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Childhood Mental Illness: Schizophrenia and Bipolar Disorder

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by

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Abstract: *Childhood Mental Illness: Schizophrenia and Bipolar Disorder,* by Vicki Wolffe

Many children are inflicted with psychosis. The following essay is an investigation of the characteristics of mental illness as it appears in youths. Studies have been conducted as to what mental illness looks like in children. Various treatment options are described. The body of this work has been compiled, predominantly, through the review of literature on the subject matter. Limited observation of a child that has been diagnosed with a severe form of a psychotic illness has been noted.

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Introduction

Mental illness is a concept of mental health professionals that refers to mental abnormalities that are associated with distress and/or dysfunction. Cognitive, emotional, or behavioral impairments may be involved to the extent that an individual's ability to work or manage socially is compromised. Major depression, generalized anxiety disorder, bipolar disorder and schizophrenia are a few disorders that are considered mental illnesses (Mental, 2006).

Normative behavior must be defined in terms of age and stage of development, as well as a child's family's expectations. Diagnosticians are colored by the beliefs of the cultures from which they stem, as well as other life experiences, professional training and philosophy (Hassibi & Breuer, 1980). It is also important to note that behaviors considered symptomatic to one culture, may be normal, or even valued in another.

Some mental illnesses begin in childhood and may continue into adulthood; these illnesses are anxiety disorders, eating disorders, affective (mood) disorders and schizophrenia. Children can also suffer from disruptive behavior disorder, pervasive development disorder, elimination disorders, learning and communication disorders and tic disorders (WebMD, 2005).

Mental illness has always been a subject of particular interest to me. I have been involved with both children and adults who have suffered with and through psychiatric disorders. Some of these individuals sought care for themselves, while others, specifically, the children, were fortunate to have adults seek aid for them. I have also known individuals who appeared to harbor demons that went undiagnosed and untreated,

which caused great strife for themselves, their families, friends and in a few cases, society as they became dependent upon a conglomeration of social services.

People become mentally ill for a number of reasons and in a number of ways. Some are genetically predisposed while others are influenced by challenging environmental factors and then there are those who are affected by a combination. The writer of this essay elected to study the subject of childhood mental illness in order to better understand the mechanisms at work within and around an inflicted child. The information herein also provides a clearer picture of what aid is available to help the child who suffers, as well as what is offered to their families. Not only does the writer have a personal interest in the subject, but also feels duty-bound as a teacher to be well informed in this realm. The following essay provides an overview of mental illness in children, with a focus on schizophrenia and bipolar disorder.

Schizophrenia is defined as a mental disorder in which thoughts, feelings and behavior become fragmented and disorganized by delusions and hallucinations and by what appears to be an indifference to personal relationships and goals that were previously valued (Irons-Georges, 1999). Bipolar disorder, or manic-depression, is a disorder of the brain that causes dramatic mood changes, energy, thinking and behavior (Child, 2002).

Etiology

There has been some controversy as to whether mental illness is biological, or psychosocial in origin, with current research revealing a biopsychiatry viewpoint, which works toward understanding mental disorders in terms of the biological function of the

nervous system. Biological, psychological and social aspects have been used to explain the causes of mental illness. Current thinking holds that all three are contributing factors. Brain structure may differ, or neurochemistry may function differently in a mentally ill individual. Such differences may be caused by environmental or genetic factors. Cognitive abnormalities, emotional difficulties, or interpersonal challenges can cause mental illness, particularly in vulnerable individuals. With regard to biological causes, or biopsychology, the neurotransmitters dopamine, norepinephrine and serotonin have been of focus in recent years. It is believed that each disorder has its own etiology (Mental, 2006).

Childhood-onset schizophrenia and pediatric bipolar disorder at the root

The causes of schizophrenia are not entirely clear. As with mental illness in general, much evidence exists to indicate biological, possibly genetic predispositions. Schizophrenia affects the brain, nervous systems and psychic emotional system (Irons-Georges, 1999). Damage to the nervous system is of concern. High incidences of schizophrenia exist in the offspring of mothers with schizophrenia, even those who were adopted at birth into non-schizophrenic households. Of schizophrenic children with an identical twin, about fifty percent will develop the disorder.

A link has been discovered with schizophrenia to an excess of certain neurotransmitters, particularly dopamine, which possibly cause disorganized random firing of neurons within the part of the brain that controls attention. Biological factors interact with the social environment. If a predisposed child must cope with a tumultuous

family situation, the chances of developing schizophrenia are increased (Irons-George, 1999).

There is increased belief that most cases of childhood-onset schizophrenia, or COS, are attributed to a brain disease of some sort. Fifty percent of children with COS have at least one first degree relative with schizophrenia (Gonthier & Lyon, 2004).

Studies also suggest that a common genetic pathogenesis may exist in some people with intellectual disabilities and psychotic illness, particularly schizophrenia, with the potential for a severe form of the illness. Those with intellectual disabilities are at increased risk for psychotic illness when compared to the general population. People with intellectual disabilities experience rates of schizophrenia that are three times that of the general population (Greenwood, Husted, Bomba, Hodgkinson & Bassett, 2004).

Contributing factors may be maternal influenza during the second trimester, starvation, lack of oxygen at birth and untreated blood incompatibility. Children show evidence of progressively abnormal brain development (National, 2003). Recent studies indicate certain infectious agents may be contributors to some cases of schizophrenia. Toxoplasma gondii has been found to alter behavior and neurotransmitter function in animals. Studies indicate that, even though schizophrenia does not generally manifest until adolescence or adulthood, the process has its beginnings in certain stages of brain development. There are increased numbers of people with schizophrenia among hospital workers and those who have grown up with cats at home, i.e. people with constant exposure to the pathogen; this finding is consistent with bipolar patients, as well (Torrey & Yolken, 2003). Other factors noted are obstetric complaints during pregnancy, viral infection during the second trimester and early encephalitis (Gonthier & Lyon, 2004).

Bipolar disorder is believed to be one of the most heritable mental illnesses, therefore present at conception. What needs to be determined is what genes, or environmental stress triggers activation of the illness (Youngstrom, Findling, Youngstrom & Calabrese, 2005). Further research will reveal more definitive explanations as to the causes of bipolar disorder in children.

