ADHD AND MENTAL HEALTH

CADDAC

CENTRE FOR ADHD AWARENESS, CANADA

CSTC - Centre de sensibilisation au TDAH Canada

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Executive Summary

Attention-deficit hyperactivity disorder (ADHD) rarely exists in isolation. Many individuals with ADHD have at least one additional mental health condition (Kessler et al., 2006). The presence of ADHD and co-occurring conditions can have detrimental impacts on one's overall quality of life. Core ADHD symptoms include hyperactivity, impulsivity, and attention dysregulation, but hyperactivity and impulsivity maybe be less obvious in those diagnosed with ADHD inattentive sub-type. What many people don't realize is ADHD also impairs one's executive functions. Executive functions impact one's ability to meet deadlines, plan and organize, problem solve, follow instructions, start and complete a task, and manage emotional outbursts (Villines, 2021). These impairments can lead to additional mental health conditions such as anxiety, depression, eating disorders, and substance use disorder.

- 80% of adults and 44% of children with ADHD have at least one co-occurring mental health condition (Kessler et al., 2006)
- 42.7% of individuals with substance use disorder have ADHD (Kessler et al., 2006)
- Up to 40% of children and 50% of adults with ADHD also have an anxiety disorder (Gair et al, 2020, Katzman et al., 2017).
- A Canadian study found that 1 in 7 adults with ADHD attempted suicide compared to 1 in 37 adults without ADHD (Fuller-Thompson et al., 2020).
- It also found that 1 in 4 women with ADHD has attempted suicide (Fuller-Thompson et al., 2020).
- 32% of students with ADHD do not graduate high school (Breslau, 2011)
- Adults with ADHD are 20% less likely to be employed and earn an average of 16% less than their counterparts (Kuriyan, et al., 2013).
- Studies suggest up to 60% of children with OCD also have ADHD (Abramovitch et al., 2015)

ADHD is a serious mental health condition; however, it can be successfully treated with early intervention and treatment tailored to individual need. An emphasis should be placed on psychoeducation and skill-based programs to teach individuals coping strategies to help prevent further co-occurring disorders such as generalized anxiety disorder, depression and substance use disorder (CADDRA, CADDAC, CanReach, 2022). We believe collaboration between governments, educational institutions, professional associations, mental health and addictions organizations, individuals and their families is necessary to support Canadians with ADHD. We are asking the Provincial and Territorial Governments across Canada to strike independent expert advisory committees to support this collaboration. The groups would guide specific actions designed to improve the long-term outcomes of individuals with ADHD in the respective Provinces and Territories.

Introduction

Attention-deficit hyperactivity disorder (ADHD) is the most common neurodevelopmental disorder in children and adults, affecting 3-5% of adults and 5-9% of children or 1.8 million Canadians (Riegler et al. 2017, statistics Canada, 2022). ADHD is a chronic condition; only 15% of children with ADHD show remission of symptomatic and functional impairment in adulthood (World Federation Guide, 2019). ADHD is highly heritable, with rates between 70-90 percent, meaning if a parent has ADHD, it is highly likely their children will also have ADHD (Faraone and Larsson 2018). ADHD impacts all areas of a person's life. Untreated ADHD can lead to devastating consequences over the course of a person's life. Children are at risk for accidental injuries, educational underachievement, and difficulties with socializing, while adolescents are at risk for early-onset substance use, delinquency, and teenage pregnancy (CADDAC, CADDRA, CanReach, 2022). Many adults fail to reach their full potential with studies showing increased risk for substance use disorders, accidental injuries, unemployment, gambling, low quality of life, suicide, and premature death (CADDAC, CADDRA, CanReach, 2022).

While core ADHD symptoms include hyperactivity, impulsivity, and attention dysregulation; hyperactivity and impulsivity maybe be less externalized in those diagnosed with ADHD inattentive sub-type. ADHD is also known to impair executive functions (EF). Executive functions refer to a range of higher-level skills critical for successful functioning in everyday life, such as planning, organizing, time management, working memory, processing speed, task initiation, emotional regulation, and self-awareness (Gair et al., 2020). Executive functions impact one's ability to meet deadlines, plan and organize, problem solve, follow instructions, start, and complete a task, and manage emotional outbursts (Villines, 2021).

