classical drive theory, with repression being a plausible reason for the inability to read. In 1953, Bibring attempted to explain the relationship between childhood depression and cognitive inefficiency by using Freud's definition of depression and expanding the view to apply it to children. In addition to Freud's concepts of decreased self-esteem and ego inhibition in depression, he also included ego helplessness. Bibring viewed the concept of the ego as becoming helpless and powerless during the affective states of depression, experiencing despair and inhibition when one becomes depressed. When a child experiences ego helplessness, the child would feel defeated and a low sense of self-concept. This negative view of the self affects the child's inability to learn as effectively. Though this link has been supported in literature on psychoanalytic

theory, researchers later found that it is important to examine the relationship between depression and cognitive inefficiency beyond a theoretical perspective. This led to further research, and more effective methods of diagnosing and understanding childhood depression.

A biological perspective grew in the research about childhood depression and its relationship with cognitive inefficiency. Lewis and Lewis (1985) studied depressed children who have experienced early loss. They found that some children have a genetic disposition that leads them to experience an altered biochemical state involving neuroendocrine changes, which then leads to depression. Another biological theory involves brain lateralization, which looked at depression in relation to learning difficulties. Research in this area applied the notion that deficit on one hemisphere of the brain leads to an overcompensation of the other hemisphere. It has been suggested that cognitive dysfunction in the right hemisphere causes the left hemisphere to compensate for this dysfunction (Brumback & Staton, 1983; Coles, 1987; Watt, 1990). These results led the researchers to theorize that the overcompensation could be causing difficulties in cognitive functioning. Coles (1987) furthered this theory by stating that feelings of sadness affect the processing ability of the right hemisphere, thus causing the left hemisphere to overcompensate. This overcompensation of the left hemisphere forces the full ability of one's cognitive efficiency to be is jeopardized. He also found that when right hemisphere dysfunction exists, symptoms of psychomotor agitation and decreased concentration also exists. Though these symptoms then tend to be interpreted as an attentional deficit issue, they could instead be resulting from a right hemisphere compromised by depressive feelings.