Prevalence

Approximately twenty percent of American children suffer from a diagnosable mental illness; about five million have serious illnesses, one that significantly interferes with day-to-day life (WebMD, 2005). In 2006 The New York Times reported that, according to a government survey, at least six million American children have been diagnosed as having severe mental disorders, a number that has tripled since the early 1990's. Experts believe that the numbers of children with illness has not increased, but that more mental health practitioners now attribute certain behaviors to childhood mental disorders (Carey, 2006). Five to thirty-five percent of preschoolers are identified by teachers and parents as exhibiting problematic social and emotional functions. Problem behaviors frequently occur among preschool children with developmental delays. Infants and toddlers who display difficult behaviors such as unresponsiveness, negative emotions, resistance and defiance have shown increased rates for behavior problems in middle childhood and adolescence. (Evangelista & McLellan, 2004). The World Health Organization predicts that childhood neuropsychiatric disorders will be one of the most common contributors to morbidity, mortality and disability for children worldwide, by 2020 (Ringereisen, Oliver & Menvielle, 2002).

One out of 40,000 children are affected by schizophrenia. It is relatively recent that bipolar disorder has been diagnosed in children; therefore there are no clear rates of prevalence (National, 2003). However, a pharmaceutical company's marketing research revealed that 95,000 children and adolescents were medicated for bipolar disorder in 2001 and it is expected that this number will increase (Youngstrom et al, 2005). Bipolar disorder in children is the fastest growing mood disorder diagnoses today. Yale University performed a survey of 1.7 million private insurance claims. The survey unveiled that bipolar disorder diagnoses had more than doubled from 1995 to 2000 in boys ages 7 to 12 years, and rates have increased since then.

There is the concern, by critics, that because the numbers of children being labeled with disorders, particularly boys with attention disorders, that often it is nothing more than boys being boys. Many do realize, however, that some form of therapy or extra help, would be beneficial (Carey, 2006).

The characteristics of childhood mental illness

Mental illness in children can manifest in a variety of ways including outbursts of anger, aggressive behavior, altered sleep, nightmares, hallucinations, hyperactivity, altered eating habits, complaints of physical ailments, long lasting negative moods, defying authority, loss of social interest, altered school performance, inability to cope with daily problems and activities, substance abuse (WebMD, 2005).

Studies also indicate that children with psychopathology exhibit face-emotion processing deficits. Face-emotion processing deficits appear specifically in children with pervasive development disorders, emotional and/or behavioral dysregulation. such as

anxiety, depression, ADHD, conduct disorder and bipolar disorder. ADHD, however, may be attributable to a lack of attention, rather than misinterpretation of facial expressions. Tests revealed that children with bipolar disorder, with severe mood dysregulation, appear to have higher rates of facial expression misinterpretation (Guyer et al., 2007).

Diagnosis for mental illness in adults and children are based on signs and symptoms. With children this can be particularly challenging, as certain behaviors, such as shyness, strange eating habits and temper outbursts, all symptoms of childhood mental illness, can also be a normal part of a child's development. Behaviors become symptoms when they occur frequently or remain, occur at an unusual age, or cause significant disruption in a child and/or family's life (WebMD, 2005). Schizophrenia and bipolar disorder display their own characteristics, some of which are shared by other disorders.

The history of childhood schizophrenia

In 1961, Dr. William Goldfarb wrote in his book, *Childhood Schizophrenia,* "Childhood schizophrenia is a psychiatric classification which comprises the most severe disorders of children who come to the attention of child psychiatrists." The schizophrenic child's disability is extensive. The number of children diagnosed with schizophrenia increases, as well as demand for specialized treatment.

Until the 1950's many psychiatrists would not recognize symptoms or make a diagnosis of psychosis in children. The reason for such unwillingness may be that psychiatrists lacked a standard "for weighing a child's incomplete and inadequate testing of reality" Goldfarb, 1968)."

Children do not present psychotic symptoms as do adults. It was commonly believed that childhood schizophrenia is not a precursor to adolescent or early adult schizophrenia, which occurs to a considerably larger degree than childhood schizophrenia.

The causes of childhood schizophrenia were unknown. Treatment was tailored for the individual child rather than any designed protocol. It was unknown whether any one specific condition of childhood schizophrenia existed. Effective techniques to gather information, "such as a child's neurologic status, the psychosocial atmosphere in his family and the contributing psychodynamics of all family members (Goldfarb (1961)," were yet to be established. There was a question whether childhood schizophrenia was a single entity or multiple disorders.

Assessment of schizophrenia in children

A thorough assessment of schizophrenia must be performed in order to ascertain a proper diagnosis, as schizophrenia shares characteristics with other psychotic disorders. Structured interviews, symptom scales and diagnostic decision trees are tools used to determine a diagnosis. The child, parents and teachers ought to be interviewed. Interviews with siblings and peers may be considered, as well.

Information to be ascertained is the child's current mental state, recent events in the child's life, any altered mental states and functions, developmental history and family history. Family history is particularly important because of the elevated levels of first-degree relatives among COS children. Questions posed to the child with regard to delusions and hallucinations must be carefully and clearly worded, as they may have

occurred for so long as to seem normal to the child. What may appear to be psychotic symptoms and what are simply strong imaginations must be teased out. Cultural factors are to be considered, particularly religious beliefs, as they may be misinterpreted. A thorough physical examination must be performed to rule out organic conditions, such as substance abuse, delirium, metabolic disorders, or seizure disorders, lesions in the central nervous system, tumors, infections or neurodegenerative disorders.

Disorders that may occur with COS include: oppositional defiant disorder/conduct disorder, ADHD, atypical depression and/or dysthymic disorder (mild/moderate lingering depression). Related problems to be considered include: seizures, learning disabilities, mental retardation and hyperactivity. It is of extreme importance for ADHD to be identified when it co-occurs with COS, as children with ADHD are often prescribed stimulants that can negatively affect the child with COS; even small doses of stimulants can exacerbate hallucinations (Gonthier & Lyons, 2004).

The child with schizophrenia:

Schizophrenia usually appears in children between twelve to eighteen years of age; although rare, it can occur in children under twelve (National, 2003). Development of the illness is slow and increasing in intensity over time (Lambert, 2001). Children who develop schizophrenia prior to the age of twelve are considered to have childhood-onset schizophrenia, or COS. It is believed that one in 10,000 children suffer with COS (Biswas, S. Malhotra, A. Malhotra & Gupta, 2006); only one-tenth to one percent manifest prior to age ten; four percent by fifteen years of age. COS occurs in males much more frequently than in females with a ratio of two to one.