These impairments can lead to additional mental health conditions known as comorbidities. Approximately 44% of children and 80% of adults with ADHD have at least one co-occurring mental health condition (Kessler et al., 2006). Some of the more common co-occurring include anxiety disorders, depression, Substance Use (SU), Bipolar, Learning Disabilities (LD), and Autism Spectrum Disorder (ASD). The presence of co-occurring conditions is important to note because it can disrupt the assessment, diagnosis, and treatment process. Also, individuals with ADHD and co-occurring conditions often have poorer outcomes than those with ADHD alone. Studies show that individuals with ADHD alone exhibited better daily functioning when compared to those with ADHD and additional mental health conditions (Elwin et al., 2020). It is well documented that individuals with multiple mental health conditions have poorer responses to treatments and longer treatment cycles (Efe et al. 2022). Therefore, it is important to assess, diagnose and treat ADHD during childhood.

Anxiety

As noted, ADHD is rarely diagnosed as a stand-alone disorder; in fact, ADHD is known as a precursor for additional mental health conditions (Gair et al, 2020, Katzman et al., 2017).
Anxiety, a group of mental health disorders characterized by excessive fear and/or anxiety that interferes with daily functioning. It is also one of the most common mental health conditions diagnosed in people with ADHD. Up to 40% of children and 50% of adults with ADHD also have an anxiety disorder (Gair et al, 2020, Katzman et al., 2017).

Anxiety is common in people with ADHD mainly due to the symptoms associated with the disorder. For instance, issues with task initiation and motivation may cause an individual to procrastinate to the point they fail to meet a work deadline or complete a school assignment on time. This can lead to job loss or failure to pass a grade. Similarly, the ability to self-regulate can also lead to anxiety – Individuals with ADHD know how to complete a task, but they may find it difficult to resist distraction or regulate their attention enough to complete the task on time. Research shows that children with ADHD have lower GPAs compared to those without ADHD (Sunde et al., 2022). While adults with ADHD report poorer work performance and job instability and earn approximately 17% less than those without ADHD (Li et al., 2022; Jangmo et al., 2021).

The constant state of worry can lead to additional anxiety disorders, such as obsessive-compulsive disorder (OCD) and social anxiety (SA). Studies suggest up to 60% of children with OCD also have ADHD (Abramovitch et al., 2015). OCD is characterized by intrusive, unwanted, and obsessive thoughts leading to urges in behaviour, or compulsions (Farrell et al., 2020). One explanation for the strong link between the disorders is the overlapping symptoms of impulsivity and compulsivity. Other explanations include genetic factors, brain structure, and brain chemicals (Brem et al., 2014). Similarly, there is a strong link between ADHD and SA. Studies show approximately 40%-62% of individuals with Social Anxiety have ADHD (M-A Edel et al, 2010). Some attribute high rates of ADHD among individuals with SA to a lifetime of criticism, lagging social skills and poor executive functioning.

Substance use

Individuals with ADHD are at greater risk of developing substance use disorders (SUD) compared to those without ADHD (Zulauf et al., 2015). Studies show as high as 50% of individuals with SUD have ADHD, and 20% of individuals with ADHD have SUD (Schellekens et al., 2020). Individuals with ADHD may seek illicit substances to cope with and relieve symptoms associated with the disorder. Childhood ADHD is often regarded as a risk factor for substance abuse disorders in

adulthood. ADHD has adverse effects on the development of SUD, including earlier onset, greater severity, and an increased frequency of SUD relapses (Slobodin, 2020; Kaye et al., 2020).

Studies suggest that those with ADHD seek certain substances to help relieve and improve ADHD symptoms like inattention, rapid thoughts, poor sleep, and mood dysregulation, rather than to seek a high. This is referred to as the "self-medication" hypothesis (Sherman, 2022). For example, a child with ADHD may be struggling academically and socially and seek substances to combat the negative feelings associated with peer rejection and poor academic performance. Additionally, children with ADHD are more impulsive and tend to have more behavioural challenges, which may contribute to substance abuse. Furthermore, co-occurring conditions such as anxiety or depression may increase the risk of substance abuse (Frank, 2022). A study found that college students with ADHD and depression were more likely to binge drink, consume alcohol more frequently, and were more likely to use marijuana and other illicit substances (Mochrie et al., 2020). This suggests that early diagnosis and treatment of ADHD can act as a preventive intervention for the development of SUDs in people with ADHD.

