Bipolar Spectrum Disorder in Children and Adolescents: A Literature Review

Michael (Mikie) C. Long

PSYC 4970

Clemson University

Abstract

This literature review examines the symptoms, symptom comorbidity, prevalence, age of onset, course of symptoms, biological and environmental causes, assessment, diagnosis, and treatment for children and adolescents with bipolar spectrum disorder. Pediatric bipolar disorder has recently started to become a more relevant topic in research and literature which is a wonderful thing because more knowledge on this subject will help so many people.

The DSM-5 bipolar disorder symptoms section specifically focuses on the symptoms of manic, hypomanic, and depressive episodes. The comorbid disorders and symptoms discuss the disorders and symptoms that overlap with a bipolar disorder and how to differentiate between a bipolar disorder and other related disorders. Course of symptoms includes statistics on how the illness progresses, illness recovery, and bipolar disorder's symptoms course. The sections about the age of onset and the prevalence discusses the age most children and adolescents are diagnosed with a bipolar spectrum disorder and how prevailing bipolar disorder in the youth is in the United States. The subsections of biological and environmental factors include the factors that affect the development of bipolar disorder in youth including genetic predispositions, structural brain differences, neuropsychological and social-cognitive factors, infections, maternal smoking and birth complications, climate, childhood trauma and life events, and social support. The final sections of this literature review is the diagnosis, assessment, and diagnosis sections. Two strategies discussed in this section to diagnosis bipolar spectrum disorder in children and adolescents is the Alexian Brother's protocol and the FIND strategy. The treatments for bipolar disorder that are discussed is psychoeducational treatment, interpersonal & social rhythm therapy (IPSRT), dialectical behavioral therapy (DBT), child and family-focused cognitive behavioral therapy (CFF-CBT), the rainbow program, and medication.

Pediatric bipolar spectrum disorder is a disorder that has not been investigated as much as adults with a bipolar spectrum disorder. Further investigation and research on this subject is very important to further clinician's knowledge on how to diagnose, treat, and assess youth with this disorder correctly and efficiently. Diagnosing bipolar disorder early on will help children in the future better handle their disorder.

Keywords: *Bipolar, bipolar disorder, children, adolescent, phenomenology, DSM-V, symptoms, treatment, diagnosis, prevalence.*

Review of Literature

DSM-5 Bipolar Disorder Symptoms

The DSM-5 (American Psychiatric Association, 2013) includes bipolar I disorder, bipolar II disorder, and cyclothymia. The objective of this literature review is to highlight the important steps in diagnosing children and adolescents with a bipolar spectrum disorder. It is also important to shed light on the importance of understanding and treating this disorder in youth. Individuals who have experienced one or more manic episodes receive a bipolar I diagnosis and individuals who have experienced one or more depressive episodes and/or one or more hypomanic episodes receive a bipolar II diagnosis.

A manic episode is characterized by an expansive, elevated, or irritable mood lasting for at least one week and the episode is accompanied by three or more symptoms when the individual's mood is expansive and elevated, and accompanied by four or more symptoms when they have an irritable mood. These symptoms can include a decreased need for sleep, pressured speech, grandiosity, racing thoughts, increased goal-directed behavior or psychomotor agitation, psychosis (Kowatch et al., 2010), and excessive participation in

pleasurable and/or risky activities. These symptoms have to cause significant impairment in the individual's functioning and cannot be due to a substance or a general medical condition.

For a depressive episode, symptoms include a depressed or sad mood, lack of interest or pleasure in things that the individual usually enjoys, changes in sleeping habits, changes in eating habits, changes in motor activity, feelings of guilt and worthlessness, a lack of concentration, and suicidal ideation or suicidal behavior that is experienced for at least one week.

A hypomanic episode is an episode where an individual experiences symptoms of an elevated, irritable, or expansive mood for at least four days, occurring with the same manic symptoms previously noted, and also cannot be due to a substance or a general medical condition (Renk et al., 2014). In pediatric bipolarity, an elevated mood is a distinguishing symptom. Youths with bipolar disorders have shown to exhibit high rates of elevated mood, aggression, increased energy, irritability, distractibility, grandiosity, pressured speech, and racing thoughts. A study conducted by Demeter et al. (2008) found that 88.5% of their sample of children expressed irritability and aggression.