Onset appears at similar ages with males and females. Initially, it was thought that the development of psychotic aspects of COS were associated with the onset of puberty; this appears not to be the case with males, however the development of secondary sex characteristics has been shown to be associated with the onset of psychosis in females (Gonthier & Lyons, 2004). Schizophrenia is diagnosed when two or more symptoms last for more than one month and life activities deteriorate for at least six months (Irons-Georges, 1999). Children with schizophrenia display language delays and other functions prior to the appearance of psychotic symptoms, usually at age seven or later. About thirty percent of these children have temporary symptoms of developmental disorder, such as rocking, posturing and arm flapping, in the first years of life. Children may begin to talk about strange fears and thoughts and may begin to cling to parents. (National, 2003)

There is no development of normal interpersonal relationships and problem-solving skills. Children with schizophrenia do not develop judgment, abstract reasoning or age appropriate personal care. Cognitive development is altered, although no intellectual impairment results. The schizophrenic child is unable to process knowledge. Social and cognitive development regresses, or fails to ever occur. Thought disorder and speech disruption may occur in older children; such characteristics are difficult to recognize in younger ones (Lambert, 2001).

According to the American Psychiatric Association schizophrenia is characterized by four positive symptoms, or newly occurring behaviors and by negative symptoms, or loss of previously held social skills. These symptoms are fragmented thinking, delusions, visual and tactile hallucinations.

The first symptom, fragmented thinking, is recognized by communication that seems strange; incoherent words may have loose or no connections. The second, delusions, may involve the belief that people are plotting against the patient, that one's thoughts are being controlled and broadcast to others. The patient may hear voices that comment on his or her behavior, or are instructional (Irons-George, 1999). Voices are perceived as external, can be single or multiple and may carry on a conversation.

The third possible symptom, tactile hallucinations, includes "electrical, tingling, burning or crawling sensations, with taste and olfactory occurring, but less often" (Levine, Carey, Crocker & Gross, 1983). The fourth, visual hallucinations are common (Irons-George, 1999). Sensations of body changes and perceptional distortions may occur (Levine et al. 1983). Disorganized behavior may "involve strange fixed positions, repetitive phrases or actions, facial grimaces or frenzied activity with no apparent purpose or theme" (Irons-George, 1999, p. 643). Communication skills may be lost, speech may become dull; apathy, indifference and detachment may occur, as well as emotional flatness, along with neglect of personal care and hygiene.

Progression of childhood schizophrenia into adulthood.

Although there are some differences in criteria used by researchers in the diagnoses of schizophrenia in children, some use the same criteria for childhood schizophrenia as for adults. Such comparable criteria facilitate the analysis of symptom progression from childhood to adulthood schizophrenia, with some significant differences between early-onset and late-onset schizophrenia. Children with early-onset

schizophrenia may display poor premorbid adjustment, have insidious, versus acute onset and poor prognosis.

For a clinical picture behaviors noted in young children with childhood-onset schizophrenia include shyness, reserved, lonely with few or no peer relationships, lack of interest or hobbies, sensitive and introverted. Other characteristics that may be displayed are: depression, suspicion, aggression with temper tantrums, refusal to attend school, suicidal ideas, runaway, thefts, odd and bizarre or manic behavior. Such behaviors were displayed, on average, three years prior to the onset of psychosis, with the more acting-out behaviors displayed to lesser degrees. One study reported teachers' observations of children, prior to seven years of age, who were subsequently diagnosed with COS, to have manifestations of more social maladjustments. Several studies have reports of distinct premorbid developmental delays, with symptoms of pervasive development disorder, such as gross deficits in language development, or no language prior to the age of thirty months. (Indeed, one issue in the assessment of psychotic disorders in children is the determination of characteristics as psychotic, or signs of autism, or pervasive development disorder.) Severe motor development was also displayed in many cases.

Research indicates that the majority of children with childhood-onset schizophrenia experience hallucinations early on, some as young as three years. Delusional ideas, mostly persecutory and somatic, also occur in most of these children.

As previously stated, childhood schizophrenia is rare. A consequence of the rarity of COS is that so few studies of this group exists, leaving researchers to be inconclusive as to whether COS is a precursor to adult schizophrenia, but indications support such a hypothesis. (Eggers, Bunk, & Krause, 2000). Studies reveal high rates for incompletion

of schooling through high school with several breaks in education. Children with childhood-onset schizophrenia had the least number of educational years when compared with those with adolescent-onset schizophrenia. As such children grow into adulthood, they tend to experience the lowest incomes and highest unemployment rates, along with the greatest breaks in occupation. The lowest number of years of education beyond high school is also reflected among those with COS. The earliest onset correlated with disrupted academic achievement and greater social-economic dependence (Biswas et al., 2006).

Childhood traumas are associated with suicidal behavior. People who suffer with schizophrenia have an increased risk of suicidal behavior. It is estimated that up to four percent to ten percent of people with schizophrenia commit suicide and forty percent attempt suicide at some point. The risk factors of suicidal behavior for those with schizophrenia include: being depressed, substance abuse, living alone, unemployment, being single, socially isolated and recent psychiatric hospital discharge. Of fifty chronic schizophrenic patients studied who had attempted suicide 113 attempts were made, or an average of 2.26 per patient. There were significantly higher numbers of attempts among those having experienced childhood traumas for childhood emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect (Roy, 2005).

Treatment for children with childhood-onset schizophrenia

Treatment for children with schizophrenia usually encompasses five parts, which are pharmacological, cognitive, family and educational interventions and environmental manipulation.

The pharmacological treatment is typically in the form of neuroleptic drugs and atypical antipsychotics. The administration of these drugs must be done so with great care, as side affects are many and can include physical compromises, as well as impaired social functions.

Cognitive treatment includes education about schizophrenia, including treatment options, social skills training, relapse prevention and basic life skills training, as well as problem solving skills training. Social skills and basic life skills training can overlap. The goal is for the child to acquire age-appropriate skills necessary to function in their environment. Some skills to be learned include eye contact, assertiveness, conversational, coping strategies, self-care (i.e. grooming and hygiene) and self-advocacy.

Family therapy focuses on bringing the family to understand COS and the available treatments, coping strategies, problem-solving and improved communication skills. Emotional expression within families strongly correlates with outcomes and relapse rates of the child. Behavioral family management works to help families to lesson, or diminish, being overly critical, hostile, or over-involved and intrusive with the affected family member.

Children with COS generally qualify for special services under IDEA. Such services include smaller classes with teachers who are experienced with children with psychiatric disorders. Modifications may be made to accommodate for poor attention and low frustration tolerance. Such modifications may include shorter assignments, tasks broken down into pieces, tutoring and direct instruction. A curriculum that includes life skills is essential. It is important to note here that even though children are often placed

in special ed classes where teachers are experienced in working with children with psychotic disorders, because of the rarity of COS, the educational arena is lacking training in working with such children, which results in inadequate services provided to this population.

Environmental manipulation includes family therapy, special education and possibly, day treatment programs, or residential settings. It is common for children with COS to be admitted to an inpatient facility at some point. It is important that the least restrictive setting, in which the child can effectively function, must be in place. Children must also be closely monitored for any effects caused by separation from their families (Gonthier & Lyons, 2004).

