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Research Article

ADHD and Borderline Personality Disorder (BPD) in Adolescence and Adults

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Abstract

Diagnosis and management of attention-deficit/hyperactivity disorder (ADHD) in adolescents and adults is complex and challenging. Failure to recognize a comorbid personality disorder in patients with ADHD may lead to the wrong assumption of treatment failure if pharmacotherapy for ADHD does not bring about adequate clinical and functional improvement. In addition, individuals with ADHD and comorbid borderline personality disorder may need additional interventions. This article provides a review on the epidemiology, diagnosis and management of ADHD and BPD. In addition, it provides information on some of the warning signs that may point to presence of BPD in adolescence and describes the challenges around the diagnosis of Borderline Personality Disorder (BPD) in Adolescents. Management approaches for patients with BPD and ADHD include both pharmacological and psychological treatment. Both approaches are discussed in this article.

Keywords: *ADHD, Comorbidity, Personality Disorder, Neurodevelopmental Disorder*

Introduction

There is a need for a clear and concise approach to a complex disorder such as Attention Deficit Hyperactivity Disorder (ADHD). The diagnosis and management of attention-deficit/hyperactivity disorder (ADHD) in adults is complex and challenging because of the frequent comorbidity of other psychiatric disorders that have symptoms overlapping with those of ADHD. The presence of comorbidities can be challenging in terms of both diagnosis and management. Understanding the diagnosis and management of ADHD is incomplete without understanding comorbidities and how to manage them. Borderline personality disorder (BPD) is a common comorbidity of ADHD. ADHD and BPD are known as frequent comorbid disorders. Patients with ADHD have higher lifetime prevalence of BPD than patients without ADH. Some researchers suggested that childhood ADHD may be a risk factor for development of BPD. There are some similarities between the two disorders. They both share deficits in affect regulation, interpersonal functioning, impulse control, and self-esteem. The mechanism of affect regulation, however, differs dramatically in the two conditions. Patients with ADHD may regulate their affect by excessive sports, sexual behavior or impulsive aggressive behavior, while BPD patients may regulate their affect by dissociation or freezing and finally self-injurious behavior. Treatment of both disorders can be carried simultaneously.

Methods

In this article, findings from the relevant literature in the past 10 years (2009 - 2019) regarding the comorbidity of ADHD and Borderline Personality Disorder in adolescents and adults are summarized. The following databases were searched: PubMed, Medline, Embase and the Cochrane library.

Search terms used for Embase: attention deficit disorder, Borderline state and for Pubmed, Medline and Cochrane Library: ADHD OR (attention-deficit OR attention deficit OR hyperactivity) AND borderline OR (borderline personality disorder).

Results were screened and 2549 articles were screened for relevance and multiple filters were applied. The relevant 37 articles were categorized in the following categories: Epidemiology, etiology, diagnosis, psychotherapeutic treatment and pharmacological treatment.

Results

Etiology

Biopsychosocial factors commonly influence both ADHD and BPD symptoms and play a role in the development of these overlapping psychopathological domains.

The etiology of ADHD involves the interplay of multiple genetic and environmental factors. There is no one direct cause for ADHD, either genetic or non-genetic. Rather, it is the complex interactions of multiple genes and multiple environmental risk factors.

Twins with more pronounced ADHD traits had lower birth weight and delayed physical growth and motor development were more pronounced in ADHD patients than controls. Maternal smoking and living with only one parent were environmental factors of influence concerning concordant ADHD traits. Prenatal tobacco exposure (OR = 3.37) and medical complications (OR = 2.87) were important risk factors for later development of BPD. Childhood trauma is considered an etiologic factor in BPD. ADHD children are at elevated risk for adversities and traumatic experiences in childhood and that this contributes to the development of BPD in adolescence and adulthood.

Diagnoses of ADHD in childhood were predictive of later BPD symptoms. Patients with both BPD and ADHD symptoms (all symptom domains) scored highest for novelty seeking. Higher than normal scores in harm avoidance were found in all patients with ADHD and BPD.

ADHD patients score high on Cloninger's temperament scales whereas BPD patients also show abnormal scores on the character scales low self-directedness and cooperativeness.