Comorbid Disorders and Symptoms

Comorbidity predicts functional impairment and age of onset predicts the bipolar episode's duration (Carlson et al., 2000, 2002). It should be clear that children and adolescents with bipolar disorder can experience symptoms that heavily overlap with other childhood disorders. Research suggests that many children and adolescents with bipolar disorder also meet the diagnostic criteria for oppositional defiant disorder (ODD), anxiety disorders, substance abuse disorders, attention deficit disorder (ADD), attention-deficit/hyperactivity disorder (ADHD), major depressive disorder, and conduct disorder (CD) even after overlapping

symptoms such as distractibility, talkativeness, and motoric hyperactivity are removed (Renk et al., 2014). According to Dementer et al. (2008), rates of comorbid psychiatric diagnoses in youths with bipolar disorder vary from 46% to 75% with oppositional defiant, 11% to 90% showing ADD and ADHD, 5% to 37% with conduct disorder, 12% to 77% with anxiety disorders, and up to 40% with any substance abuse disorder. ADHD is the most frequent comorbid diagnosis in children and adolescents with a bipolar disorder (Demeter et al., 2008). A study conducted by Renker et al. (2014) of a sample of 36 consecutively hospitalized children who were three to five years old showed an irritable mood, indicating a strong family history of affective illness, and had exhibited previous symptoms of ADHD. Only 17% of the sample were diagnosed with bipolar disorder. Additionally, preschoolers with bipolar disorder exhibit a greater severity of depression and more comorbidity than preschoolers diagnosed with major depressive disorder.

A possible explanation for the diversity and high rates of reported comorbid diagnoses in children and adolescents with bipolar disorder might be due to overlapping symptoms across diagnoses that may be attributed to other disorders. Examples of symptoms would be inattention, impulsivity, distractibility, psychomotor agitation, and sleep disturbances can be symptoms of youths with bipolar spectrum disorder and ADHD. Despite significant symptom overlap, mania can be distinguished from ADHD by the presence of the main symptoms of mania such as grandiosity and euphoria (Souttulo et al., 2005).

Course of Symptoms

Based on the findings of one study done by Renk et al. (2014), the majority of adolescents and children diagnosed with bipolar spectrum disorder (81.5%) had a complete recovery from their symptoms by two and a half years following their index period, but 62.5% of

these children experienced symptoms within an additional one-and-a-half-year period. The majority of these children and adolescents with recurring symptoms had depressive symptoms or mixed presentations, with a significantly lower frequency for mania symptoms. Many of the children moved from a non-specified bipolar disorder to a bipolar I (38%) and a bipolar II disorder (25%). A meta-analysis supported the finding above stating that 80% of children and adolescents with bipolar spectrum disorder fully recovered from their symptoms within two and a half years after the onset of their disorder and approximately 60% of them had at least one recurrence of symptoms within one and a half years after full recovery (Washburn et al., 2011). Also, according to McClellan et al. (2010), about 20% of children and adolescents with major depressive disorder go on to experience many manic episodes by adulthood. According to Demeter et al. (2008), it seems that after the disorder onset, youth with bipolar disorder spend the majority of time-shifting between syndromal and subsyndromal mood episodes, with short periods of scattered euthymia. Mood disorder's polarity that happens during the course seems to change with the age of the child diagnosed with bipolar. Their mood state of the initial mood episode has been found to influence time until symptom remission (Demeter et al., 2008). For example, children and adolescents who initially presented a manic or mixed episode had a shorter duration until their mood was stabilized compared to adolescents and children who initially experienced a depressive episode. Furthermore, the longitudinal outcome seems to be worse in youth who have an earlier age of onset of bipolar disorder, with rapid mood fluctuations, psychosis, mixed episodes, a lower socioeconomic status, and family psychopathology being reported.

Age of Onset

According to Demeter et al. (2008), there is evidence that suggests that children and adolescents experience the onset of bipolar disorder symptoms before 17 years old and in retrospective studies that examined adults with bipolar disorder, adults reported childhood symptom onset in substantial numbers. (McClellan et al., 2010) 65% of adults experienced an onset of bipolar symptoms before the age of 18 and 27.7% reported having their first mood episode before the age of 13 years old. Early-onset cases are predominantly male, especially in cases with an age-onset before 13 years old (Perlis et al., 2004). A large proportion of existing literature describes mood disorders (mostly depression) as beginning in childhood and having a childhood-onset. Bipolar spectrum disorder is now being diagnosed more commonly in children at the preschool age (four to five years old) (McClellan et al., 2010).

