

HOW CAN STUDENTS WITH ANXIETY BE SUPPORTED WITH
COGNITIVE BEHAVIOUR THERAPY AND NATURE-BASED THERAPY

by

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How can students with anxiety be supported with Cognitive Behavior therapy and Nature-Based therapy?

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Dedication and Acknowledgement

I would like to respectfully acknowledge the shared, unceded traditional territories of the Katzie, Semiahmoo, Kwantlen and other Coast Salish Peoples where I work, play, and learn.

I would like to thank my family for inspiring me to take a risk and go back to school to pursue my dream of becoming a counsellor. To my husband, Brian for bringing me cappuccinos on Saturday mornings and for encouraging me not to give up. To my daughter, Alana who gave me the courage and determination to re-invent myself and my career. To my son, Dylan who challenges me to be the best version of myself. Special thanks to my mentor, Karen Pearson, who inspired me to connect our youth to the power of nature and its healing magic.

I would like to dedicate this paper to all youth who struggle with anxiety at Queen Elizabeth. My hope is that through sharing our stories we become stronger, more resilient, and able to face any challenge. I would also like to dedicate this paper to my grandmother, Freda Mason, who passed during 2020. Your guidance and ancestral presence was felt this past year and has helped me to show up and be brave.

“My wish is to stay always like this, living quietly in a corner of nature” Claude Monet

Abstract

COVID-19 has caused tremendous stress among children and adolescents and this stress could precipitate the development of anxiety, panic attacks, depression, mood disorders and other illnesses (Shah et al., 2020). Recent research reports that 60% of parents surveyed during the beginning of the pandemic were concerned or extremely concerned about their families, managing their child's behavior regarding stress levels, anxiety, and emotions (Statistics Canada, 2020). These results support an urgent need for intervention and recovery efforts aimed at improving child and adolescent well-being (Jackson et al., 2021) (Racine et al., 2021).

Research establishes a strong connection between exposure to nature and enhanced well-being. The purpose of this capstone is to provide therapeutic strategies for school counsellors involving the proven benefits of Cognitive Behavior Therapy and Nature Based Therapy for use with students with anxiety.

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How can students with anxiety be supported with CBT and Nature-based therapy?

Chapter 1: Introduction

Background

My relationship with nature began at a young age. My earliest memories are of exploring the ranch we lived on in Nelson, New Zealand, climbing trees before I could walk and interacting with the animals we cared for. Growing up, I was always outside playing in the forest, by the river or hiking the hills and exploring. I remember sitting in my favourite tree, thinking, reflecting, asking it questions and waiting for the answers that would come. Nature had the power to hold my difficult emotions that others could not. Fast forward to my forties and going through several health issues, I again began to seek connection and healing in nature.

Recovering from cancer, my goal was to complete the West Coast trail. In 2018, at 6 months cancer free I was able to hike the trail with my husband. In my experience, nature has been a powerful healer, partner, and constant friend. My goal in sharing this research is to bring nature into students' lives to help them develop a relationship with nature and through this connection provide healing to those who suffer from anxiety.

Anxiety is one of the major leading causes of mental illness among children. Mental illness can affect children at any point during their childhood, but it most significantly affects them during adolescence (Adolescent mental health, 2020) (Children's mental health, 2020) (Shah et al., 2020). About 15% of children and adolescents in the world have mental health disorders or conditions (Child and adolescent mental health, 2020) (Adolescent mental health, 2020) (Children's mental health, 2020) (Shah et al., 2020), and nearly 50% of mental disorders start to affect children by the age of 14 (Child and adolescent mental health, 2020) (Adolescent mental

health, 2020)(Shah et al., 2020). If left untreated, a child's mental development has been found to be drastically and detrimentally impacted (Child and adolescent mental health, 2020) (Adolescent mental health, 2020) (Children's mental health 2020) (Shah et al., 2020). In 2016, an estimated 53,000 deaths were due to adolescent suicide, which is the third leading cause of morbidity in this group (Child and adolescent mental health, 2020) (Adolescent mental health, 2020) (Shah et al., 2020). This emphasizes that adolescence is a period of vulnerability for the onset of mental health conditions (Child and adolescent mental health, 2020) (Adolescent mental health, 2020) (Shah et al., 2020).

Cognitive Behavior Therapy has established itself through numerous randomized controlled trials as an effective psychological treatment for children with anxiety (James et al., 2013) (Reynolds et al., 2012) (Fonagy et al., 2014) (Stallard, 2019). CBT has informed many school-based prevention programs and has been found to be effective in reducing symptoms of depression (Hetrick et al., 2016) (Calear & Christensen, 2010), anxiety (Werner-Seidler et al., 2017) (Stockings et al., 2016) (Neil & Christensen, 2009) and post-traumatic symptoms (Rolfesnes & Idsoe, 2011) (Stallard, 2019).

Nature deficit disorder is a term used by Louv (2008) to discuss the impacts of youth today spending less time outdoors and more time doing sedentary activities. Nature deficit disorder results in physical and mental health concerns such as obesity, depression, anxiety, ADHD, and other mental health issues (Louv, 2008). Researchers have found that nature in the school context contributes to multiple indicators related to optimal student wellness and learning (Corazon et al, 2019). Although Nature itself is not a therapy, the practice of Nature Based

Therapy, with nature as co-therapist has many psychological and emotional benefits (Corazon et al, 2019). This leads researchers to question how nature can make a difference for youth with anxiety.

This paper sets out to provide an understanding of the prevalence of anxiety in youth, and from a school counsellor's perspective, how youth with anxiety can benefit from Nature -Based therapy combined with Cognitive Behavior Therapy. Included in this paper is a one-day professional workshop that outlines the practice of infusing nature-based therapy with the strategies and proven benefits of CBT. It offers counsellors, teachers' and professionals' strategies and tools to practice with students who are struggling with anxiety as well as a variety of other mental health issues.

Significance of the Study

The purpose of this study is to examine the problem of anxiety in youth, how it impacts youth in a school context and what is the best way to support students with anxiety. The form of the study is a narrative research study, that examines the research on anxiety and the following treatments: Cognitive behavior therapy as a treatment for anxiety and Nature based therapy as a treatment for anxiety. Further research is examined on Nature based therapy combined with Cognitive behavior therapy and how it can actively influence the therapeutic process in treating anxiety in youth. Combining a top down (Cognitive processing) and bottom-up (Sensation processing) this study was chosen to meet the needs of youth who have anxiety in a more holistic way. Through an Eco-wellness therapeutic model (Reese & Myers, 2012), combining the proven

benefits of Cognitive Behavior Therapy and the powerful restorative and healing benefits of Nature, it is hoped counsellors can help youth manage and reduce their anxiety in a school context.

This paper sets out to provide an understanding of anxiety in youth, their need for treatment, and from a school counsellor's perspective, how youth with anxiety can benefit from Nature -Based therapy combined with Cognitive Behavior Therapy. This study was chosen to highlight the problem of anxiety in our youth as a serious mental health issue and to provide teachers, school counsellors families and administrators tools to support those students in managing their anxiety and how it can make a difference for youth. Recommendations will include a power point highlighting Cognitive Behavior Therapy strategies and tools combined with a Nature -Based therapy approach to manage youths' anxiety.