The highest overlap between ADHD and BPD seems to be in the domain of impulsivity. Emotion dysregulation is often considered the core feature of borderline psychopathology and components of emotion dysregulation have been intensively studied in BPD. Currently ADHD research suggests that negative emotions seem to contribute to or aggravate ADHD symptoms via assumed emotion regulation deficits [1].

Borderline personality Disorder patients with ADHD showed more history of maltreatment during childhood compared to each disorder alone. History of childhood sexual and emotional abuse could be a risk factor for development of BPD or BPD-ADHD diagnosis in adulthood.

The etiological factors attachment style and traumatic experiences are not suitable for differentiating ADHD in adulthood and BPD. Recent study suggested that both the ADHD and BPD patients claimed traumatic experiences in their childhood or adolescence. Most frequently, patients reported traumatization following emotional neglect and emotional abuse [2].

Epidemiology

In adolescence, Point prevalence estimate of BPD is around 0.9%. Cumulative prevalence rates suggest that 1.4% of adolescents will meet diagnostic criteria for BPD by age 16 years, and 3.2% by age 22 years. The diagnostic stability of BPD has been found to be similar in adolescents and adults [3].

Attention deficit/hyperactivity disorder (ADHD) is part of the neuro-developmental disorders starting before the age of twelve, according to the DSM-V. More than 50% of the children suffering from ADHD still displayed clinically relevant symptoms when reaching adulthood, with a high degree of psychiatric comorbidities [3], among which borderline personality disorder (BPD) is encountered more often than expected by chance [4].

Comorbidity rates between ADHD and Borderline personality disorder (BPD) in adults are well documented in the literature. The comorbidity rates are high. Some researchers found only 16% comorbidity of BPD with ADHD [5] but recently, others reported a number as high as 38% [6]. A study on the psychiatric comorbidity among male offenders on probation in Sweden indicted that the rate of comorbidity of BPD and ADHD in that population was 70% [7].

Both ADHD and Borderline personality disorder have indistinguishable comorbidity rates for substance use, anxiety and eating disorders, and very similar levels of cyclothymia, which may point to mood labiality as a common denominator of these disorders [8].

Some data suggest that ADHD patients without symptoms of BPD are less predisposed to be nervous, tense, and insecure than ADHD patients with symptoms of BPD. That finding is in line with the characterization of BPD in terms of emotional instability. They also scored significantly higher on the character dimensions self-directedness and cooperativeness than did the other patients and, in fact, showed normal character development [9].

Several hypotheses are proposed to account for the comorbidity between ADHD and BPD. Some researchers suggested that the comorbid disorders do not represent distinct entities but, rather are the expression phenotypic variability of the same disorder. Others suggested that each of the comorbid disorders represents distinct and separate clinical entities or the comorbid disorders share common vulnerabilities, either genetic (genotype), psychosocial (adversity), or both. Other hypothesis include the proposal that one syndrome is an early manifestation of the comorbid disorder (i.e. ADHD is an early manifestation of a mood disorder), the development of one syndrome increases the risk for the comorbid disorder (i.e. ADHD increases the risk for borderline personality disorder) or finally the comorbid disorders represent a distinct subtype (genetic variant) within a heterogeneous disorder [10].

Diagnosis

Currently, DSM-5 uses categorical model in diagnosing BPD. When a dimensional approach is used, sub-threshold conditions can be easily identified and described and changes in symptoms over time can be more detected. In addition, therapeutic interventions could be more individually targeted. That may provide potential advantages of a dimensional model over a categorical model in diagnosing BPD [11].

According to DSM V (APA 2013) [12], patient has to have a long standing pattern that started in early adulthood that causes significant impairment in function and meets 5 of the following criteria:

1. An intense fear of abandonment, even going to extreme measures to avoid real or imagined rejection or abandonment. Patients may show extreme reactions to abandonment.
2. A pattern of unstable intense relationships, sometimes seeing things as black and white or using splitting as a defense. Patients may have difficulties sustaining relationships.
3. Rapid changes in self-identity or self-image that include shifting goals and values.
4. Periods of stress-related paranoia and loss of contact with reality, lasting from a few minutes to a few hours. The paranoid thoughts can be viewed as micro-psychotic experiences.
5. Impulsive and risky behavior, such as, reckless driving, sex, spending sprees, binge eating or drug abuse or gambling. The impulsivity is a pattern.
6. Suicidal threats or behavior or self-harm, often in response to fear of separation or rejection.
7. Significant and wide mood changes or swings that can happen within the same day, lasting from a few hours to a few days, which can include intense happiness, irritability, or anxiety.
8. Long standing feelings of emptiness.
9. Inappropriate, severe anger episodes or difficulty controlling anger, such as frequently losing temper, being sarcastic or bitter, or having physical fights.