The child with bipolar disorder.

Bipolar disorder, also known as manic depression, has been recognized in children as young as six years old (National, 2003). It is a disorder of the brain. Symptoms can emerge from infancy through adulthood (Child, 2002). Pediatric bipolar disorder, or PBD and attention deficit hyperactivity disorder, or ADHD, share certain characteristics, such as irritability, hyperactivity and distractibility, making it difficult to differentiate children with these symptoms (National, 2003). It is suspected that many children diagnosed with ADHD either actually have early-onset bipolar disorder, or both. It is estimated that 3.4 million children diagnosed with depression my actually suffer with early-onset bipolar disorder, but have yet to experience the manic phase (Child, 2002).

"Elated mood, grandiose behaviors, flight of ideas, decreased need for sleep and hypersexuality occur primarily with mania and are uncommon in ADHD" (National, 2003). Sleep patterns may also manifest in too much sleep (Bardick & Bernes, 2005).

Mania includes a child's laughing hysterically and acting very happy without any apparent reason. Grandiose behaviors are when children act as though the rules do not pertain to them and some believe they can perform super human deeds without being harmed. Flight of ideas is jumping from one topic to another. Decreased need for sleep is recognized by four to six hours of sleep a night, with the child not being tired the next day. Hypersexuality can occur in children who have not experienced sexual abuse. These children flirt as those beyond their years, may try to touch adults sexually and use explicit sexual language (National, 2003).

Children with bipolar disorder can also exhibit eating disorders, self-mutilation and suicidal ideation. Some cut themselves, hit themselves, or bang their heads against a wall in a self-mutilation attempt. Increased social withdrawal commonly occurs (Bardick & Bernes, 2005). Suicidal ideation has been reported in children as young as four years old and it increases in the adolescent years.

It is common for the manic child to have daily cycles of giddy highs to morose lows (National, 2003). Seventy percent of bipolar children experience mixed states and rapid cycling. A mixed state is exhibited by "agitation, high energy and constant restlessness coupled with feelings of worthlessness and self destruction" (Bardick & Bernes, 2005, p. 2). Rapid cycling are fast transitions between depression and manic symptoms. Cycling lasts from twenty-four hour periods to weeks (Bardick & Bernes, 2005).

Such mood instability affects behavior and results in academic challenges in school, poor social skills, and relationship conflicts with siblings, as well as stressed parents (West, Henry & Pavuluri, 2007).

Some children with bipolar disorder may have difficulty with peers as they struggle to respond to social cues or boundaries. They may be bossy and intrusive; everything must be their way. Some children behave differently in different settings. Behavior may become very goal directed, i.e. beginning a project that must be completed immediately (Bardick & Bernes, 2005).

Progression of pediatric bipolar disorder into adulthood

Studies of adults with bipolar disorder reveal that those with onset prior to adulthood, particularly prior to adolescence, tend to present with a more pernicious disease, as has been learned of individuals with schizophrenia. Characteristics include longer illness duration, more chronic courses, as well as an increase of bipolar disorder along with other psychiatric disorders. Childhood-onset bipolar disorder is linked to lower recovery rates, increased mixed/rapid cycling episodes and more altered symptoms and polarity than those whose illness began during, or post puberty and adulthood. Some research suggests that childhood-onset bipolar disorder may reflect elevated rates for familial bipolar disorder and/or other disorders.

Childhood-onset bipolar disorder tends to occur in males and they are likely to have lower socioeconomic status. Both children and adolescents with early-onset bipolar disorder were more likely to not live with both natural parents; less than forty percent lived with both parents.

Those with early childhood-onset bipolar disorder also exhibit high comorbidity, nearly seventy-five percent, with ADHD. Adolescents with early-onset bipolar disorder suffer comorbidity with high levels of anxiety disorders in comparison with late-onset adolescents. Interestingly, childhood-onset patients exhibit lower rates of "conduct disorder, substance abuse/dependence, suicidal attempts, panic disorder, and physical/sexual abuse compared with early and late onset adolescent groups" (Rende et al., 2007, p.199).

Both children and adolescents with early-onset bipolar disorder had higher levels of first-degree family history for "ADHD, conduct disorder, anxiety disorders, substance dependence, suicidal behavior, and suicide attempt/completion compared with adolescents with late onset" (Rende et al., 2007, p. 199). Pediatric bipolar subjects with second-degree relatives were more likely to suffer depression and ADHD. The point here is that a family history for psychiatric illness tends to be associated with childhood bipolar disorder (Rende et al., 2007).

Treatment for children with bipolar disorder

Those with pediatric bipolar disorder tend to be chronic, unmanageable, with low recovery rates and high relapse rates. PBD requires treatment that integrates different psychotherapeutic approaches to target specific problems that affect these children, along with family members, in order to facilitate more lasting treatments. Not enough research on long-term maintenance in pharmacological or psychosocial treatment for PBD has been conducted to date. One study, however, looked into five to seventeen year old children with bipolar disorder who exhibited worsening of symptoms or poor response to

medication. Those who received medication changes had greater symptom reduction and better overall functioning than those whose treatment went unaltered, although improvement was still only at a sixty-eight percent rate, leaving thirty percent with no improvement.

One preliminary study of pharmacological only treatment of pediatric bipolar disorder patients, without maintenance treatment, indicated a median drop out rate of four months. One twenty-four month study of pharmacologically only treated children with depression indicated that children who were actively symptomatic after treatment for an acute-phase had acceleration rates of improvement when four-month booster sessions were conducted. Post treatment of those without booster sessions showed signs of recidivism.

A three-year study of patients with pediatric bipolar disorder, who participated in a child and family-focused cognitive-behavioral therapy program, with maintenance after the initial acute phase of treatment, sustained positive effects of the initial intervention and were functioning, significantly, better than prior to the initial intervention. At completion of the study eighty-three percent of participants experienced minimal, or no, symptoms.

Results of the study imply, strongly, that low recovery rates may be preventable through ongoing integration of pharmacotherapy and psychosocial treatment. A model that included initial intensive psychotherapy, followed with maintenance of psychosocial booster sessions, along with pharmacotherapy, produced the optimal symptom management and healthy functioning (West et al., 2007).

Choosing a treatment for the child with psychotic symptoms

Along with the challenges involved in the development of a treatment program for the child that has received a 'definitive" diagnoses, there is the question as to how to best develop a treatment program for the child that is symptomatic, yet has not clearly developed a psychiatric illness. Prescribing medication must be weighed heavily for a number of reasons. First, even the best current criteria for diagnoses are imperfect and leave room for high false positives, leaving children exposed to medications they may not have needed. Secondly, the symptoms may never develop into an illness. Intervention entails contact with psychiatric services, along with the labeling of being at risk for developing psychosis and can carry social stigma.