Prevalence

As the definition of bipolarity has broadened in both children and adolescents, some experts in the subject suggest that the disorder might be as prevalent as 1% in the youth (McClellan et al., 2010). In a meta-analysis, the data regarding the epidemiology of pediatric bipolar disorder in American samples found an average first incidence of bipolar disorder through age 18 of 1.4%, a prevalence of subsyndromal bipolar disorder through age 18 of 4.5%, and a point prevalence of 0.6% at baseline, 0.5% at one year later, and 0.7% at 24 years old. In the United States, Bipolar I has an average lifetime prevalence of 1%, but if other forms of the spectrum are included in this prevalence, including Bipolar II and cyclothymia disorder, the prevalence in children and adolescents may go beyond 3-7% (Soutullo et al., 2005). Many studies accept this assertion, including a meta-analysis done by McClellan et al. (2010) stating that the estimated lifetime prevalence of bipolar I disorder in the general population of the United States ranges from 0.4 to 1.6%, with about 0.5% of the population having bipolar II

disorder. They also found that the combined prevalence of bipolar I and bipolar II disorder is 2.6%. The most frequently occurring symptoms of mania in children and adolescents with bipolar disorder include increased energy, pressured speech, and distractibility. A study conducted by Renk et al. (2014) found that the prevalence for children exhibiting symptoms of increased energy was 89%, 82% for pressured speech, and 84% for distractibility in their sample. They also found that 78% of children experienced grandiosity, 72% of children experienced decreased need for sleep, 70% exhibited symptoms of elation and euphoria, and 69% exhibited poor judgment. Other research suggests that about 1/5 of children and adolescents with Bipolar disorder show symptoms of hallucinations or delusions during any type of mood episode.

Latinos and African Americans expressed similar rates in experiencing manic symptoms compared to whites in a study conducted by Perron et al. (2014). The presentation was 14 out of 16, except for the symptoms of self-esteem and grandiosity which were exhibited more in Caucasian children. Many studies have found that there is a higher prevalence of bipolar I disorder in Latino and Asian children than in Caucasian children. They are also more commonly treated for bipolar I disorder than Caucasians. Studies have found that this could be related to misdiagnosis, under-diagnosis, or care underutilization of individual's with milder presentations of bipolar disorder (Perron et al, 2014)

Foundation and Causes

Biological

Bipolar disorder is highly heritable, with the probability that an increased family history of bipolar disorder leads to an earlier pediatrics onset. United States' offspring studies have also reported higher rates of child and adolescent bipolar disorder if their parents have the disorder (Soulluto et al., 2005). According to Demeter et al. (2008), higher rates of affective disorders in

first-degree relatives have been found in adolescents with bipolar disorder. Additionally, it has been well documented in the existing literature that children and adolescents with parents with a bipolar disorder are at a much higher risk of developing it as well. Children and adolescents with parents diagnosed with a mood disorder such as depression and/or a bipolar disorder are at an increased risk of developing other psychiatric disorders as well. Furthermore, a child with only one parent with bipolar disorder have additional implications on the child's course of their bipolar disorder illness. Children and adolescents who have two parents diagnosed with bipolar disorder have been reported to experience more severe irritability and depression, a lack of mood reactivity, and rejection sensitivity when compared with children and adolescents with only one parent with a bipolar disorder diagnosis.

Genetic Predispositions

Due to the high heritability of bipolar disorders, many genetic causes of bipolar spectrum disorder have been examined. Many genomic areas have been associated with bipolar disorder and mood symptoms' age of onset. The regions on chromosomes 2, 4, 6, 8, 11, 12, 13, 16, 18, 21, 22, and X are possibly linked to bipolar disorder. Also, multiple functional candidate genes have been recognized to possibly be linked to bipolar disorder including brain-derived neurotropic factor, catechol-Omcthyl transferase (COMT), D-amino acid oxidase activator, tyrosine hydroxylase, and neuregulin. Additionally, an earlier age of onset and an increased illness severity in succeeding family member generations have led to genetic anticipation that has been hypothesized in bipolar disorder. It has also been suggested that trinucleotide repeats might be involved in the genetic predisposition to the development of a bipolar disorder (Demeter et al., 2008).

