



# Assessing Anxiety and Depression in Young Populations:

## An Inventory of Environmental Risk Factors and Adverse Childhood Events

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**Abstract:** Anxiety and depressive disorders in children and adolescents affect social, physical, and emotional development necessitating thorough screening and assessment. Mood disorders in younger populations have known risk factors that are typically categorized as either psychological, biological, or environmental in origin. This article highlights environmental factors correlated with anxiety and depression during childhood and adolescence with an emphasis on adverse childhood events.

### Introduction: Mood Disorders in Children and Adolescents

Anxiety and depression are recognized as the two most common internalizing disorders in childhood and contribute to frequent disruption to the interpersonal and academic functioning in youth and children.<sup>1</sup> Internalizing disorders are correlated with an increase in school drop-out, substance use, and potentially suicide.<sup>2</sup> The Ontario Child Health Study (OCHS) in 2014 revealed that the past 6-month prevalence rates of all mood disorders range from 18% to 22%.<sup>3</sup> Mood disorders in children often go undetected and untreated despite advances in diagnostic criteria.<sup>4,5</sup>

Identifying and ameliorating emotional distress in children continues to be a challenge. Insufficient awareness about the importance of early recognition has been hypothesized as contributing to inadequate detection of mood disorders in youth.<sup>6</sup> Symptoms and diagnostic criteria are different in children and adolescents compared to adults and progress is being made to improve the assessment criteria for juvenile patients.<sup>7</sup> In addition to presentation of symptoms, the assessment process also depends on a detailed health history and screening for risk factors and underlying causes. The assessment process may be augmented by considering the diverse risk factors—biological, psychological, and environmental—in combination with symptom presentation.<sup>8</sup>

### Assessment Overview

The fundamental purpose of clinical assessment is to formulate a thorough understanding of the case that will effectively guide management, referral and intervention.<sup>5</sup> A challenge is obtaining

dependable, congruent, corroborative details from the juvenile patient and other informants. In the context of childhood emotional disturbances, information is typically obtained from multiple sources (i.e. the patient, parents, caregivers, and teachers). A perceived mutually beneficial relationship between the child, family and healthcare provider may clarify the facts. The child who recognizes that there is a joint effort to understand and address their emotional concerns may be less guarded.<sup>5</sup> Figuratively placing the young patient in the context of psychosocial experiences may strengthen the clinician's understanding of origins, urgency, and prognosis.<sup>5</sup> Understanding pervasive childhood risks—and employing unprejudiced, trauma-informed inquiry—may unmask deep seated factors contributing to the child's current experiences. A trauma-informed approach has been postulated as having the fundamental shift to asking 'What happened to you?' rather than 'What is wrong with you?'.<sup>9</sup> Being able to develop this type of therapeutic alliance in the primary care setting may prove helpful for assessment but does not replace the clinical expertise of qualified practitioners. Judicious referral is compulsory.<sup>7</sup> Healthcare professionals should reference referral criteria to gauge when a referral to a more qualified practitioner should be made. Mild mood changes and depression without comorbidities can typically be managed by the primary care provider. Referral is warranted in circumstances of significant depression and where there are multiple risk factors; psychotic depression; mild depression that has not responded to interventions after 2-3 months; unexplained self-neglect for at least 1 month's duration that could be harmful to physical health; recurrent depression; active suicidal ideas or plans; or when a referral is requested by a young person or their parents or caregivers.<sup>7</sup> Other features that may necessitate referral are episodes of panic; compulsions; and aggressive behaviour. Guidelines on the role of the primary care provider and psychiatric intervention and management are available for reference (e.g. NICE Guidelines).<sup>7</sup>

### Assessment: Determining Presence and Severity of Symptoms

A thorough history can be obtained by screening through symptom-based questionnaires, paying attention to organic dialogue, and drawing out plausible exacerbating or contributing factors by noting psychosocial influences.<sup>5</sup> Physical examination and lab testing (when appropriate) may be indicated to rule out comorbid medical conditions.<sup>10</sup> Anxious and depressive symptoms may co-exist, and screening for features of both is prudent in the context of children suffering from mood concerns.<sup>11</sup>

When assessing children with anxiety, differentiation between anxious symptoms and developmentally appropriate worries and fears as well as appropriate reactions to stressful stimuli is warranted. If anxious symptoms are present, the clinician must determine if stressors or trauma are contributing to the occurrence or maintenance of the symptoms.<sup>12</sup> The use of standardized tools such as Spence Children's Anxiety Scale (SCAS) (ages 8-15) or possibly the Screen for Child Anxiety Related Disorders (SCARED) questionnaire may be helpful in deciphering severity of symptoms. The Preschool Feelings Checklist can be used in the primary care setting for very young children.