Some researchers identified some warning signs that may point to presence of BPD in adolescence such as repetitive non suicidal self-injury (NSSI) or suicide attempts, Impulsive risk-taking behaviors (e.g. substance abuse, risky sexual behavior), mixture of high levels of both internalizing (depressive symptoms, anxiety) and externalizing problems (conduct problems), frequent anger outbursts, frequent interpersonal problems and unstable relationships and insecure identity, lack of goals in life and very low self-esteem [13]. Despite these warning signs, clinicians in several parts of the world are reluctant to diagnose BPD in adolescents for the following reasons:

1. The diagnosis of BPD may be invalid in adolescence.
2. Common features of BPD, such as affective instability or disturbed self-image, are normative among adolescents.
3. Personality could still be in development.
4. BPD diagnosis can be stigmatizing and clinicians wish to protect their patients from stigmatizing and pessimistic attitudes.

Recently, a review concluded that research did not support the first 3 assumptions and lots of work is being done to change the stigma associated with BPD. BPD has been found to be a reliable and valid diagnosis in adolescence. Early intervention is beneficial [13].

Key similarities and differences between Borderline personality Disorder and ADHD?

Both disorders are chronic, disabling and impairing conditions that are pervasive across many situations and might share impulsivity as a common symptom (ADHD combined type and Hyperactive-impulsive type). ADHD has childhood onset or early adolescent onset while BPD has Early adult/adolescent onset; signs in childhood in some cases. Some key differences: Inattention is not a core feature of BPD however frantic efforts to avoid real or imagined abandonment is one of the core feature of BPD. Recurrent suicidal behaviour is a core feature of BPD but not ADHD. Hourly mood fluctuation is a core feature of BPD but some affective lability might be found in ADHD [14].

Some neuroimaging studies suggest that for ADHD and BPD, there may be some shared neurobiological dysfunction, thus a degree of overlap may exist in underlying brain dysfunctions, as well as in symptomatology. For instance, there may be dysfunctions of the prefrontal cortex, a core region for attentional mechanisms and impulse control, and in the orbitofrontal cortex, a core region for impulsivity and emotional control [15].

Anger expression and aggression are reported to be higher in comorbid BPD and ADHD [16].

Failure to recognize a comorbid personality disorder in patients with ADHD may lead to the wrong assumption of treatment failure if pharmacotherapy for ADHD does not lead to adequate clinical and functional improvement.

In addition, individuals with ADHD and comorbid borderline personality disorder may need additional interventions, such as dialectical behavioral therapy, to address serious symptoms such as self-injury and distorted perception [17].

ADHD is characterized by a persistent pattern of inattention and/or hyperactivity/impulsivity that can interfere with or reduce the quality of social, academic or occupational functioning. However, when diagnosing ADHD in adults, it is important to note that the expression of key symptoms can change with age. In particular, hyperactivity and impulsiveness tend to decline with increasing age, whereas inattention tends to persist [18,19]. Symptoms such as hyperactivity may change into feelings of inner tension or restlessness [20], which can then be mistaken as signs of anxiety or depression.

Management

There are several management difficulties in patients with comorbid ADHD and BPD that are related to BPD. Patients with BPD often elicit countertransference reactions in the treating physician which can lead to the over or under prescription of pharmaceuticals. Patients with BPD may struggle with accurately assessing response to ADHD medications. Objective measures would be helpful when clinicians

attempt to document patient's response to treatment. Patients with BPD may challenge the boundaries therefore clinicians should s also maintain appropriate boundaries at all times with BPD patients. When patient expectations are not met, they may react with feelings of abandonment, rage, disappointment, or devaluation. Projective identification can lead to feelings of helplessness in clinicians [21].