If a child's symptoms increase and a psychosis is ultimately diagnosed, studies indicate the necessity of intervention that includes medication, psychosocial therapy and often, behavioral family therapy (usually to address emotional expression of the family that can include criticism, hostility and over involvement). A clinician must decide which of the antipsychotic medications (of which there are several to choose from) would be most likely to alleviate a child's symptoms. Often times, more than one medication must be tried, as different drugs offer a varied level of efficacy on individuals

Also side effects are plenty, with some producing intolerable results, which may have the potential to compromise one's physical health. Severe weight gain is often associated with some antipsychotic drugs and so other therapists, such as a dietician and physical therapist, are brought into the mix. Drooling is a common side affect of some antipsychotic medications and additional medication is introduced to manage this affliction (Shaw & Rapoport, 2006).

Clearly, the development of psychotic symptoms poses the many challenges that are equal to the actual onset of a psychotic illness.

Current controversies

As previously noted, mental health professionals, somewhat, differ in their beliefs as to the causes of mental illness in general, as well as schizophrenia and bipolar disorder, specifically. The controversy lies between whether the causes are more biological or environmentally based. Recent research reveals a biopsychiatric bent. It remains to be seen whether one side will hold a stronger influence than the other.

There are also differing opinions as to whether children ought to receive medications for the treatment of mental illness, or whether other forms of therapy that do not depend on the administration of chemicals ought to be the treatment of choice. Further mention of this subject will be discussed later on in the essay in the section on intervention and education.

Effect on domains

It is believed that attachment affects children in a variety of ways. Although insecure attachment is not a mental disorder, it creates a risk of psychological and social dysfunctions. Disorganized/disoriented attachments can be associated with disassociative symptomology, which may make one susceptible to post traumatic stress disorder later in life, if exposed to overwhelming situations. Such individuals also experience attention deficits and an inability to regulate emotions and behavioral impulses. These are all traits

that exist with the schizophrenia and bipolar child, as well as other psychopathologies (Siegel, 1999).

Considering the fact that a number of children who develop mental illnesses are raised by parents with mental illnesses, the chance for secure attachment may be compromised. As the child is not only isolated within him or herself because of his or her own behavioral impulses, coupled, perhaps by the hearing of voices, it is likely that the environment produced by the parent is not conducive to the development of secure attachments. A schizophrenic or bipolar child is unlikely to be in a state where they can seek out positive, supportive relationships with an adult and may even shun such relationships because of harbored anxieties and fears.

Children who have not received predictably warm, supportive, emotionally available signals from a caregiver are likely to avoid dependence on others. It is believed that early attachment experiences affect the brain. Studies with rats have indicated that maternal deprivation is associated with social behavioral problems. Serotonin medications relieve the behaviors, however, when treatment is stopped, the behavior returns, which indicates potentially permanent damage caused by emotional deprivation. Deprivation also contributes to a lack of formation of synapses, which contributes to a high-risk condition if a child is exposed to an abundance of stress.

Lack of secure attachment can, also, bring about the production of stress hormones, which leads to the death of neurons in the pathways that involve the neocortex and limbic system in the area involved with emotional regulation. Research by van Ijzendeorn and Bakermans-Kranenburg (cited in Siegel, 1999) has indicated an association between insecure attachment and psychiatric disturbances, including anxiety

and mood disorders. It has been revealed that insecure attachment in the psychiatric population is at far higher rates than in the general population and secure attachment is at significantly lower rates in the psychiatric population.

It is believed that communication with attachment figures allows the mind to establish self-organizing processes. Main believes that an avoidant or resistant behavioral strategy will likely become dependent on "the control or manipulation of attention...altering aspects of memory, emotion, and awareness of surrounding conditions (Main quoted in Siegel, 1999, p. 87) (Siegel, 1999).

Schizophrenia is often preceded in children with behavioral problems, developmental delays and neurological signs; all of which can affect cognitive functioning, memory, social interaction, motor development and communication. Language and motor delays may develop prior to the onset of psychosis. About one-third of these children will display symptoms of pervasive development disorder, which may appear as anxiety, disorganized or as disruptive. There will be no development of normal interpersonal relationships, or problem-solving skills. Schizophrenic children do not develop judgment, abstract reasoning, or personal care skills that are appropriate with their age level.

Cognitive development is altered and although no intellectual impairment results the schizophrenic child is unable to process knowledge. Social and cognitive development will regress or fail to ever occur. Thought disorder and speech disruption may occur in older children; it is unclear whether the same takes place in young children, as it is difficult to recognize. Development of psychosis is gradual, slow and increases in intensity over time; this period is known as the prodromal phase (Lambert, 2001).

One study revealed that children with bipolar disorder are more likely to misinterpret facial cues than other children and may read a hostile expression where a neutral expression is held. It is believed that such misinterpretations may provoke the petulance and aggression that bipolar children sometimes display toward others. Such inappropriate reaction is counter productive to social interaction (Seppa, 2006).

Research study

Scientists are in pursuit of the genes that are implicated in schizophrenia and believe that they may be zeroing in on the gene involved in breaking down dopamine. A study of children missing a copy of the COMT gene, which exists in two forms, high and low active versions, which are responsible for less and more dopamine to collect in synapses, respectfully. Individuals have either two high, or two low copies of the gene, or one of each. Research indicates that people with a low active pair and therefore high levels of dopamine in the brain, have slightly higher cognitive efficiency than those with two high active versions. If the levels are too far apart the brain can be impaired, which indicates that precise levels of dopamine are required for proper cognitive functioning. The deletion, called velocardial-facial syndrome, occurs in one out of 4,000 births and impairs health and mental development.

Twenty-four children with the deletion of the gene were tested for psychotic symptoms and verbal functioning, which is affected in schizophrenia. When retested five years later in late adolescence, seven had developed a psychotic disorder, compared to none in the control group of twenty-three people with developmental disabilities. Of the seven, those with the low activity version of COMT showed more severe psychotic

symptoms and a greater drop in verbal IQ, as well as a stronger decline in the volume of their prefrontal cortex than those with the high activity version. The study offers new evidence that COMT affects brain development and cognition and affirms the need for optimal levels of dopamine. Identifying the highest risk groups may lead to measures in prevention of the cognitive deterioration that occurs in schizophrenia (Holden, 2005).