Structural Brain Differences

Results from existing literature have shown that children and adolescents with bipolar disorder might have structural brain differences when compared to youths with other psychiatric conditions and children and adolescents without a psychiatric diagnosis. These structural brain differences include smaller cerebral volumes (left temporal lobes and bilateral parietal), smaller hippocampal volumes, and smaller cingulate volumes. In a study where children and adolescents with bipolar disorder underwent an MRI, the results showed that larger right nucleus accumbens of the basal ganglia were found in the individuals when compared to youth with no psychiatric diagnoses. Also, a large inverse relationship was found in this study between the right nucleus accumbent volume and the number of medications the children and adolescents were currently taking (Demeter et al., 2008).

Neuropsychological and Social-Cognitive Factors

According to Demeter, et al. (2008), it has been found that children and adolescents with bipolar disorder show less cognitive flexibility when adapting to changing incidents in cognitive testing. There is evidence to suggest that the activation patterns in certain brain regions are different in pediatric bipolar disorder patients when compared to healthy controls when the patients saw happy and sad faces. These differences in activation suggest that there is a disturbance in affect neurocircuitry which might contribute to social cognitive deficits and emotional dysregulation in youth with bipolar disorder. An understanding of these findings on cognitive and emotional processing are highly clinically relevant because they allow clinicians to address interpersonal skills in their psychotherapy and also allow educators to change lesson plans to accommodate these possible cognitive deficits. Using an MRS, youth with bipolar disorder that are undermedicated have been found to have a significantly lower glutamine level in their anterior cingulate cortex when they were compared to youth with a bipolar disorder that

were receiving quality levels of medications and when compared with youth without a psychiatric diagnosis. Pharmacotherapies could eventually be developed to target the neurochemical basis of pediatric bipolar disorder when neurochemical differences in children and adolescents with bipolar disorder in comparison with normal controls are determined.

Environmental

According to Aldinger et al. (2017), there are multiple environmental factors and causes of pediatric bipolar disorder including infections, maternal smoking, birth complications, the climate, childhood trauma, life events, and social support.

Infections

Infections, especially intrauterine infections, interfere with fetal and postnatal neurodevelopment. This interference could lead to neuropsychological health impairments and a higher vulnerability for psychiatric disorders, especially bipolar disorder. There is data that suggests that influenza did not influence bipolar disorder without psychotic symptoms, which are a much more severe course of illness. It has also been found that gestational influenza infections in children and adolescents have an increased risk of developing a bipolar disorder, regardless of the presence or absence of psychotic symptoms (Aldinger et al., 017).

Maternal Smoking and Birth Complications

Maternal smoking has been proposed to increase the risk of multiple illnesses, including ADHD, ADD, conduct disorder, and autism spectrum disorder. An association between maternal smoking and bipolar disorder is not investigated as much as it should be, and previous findings on this topic are inconsistent. Two studies have found an increased risk of pediatric bipolar disorder due to maternal smoking while the mother was pregnant. Until now, there have not been

any systematic research procedures that deal with the effects of maternal smoking during pregnancy on bipolar disorder's clinical course.

It is suggested that there is a higher risk of children and adolescents developing bipolar disorder if they were delivered by a planned cesarean section compared to natural birth. The results of an existing study have found that this suggestion is unclear. It is also proposed and there is a real association between bipolar disorder in the youth and pre-term birth (Aldinger et al., 2017).

Climate

Seasonal effects have been found to influence mood regulation, especially in bipolar disorder. Individuals with bipolar disorder and seasonal patterns form the minority but they suffer from a more severe bipolar disorder clinical course. Manic episodes are more frequently linked to seasonality than depressive episodes. Mania has its peaks in the summer and spring and a third peak during the mid-winter while depression shows higher occurrences in the spring and winter. Additionally, there is evidence that climate factors, such as mean daily temperature, mean daylight hours, and the daily number of sunshine hours, are correlated with a bipolar disorder relapse in the future in children and adolescents diagnosed. Positive therapeutic effects of phototherapy in mood disorders furthermore support the relationship between sunlight and a child's or adolescents' mood states (Aldinger et al., 2017).

Childhood Trauma and Life Events

It is common for individuals with a mental disorder, such as bipolar disorder, to have a history of childhood trauma. In bipolar disorder, the frequency of post-traumatic stress disorder (PTSD) ranges from 16% to 39%. Childhood trauma is considered to be shown in almost 50% of bipolar disorder patients, particularly with patients within the 16-21 years old range. Results

show that childhood trauma has a significant impact on the age of onset and clinical course of bipolar disorder; this association has been established very vigorously. It has been found that childhood trauma affects the clinical course of bipolar disorder by leading to an earlier age of onset. This association also increases the probability of the illness's rapid-cycling course, the number of lifetime mood episodes, the risk of suicidal thoughts and attempts, the occurrence of psychotic features, and substance abuse. Females with bipolar disorder report childhood trauma more than men and have a much stronger relationship with a more severe clinical course which may include, an earlier age of onset, suicidal thoughts and attempts, more depressive episodes, and rapid cycling. It has also been found that individuals with bipolar disorder who have experienced childhood trauma have more serious manic episode symptoms than symptoms of depression.