Theoretical Framework

Eco-wellness, Psycho-evolutionary theory and Attention-Restoration theory provide the theoretical framework through which this study is based on. Eco- Wellness, developed by Reese and Myers (2012) is a framework for strategically infusing nature throughout the school counselling curriculum. It can be defined as one's sense of appreciation, respect for, and awe of nature resulting in greater feelings of connection to nature and holistic wellness (Myers & Sweeney, 2008). Attention Restoration Theory proposes that contact with nature restores and redirects one's attention to the current task at hand (Kaplan & Kaplan,1989) (Kaplan, 1995) (Hartig, 1991) (Naor & Mayseless, 2021). The theory states that clearing the mind, redirecting

attention, dealing with unresolved concerns, and reflecting on priorities can all be better achieved in a supportive environment that includes nature (Kaplan & Kaplan, 1989) (Kaplan, 1995) (Hartig, 1991)(Naor & Mayseless, 2021). Psycho-evolutionary theory suggests that natural settings can have a stress-reducing and calming effect on individuals by regulating their emotional responses to their environment (Kaplan & Kaplan, 1989) (Kaplan, 1995) (Hartig, 1991)(Naor & Mayseless, 2021). Natural environments can positively impact an overall sense of emotional well-being by lowering neurophysiological stress, thereby generating more positive emotions, sustaining attention, and restricting negative thoughts (Kaplan & Kaplan, 1989) (Kaplan, 1995) (Hartig, 1991)(Naor & Mayseless, 2021).

These theories support the idea that nature functions as a restorative and stress-reducing environment for humans (Kaplan & Kaplan, 1989) (Kaplan, 1995) (Hartig,1991) (Naor & Mayseless, 2021). Both theories also support the practice of Nature based therapy with school age students in a psycho-educational context.

Definition of Terms

Beck' Anxiety Inventory- Beck's Anxiety Inventory was created by Aaron T. Beck and colleagues. It is a 21-item multiple choice self-report inventory that measures the severity of anxiety in adults and adolescents (Beck, 1990).

Cognitive behavioral therapy (CBT)- CBT is a generic term to describe psychotherapeutic interventions based on cognitive, behavioral, and problem-solving approaches (Hofmann et al, 2010) (Stallard, 2019).

Nature Therapy- Nature Therapy sometimes referred to as “ecotherapy”, describes a broad group of techniques or treatments that use an individual's presence within nature with the intention of improving an individual's mental or physical health. It is based on the principles of Ecopsychology which looks at how we feel interconnected with the earth (Wikipedia, 2021).

Nature deficit disorder (NDD)- NDD is a term defined by author and researcher Richard Louv, who coined the phrase to serve as a description of the human costs of alienation from nature (Louv, 2008).

Shinrin Yoku (Forest Bathing) – Forest bathing is the idea that a person simply visits a natural area and walks in a relaxed way. Practitioners leave aside their phone, camera, or any other distractions to be fully present in the experience. They pause from time to time to look more closely at a leaf or to notice the sensation of the path beneath their feet. These leisurely walks under a forest canopy can be combined with guided activities to help a person to open their senses, hone their intuition and experience the forest as they never have before. Sessions of “Shinrin Yoku” are essentially designed by incorporating mindfulness meditation practices and techniques of deep nature connection mentoring (Mathias et al., 2020).

Chapter 2: Literature Review

Introduction

This literature review will focus on research that supports the integration of a Cognitive behavior therapy and Nature-based therapy approach to address anxiety in youth. The literature review will focus on the following themes: Anxiety in youth, Cognitive-Behavior Therapy for anxiety and Nature-Based Therapy for Anxiety. Based on the literature presented, in Chapter 3, I will propose a professional development workshop for school counsellors on the overall benefits of Nature-based therapy combined with Cognitive behavior therapy for students presenting with anxiety.

Prevalence of Anxiety in youth

According to studies conducted in the U.S., Bushnell et al., (2018), anxiety disorders are the most common mental illnesses in children and affect around 15-20% of youth in the United States and can continue throughout their lifetime. One in three adolescents aged 13-18 will experience an anxiety disorder (Garcia, 2021). Anxiety disorders in children and teens have increased by 20-30% in the last 10 years (Garcia, 2021). Nearly 50% of mental disorders start to affect children by the age of 14 (Child and adolescent mental health, 2020) (Adolescent mental health, 2020)(Shah et al., 2020). If left untreated, a child's mental development has been found to be drastically and detrimentally impacted (Child and adolescent mental health, 2020) (Adolescent mental health, 2020) (Children's mental health, 2020) (Shah et al., 2020). Mental illness can affect children at any point during their childhood, but it most significantly affects them during adolescence. This emphasizes that adolescence is a period of vulnerability for the onset of mental health conditions (Child and adolescent mental health, 2020) (Adolescent mental health, 2020) (Shah et al., 2020).

One in 5 youth globally are experiencing clinically elevated anxiety symptoms according to the study on the Global Prevalence of Depressive and Anxiety Symptoms in Children and Adolescents during Covid-19 (Racine et al., 2021). Racine and colleagues suggest that pre-pandemic estimates of anxiety were 11.6% and the result of the COVID-19 pandemic has likely doubled these results (Tiirikainen et al, 2019) (Racine et al., 2021).

According to the 2018 Children's Mental health report, diagnosis of anxiety in youth in approximately 100,000 children aged 0–17 demonstrated that anxiety disorders in youth are being increasingly recognized by health care providers (Saavedra et al., 2010) (Children's Mental Health Report, 2018). High school students today have more anxiety symptoms and are twice as likely to see a mental health professional as teens in previous generations (Saavedra et al., 2010) (Children's Mental Health Report, 2018).

The Physiology of Anxiety “Anxiety and the Nervous System”

Anxiety as Fear

Anxiety is defined as a response to real or potential threats (Garcia & O’Neil, 2021). This response may have physiological and behavior symptoms (Garcia & O’Neil, 2021). Our brain regulates our physiological response to situations that cause fear by stimulating the sympathetic nervous system (Garcia & O’Neil, 2021). Which in turn releases epinephrine and norepinephrine (hormones) that trigger the “Fight or Flight” response to stress (Garcia & O’Neil, 2021). Serotonin and dopamine in the brain are the primary neurotransmitters responsible for

mood regulations (Garcia & O'Neil, 2021). A reduced level of dopamine is linked to depression, whereas serotonin is involved in how people process their emotions (Garcia & O'Neil, 2021). Depression, mania, and anxiety have been linked to the dysfunction of these neurotransmitters (Garcia & O'Neil, 2021). Many forms of adolescent anxiety are associated with other psychiatric conditions, such as depression (Garcia & O'Neil, 2021).