Intervention and education

A number of medications are being prescribed to children with psychiatric illnesses. Some children respond well and have been stabilized, while others have realized less success. One drawback of drug therapy is that many children suffer side effects, both physical and mental. Therapies and home regimens, also, help patients and families cope with the disorder. The National Institute of Mental Health launched the Systematic Treatment Enhancement Program for Bipolar Disorder to refine therapies. Of all the therapies studied, the most basic and perhaps most important is lifestyle management. It is believed that fluctuating schedules cause reactions and can destabilize patients, with sleep deprivation and time zone changes being particularly troublesome.

Because of this, it is recommended that children be kept on enforced sleep schedules. Teens must be responsible for their own schedules. Diet is important. As caffeine can trigger mania, caffeine containing beverages and chocolate are forbidden. Adolescents must refrain from using recreational drugs and alcohol.

For older children, individual therapy is employed. Children work on social-rhythms where they learn to balance meals, sleep, studies and recreation. In the event of a personal crisis, such as a family incident, the therapist is available to support the child

in such situations, as well (Kluger et al. 2002). Treatment for children also includes education about emotions, activity scheduling, problem solving, social skills, training, cognitive restructuring, self-monitoring and anger management. The Anger Coping Program is the only anger management program for children that appears to be effective. Teaching, modeling and role-playing are employed in an attempt to reverse the distortions and aggression the bipolar child experiences. Treatment goals for children and parents are to better inform them of mood disorders, symptoms and co-occurring disorders; increase comprehension of medicinal, mental health and community-based interventions; help families to see their child as separate from the disease; relieve families of feelings of blame for their child's disorder, while encouraging responsibility for management attempts; improve symptoms, increase coping skills, work on individual and family communication and problem-solving skills, improve patient relationships with family and peers; increase agreement between care giving adults, and increase social support (Lofthouse & Fristad, 2004). Preschool intervention programs tend to concentrate on cognitive, language and motor delays, neglecting social and emotional issues (Evangelista & McLellan, 2004).

Family therapy is employed, as well. Bipolar disorder and schizophrenia, as well as other anxiety conditions are influenced by surroundings. A child raised in a steady, stable home is less likely to develop symptoms and more likely to have a better outcome if an illness begins. Negatively expressed emotions ought to be avoided, as they can make a child feel worse about him or herself. Family arguments must be conducted in a controlled manner, i.e. keep volleys to a minimum. The most important help families can offer a suffering child is to step in and help guide the child through an outbreak (Kruger

et al, 2002). Parents are also instructed in anger-management, positive reinforcement and pleasant-activity scheduling (Lofthouse & Fristad, 2004).

Research is being performed on the effects of food on mental illness, as well as the determination as to what lobes and regions in the brain are involved. Scientists are working toward the development of a blood test to diagnose the various mental illnesses (Kluger et al, 2002).

Seventy-five percent of children receiving mental health services do so at school. Such ease of accessibility provides an ideal setting in which to offer programs that may prevent, identify and intervene in the development of serious dysfunctions. Some families avoid seeking help because of the stigma associated with mental illness. Since many children already receive school-based services for non-mental health related concerns, they may more readily partake of mental health services.

Psychiatric issues are often not recognized in children and adolescents and adults tend to minimize such problems. Pairing mental health services with schools develops opportunities for education of school personnel and parents in identifying mental health issues and referrals for treatments. In-school treatment also offers opportunities for patients to practice skills acquired through therapy

Existing school based mental health treatment programs, however, have not been evaluated. Some positive effects, however, have been realized for anxiety disorders, depression, substance use and conduct and emotional problems. Also, few programs target specific psychiatric disorders and use methodological controls.

The Surgeon General has called for increased development and growth of interventions into community settings. Large-scale disasters, such as Hurricane Katrina

and the World Trade Center attacks bring to the forefront the necessity of such programs in school (Masia-Warner, Nangle & Hansen, 2006).

Literature is available that notes guidelines that discuss the degree of restrictiveness for developing a system of care for children and adolescents with severe emotional disturbance. In 1992 Friedman and Kutash argued for focus on early intervention (as has since come to be viewed, generally), with the belief that recognizing and intervening in the problems of children at a young age may soften the effects of poverty and social class on a child's future prospects. Kahn and Kammerman believed that socialization and child development programs might provide superior benefit to treatment services.

A system of care must consider transitions that are experienced by children and adolescents. Such experiences include entry into school and the challenges of teen years, which are followed by exit from the parental, or guardian, home. For some, these transitions are additionally weighted with divorce, remarriage and a family member's death. Such life experiences can place a youth at risk for emotional and/or behavioral disturbance.

It is recommended that services and policies be set in place that promotes health development of our nation's youth. Services ought to include a community system, which address all needs of youth from birth to twenty-two years of age. Health, as well as social services are to be considered and would include parental care, well baby clinics, day care, Head Start, schools, places of worship, family planning clinics, drug prevention programs and vocational rehabilitation. Such programs are focused on non-clinically impaired children and youth. however often include those children at risk for emotional

and behavioral disorders. For the non-clinically impaired child, such intervention may identify and address mental health problems while they are manageable (Newcomb & Cousert, 1996).

These intervention approaches all appear to have merit. As previously noted, pharmacological therapy is on the rise. Whereas many children have benefited from such treatments, many believe that dosing children is unwarranted and inappropriate. Many children suffer side effects from these drugs, both physical and/or mental/emotional, including altered behavior, other than what the patient is being treated for, which can be deleterious to the child. As studies cannot be performed on children, there is no precise manner of prescribing dosage, nor safety.

Many professionals advocate therapies that are free of chemically based treatments. Certainly family-based treatments provide considerable help to the suffering child and family; the support received by the family from a therapist can only serve to improve conditions and the families' increased skills at supporting the child is invaluable. Success and failure have been realized with children and research continues to provide professionals and caregivers with information that assists in designing individual therapy programs.

In school, as well as other community-based treatment centers also seem to be positive, forward approaches to dealing with mental illness. People are far more likely to avail themselves of such centers when convenience is offered. Adding the anxiety of travel to treatment, and the expense, is not conducive to attendance and improvement in health.

Connection to education practice

The child that suffers from a mental illness endures great challenges in their development and academic success. Such a child experiences low self-esteem, as they are unable to function as others around them. As has been previously noted, it is believed that certain biological causes of mental illness may affect cognition, as well. If a child's thinking processes are impaired, the challenges of school can become insurmountable. The mentally ill child is unlikely to feel securely attached, as many disorders cause one to implode within themselves and in many ways, depart emotionally and mentally from the surrounding world. Such children would be hard-pressed to establish working, caring, and trusting relationships with teachers and peers. As memory may be impaired, a child would likely be overwhelmed with academic challenges, as well as the simple routine of preparing to come to school in the morning and following the schedule of the class.