Depression

Undiagnosed and untreated ADHD in childhood and adolescence can lead to a greater risk for depression in adulthood. A study following participants from childhood to young adulthood found that childhood ADHD was associated with an increased risk of depression in young adulthood; up to 70% of people with ADHD may experience depression in their lifetime (Cuncic, 2020, Riglin et al., 2020). Depression refers to recurring and long-term episodes of sadness and loss of interest in daily activities of living. For many, ADHD and depression are considered chronic disorders. While depression and ADHD can co-exist as separate conditions, for some depression can result from difficulty managing ADHD symptoms. For example, adults may have difficulty completing work-related tasks on time, contributing to poor work performance and ostracism from co-workers and management, which may lead to depressive symptoms. Children and adolescents may struggle with poor academics, social rejection and isolation, and low self-esteem which can lead to chronic depression if left untreated. Another major risk factor for depression in those with ADHD is impairment in executive functioning including emotional dysregulation (Sherman, 2020). People with ADHD often feel more intense emotions than those without ADHD and take longer to recover from these intense emotions.

Those with ADHD and depression are also at an increased risk for suicide and self-harm (Guarnotta, 2020). This is particularly significant in hyperactive/impulsive types (Sherman, 2022). Two major theories behind the high risk of suicidality in people with ADHD include impulsivity as a personality trait and the presence of comorbid conditions, which may act as a risk factor (Balazs

and Kereszteny, 2017). A Canadian study found that 1 in 7 adults with ADHD attempted suicide compared to 1 in 37 adults without ADHD (Fuller-Thompson et al., 2020). It also found that one in four women with ADHD has attempted suicide (Fuller-Thompson et al., 2020). Sixty percent of the association between ADHD and attempted suicide was attenuated when a lifetime history of depression, anxiety disorders and other risk factors were taken into account (Fuller-Thomson, et al. 2020). This suggests the importance of early assessment, diagnosis, and treatment of ADHD.

Eating disorders

Those with ADHD are more likely to develop eating disorders than those without ADHD (Olivardia, 2022). The prevalence of eating disorders in people with ADHD ranges up to 12% (Reinblatt, 2016). Eating disorders are mental health disorders characterized by abnormal eating and/or weight control behaviours (Treasure et al., 2021). Such disorders can have damaging effects on physical and mental health. Some classifications of eating disorders include anorexia nervosa (AN), bulimia nervosa (BN) and binge eating disorder (BED). A research study found that lifetime ADHD was significantly associated with lifetime BN, BED, and any other ED (Ziobrowski et al., 2018). However, the most common eating disorders in those with ADHD are BN and BED (Cox, 2022). Those with BN eat a large amount of food quickly and purge the food by throwing up or engaging in rigorous exercise. Unlike BN, those with BED, eat large amounts of food but do not purge the food. AN, on the other hand, is characterized by an extreme restriction of calorie intake and an overwhelming fear of weight gain.

Poor impulse control, a major symptom of ADHD, can act as a major contributor to the development of eating disorders such as BED and BN (Olivardia (2022). Both ADHD and binge eating share similarities of impulsivity. For example, someone with ADHD may have difficulty controlling their desires and/or acknowledging the consequences of their behaviour. For those with bulimia, food acts as a form of “self-medication” or relief from ADHD-related symptoms such as anxiety, boredom, and fear. For example, an adult with ADHD may strictly control their eating habits to integrate control over their ADHD symptoms that negatively affect their lives. A recent article in Additude Magazine highlighted the story of a 44-year-old woman named Tyra, who struggles with ADHD and anorexia (Olivardia, 2022). She mentions that during her childhood controlling her weight was her only success. She often felt overwhelmed and failed to get things done. However, controlling her eating habits and weight gave her a sense of power over her ADHD symptoms. Additionally, impairments in executive functioning may cause difficulty regulating emotions which may contribute to a binge eating disorder. People often eat when they feel intense emotions. Impairments in executive functioning may also make it difficult to plan and prepare proper meals leading to poor food choices (McQuillan, 2022).

Neurodevelopmental Disorders

In addition to mental health conditions, individuals with ADHD also face an increased rate of neurodevelopmental disorders (NDDs) such as autism spectrum disorder (ASD) (25%), Learning Disabilities (30%), Tourette Syndrome (20%), and Oppositional Defiant Disorder (ODD) (40%) (Additude, 2021; Chadd, n.d.). Neurodevelopmental disorders are a group of disorders characterized by alterations in brain development which impacts emotion, learning, behaviour, and memory among others. Those with additional NDD are at a higher risk for mental health conditions such as anxiety, depression, substance use, and other mental health conditions (Hansen et al., 2018). As a result, these individuals face multiple barriers in accessing support services in their community (Ono et al., 2019).