Anxiety as Stress

Stress and how you think about stress can change your body's response to stress. Researcher, Kandhalu (2013), stated that if you can change your mind about stress, you can change your body's response to stress (Kandhalu, 2013). When one feels stressed, the person may interpret this as anxiety although it may be healthier to view the stress as something that energizes your body and prepares you to meet the challenge (Kandhalu,2013). Cortisol, often called the "stress hormone", that is secreted by the Hypothalamic Pituitary Adrenal, affects our body in both physical and mental ways that can be detrimental to our health (Kandhalu,2013). In a typical stress-response the heart rate goes up, breathing is faster, and blood vessels constrict (Kandhalu,2013). When stress is viewed as a positive phenomenon, your blood vessels stay relaxed, making your heart healthier, then you feel less stressed and interpret this as your body rising to the challenge (Kandhalu,2013). In work with youth, this can be valuable information for them to process regarding how they can choose to respond to stress and what tools and strategies they can use to manage their stress in healthy ways.

Anxiety and the Brain (Neurobiological)

Most anxiety disorders emerge during childhood and adolescence, a developmental period characterized by dynamic changes in fronto-limbic circuitry (Cohodes & Gee, 2017). Fronto-limbic circuitry plays a key role in fear learning and has been a focus of recent efforts to understand the neurobiology of anxiety disorders (Cohodes & Gee, 2017). Studies of Paediatric anxiety have revealed alterations in both the structure and function of fronto-limbic circuitry (Cohodes & Gee, 2017). The amygdala, prefrontal cortex, anterior cingulate cortex, and hippocampus contribute to fear conditioning and extinction; interactions between these regions in the brain have been implicated in anxiety during development (Cohodes & Gee, 2017). Abnormalities in the PFC and ACC and their connections to the amygdala may reflect weakened top-down functioning of the brain (Cohodes & Gee, 2017). Further studies in this area may help to contribute to an understanding of the neurobiological base of anxiety and help to develop clinical interventions for youth.

Anxiety disorders in youth

Anxiety disorders emerge during the critical developmental periods of childhood and adolescence (Strawn et al., 2021). Reviews synthesize recent findings on the prevalence, risk factors, course of the anxiety disorder, and their neurobiology and treatment (Strawn et al., 2021). Anxiety disorders are associated with multiple risk factors including early inhibited temperament, environment stress, and structural and functional abnormalities in the prefrontal-amygdala circuitry (Strawn et al., 2021). In diagnosing youth according to the DSM-5, the key features of Generalized anxiety disorder (GAD) are persistent and excessive anxiety and worry, including work and school performance, that the individual finds difficult to control (APA, 2013). In addition, the individual experiences physical symptoms, including restlessness or

feeling keyed up or on edge, being easily fatigued, difficulty concentrating or mind going blank, irritability, muscle tension and sleep disturbance (APA, 2013). Other common anxiety disorders diagnosed in children are Separation Anxiety and Social Anxiety (Rapee, 2012). Separation anxiety presents as fear or concern that something bad will happen to the child or parent when they are separated (Rapee, 2012). Social anxiety presents as a fear and avoidance social situation when children are excessively self-conscious (Rapee, 2012). Some of the common symptoms of anxiety disorders in children can be vomiting, diarrhea, stomach aches, worry, nightmares, fear of school or being alone, irritability, sleeplessness, muscle tension and headaches (Rapee, 2012). Other anxiety disorders are selective mutism, phobia, and panic disorder (Rapee, 2012). Selective mutism is a form of anxiety when children choose not to speak in some settings, for example, at school or in social situations (Rapee, 2012). Specific phobias are when children have excessive fear of things (Rapee, 2012). Panic disorder is when children have sudden unpredictable panic attacks that may cause feelings of impending death or doom (Rapee, 2012). Anxieties or fears are often appropriate at different times in development. Separation anxiety affects young children, at the average age of 11 years, while social anxiety disorder presents later when peer relationships become more important at the average age of 14 years (Children's mental health report, 2018). In Social anxiety disorder, earlier age of onset is linked to more severe anxiety in later years (Children's mental health report, 2018). Genetic risk factors play a particularly important role in panic disorder and generalized anxiety disorder (Children's mental health report, 2018). Children of anxious parents are five times more likely to have an anxiety disorder than those with non-anxious parents (Children's mental health report, 2018). Adolescent onset of social anxiety disorder is linked to a stressful event

and approximately half of all adults with social anxiety disorder can point to a specific embarrassing event in their youth that started it (Children's mental health report, 2018).

Females are at a greater risk for anxiety disorders, and this gender difference begins at puberty (Children's mental health report, 2018). Adolescent girls are twice as likely as adolescent boys to have an anxiety disorder (Children's mental health report, 2018).

Impact of Anxiety in Schools

Anxiety disorders in children and adolescents are associated with poorer academic performance and school attendance. Specifically, youth with anxiety disorders may suffer from test anxiety or difficulties with concentration and attention (Von Der Embse, Barterian & Segool, 2013) (Jones et al., 2017). Additionally, research suggests that older children and adolescents with anxiety disorders are at greater risk of dropping out of school prematurely compared to their non-disordered peers (Kessler et al., 1995)(Van Ameringen et al., 2003)(Jones et al., 2017). School refusal among anxious youth is associated with greater psychiatric severity and poorer psychosocial functioning when compared to anxious children who are not school refusing (Ingul & Nordahl, 2013) (Jones et al., 2017). Anxiety in children and adolescents is associated with global academic underachievement, as well as specific impairments in academic functioning (e.g., poor concentration, difficulty reading aloud/giving oral reports, and test anxiety (Nail et al., 2015) (Jones et al., 2017).

Research consistently finds that youth with anxiety experience difficulties regulating their emotions (Southam-Gerow & Kendall, 2000) (Suveg & Zeman, 2004) (Jones et al., 2017). Regulating emotions effectively to meet the demands of the environment is critical for multiple domains of functioning across age levels (e.g., social competence, academic achievement) (Blair,

2007) (Jones et al., 2017). Dysregulated emotions may interfere with academic performance, as emotion regulation is important in higher-order cognitive processes such as working memory, attention, behavioral control, and planning (Graziano et al., 2007)(Jones et al., 2017).

Multiple studies have demonstrated a link between early anxiety symptoms and the development of disruptive behavior (Children's mental health report, 2018). Untreated social phobia is associated with several negative outcomes including poor school and work performance, school drop-out and unemployment (Children's mental health report, 2018). Children whose anxiety manifests as tantrums, opposition or violent outbursts often get in trouble at school or with the law (Children's mental health report, 2018).

The impact anxiety disorders have on the social, emotional, and cognitive parts of the brain of youth result in difficulties with school attendance, emotional regulation, peer relationships and learning. If anxiety in youth is untreated, many are at more of a risk for suicide, poor school performance, can develop other anxiety disorders, depression, eating disorders, attention deficit disorder and or substance abuse (Kumara & Kumar, 2016).