The, possible, frequent absences are an issue to be considered. Certainly missed work must be made up, but ought to be done slowly, as to not add further stress to the child. Perhaps assignments ought to be modified to reduce the anxiety of completing work along with the other children.

One would imagine that the stress of the school environment, academically and socially could influence the occurrence of episodes. As a teacher, I would employ the techniques that families are taught to use with the mentally ill child. I would refrain from the use of negative language (as ought to be with all children) and provide positive and encouraging words and be available in the event the child elects to use the teacher as a sounding board. I believe it is also wise to be attuned to the possibility of abuse. Approaching the child in an appropriate physical manner may be of help, such as hugs

(depending on the age of the child), or strokes on the back, arm, or head and be conscious to let the child be aware of my advance. Books can be read to the class, if available, or stories can be created that discuss the child's behavior, using fictitious characters, as to how classmates can support their friend. Puppets are wonderful tools to employ in the telling of a story to children, as well as allowing a child to speak of his/her thoughts and experiences.

It is unimaginable what a child with a mental illness feels, particularly with conditions such as schizophrenia and bipolar disorder that refract the mind, and have such significance to a child, the family and community. It seems that, as an educator, the best is to keep abreast of all literature on the subject and offer kindness and support to all concerned.

Implications

In 2006, The New York Times ran a series of articles that addressed the myriad complexities involved in being a child with a psychiatric illness and a family with such a child. The subject matter is of such proportions that these articles each made front-page news. There were candid accounts told by the families, including photographs, of the children and parents.

It seemed as though for each "expert," which includes child psychiatrists, family doctors, pediatricians, psychologists and social workers a child met with, a different diagnosis was offered. Multiple mental health professionals were referred and visited by each child, resulting in multiple diagnoses. Moreover, multiple treatments were performed, which translates into multiple exposures to multiple medications.

Children and families must cope with the burdens, frustrations and fears of existing with a mental illness. The challenges are insurmountable. There is the constant thought of what a child may do to himself or herself; will self-destruction be attempted, moreover, succeeded? What may a child do to a family member or an outsider? Parents also cope with guilt and siblings feel neglect.

There are neither blood tests, nor brain scans yet available to determine a diagnosis. Interviews, i.e. mere words, are all one has to use to determine what, if any, psychosis a child, or adult, may house inside of them. Child psychiatrists are in desperately short supply, as noted in The New York Times (Carey, (2006), which can only exacerbate the situation.

Children today are receiving "drug cocktails," i.e. the ingestion of multiple drugs, daily. In 2005, in the United States, approximately, 1.6 million children and adolescents received at least two drugs in combination; 280,000 of these children were under the age of ten. More than 500,000 of these children were prescribed at least three psychiatric medications and over 160,000 children received at least four medications combined.

Many psychiatrists and parents believe that these cocktails help, yet no scientific research exists to back this up. Some research exists that indicates that a combination of two drugs in adults offers some help, but there is scant evidence for children and absolutely no research indicates that combining three or more medications in children, or adults, is effective, or appropriate. Defenders of such practice state that multiple medications are prescribed for the treatment of physical ailments, such as diabetes, heart disease, cancer and AIDS; child psychiatry is no different (Harris, 2006).

Mental illness, clearly, devastates individuals, families, communities and society as a whole. Lives are fractured.

In "The Day the Voices Stopped," Ken Steel writes of his life as a schizophrenic individual from its inception at the age of fourteen years, through his days when the voices stopped at the age of forty-seven. Mr. Steel began his journey through the maze that is the mental health industry, seemingly, one morning when he heard the voices of morning television talk show personalities berating him, telling him of his lack of worth. These voices, rapidly, became a chorus of insults, at times holding conversations with themselves, as though, Ken, the victim of this disease, was not even present. In his head, Ken would hear a continual cacophony of voices. The voices would say such words as, "Kill yourself… Set yourself afire…Hang yourself…The world will be better off. You're no good" (Steel, 2001). The voices would include a variety of suggestions as to how to perform their bidding, as well as details for completing such tasks.

Ken spent most of his life in and out of inpatient psychiatric facilities. At times he had the fortune to be attended to by professionals who exhibited care. He found the support of friends, mostly those also inflicted with a psychotic disorder. At other times he experienced thoughtless, cold and too often, cruel treatment, which consisted of over doses of medications, while strapped to a hospital bed, secluded in a cell.

Ken received electric shock therapy as an adolescent. Such treatment was often repeated, even when it was clear that no benefit was received and such side effects as memory loss were realized. In Ken's case the memory losses were temporary, however, too many recipients of electric shock treatment retain permanent memory loss.

Ken hitched rides from town to town, state to state, as his life was in constant turmoil; he was run by the voices, relentlessly. There were periods when he had improved control and was able to hold a job and live independently. These phases would last for only brief periods and Ken would become self-destructive, once again. Inevitably finding himself in a psychiatric facility.

In his mid-forties, Ken had the fortune to be aided by a caring, concerned, dedicated professional who guided him to the proper combination of pharmacological and psychosocial treatment. At forty-seven years of age the voices, finally, ceased. Ken went on to become a productive member of society. He became an advocate for the mentally ill, which included the position as editor of *New York City Voices: A Consumer Journal for Mental Health*, a New York based newsletter for those living with mental illness.

Sadly, Ken Steele succumbed to heart disease and died in 2000. He suffered other physical ailments, many of which were attributable to side effects of antipsychotic prescription medications. One would assume that the stress of such a life as Ken's would, also, have taken a toll on his physical health. More of Ken's life was about his schizophrenic state than about living.

There are too many Ken Steele's in the world. A more concentrated effort must be put forth by those trained in the mental health industry. Comprehensive research studies must be planned out and executed that provides as definitive results as possible; that clearly define the proper psychosocial and pharmacological treatment programs for all personas with mental illness. Children who may exhibit symptoms of psychosis, or any serious behavioral disorder must be closely supervised. Intensive care must be put in

place to aid those children who clearly exhibit symptoms. As with any disease, the earlier the treatment begins, the better the prognosis.

I had the opportunity to observe a boy, who will be referred to herein as Moari, who attended a program for gifted children in a public school. Moari appeared to be a particularly intellectually gifted child and by all accounts, developing normally. During the middle of the school year, Moari began to believe that the animals that lived in tanks in the classroom were staring at him. He would crawl under the teacher's desk in an attempt to hide from these animals.

The children in the class would laugh at Moari, who began to physically attack the children, not only for laughing at him, but also for simply looking at him. Moari began to mimic the behavior of the class pets, crawling about on the floor. The teacher had to keep the child beside her, at all times, holding his hands, to inhibit Moari's hurting the other children. Moari's teacher, repeatedly, reported his altered behavior to the school psychiatrist. No action to help the child was taken.