Life events describe any significant changes in someone's environment that result in personal and/or social consequences. Recently, the social zeitgeber theory has gained attention in the literature. Social zeitgebers include solitary activities and social contact. The changes in social zeitgebers are followed by a pattern in daily life disruptions. Consequently, biological circadian rhythms are disrupted and affect an individual's mood stability, especially in children and adolescents with bipolar disorder. Many existing works of literature have shown that particular life events influence bipolar disorder's age of onset and the clinical course of the illness. These types of stressful life events are different in triggering mania or depression. Existing literature shows that goal attainment and positive life events are more likely to be followed by mania rather than depression. Sadness triggers mania as well and personal illnesses are more likely to have depression in the following. In one study's results, it was found that the risk of having a depressive episode is associated with the number of life events a person has.

Also, an increase in life events is associated with a higher risk of having a first bipolar disorder episode and following episodes. It was also found that there is a higher impact of life events on the age of onset rather than on the reoccurrence of bipolar disorder symptoms (Aldinger et al., 2017).

Social Support

Social support is defined as the perception of being cared for, esteemed, loved, valued, and belonging to a mutual network of communication. The lack of social support influences the age of onset and the clinical course of bipolar disorder. People diagnosed with bipolar disorder have reported deficits in many areas of their social relationships such as their relationships with their friends, family, and parents. Existing literature has also found that individuals with low social support have a higher rate of symptom relapses. Results have found that children and adolescents with supportive parents have a very positive effect on their disorder's clinical course, and children and adolescents without supportive parents have a higher increased risk of developing psychotic features.

Adding to social support, family behavior also plays a large role in bipolar disorder's clinical course. Negative affective styles and highly expressed emotions increase the probability of a higher risk of symptom relapse (Aldinger et al., 2017).

Diagnoses and Assessment

Treatment

It has been suggested in the existing literature that if children and adolescents are treated very close after their initial onset of their mood symptoms, the developmental impact of the bipolar disorder may be minimized (Dementer et al., 2008). An assessment needs to include both current and past history regarding symptom presentation, response to treatment, psychosocial

stressors, and family psychiatric history. It is useful to organize the clinical information by using a life chart to characterize the child's course of illness, episode patterns, severity, and response to treatment. A comprehensive treatment plan that combines psychotherapeutic and medication interventions are needed to address the symptomatology and the confounding psychosocial factors that are present in children and adolescents diagnosed with a bipolar disorder. The goal of therapy is to improve symptoms, educate them on the illness, and promote devotion to treatment, working to prevent a relapse, reduce long-term morbidity, and promote normal growth and development in the patient. (McClellan et al., 2010).

According to Washburn et al., 2007, Dr. Pavuluri's treatment algorithm is very useful and consists of four steps:

1. Prescription hygiene: The goal is to determine what previous medications were effective, ineffective, or worsened symptoms, and to discontinue the ineffective and potentially confounding medications such as serotonin reuptake inhibitors and stimulate medications.
2. Mood stabilization: Involves making decisions regarding the specific medications, a combination of medicines, and the medication sequence to choose in stabilizing the child or adolescent's mood.
3. Addressing the break-through symptoms: The focus in this step is on treating symptoms that are beyond acute mood stabilization such as psychotic symptoms, depression, and sleep issues. It is very important to address symptoms that have treatment resistance in this step.

4. Problem solving: The goal is to target the co-occurring conditions such as anxiety and ADHD and to manage side-effects like sleepiness, gastrointestinal symptoms, weight gain or loss, and extrapyramidal symptoms.

Many other treatment interventions are designed to accomplish the treatment of bipolar disorder in children and adolescents, these treatments include:

Psychoeducational Treatment

This type of treatment is designed to accomplish the following goals: improve the patient's management of their pediatric bipolar disorder symptoms and associated symptoms, increase knowledge and understanding of bipolar disorder and its treatments, improve problem-solving and communication skills, and increase the child and family's sense of support in handling the disorder. Additionally, the treatments help parents become more involved in their child's treatment plan and coach them on different ways they can effectively serve their children (McClellan et al., 2010).