Anxiety and Substance Abuse

Anxiety rarely occurs alone. Adolescents diagnosed with anxiety disorders and depression often have issues with substance abuse (Bushnell et al., 2018). Childhood anxiety disorders including panic and social anxiety are linked to increased risk for substance use, particularly alcohol abuse and dependence (Bushnell et al., 2018). Youth with anxiety disorders have double the chance of developing a substance abuse disorder (Children's mental health

report, 2018). Williams et al. (2021)(GC et al., 2021), quantitative research on "Substance use patterns and symptoms of anxiety and depression among Canadian secondary school students" students who are experiencing anxiety and depression may be more likely to use one or more substances. The study's findings conclude that students with anxiety and depression have the highest odds of using more than one substance (poly-use), and that females had a higher prevalence of anxiety and depression and should be a priority population for mental health programming (Williams et al., 2021). This is an important developmental period for youth and more assessment of symptoms and treatment for youth needs to be done, to identify anxiety and depression in youth and to prevent students from using substances to cope with their anxiety and depression. This study emphasizes the need for programs to be offered at the high school level to help youth identify if they have symptoms of anxiety and depression and how to manage symptoms of anxiety and depression, without the use of substances like alcohol, cannabis, or cigarettes. This is valuable information for counsellors, educators, and parents. The high prevalence of substance use and untreated symptoms of anxiety or depression in this population of Canadian high school students is concerning.

Common Treatments of Anxiety

Medication as treatment for Anxiety

According to the research by Bushnell et al., (2021), Selective serotonin reuptake inhibitors (SSRIs) are usually the first choice of medication for treating anxiety. SSRIs affect your brain chemistry by slowing re-absorption of the neurotransmitter serotonin, a chemical that helps to regulate mood and anxiety (In Wikipedia, 2021). Serotonin, like dopamine and

norepinephrine, is a brain neurotransmitter. When the brain produces serotonin, tension is eased, and the subject feels less stressed and more focused and relaxed (Serotonin, 2008). Bushnell et al., (2018) recent study on "Treating pediatric anxiety: Initial use of SSRIs and other anti-anxiety prescription medications" supports the view that SSRIs are the most used first-line medication for paediatric anxiety (Bushnell et al., 2018). The results of the study were that SSRIs are the most used first-line medication for childhood anxiety, with half of the SSRI initiators continuing treatment for 6 months (Bushnell et al., 2018). Overall, the findings of the study are convincing on the effectiveness of the medication on short-term use to reduce symptoms of anxiety in children.

Cognitive Behavior Therapy as treatment for anxiety

Cognitive Behavior Therapy (CBT) has established itself through numerous randomized controlled trials as an effective psychological treatment for children with anxiety (James et al., 2013) (Reynolds et al., 2012) (Fonagy et al., 2014) (Stallard, 2019). CBT has informed many school-based prevention programs and has been found to be effective in reducing symptoms of depression (Hetrick et al., 2016) (Calear & Christensen, 2010), anxiety (Werner-Seidler et al., 2017) (Stockings et al., 2016) (Neil & Christensen, 2009) and post-traumatic symptoms (Rolfesnes & Idsoe, 2011) (Stallard, 2019).

Medication and Cognitive Behavior Therapy combined as treatment for anxiety

Anxiety disorders are high prevalence, early-onset are consistently responsive to treatment (Strawn et al., 2021). According to Strawn et al. (2021), research on pediatric anxiety disorders, their findings represent that anxiety disorders are effectively treated with a combination of CBT and medication (SSRI's and SNRII) (Strawn et al., 2021). The most widely

recognized clinical trial of treatments for youth with separation anxiety, generalized anxiety and social anxiety disorders showed that a combination of CBT and antidepressant medication is most effective (Child's Mind Institute, 2018).

Summary

Anxiety is highly treatable and early intervention can be effective. According to the research more focus could be placed on identifying many of the youth who do not get help. Research on medication (SSRIS) that are effective in treating anxiety in youth as well as research on Cognitive Behavior Therapy are found as an effective therapy use to treat anxiety. The most effective treatments of anxiety are early intervention, and a combination of medication and Cognitive Behavior Therapy (Strawn et al., 2021). The more we educate parents, teachers, and counsellors to look out for the symptoms of anxiety in youth, the more likely they will receive early treatment and avoid poor school performance, substance abuse, other mental health disorders and possibly suicide.

Theme 2: Cognitive Behavior Therapy for Anxiety

What is cognitive behavior therapy?

Cognitive Behavior Therapy (CBT) is a popular psychotherapeutic approach, which aims to alleviate distress by modifying cognitive content and process and realigning thinking with reality (Longmore & Worrellm, 2008) (Kumara & Kumar, 2016). Arthur Beck, the father of CBT, described the negative thinking patterns associated with depression and anxiety (critical thoughts about oneself) and outlined ways to target and reduce negative thoughts (Rector, 2010).

Cognitive Behavioral therapists identify and treat difficulties arising from an individual's irrational thinking, misperceptions, dysfunctional thought, and faulty learning (Kumara & Kumar, 2016). CBT is a top-down approach to treating anxiety. It includes cognitive techniques as well as behavioral components (Kumara & Kumar, 2016). Cognitive techniques emphasize recognizing and challenging negative thoughts and maladaptive beliefs (Kumara & Kumar, 2016). Behavior techniques involve homework, goal setting, relaxation, mindfulness, communication skills, assertiveness skills and problem-solving skills (Kumara & Kumar, 2016). CBT includes the identification of symptoms of anxiety and exercises to calm physiological symptoms of anxiety (e.g., heart racing, tense muscles) such as mindfulness, imagery, deep breathing exercises and muscle relaxation (Keyhan, 2020). Children are taught to identify thoughts that serve to maintain or increase their anxiety (e.g., "I know I'm going to fail this test!") and replace them with coping thoughts (e.g., "I studied hard for this test, and I am well prepared to at least do OK!") (Jones et al., 2017). Additionally, as with individuals of all ages, children are gradually exposed to feared situations while using their coping skills to build a sense of self-efficacy (Higa-McMillan et al., 2016) (Jones et al., 2017).

The benefits of CBT

CBT treatment is structured, problem-focused and goal-oriented. CBT teaches proven strategies and skills and emphasizes the importance of a collaborative therapeutic relationship between the therapist and client (Rector, 2010). It was designed to be quick, practical and to provide people with long-term skills to keep them healthy (Rector, 2010). The focus on CBT is on the here and now, on the problems that come up a person's day to day life (Rector, 2010). CBT helps people to look at how they interpret and evaluate what is happening around them and the effects these perceptions have on their emotional experience (Rector, 2010).

In the practice of CBT, clients learn to identify, question, and change the thoughts, attitudes, beliefs, and assumptions related to your problematic emotional and behavioral reactions to certain kinds of situations (Rector, 2010). By monitoring and recording your thoughts, you learn that the way you think can contribute to emotional problems such as depression and anxiety (Rector, 2010). In CBT, you learn to reduce these emotional problems by identifying distortions in your thinking, viewing thoughts as ideas about what is going on rather than as facts and standing back from your thinking to consider situations from different viewpoints (Rector, 2010). CBT is considered an effective treatment for anxiety disorders including specific phobias, panic disorder, social phobia, generalized anxiety disorder, obsessive compulsive disorder, and post-traumatic stress disorder (PTSD) (Rector, 2010).