Although neurodevelopmental disorders are categorized as separate disorders, they share overlapping symptoms such as poor impulse control, memory challenges, emotional regulation/perception, and motor function (Dewey, 2018). Executive functioning is often impaired in those with neurodevelopmental disorders (Dajani et al., 2016). For example, a recent study showed that impaired executive functioning is more prevalent in ASD and ADHD continuums and that poor executive functioning could act as a precursor for ASD and ADHD (Otterman et al., 2019). Another study found that children with ADHD and Learning disorders showed greater executive functioning impairment compared to children who do not have either condition (Crisci et al., 2021).

Barriers to Assessment and Treatment

There are several barriers to getting assessed and treated for ADHD. The biggest obstacle is the lack of ADHD knowledge by primary care physicians. Many studies have demonstrated a poor understanding of ADHD among primary care physicians (PCPs) globally. This lack of training affects many aspects of primary care from referral and diagnoses to management of the disorder (French, Sayal, Daley, 2018). A B.C study found that only 52% of general practitioners (GP) were comfortable assessing and diagnosing ADHD, compared to 78% who are comfortable assessing and diagnosing mood disorders (Miller et al., 2005). These disparities are extremely significant because primary care settings are the first point of contact for many patients and families and act as “gatekeepers” to mental health services (Rashid et al., 2018). Undiagnosed and/or untreated ADHD can have dire consequences therefore, it is imperative that primary care professional have the knowledge and tools required to assess and treat ADHD.

Additionally, the presence of comorbidities may further complicate ADHD assessment, diagnosis, and treatment because of the presence of overlapping symptoms between ADHD and other co-occurring mental health conditions. Many mental health conditions share symptoms such as poor concentration, difficulty completing tasks, focusing, impaired social functioning,

restlessness, and mood swings (Katzman et al., 2017; Broadway, 2022). This can result in a missed ADHD diagnosis, leading to people receiving treatment for the co-occurring disorder, but not ADHD.

Lastly, despite ADHD being the most common neurodevelopmental disorder in children and adults, ADHD is poorly understood and highly stigmatized among the general population. One of the most glaring misconceptions about ADHD is that it is a highly externalized disorder characterized by obvious hyperactivity. When In fact, those diagnosed with ADHD inattentive sub-type are not outwardly hyper at all. To receive an ADHD diagnosis, symptoms must be present in more than one setting, impact daily functioning, and be persistent. Studies show that a lack of understanding about ADHD including the importance of diagnosis and treatment is very much prevalent among community members such as teachers, parents, and healthcare providers (Hamed et al., 2015).

Research suggests that the stigmatization of ADHD is associated with a reduced likelihood of accessing mental health services (Bisset et al., 2022). Stigmatization itself can act as a barrier to receiving a proper diagnosis and treatment for ADHD. For example, a parent may choose to forego getting their child assessed for ADHD due to the negative perceptions associated with the condition.

Recommendations

The consequences of untreated ADHD are far too great to ignore. It is a serious mental health disorder contributing to marked impairment throughout a lifespan. However, it can be successfully treated with improvement in outcomes leading to a reduction of mental health consequences and costs.

Treatment for ADHD should consist of timely assessment and diagnosis, early intervention, and treatment tailored to individual needs. An emphasis should be placed on psychoeducation and skill-based programs to teach individuals coping strategies to help prevent further comorbid disorders such as generalized anxiety disorder, depression and substance use disorder (CADDAC, CADDRA, CanReach, 2022).

We believe collaboration between governments, educational institutions, professional associations, mental health and addictions organizations, individuals and their families is necessary to support Canadians with ADHD.

We are asking the Provincial and Territorial Governments across Canada to strike independent expert advisory committees to support this collaboration. The groups would guide specific actions designed to improve the long-term outcomes of individuals with ADHD in the respective Provinces and Territories. Actions should be based on these pillars:

1. Develop and expand ADHD resources across Canada to help individuals and families impacted by ADHD access treatment.
2. Invest in training and ongoing support for medical and mental health practitioners to improve access to ADHD assessment and treatment.
3. Invest in ADHD training for educators to improve academic outcomes for students with ADHD. Implement specific ADHD training into the curriculum in teachers' college, early childhood education and child and youth worker programs.

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