Interpersonal and Social Rhythm Therapy (IPSRT)

This therapy is individual psychotherapy that is based on the theory that one aspect of vulnerability for developing bipolar disorder in children and adolescents is instability in circadian rhythms and neurotransmitter systems that are involved in regulation. In this model, psychosocial stressors are hypothesized to cause and worsen bipolar disorder episodes through their ability to disrupt sleep and social routines. IPRST children and adolescent interventions are also designed to stabilize these routines and the patient is helped to explore the relationship between their stressful life events which may include their mood swings and interpersonal problems. The importance of managing affective symptoms and addressing interpersonal

functioning deficits is supposed to reduce the child's negative influence on their psychosocial functioning (McClellan et al., 2010).

Dialectical Behavior Therapy (DBT)

DBT is an evidence-based psychotherapy designed for adults that are diagnosed with a borderline personality disorder to bring emotional dysregulation and other symptoms to the surface. This intervention is very adaptive for the youth and consists of six months of weekly, one-hour therapy sessions that are followed by another six months of bi-monthly sessions. During the first six months of acute-phase treatments, patients alternate between family skills training and individual therapy. The continuation treatment phase, months seven to twelve, involves individual and family therapy intending to review skills and integrate gains. Individual therapy is focused on problem behaviors and has regular homework assignments that have been shown to increasingly help children and adolescents. Family skills training begins with psychoeducation but is continued through modules on distress tolerance, emotional regulation, mindfulness, and interpersonal effectiveness. In the existing literature, it has been shown in results that family skills training and family-focused therapy for youth with bipolar disorder have extremely positive results (McClellan et al., 2010).

Child and Family-Focused Cognitive Behavioral Therapy (CFF-CBT) or The Rainbow Program

This treatment was originally adapted from family-focused therapy as a complementary intervention for children and adolescents from the age of eight to twelve with bipolar disorders. It was designed to be developmentally specific to youth and is focused on the needs of the children and adolescents and their families as well. CFF-CBT also includes intensive work with the parents to support them in developing and promoting an effective parenting style and to meet

their child's therapeutic needs. By integrating cognitive behavioral therapy, mindfulness, psychoeducation, and positive psychology techniques, the intervention will address the impact of the child's bipolar disorder in a psychosocial context (Washburn et al., 2007).

Medication

The primary medication treatment for bipolar affective disorder is a traditional mood stabilizer and/or atypical antipsychotic medications. The only medication that is approved by the FDA for bipolar disorder in youths (age twelve years old and older) is Lithium. Children and adolescents with significant emotional and behavioral dysregulation most likely need intensive behavioral and parenting intervention in addition to medication therapy. Medication choice should be made based on evidence of its efficiency, the illness' phase, the presence of confounding presentations such as psychotic symptoms and rapid cycling mood swings, the medication's side effects and its safety, the patient's medication response history, and the parent's preferences for their child. Combining certain mood stabilizers in children and adolescents diagnosed with bipolar disorder is safely tolerated and effective. Stimulant medications might be beneficial when addressing ADHD symptoms once the child's mood symptoms are decently controlled on a mood stabilizer regimen (McClellan et al., 2010).

Although medications significantly help with the core symptoms of a child's bipolar disorder, they do not necessarily address the associated developmental and functional impairments and the frequent need for skills building and support. Preexisting behavioral disorders, learning problems, and confounding psychosocial issues might require specific and additional treatments that are related to those issues once the bipolar affective episode is stabilized. Psychotherapeutic interventions are greatly needed to promote medication compliance and to avoid relapse. Ultimately, interventions are needed to help youths and their

families to cope with the developmental impact on academic performance, relationships, and psychological health (McClellan et al., 2010).

Diagnosis

A recommendation suggests that the *DSM-5* criteria should be followed carefully when diagnosing mania, hypomania, and depression. Particularly, it is important to pay close attention to the duration and pattern of the bipolar symptoms and how they relate to motor activity, sleep, and changes in cognitive functioning which can provide important information that health and mental health providers can use to render out the likelihood that symptoms might be due to bipolar disorder or some other disorder(s). The Practice Parameter suggests that otherwise not specified bipolar disorder should be used for children and adolescents who exhibit an atypical duration of bipolar disorder symptoms. The course of symptoms in youth can significantly vary relative to the DSM-5 criteria and youth bipolar disorder interventions resemble those provided to adults, given this recommendation might facilitate children receiving interventions that may not be useful in easing their symptoms that they are experiencing. They also suggest that problems associated with bipolar disorder need to be closely assessed. These problems include commonly comorbid disorders, medical problems, and psychosocial stressors.