Eventually, it was reported that Moari had cut his mother with a piece of glass. Such an incident brought his mother to the realization that Moari required psychiatric care. Moari was admitted to a psychiatric hospital for, approximately, one month. Six weeks after Moari's discharge, he returned to school in a heavily medicated state. Moari remained at the school until the end of the year. He was transferred to a different school in the fall, where he was expelled from, but was, eventually, placed in a more appropriate setting.

When one is guided to manage their illness not only is the individual aided, but so too is the family, community and society. It is wise to put resources towards helping a

youth grow and progress into a productive member of society. If there is lack of concern for the individual who suffers with psychoses, than the concern still remains for the burden on society, as too many mentally ill people become dependent as adults, as they require further stays in psychiatric facilities. Let us also note the growth of facilities to house those who commit criminal offenses, which are, sadly, often contributable to mentally ill individuals, such a situation that is highly avoidable.

Gonthier, M. & Lyon, M.A. (2004). Childhood-onset schizophrenia: an overview. *Psychology in the Schools, 41* (7), 803-811.

Greenwood, C.M.T., Husted, J. MD, Hodgkinson, K.A. & Bassett, A.S. (2004). Elevated rates of schizophrenia in a familial sample with mental illness and intellectual disability. *Journal of Intellectual Disability Research, 48* (6), 531-539.

Guyer, A.E., McClure, E.B., Adler, A.D., Brotman, M.A., Rich, B.A., Kimes, A.S., Pine, D.S., Ernst, M. & Leibenluft, E. (2007). Specificity of facial expression labeling deficits in childhood psychopathology. *Journal of Child Psychology and Psychiatry, 48* (9), 863-871.

Harris, G. (2006, November 23). Proof is scant on psychiatric drug mix for young. *The New York Times,* pp, A1, A28.

Hassibi, M & Breuer, H., Jr. (1980). *Disordered Thinking and Communication in Children.* New York: Plenum Press.

Holden, C. (2005). Cracking Open Psychosis. *Science Now.*

Irons-Georges, T. (Ed.) (1999). Schizophrenia: Disease/Disorder. *Children's Health* (Vol. II). Pasadena, CA: Salem Press, Inc.

Kluger, J., Song, S., Cray, D., Ressner, J., DeQuine, J., Sattley, M., Scalet, C., Sieger, M. (2002). Young and Bipolar. *Time, 160.* Retrieved November 15, 2006 from Ebsco Host Research Databases on the World Wide Web: http://web.ebscohost.com

Lambert, L. (2001). Identification and management of schizophrenia in childhood. *Journal of Child & Adolescent Psychiatric Nursing,* 14, 73-80. Retrieved December 12, 2006 from Ebsco Host Databases on the World Wide Web: http://web.ebscohost.com

Levine, D.L., M.D., Carey, W.B., M.D., Crocker, A.C., M.D., Gross, R.L., M.D. (Eds.). (1983). Schizophrenia and Related Psychotic Conditions of Childhood and Adolescence. *Developmental –Behavioral Pediatrics.* 886-890. Philadelphia, PA: W.B. Saunders Company

Lofthouse, N. & Fristad, .A. (2004). Psychosocial Interventions for Children With Early-Onset Bipolar Spectrum Disorder. *Clinical Child and Family Psychology Review, 7.* 71-88.

Masia-Warner, C., Nangle, D.W. & Hansen, D.J. (2006). Bringing evidence-based child mental health services to the schools: general issues and specific populations. *Education and Treatment of Children,* 29. 165-172

Mental Illness — From Wikipedia the Free Encyclopedia. Retrieved December 16, 2006 from the World Wide Web: http://www.en.wikopedia.org/wiki/Mental_illness

NAMI (2004). About Mental Illness. *National Alliance on Mental Illness.* Retrieved November 15, 2006, from http://www.nami.org.

National Schizophrenia Fellowship (2003). Childhood mental illness. *Rethink.* Retrieved November 8, 2006, from http://www.rethink.org.

Reingeisen, H., Oliver, K.A. & Menvielle, E. (2002). Recognition and treatment of mental disorders in children: considerations for pediatric health systems. *Pediatric Drugs,* 4. 697-703.

Rend, R. (PhD), Birmaher, B. (MD), Axelson, D. (MD), Strober, M. (PhD), Gill, M.K. (MSN), Valeri, S. (PhD), Chiappetta, L. (MS), Ryan, N. (MD), Leonard, H. (MD), Hunt, J. (MD), Iyuengar, S. (PhD) & Keller, M. (MD) (2007). Childhood-onset bipolar

disorder: evidence for increased familial loading of psychiatric illness. *J. Am. Acad. Child Adolesc. Psychiatry, 46* (2) 197-204.

Roy, A. MD (2005). Reported childhood trauma and suicide attempts in schizophrenic patients. *Suicide and Life-Threatening Behavior, 35* (6) 690-693.

Seppa, N. (2006). Bipolar kids misinterpret facial cues as hostile. *Science News*, 169. 340-341

Shaw, P. (MD) & Rapoport, J.L. (MD) (2006). Decision making about children with psychotic symptoms: using the best evidence in choosing a treatment. *J. Am. Acad. Child Adolesc. Psychiatry, 45* (11), 1381-1386.

Siegel, D.J. (1999). *The Developing Mind: How Relationships and the Brain Interact to Shape Who We Are.* New York: The Guilford Press.

Steel, K. & Berman, C. (2001). *The day the voices stopped: a memoir of madness and hope.* New York: Basis Books.

Torrey, E.F. & Yolken, R.H. (2003). Toxoplasma gondii and Schizophrenia. *Emerging Infectious Diseases, 9.* 1375-80. Retrieved November 8, 2006 from the World Wide Web: http://newfirstsearch.oclc.org

WebMD (2005). Mental Health: Mental Illness in Children. *WebMD Medical Reference in collaboration with THE CLEVELAND CLINIC.* Retrieved November 15, 2006, from the World Wide Web: http://www.webmd.com/content/Article/60/67113.htm.

West, A.E., PhD, Henry, D.B., PhD & Pavuluri, M.N., MD, PhD (2007). Maintenance model of integrated psychosocial treatment in pediatric bipolar disorder: a pilot feasibility study. *J. Am. Acad. Child Adolesc. Psychiatry, 46* (2) 205-212.

Youngstrom, E.A., Findling, R.L., Youngstrom, J.K. & Calabrese, J.R (2005). Toward and evidence-based assessment of pediatric bipolar disorder. *Journal of Clinical Child and Adolescent Psychology,* 34, 433-448.