Key clinical recommendations in adults with BPD and ADHD

Psychoeducation is the first step in management of both disorders.

Psychotherapy is the primary treatment for BPD. Principals of Dialectic behavior therapy (DBT) may be helpful in adult ADHD patients as an adjunct to medications.

No fully evidence-based pharmacotherapy exists for the core BPD symptoms although some medications may be effective for individual symptom domains. E.g. impulsivity.

Treatment of ADHD should be considered when treating comorbid personality disorders. Treating the core syndrome of ADHD may result in better functioning, less distress, more control over behavior and possibly will have more engagement and benefit from psychotherapy [14].

There are helpful tips for managing borderline patients in primary care setting that clinicians should attempt to follow. Clinicians could start learning about common clinical presentations and causes of undesirable behavior in BPD. They may learn to validate the patient's feelings by naming the emotion you suspect, such as fear of abandonment, anger, shame, and so on, before addressing the "facts" of the situation and acknowledge the real stresses in the patient's situation. Patients with BPD may display provocative behavior. Clinicians should avoid responding to provocative behavior. They may schedule regular, time-limited visits that are not contingent on the patient being "sick" and set clear boundaries at the beginning of the treatment relationship. Clinicians should not respond to attempts to operate outside of these boundaries unless it is a true emergency. When several providers of care are involved, then open communication with all other should be a condition of treatment. Polypharmacy and large-volume prescriptions of potentially toxic medications (including tricyclic antidepressants, cardiac medications, and benzodiazepines) should be avoided. If potentially addicting medications such as benzodiazepines or opiates are needed, then patients should be informed of the policies regarding these medications early in the treatment relationship so they are aware of the limits. Clinicians may be able to set firm limits on manipulative behavior while avoiding being judgmental and should not reward difficult behavior with more contact and attention [22].

Psychotherapeutic approaches for patients with BPD

Examples of empirically studied treatments for BPD include: Dialectic behavior therapy (DBT), mentalization-based therapy, transference-focused psychotherapy, and general psychiatric management.

Several types of these psychotherapies have a manual and require therapists to undergo extensive training, to be self-aware and have access to therapy or consultation by other colleagues to avoid burnout.

DBT is one of the most commonly used approaches for the psychotherapeutic treatment of adolescent BPD. It is an outpatient based treatment involving group and individual therapy and considered as an effective treatment for BPD. DBT adolescents (DBT-A) consists of 20 weekly individual psychotherapy sessions, weekly participation in the skills group and rigorous supervision of the therapists. The integration of families is a central component of DBT-A.

DBT focuses on teaching the patient how to regulate emotions, manage self-destructive feelings and behaviors, tolerate distress, and develop interpersonal effectiveness and ability to reality testing. It uses different techniques over at least one year, including acceptance, and mindfulness. It has been found to reduce self-harm and suicidality in addition to lowering health care costs and utilization of emergency department and inpatient admission [23].

Mentalization-based therapy is another group and individual psychotherapy. The goal of treatment is focused on helping the patient to "mentalize" or understand the mental state of oneself and others and to think before reacting. It uses psychodynamic approach and is linked to attachment theory [24].

Transference-focused psychotherapy is an individual, twice-weekly therapy derived from psychoanalysis. It is focused on transference (feelings of the patient projected onto the therapist) and is among the more difficult techniques to learn. It has been developed by Kernberg and his group in accordance with object relations theory. It combines classic analytic techniques with a more structured and presence-focused approach that fits the needs of adolescents with BPD [25].

General psychiatric management is a once-weekly psychodynamic therapy. It focuses on the patient's interpersonal relationships and can also include pharmacotherapy and family therapy. This is the most available and easiest to learn. In general, effective treatment requires the patient's active involvement and commitment [22].

Cognitive analytic therapy (CAT) is used in adolescent BPD and has been adapted for early intervention. CAT is a time-limited, integrative psychotherapy that arose from a theoretical and practical integration of elements of psychoanalytic object relations theory and cognitive psychology, subsequently developing into an integrated model of development and psychopathology.