As a result of this, a comprehensive assessment and diagnosis that includes a thorough understanding of the child or adolescent's abilities are critical. This information will help providers made a comprehensive treatment plan easily. The Practice Parameter's third suggestion is that diagnosing children with bipolar disorder should be used cautiously. This is because youth who have mood and behavioral problems might be experiencing different environmental and biological factors that may account for these problems such as psychosocial stressors, developmental delays, the child's temperament, and parent-child relationship

problems. They recommend that the parents and child should be interviewed both individually and together, that mania screening should include questions about periods of mood changes and associated systems, and that the period where the child displays heightened irritability needs to be identified. They also suggested that a developmental perspective should be used to evaluate the symptoms' severity and if they are clinically relevant. Additionally, many considerations for bipolar disorder assessments in the youth are generally offered (Renk et al., 2021).

There are no biological tests, including genetic and imaging studies, that are useful in making a bipolar disorder diagnosis but there are many recommendations for clinicians to do this (Mcclellan et al., 2010). Alexian Brother's diagnostic protocol for pediatric bipolar disorder is widely used today and consists of five steps:

1. Mania screening.
2. Establishing an accurate estimate of the likelihood of pediatric bipolar disorder
3. Evaluating the diagnostic criteria with high specificity to pediatric bipolar disorder.
4. Gathering episode evidence.
5. Extending the assessment window.

In the first step, a screening measure is used to screen for the presence of mania. This protocol recommends the Child Mania Rating Scale (CMRS) that includes 21 developmentally specific items that correlate to DSM-5 bipolar disorder criteria. In the second step, the screening measure's results and additional information such as a family history of bipolar disorder are used to gather a pediatric bipolar disorder probability estimate. The probability estimate is obtained through a nomogram that uses Bayes' theorem to estimate the probability of a pediatric bipolar disorder diagnosis based on the test findings and/or clinical observations. The protocol's third step involves evaluating different symptoms to determine the eligibility for a mood

episode. The Alexian Brothers protocol recommends that clinicians focus on the criteria that are highly specific to bipolar disorder and avoid paying attention to criteria that overlap with other disorder's criteria. Specifically, the protocol recommends that clinicians focus on the symptoms of a decreased need for sleep, hypersexuality, unstable self-esteem, grandiosity, pressured speech, racing thoughts, elevated mood, and goal-directed activity (Washburn et al., 2011).

Kowatch et al (2021) recommend that clinicians use the FIND strategy when ascertaining the presence or absence of manic or depressive symptoms in children and adolescents. The FIND strategy includes frequency, intensity, number, and duration.

1. Frequency: Their symptoms occur most days of the week.

2. Intensity: Their symptoms are severe enough to cause major disturbances in one area or moderate disturbances in two or more areas of their life.

3. Number: They experience symptoms three or four times per day.

4. Duration: Their symptoms occur for more hours a day total, and not necessarily contiguous.

Conclusion

The main findings of this literature review are how prevalent bipolar spectrum disorder really is in children and adolescents, the symptoms and disorders that are comorbid with bipolar disorder that makes it hard to differentiate between them, and the importance of how to clinically assess, diagnose, and treat youth with this illness.

The main limitation of my research on this subject is that there needs to be more research on this. In the recent years, pediatric bipolar spectrum disorder has become more popular to investigate but there is still not enough information. Another limitation of my research is that there is no evidence on biological tests, including genetic and imaging studies, for assessing and

diagnosing bipolar disorder in children and adolescents which means that there are not as many effective options in doing this. There needs to be more resources for clinicians in doing this. Two new areas of research that are needed on this topic are definitely how to better diagnose and assess bipolar disorder in youth and the environmental factors that affect this illness. More research and literature on these areas will help us to better understand pediatric bipolar disorder and how to better treat it as soon as possible.

In this literature review, I found multiple sources of information on this topic. This research is important mainly because there is not enough of it on pediatric bipolar disorder. It is also important because clinicians need to be better equip at diagnosing, assessing, and treating children and adolescents with bipolar disorder as accurately as possible so that they do not misdiagnose the child and so that they can efficiently help them understand and live with their diagnosis.