The diagnostic criteria for depression in adolescents and adults is the same though symptom presentation may differ. Hopelessness, anhedonia, boredom, hypersomnia, weight changes, alcohol or drug use, and suicide attempts are possible experiences of adolescents with depression.<sup>8,13</sup> Younger children struggle to convey their mood and may appear sad and more likely to present with somatic complaints, separation anxiety, and phobias.<sup>8,13</sup> The Children's Depression Inventory (CDI) (ages 7-17) and the Beck Depression Inventory for Primary Care for adolescents 12 to 18 years of age are useful tools.<sup>14,15</sup>

There is a notable lack of healthcare providers who are adequately trained to treat depression in children and youth.<sup>11</sup> Developing prevention and treatment strategies is an ongoing endeavour in the healthcare and research sectors.<sup>11</sup> Though diagnosis of anxiety and depressive disorders is reserved for qualified practitioners, referencing criteria in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) is helpful for screening and referral purposes.

### Assessment: Risk Factors

There are numerous influences that may play a role in mood disorders in children and adolescents, typically categorized as biological, psychological and environmental. Biological risk factors include family history of anxiety or depression, medical illness, pubertal and hormonal changes, female sex, low birth weight, maternal age younger than 18 years, and obesity.<sup>8,12</sup> Psychological risk factors comprise emotional dependence, history of suicide attempts, ineffective coping skills, low self-esteem, negative body image, negative thinking styles, and self-consciousness.<sup>8,12</sup> Environmental risk factors—elaborated on in the remainder of this paper—include adverse childhood experiences, certain family dynamics, negative social interactions, low socioeconomic status, poor academic performance, overeating, and substance use.<sup>8,12</sup> Nutrient deficiencies and diet and lifestyle factors are briefly discussed as possibly contributing to mood, but more research is needed.

### Environmental Factors: Adverse Childhood Experiences

Adverse Childhood Experiences (ACEs) are unfavourable events occurring in younger populations (0-17 years of age) including violence (experienced and/or witnessed), trauma, abuse (maltreatment), neglect and having a family member attempt or die by suicide.<sup>16,17</sup> Other ACEs occurring in the household that may destabilize the child's sense of security and social engagement

are substance use, mental health concerns, and fragmented family dynamics (e.g. family members being incarcerated and parental conflict and/or separation).<sup>16,17</sup> ACEs are correlated with development of neurobiological alterations (functional and volumetric changes in certain brain structures) and psychological disorders often leading to lifelong negative effects on health, well-being, and opportunity.<sup>16,17</sup> The majority of environmental risk factors for mood disorders in young populations could fit categorically under the ACE umbrella term. The remaining environmental factors are lifestyle factors that may exist alongside ACEs or as sequelae of ACEs.

### ACE: Abuse

Abuse occurs in various forms and can significantly impact the wellbeing of the victim. Emotional maltreatment has a strong association with dysfunction in social anxiety disorder (SAD).<sup>18</sup> Literature tends to focus on the anxiety and mood outcomes associated with physical and sexual abuse. It has been speculated that since these forms of abuse are inherently more egregious, they are often viewed as more injurious. Some research indicates that emotional mistreatment and neglect (but not other forms of abuse) predispose the cognitive state that advances development and morbidity of anxiety disorders.<sup>18</sup> Women who experienced childhood sexual abuse were found to have an increased risk for developing chronic and major depression.<sup>19,20</sup> Gender-diverse and sexual-minority youth have an increased risk of experiencing depression or anxiety than straight or cisgender youth.<sup>21</sup> Attentiveness to the prevalence and sequelae of abuse—in all its forms—may be supportive when screening for mood disorders.<sup>9,18</sup>