Cognitive Behavior Therapy as treatment for Anxiety

Research to support CBT treatment of anxiety

CBT is a well-established treatment for childhood anxiety disorders (Warwick et al., 2017). According to studies, 60% of children recover from anxiety following this treatment (Warwick et al., 2017). Kumara and Kumar's study was to understand the impact of Cognitive Behavior Therapy (CBT) on anxiety and depression in adolescent students (Kumara & Kumar, 2016). A CBT intervention was given to the Anxiety group for 12 sessions (Kumara & Kumar, 2016). The findings of the study revealed that CBT was highly effective in reducing anxiety in adolescent students (Kumara & Kumar, 2016). A meta-analysis published by Stockings et al. (2016) (Jones et al, 2017) found that Cognitive behavioral therapy (CBT)-based preventive programs provided at the universal, targeted, and indicated levels produced reductions in anxiety

and depressive disorders, after nine months post-program completion for elementary school-, middle school-, and high school-aged youth (Werner-Seidler, Perry, Callear, Newby, & Christensen, 2017) (Jones et al., 2017).

A study by Carpenter et al. (2018) was conducted to examine the efficiency of CBT for anxiety related disorders based on randomized placebo-controlled trials. Findings demonstrated that CBT positively affected patients with OCD, GAD and Acute stress disorder, and that CBT is a moderately effective treatment for these anxiety disorders when compared with a placebo (Carpenter et al., 2018).

Researchers Peris et al. (2015), conducted a study on the “Trajectories of change in youth anxiety during cognitive-behavior therapy” using the Child/Adolescent Anxiety Multimodal Study (CAMS). The objective of the study was to evaluate changes in the reporting of youth anxiety following the introduction of specific cognitive-behavior therapy (CBT) components: relaxation training, cognitive restructuring, and exposure tasks(Peris et al., 2015). These results support CBT theory and suggest that cognitive restructuring and exposure tasks each make substantial contributions to improvement in youth anxiety (Peris et al., 2015).

CBT has been proven as effective treatment for individual and group therapy. Results from recent meta-analyses suggest that CBT is well established for the treatment of anxiety disorders in elementary school-aged youth when delivered in either group or individual format within the school setting (Higa- McMillan et al., 2016)(Jones et al., 2017). Villabø and colleagues conducted a study to compare the effectiveness of individual cognitive-behavioral

therapy (ICBT) and group CBT (GCBT) for referred children with anxiety disorders within community mental health clinics (Villabø et al., 2018). Results demonstrated that there was loss of principal anxiety disorder within 12 weeks of the GCBT program as well as a 2-year follow-up (Villabø et al., 2018). The study's conclusions found that among children with anxiety, both individual and group CBT can be equally as effective in reducing anxiety (Villabø et al., 2018). Results from the CAMELS (Child/Adolescent Anxiety multimodal longitudinal study) indicate that successful intervention of CBT for youth anxiety is associated with improved functioning, decreased overall impairment, and enhanced life satisfaction on an average of 6 years later (Swan et al., 2018). Findings support the positive impacts of early intervention for anxiety on later functioning (Swan et al., 2018). These studies support the overall effectiveness of CBT as early intervention, treatment, and prevention of youth with anxiety.

CBT programs for youth

Research suggests that prevention programs can be successful in school-age children. One program called "The Cool Kids Program" is an approach based upon cognitive-behavioral therapy principles and was developed for anxious youth ages between 7 and 17 years of age, and their parents (Rapee et al., 2000) (Mychailyszyn, 2017). A similar program developed using cognitive behavior therapy "Cool Little Kids" is a parenting program delivered over the internet with a goal of preventing the development of anxiety disorders in 3-6 years of age (Mychailyszyn, 2017). These programs have shown significant reduction in child anxiety symptoms (Mychailyszyn, 2017).

Why CBT alone may not be able to regulate anxiety?

Cognitive therapies have proven to be very effective, although there remains a minority of people who do not respond to this form of psychotherapy (Stallard, 2019). Some do not find the process of actively challenging and re-appraising specific cognitions easy or manageable (Cotton et al., 2016). According to “The Yerkes-Dodson law,” the executive functioning of the left brain that supports CBT shuts down when arousal goes too high. Some people have a strong enough executive function that they can quickly mobilize CBT strategies and keep arousal from rising to the point where their cognition is overwhelmed (Bunn, 2014). But others cannot. Their executive function shuts down quickly and their left brain's ability to regulate collapses (Bunn, 2014). Neuroscientists say the right brain can continue to operate even after a high level of arousal has shut cognition down and may be able to take over and regulate affect automatically and unconsciously (Bunn, 2014).

Several studies have highlighted those changes in cognitions are not necessarily related to improved emotional well-being (Stallard, 2019). Changes can occur without directing and explicitly challenging the content of cognitions (Stallard, 2019). This has led to what has been called a third wave of cognitive behavior therapies (Hofmann et al., 2010) (Stallard, 2019). These psychotherapies focus on changing the nature of the relationship between the individual and their own internal events, instead of actively changing the content of their thoughts (Hofmann et al., 2010) (Stallard, 2019). This has led to the development of Acceptance and Commitment Therapy (ACT) (Hayes, 2004) (Hayes et al., 2006), Compassion-Focused Therapy (Gilbert, 2009,2014) and Mindfulness (Segal et al., 2012) (Stallard, 2019). These interventions encourage the individual to live with, accept and tolerate their experiences, cognitions, and emotions rather than trying to change them (Stallard, 2019).

Cognitive Behavior Therapy and Mindfulness

Mindfulness has been defined as the non-judgmental observation of the ongoing stream of internal and external stimuli as they arise (Baer, 2003)(Stallard, 2019). Bishop et al. (2004) proposed two components of mindfulness: (a) self-regulation of attention and (b) adoption of a curious, open, and accepting attitude toward all internal and external stimuli (Bishop, 2004) (Stallard, 2019). Mindfulness training has been adopted by contemporary psychology with the aim of increasing awareness and skillful responding to mental processes that contribute to emotional distress and maladaptive behavior (Keng et al., 2011) (Stallard, 2019). Mindfulness techniques are used to increase awareness as attention is focused on internal and external events as they occur (Stallard, 2019). Thoughts and emotions are accepted without judgement as ongoing internal mental events and physiological reactions are separate from their personal core identity (Stallard, 2019). This involves the individual connecting with and experiencing the here and now with openness and curiosity (Stallard, 2019).

MBCT (Mindfulness Based Cognitive Therapy)

MBCT borrows meditation practices from MBSR (Mindfulness Based Stress Reduction) and includes cognitive techniques and exercises derived from CBT (Norton et al., 2015). These techniques were found to decrease depressive symptoms (Kenny & Williams, 2007) (Teasdale et al., 2002) (Norton et al., 2015), as well as reducing anxiety symptoms in anxiety disorder patients (Hoge et al., 2013) (Norton et al., 2015). MBCT also includes elements of cognitive therapy and psychoeducation about depression (Norton et al., 2015). People learn that attempting to resist or avoid unwanted thoughts or feelings may intensify distress and perpetuate depression, rather than help resolve it (Sipe et al., 2012). Additional behavioral elements include

supporting participants to mindfully complete activities that enhance well-being, such as listening to pleasant music or going for a walk. Patients develop action plans that identify early warning thoughts or feelings that signal worsening symptoms and steps to take when they occur (Segal et al., 2002)(Sipe et al., 2012).