References

Aldinger, F., & Schulze, T. G. (2017). Environmental factors, life events, and trauma in the course of bipolar disorder. Psychiatry and clinical neurosciences, 71(1), 6–17. https://doi.org/10.1111/pcn.12433

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Boris Birmaher, M. (2006, February 01). The clinical course of children and adolescents with bipolar spectrum disorders. Retrieved February 02, 2021, from https://jamanetwork.com/journals/jamapsychiatry/fullarticle/209320

Danielyan, A., Pathak, S., Kowatch, R., Arszman, S., & Johns, E. (2006, July 05). Clinical characteristics of bipolar disorder in very young children. Retrieved February 02, 2021, from https://www.sciencedirect.com/science/article/pii/S0165032706002606?casa_token=1Vx5duCcaXYAAAAA%3AqDqBBQZEaCAaSeE-xUlYa0wE3rK35KhjcIMTda6huFNNqmnEwjQ5B_-08B9Jv4EQ7kH3Qv0Qvw

Demeter, C., Townsend, L., Wilson, M., & Findling, R. (2008). Current research in child and adolescent bipolar disorder. Retrieved February 02, 2021, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181873/

Kowatch, R., Fristad, M., Birmaher, B., Wagner, K., Findling, R., & Hellander, M. (2010, January 04). Treatment guidelines for children and adolescents with bipolar disorder.

Retrieved February 02, 2021, from https://www.sciencedirect.com/science/article/pii/S0890856709614672?casa_token=eO7RKxUxSesAAAAA%3A9ZDYYHLVfwb9E8MoDcfeaTh7HLzfLV8g3eZtSeuk_20wTlFb7f_caKqUNrI2NFcpqezXIQTFiA

McClellan, J., Kowatch, R., & Findling, R. (2010, January 04). Practice parameter for the assessment and treatment of children and adolescents with bipolar disorder. Retrieved February 02, 2021, from https://www.sciencedirect.com/science/article/pii/S0890856709619687?casa_token=rl7q8tQireEAAAAA%3AsTTZHi-J0btRDAUJlUtNwHj6O77o4Ezmj577mpHbSLzaJgFzXjOJiMASr72q9VeJ2sCZNaVUDA

Perlis, R. H., Miyahara, S., Marangell, L. B., Wisniewski, S. R., Ostacher, M., DelBello, M. P., Bowden, C. L., Sachs, G. S., Nierenberg, A. A., & STEP-BD Investigators (2004). Long-term implications of early onset in bipolar disorder: data from the first 1000 participants in the systematic treatment enhancement program for bipolar disorder (STEP-BD). Biological psychiatry, 55(9), 875–881. https://doi.org/10.1016/j.biopsych.2004.01.022

Perron, B. E., Fries, L. E., Kilbourne, A. M., Vaughn, M. G., & Bauer, M. S. (2010). Racial/Ethnic group differences in bipolar symptomatology in a community sample of persons with bipolar I disorder. The Journal of nervous and mental disease, 198(1), 16 21. https://doi.org/10.1097/NMD.0b013e3181c818c5

Renk, K., White, R., Lauer, B., McSwiggan, M., Puff, J., & Lowell, A. (2014, February 24). Bipolar disorder in children. Retrieved February 02, 2021, from https://www.hindawi.com/journals/psychiatry/2014/928685/

Soutullo, C., Chang, K., Díez-Suárez, A., Figueroa-Quintana, A., Escamilla-Canales, I., Rapado-Castro, M., & Ortuño, F. (2005, December 08). Bipolar disorder in children and adolescents: International perspective on epidemiology and phenomenology. Retrieved February 02, 2021, from https://onlinelibrary.wiley.com/doi/full/10.1111/j.1399-5618.2005.00262.x?casa_token=14OyUK34K4cAAAAA%3AYj4LQzH-9U-P-5SZvfw6uj0EAPhKPd7Z3PArlHvC1zfT5I7F3eE9kM-odxF4U4qXC9CaqEGhUIikCn0

Substance Abuse and Mental Health Services Administration. DSM-5 changes: implications for child serious emotional disturbance [Internet]. Rockville (MD): Substance Abuse and Mental Health Services Administration (US); 2016 Jun. Table 12, DSM-IV to DSM-5 Bipolar I Disorder Comparison. Available from https://www.ncbi.nlm.nih.gov/books/NBK519712/table/ch3.t8/

Washburn, J., West, A., & Heil, J. (2011, March). Treatment of pediatric bipolar disorder: a review. Retrieved February 02, 2021, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3150503/