### ACE: Bullying

Bullying, a serious social concern, is correlated with history of ACEs. Both perpetration and victimization are linked to ACEs indicating the need for proper screening while maintaining trauma-informed practice.<sup>22</sup> Bullied children tend to have more anxiety. Bullies—while equally or less anxious than their peers—may experience higher rates of depression.<sup>23</sup> Traumatic experiences are known to exist in conditions such as post-traumatic stress disorder (PTSD) and may be implicated in other mood disorders such as anxiety and depression.<sup>24</sup>

### ACE: Family Dynamics

Family dynamics such as parental conflict and divorce are associated with increased risk for worsening of depression later in life. For adolescent patients already struggling with depression, experiencing a parental separation was found to increase the risk of bipolar disorder as an adult.<sup>25</sup> Parental conflict contributes to an increase in emotional insecurity in children.<sup>26</sup>

### ACE: Negative Social Interactions

Environmental factors including digital media, school stress, and social activities may contribute to mood disorders. Internet use has either a positive or negative influence on depression depending on how it is used. Using the internet for health purposes is associated with an increased risk of depression (attributable to rumination and hyper-focus on health concerns) whereas using internet for communication with friends and family has been shown to lower levels of depression.<sup>27</sup> There is mounting evidence supporting the notion that digital media

contributes to mood concerns such as anxiety and depression. Current areas of inquiry include: the role of technology-based negative social comparison in anxiety and depression; substituted digital media use and poor emotional-regulation, social anxiety from avoided social interactions, and anxiety due to fear of insufficient connectedness. Victimization through cyberbullying may have significant implications in anxiety, depression and suicide.<sup>28</sup> Social events and even routine activities such as school can trigger anxiety in certain children.

## ACE: Substance Use

The overuse of substances such as alcohol, smoking, and illicit drugs may contribute to symptoms of anxiety and depression in teens. Early onset of alcohol use and frequent consumption and intoxication correlates with worse depressive symptoms; the association was stronger for girls than for boys when considering early onset alone.<sup>29</sup> Similarly, frequent/heavy drinking among girls was related to anxiety disorders, but not among boys.<sup>30</sup> More severe anxiety disorders (e.g. agoraphobia, OCD) were found to be significantly associated with drug use for girls.<sup>30</sup>

## Environmental Factors: Nutrient Deficiencies

Iron deficiency amongst children is common and may be implicated in mental health concerns. A deficiency in iron increases the risk of psychiatric and mood disorders.<sup>31</sup> Brain iron status influences energy metabolism and neurotransmitter homeostasis. These functions have been shown to influence both mood and behaviour.<sup>32</sup> Vitamin D deficiency and insufficiency are pervasive in adolescents with severe mood disorders. Vitamin D has been hypothesized as either a mediator for or result of illness severity—possibly both.<sup>33</sup> Supplementation with vitamin D for depression, however, has shown limited beneficial effects.<sup>34</sup> Other nutrient deficiencies that may be linked with mood disorders are, vitamin B12,<sup>35</sup> magnesium,<sup>36</sup> and zinc.<sup>37</sup>

## Environmental Factors: Lifestyle Factors

Health risk behaviours such as poor sleep habits, lack of adequate physical activity, and overeating may contribute or exacerbate mood disorders in children.<sup>38,39,40</sup> While sleep disturbances are a symptom of depressive disorders, altered sleep patterns have been implicated to upturn risk for mood imbalances.<sup>38</sup> Longitudinal research has shown a link between the level of physical activity and decrease in depressive symptoms in children.<sup>39</sup> Frequent aerobic activity induces positive physiological effects and is linked with lower sympathetic nervous system tone.<sup>41</sup> Overeating and obesity have the potential to contribute to depressive symptoms or extend a depressive episode.<sup>40</sup> Negative self-image and depressive feelings are associated with obesity.<sup>42</sup>

## Conclusion

The prevalence and morbidity of childhood anxiety and depression warrants thorough screening and assessment. The consequences of environmental risk factors including adverse childhood events are ominous and a trauma-informed practice model should be considered. A deep understanding of the many contributions to mood disorders in younger populations facilitates accurate assessment and gives direction to therapeutic interventions. 🍌

## About the Author

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