A systematic review by Norton et al. (2015) examined two studies that implemented MBCT for reducing social anxiety for those with social anxiety disorder (Mulkens et al., 2001) (Bogels et al., 2006) (Norton et al., 2015). Both studies reported significant improvements in social anxiety at post treatment and at a follow-up (Norton et al., 2015). A study by Cotton et al. (2016) focused on children with bipolar parents who are at risk for bipolar and anxiety disorders. Children participated in 12 weekly sessions of Mindfulness-based cognitive therapy (Cotton et al., 2016). Results indicated that increases in mindfulness were associated with decreases in anxiety in the children (Cotton et al., 2016). The children and parents/guardians reported high levels of feasibility, acceptability, and usefulness of the intervention (Cotton et al., 2016).

Summary

CBT delivered in the school setting for children and adolescents is considered a well-established treatment approach (Higa-McMillan et al., 2016)(Jones et al., 2017). The overall aim of CBT is to improve current well-being and enhance resilience and future coping (Stallard, 2019). Youth can achieve this through developing increased self-awareness, improved self-control and learning helpful cognitive and behavioral skills. The process of CBT moves the young person from a dysfunctional to a more functional cycle of thoughts, feelings, and behaviors (Stallard, 2019). CBT has a positive impact on youth, and it has helped reduce the symptoms of anxiety and depression. Therapists and school counsellors need to develop

treatment approaches like CBT and offer a sympathetic and non-judgmental space which would allow the adolescents to offload the negative thoughts and feelings and enhance their positive attitude towards their lives. CBT may also prevent further mental health issues for youth, as it provides them tools to deal with their anxiety in the future. Combining Mindfulness and Cognitive Behavior therapy may be the most impactful way to treat youth with anxiety.

Theme 3: Nature -Based Therapy

Introduction

Being outdoors is a necessary and integral part of human health which has been ignored by mainstream mental health and therapy for too long (Dobud & Harper, 2021). Environmental psychologists believe that many of the psychological and physical problems in modern societies arise because of a disconnect between humans and nature (Draud, 2011). An increasing lack of contact with nature is one currently discussed factor underlying psychosocial stress among children and adults today (Bowler et al., 2010) (Cardinal, 2010)(Mathias et al., 2020).

Richard Louv, the journalist, and author of *Last Child in the Woods*, proposes that young people today are at a risk for nonclinical entities that he termed “Nature Deficit disorder” (NDD) (Louv, 2008). He proposes that direct exposure to nature is essential for the physical and emotional health of both children and adults (Charles & Louv, 2009). Louv’s work draws on the theory that exposure to the natural environment can be cognitively restorative, reduce stress and promote a sense of place (Charles & Louv, 2009). According to Louv, nature can be an ideal place, partner, and guide in therapeutic practice (Charles & Louv, 2009).

What is Nature-based therapy?

Nature-based therapies are defined as therapeutic interventions that incorporate plants, natural materials, and outdoor environments (Annerstedt & Währborg, 2011). The meaning of nature therapy can vary from person to person, but in general, nature therapy involves a trained, supportive professional, therapist or counsellor, a green environment and appreciating and exploring nature (Annerstedt & Währborg, 2011) (Jones et al., 2017). According to Corazon et al., (2012), Nature-based therapy can be considered an umbrella term for a diverse range of psychotherapeutic practices which integrate experiences and activities in nature as therapeutic means (Corazon et al., 2012).

Forest Bathing “Shinrin-yoku” - physiological benefits of spending time in nature

The calming, rejuvenating and restorative benefits of forest bathing have always been known intuitively, but in recent decades scientific studies have revealed how simply being in wild areas has healing effects (Mathias et al., 2020). Several studies from Japan and South Korea have demonstrated health benefits of time under the canopy of the living forest (Mathias et al., 2020).

Trees naturally secrete antibiotic molecules that are found in the forest atmosphere, including phytoncides, which are volatile antibiotic substances with anti-microbial effects (Plaisance 1985) (Mathias et al., 2020). Recent studies show that phytoncides can induce lymphocyte activity in humans (Li et al., 2006)(Karjalainen et al., 2010) (Mathias et al., 2020), which might represent an underlying mechanism linking forest bathing to enhanced immune function (Li, 2010) (Mathias et al., 2020). Also, exposure to negative ions in the forest atmosphere has been thought to hold beneficial effects for human health (Plaisance, 1985) (Monce, 2018) (Mathias et al., 2020). Recent studies show few effects of negative ions on anxiety, mood, relaxation, and

comfort, but show some evidence that exposure to high-density negative air ionization predicts lower depressive symptoms (Perez et al.2013) (Mathias et al., 2020).

A Japanese study by Tsunetsuaga et al, (2007), observed that walking through a forest, can activate the pre-frontal cortex, lower blood cortisol and blood pressure levels, strengthen immunity, and promote muscle relaxation. These physiological responses suggest that sympathetic nervous activity was suppressed, and parasympathetic nervous activity was enhanced in the forest area, and that “Shinrin-yoku” reduced stress levels of the participants (Tsunetsugu et al., 2007). This study supports the positive physiological effects of living near a forest area (Tsunetsugu et al., 2007). Song and colleague’s further examined research in Japan about the physiological effects of nature therapy (Song et al., 2016). They found that forest therapy had the following effects: (1) it decreased the levels of salivary cortisol, a typical stress hormone; (2) it decreased the pulse rate; (3) it decreased the systolic and diastolic blood pressures; (4) it increased HF; and (5) it decreased the LF/HF ratio (Song et al., 2016). These findings support the idea that viewing or walking around a forest environment for a 15 min session of forest therapy induces a state of physiological relaxation (Song et al., 2016).

Additionally, Chang et al, (2008), theorize that humans are exhausted by artificial stimulation and that nature provides a restorative environment.

Mental health benefits following exposure to forested areas have also been linked with specific physiological responses, including reduced diastolic blood pressure and reduced heart rate (Sivarajah et al., 2018). Research supports that time spent in nature has a powerful effect on restoring attention, relaxation, and heart rate (Mygind et al., 2019).

Research suggests that experience of the natural environment may have a range of beneficial health outcomes for children and young people. According to researchers, Song et al., (2015), Nature therapy from a health perspective can be defined as “a set of practices aimed at achieving ‘preventive medical effects’ through exposure to natural stimuli that render a state of physiological relaxation and boost the weakened immune function to prevent disease” (Song et al., 2015). Nature therapy can be used to prevent illness and maintain and promote health through exposure to nature, with the consequence of a state of relaxation (Song et al., 2015). Restorative effects of nature can be described as the person who spends time in nature may exhibit improvements in physiological relaxation and the immune function recovery response.

Mental health benefits of Nature

Many have written about the positive benefits of the forest environment that include increased self-confidence, improved self-esteem, and mental health. Research suggests that experience of the natural environment may have a range of beneficial mental health outcomes for children and young people. According to Sivarajah and colleagues, human exposure to green space can result in positive feelings, relaxation, and stress relief, and can restore attention-demanding cognitive performance (Sivarajah et al., 2018). Researcher, Tim Gill published a paper in 2014 outlining the benefits that contact with nature provided for children. According to his research, Gill concluded that child contact with nature leads to pre-environmental beliefs, increased feelings of being connected to a place, and increased environmental knowledge (Gill, 2014). He also found that residing near green spaces is supportive of mental health and emotional regulation are improved for children with ADHD and children in general (Gill, 2014).