CAT uses collaboration between patient and therapist where they both reach a shared understanding of the origin of patient's problems, feelings, behaviors and interpersonal relationship difficulties.

Other examples include cognitive behavioural therapy (CBT), dynamic deconstructive psychotherapy (DDP), and interpersonal therapy for BPD (IPT-BPD) [26].

Although only few studies have investigated the effectiveness of mindfulness training in ADHD (many of which showing methodological limitations), some researchers do suggest that mindfulness may be useful in ADHD interventions. Mindfulness means paying attention and being aware of the experiences occurring in the present moment, and some authors argue that mindfulness training is associated with improved attention systems and self-regulation, and that it therefore fosters those skills that are underdeveloped in individuals with ADHD [27].

Management: pharmacological treatment

There appears to be very limited data in relation to treatment of patients with comorbid ADHD-BPD [28].

In adolescence, the risks of polypharmacy and iatrogenic harm are high [24].

One study shows some preliminary evidence for Omega -3-fatty acids in adolescents with BPD and psychosis but no studies in BPD and ADHD [24].

Some researchers argued that, while many patients with BPD receive 'off label' medications, no robust evidence of efficacy exists for pharmacotherapies in relation to "the core BPD symptoms of chronic feelings of emptiness, identity disturbance and abandonment".

Patients with BPD may have some tendencies to misuse or abuse controlled substances therefore careful prescribing should take place particularly for short acting stimulant medications [26].

With regard to the noradrenergic systems, clonidine treatment, which has been reported to effectively reduce impulsivity and hyperactivity in children and adolescents with ADHD, may also reduce aversive inner tension and the urge to self-harm in patients with BPD [29].

One author suggests that treating the core syndrome of ADHD may result in better functioning, less distress and more control over behavior and possibly will have more engagement and benefit from psychotherapy [14].

The current evidence from randomised controlled trials suggests that drug treatment, especially with mood stabilisers and second-generation antipsychotics, may be effective for treating a number of core symptoms and associated psychopathology, but the evidence does not currently support effectiveness for overall severity of borderline personality disorder. Pharmacotherapy should therefore be targeted at specific symptoms [30,31-36].

Discussion and Conclusion

ADHD and BPD are chronic, disabling and impairing disorders that are pervasive across many situations and might share key similarities. Impulsivity is a common symptom shared between BPD and ADHD combined type or Hyperactive-impulsive type). ADHD in majority of cases has childhood onset or early adolescent onset while BPD has an early adult/adolescent onset. Inattention is not a core feature of BPD however frantic efforts to avoid real or imagined abandonment is one of the core feature of BPD. Recurrent suicidal behavior is a core feature of BPD but not ADHD. Frequent mood fluctuations can be a core feature of BPD but some affective lability might be found in ADHD.

Diagnostic clarity for both disorders should be one of the important areas to confirm before starting the treatment. Failure to recognize a comorbid personality disorder in patients with ADHD may lead to the wrong assumption of treatment failure if pharmacotherapy for ADHD does not lead to adequate clinical and functional improvement.

Despite having ample research in the area of ADHD, the research on the comorbidity of ADHD and BPD in adolescence remains scarce. There appears to be very limited data in relation to treatment of patients with comorbid ADHD-BPD in all age groups.

Psychotherapeutic interventions are recommended in patients with BPD and ADHD starting with psychoeducation. Psychotherapeutic approaches may include cognitive behavioural therapy (CBT), modified Dialectic behavior therapy (DBT), mentalization-based therapy, and mindfulness training. Occupational and academic accommodations are also helpful.

Pharmacotherapy with mood stabilizers and second-generation antipsychotics, may be effective for treating a number of core symptoms of BPD however mood stabilizers may cause cognitive dulling that can be problematic in patients with ADHD. Careful prescribing should take place particularly for stimulant medications since some patients with ADHD and BPD may misuse or abuse controlled substances. Quantities of medications supplied to patients who frequently self-harm by overdosing should be small and monitored. Regular scheduled appointments are needed in this population.

In conclusion, there is a significant need for more research in the area of ADHD and BPD in adolescence. Several questions starting with the diagnosis and ending with the management and prognosis remain unclear.

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