A similar study by Tillmann et al., (2018), on nature's benefits on overall mental health of youth, found that the incorporation of nature positively affected emotional well-being and attention deficit disorder/hyperactivity disorder. Other outcome measures included overall mental health, self-esteem, stress, resilience, depression, and health-related quality of life (Tillmann et al., 2018).

The researcher McCormick (2017) conducted a systematic review relating to green space and the mental well-being of children. Results confirmed that access to green space was associated with improved mental well-being, overall health, and cognitive development of children (McCormick, 2017). McCormick also concludes that access to green space supports attention restoration, memory, competence, supportive social groups, self-discipline, moderates stress, improves behaviors and symptoms of ADHD and was even associated with higher standardized test scores (McCormick, 2017). Zhang and colleagues (2020), also examined research on the association between green space and adolescents' mental well-being. They discovered a growing body of research has found that exposure to green space has a variety of positive impacts on young people's overall health (Zhang et al., 2020). These benefits include enhanced mental health and resilience as well as increased physical activity and reduced risk of obesity (Zhang et al., 2020). From the studies, they concluded that time spent in nature and exposure to green space can improve positive mood and emotions, provide a retreat from daily hassles, and reduce the risk of psychological and physiological stress in adolescents (Zhang et al., 2020). They also discovered evidence of lasting mental health benefits of green space exposure in childhood (Zhang et al., 2020). These findings suggest exposure to green space is a promising intervention for promoting adolescents' mental well-being (Zhang et al., 2020).

Norwood and colleagues conducted a similar systematic narrative review of the behavioural, cognitive, and emotional effects of passive nature exposure on young people (Norwood et al., 2019). These findings suggest that passive exposure to nature promotes positive changes in attention, memory, and mood in young people (Norwood et al., 2019).

Roberts et al., (2020) focused on research involving the direct interaction with nature amongst children and young people and its impact on wellbeing. A range of mental wellbeing outcomes were identified and grouped into thematic areas of self-esteem and confidence, positive and negative affect, stress reduction and restoration, social benefits, and resilience (Roberts et al., 2020). Their findings support nature as a positive impact on the wellbeing of children and youth (Roberts et al., 2020). These studies reviewed demonstrate statistically significant positive relationships between nature and mental health and well-being.

Nature's healing effects on Anxiety

In essence, nature is an effective co-regulator for the nervous system (Kain & Terrell, 2018). It can serve to down regulate a hyper aroused nervous system (someone who is anxious, angry, stressed) and it can up-regulate a hypo aroused nervous system (those who are depressed, low energy, withdrawn) (Kain & Terrell, 2018). Nature has this effect because of how it can restore attention, with soft and varied visual stimulation, and natural rhythms and cycles (think of waves lapping the shore), and the potential for movement, curiosity, and exploration that nature invites (Kain & Terrell, 2018) (Dobud & Harper, 2021).

Some studies report the reduction of stress, anxiety, and depression in participant's during a brief nature experience, such as walking as little 30 to 90 minutes in a natural setting as opposed to an urban setting. Research by Bratman and colleagues reveals that in healthy participants, a brief nature experience involving a 90-min walk in a natural setting, decreases both self-reported rumination and neural activity in the sub genual prefrontal cortex (Bratman et al., 2012). This study reveals a pathway by which nature experience may improve mental well-being and suggests that accessible natural areas within urban contexts may be a critical resource for mental health in our rapidly urbanizing world (Bratman et al., 2012).

Other studies suggest spending time in nature is a protective factor for mental health in young people. Researchers were able to identify that as little as 30 minutes spent in nature each week reduced the subject prevalence of psychosomatic issues by 24% compared to their peers who spent no time in nature (Piccininni et al., 2018). Issues addressed in this study included depression, irritability, bad temper, anxiety, difficulty sleeping, dizziness, back ache, stomach, and headaches (Piccininni et al., 2018). The results of this study provide a snapshot of the important role of outdoor play and nature connectedness in the promotion of positive mental health for youth (Piccininni et al., 2018).

Nature Based Theories

Ecopsychology

Ecopsychology is an interdisciplinary field that focuses on the synthesis of ecology and psychology and the promotion of sustainability. It is distinguished from conventional psychology as it focuses on studying the emotional bond between humans and the

earth. Instead of examining personal pain solely in the context of individual or family pathology it is analyzed in its wider connection to the more than human world. A central premise is that while the mind is shaped by the modern world, its underlying structure was created in a natural non-human environment. Ecopsychology seeks to expand and remedy the emotional connection between humans and nature, treating people psychologically by bringing them spiritually closer to nature.

Environmental psychophysiological stress recovery theory

Roger Ulrich's Environmental psychophysiological stress recovery theory involves both psychological and physiological components (Ulrich et al., 1991) (Corazon et al., 2019). Physiological recovery entails a shift of parasympathetic nervous activity (cardiovascular, endocrine, and immune system) (Ulrich et al., 1991) (Corazon et al., 2019), whereas psychological recovery entails a positive change in emotional state (Ulrich et al., 1991) (Corazon et al., 2019).

Attention Restoration Theory

Attention Restoration Theory (ART) can be seen as related to stress recovery as well (Kaplan, 1995)(Corazon et al., 2019). Attention Restoration Theory proposes that contact with nature restores and redirects one's attention to the current task at hand (Kaplan & Kaplan, 1989) (Kaplan, 1995) (Hartig, 1991)(Naor & Mayseless, 2021). ART states that clearing the mind, redirecting attention, dealing with unresolved concerns, and reflecting on priorities can all be better achieved in a supportive environment that includes nature (Kaplan & Kaplan, 1989) (Kaplan, 1995) (Hartig, 1991)(Naor & Mayseless, 2021). These theories support nature as physiologically and psychologically stress-relieving and restorative for clients.

Nature Based Therapy Theoretical models

Nature-based therapy process model

There is no widely accepted theoretical model to explain the nature-based therapy process (Oh et al., 2020). For nature-based therapy to be recognized and further developed for use in the field of mental health, it is necessary to develop theoretical models of nature-based therapy processes (Oh et al, 2020). The purpose of the study by Oh et al, (2020) was to develop a theoretical model of the nature-based therapy process by analyzing empirical data (Oh et al, 2020). This study suggests that nature-based therapy doesn't have a single step but is an integrated way of healing with reported emotional and cognitive changes (Oh et al, 2020). The research conducted by the Korea Forest Service revealed that the nature-based therapy process contained six categories: Stimulation, acceptance, purification, insight, recharging, and change (Oh et al, 2020). When in the natural environment, the results of the demonstrated that participants first experienced positive emotional change, followed by cognitive and behavior changes (Oh et al, 2020). Based on these results, a nature-based therapy process model was derived (Oh et al, 2020).

Horticulture therapy, wilderness therapy and ecotherapy

Annerstedt and Wahrborg (2011) conducted a literature review of Nature assisted therapies where researchers investigated the effects of ecotherapy on different aspects of wellness. The studies encompassed horticultural therapy, wilderness therapy, and general ecotherapy. Annerstedt and Wahrborg described the ecotherapies as effective in alleviating

some symptoms of schizophrenia, adolescent aggression, depression, post-traumatic stress disorder, and anxiety(Annerstedt & Währborg, 2011).

RESET (Release Everyday Stress and Enjoy Trails)

This study investigates the psychological impact of two short (1 and 5 min) green space interventions that integrate two proven approaches to stress reduction - mind-body skills and nature exposure (Ibes et al., 2018). These interventions are part of a developing collection of ecotherapy exercises called RESET developed by Wild Rock, a nonprofit nature center, to support adult participants in developing self-care practices in nature (Ibes et al., 2018). Results were 96% of participants reported psychological impact, most commonly, relief from stress (82%) (Ibes et al., 2018). Overall, findings suggest that adults under stress respond frequently and favorably when presented with an invitation and the support to participate in a short, mindful experience in nature (Ibes et al., 2018).

Flow Learning

Flow Learning is a Nature-based therapy model developed by Joseph Cornell in 1989. Cornell explains the strengths of Flow Learning, as helping people free their attention so they can relax, have fun, and enjoy the natural world (Cornell, 1989). When you introduce people to nature with playful activities that energize body and mind, the high energy that the games develop washes away personal problems and moods (Cornell, 1989). Freed from personal worries, their enthusiasm and attention can flow into new and fascinating experiences (Cornell, 1989).

Nacadia Nature Based Therapy (NNBT)

“Nacadia” is a university-founded healing forest garden in Copenhagen, Denmark. “Nacadia” integrates the psychotherapeutic and gardening aspects of nature-based therapy (Corazon et al., 2012). The psychotherapeutic aspects are based on mindfulness and an acceptance therapy, while the gardening aspects are highly inspired by permaculture principles and methods (Corazon et al., 2012).

On examination of the following Nature based theoretical models, Reset (Ibes et al., 2018), Flow Learning (Cornell, 1989), and Nacadia Nature Based Therapy (NNBT) (Corazon et al., 2012), these models have similar theories based on Nature Therapy such as stress reduction, mindfulness, and the psychotherapeutic benefits of nature.

Nature Therapy in a school environment

Practices of Nature based therapy in schools

Practices of Nature based therapy and forest bathing could be implemented in schools or community contexts with young people. Several successful initiatives offering outdoor activities (e.g., forest, park, local community, farm) in schools have been shown to hold health benefits, and help to connect youth to nature (Cardinal, 2010) (Louv2008) (Mathias et al., 2020).

Research conducted by Chawla et al., (2014) on “Green schoolyards as havens from stress and resources for resilience,” was guided by observations and interviews with students from elementary to high school. The study describes how the natural areas enabled students to escape stress, as well as focus, build competence, and form supportive social groups (Chawla et al., 2014). These findings have implications for theories of resilience and restoration as well as

school interventions for stress management (Chawla et al., 2014). Positive effects on stress, attention, competence, and supportive social relationships were found across all age groups from elementary school to high school (Chawla et al., 2014). A study by Dettweiler and colleagues compared the stress levels of students taught using an outdoor curriculum in a forest, with children in a normal school setting (Dettweiler et al., 2017). They were especially interested in the effect outdoor teaching might have on the children's normal diurnal cortisol rhythm over a school year (Dettweiler et al., 2017). The main results in their measures were that the outdoor school had a steady decline of cortisol during the school day, as compared with the normal school setting, which showed no decline (Dettweiler et al., 2017). These results support the theory that children who learn in an outdoor setting are considerably less stressed, due to a decline in cortisol levels, than children who learn in a normal indoor school setting (Dettweiler et al., 2017).

Nature Based Child Centered Play Therapy (NBCCPT)

Nature Based Child Centered Play Therapy (NBCCPT) was evaluated as an individual counselling context in an after- school program by Swank and colleagues (2017). Research by (Swank et al., 2015), utilized the natural elements in an outdoor context and evaluated the effects of this approach in the individual counselling context and identified reductions in problem behaviors (i.e., more on-task behaviors and reducing the number or problems in the school environment) (Swank et al., 2015). These researchers identified similar effects when implementing NBCCPT in group counselling in a school setting (Swank et al, 2017).

Mindfulness in Nature

Recent research by Adams and Beauchamp (2020), study on the mental health experiences of children when taking part in mindful approaches in nature reserves. The children, ages between 7 and 11 years old, were drawn from four classes in four different primary schools (Adams & Beauchamp, 2020). Students undertook semi-structured interviews after each school experience (Adams & Beauchamp, 2020). Analysis of the data revealed several common themes in the children's experiences (Adams & Beauchamp, 2020). The children reported feeling calm and relaxed, experiencing a different sense of time, and feeling as though they had transcended their everyday reality when taking part in these mindful activities in nature (Adams & Beauchamp, 2020).

Eco-Wellness

Eco-Wellness, developed by Reese and Myers (2012) is a framework for strategically infusing nature throughout the school counselling curriculum. It can be defined as one's sense of appreciation, respect for, and awe of nature resulting in greater feelings of connection to nature and holistic wellness (Myers & Sweeney, 2008).

Counsellor's relationship to Nature

Curiosity about the counsellor's relationship with nature in the therapeutic process and the idea that nature is an active participant in the practice of Nature Based Therapy lends itself to Naor & Mayselless(2021) research into Nature Based Therapy, and how practitioners of NBT work with nature to serve therapeutic goals. Naor & Mayselless discovered four basic categories of practice. The following categories are: Nature is actively influencing the therapeutic process (Naor & Mayselless, 2021), that nature provides significant and relevant information about the client (Naor

& Maysseless, 2021), that the practitioners' relationship with nature impacts the relationship with the client (Naor & Maysseless, 2021) and that the role of the therapeutic process as well as the practitioners can create the conditions for the clients engagement with nature as a resource (Naor & Maysseless, 2021).

Using Resources of Nature in the counselling room

Qualitative Research into Ecotherapy Practice by Kamitsis & Simmonds (2017) involved interviewing counsellors on how they use nature as a resource in the counselling room. A counsellor, Amanda, asks clients to select a natural item from a bowl in her office (Kamitsis & Simmonds, 2017). She encourages a process whereby the client begins to relate the physical sensation of that item to some other source of relaxation, such as the somatic experience of a guided relaxation exercise, which she may facilitate prior to the client selecting the item (Kamitsis & Simmonds, 2017). Once an association between the physical sensation of the item and the calming effect is created, the client can carry that item with them and use it to evoke a relaxed state when they begin to experience the physiological symptoms of anxiety and stress. (Kamitsis & Simmonds, 2017).

Touching nature allows the client to relate and connect to objects and living things in nature. For example, Therapist, Linda has a basket of natural items in her office, which includes rocks, seeds, dried flowers, and honeycomb (Kamitsis & Simmonds, 2017). Linda initially has clients associate one or several items with different emotions, aspects of a problem, family members, and so on (Kamitsis & Simmonds, 2017). She then encourages clients to talk about and/or engage in a dialogue with the emotion/natural object, and she has found this to be an

effective way to help people address issues and emotional experiences that might otherwise be too difficult to talk about (Kamitsis & Simmonds, 2017) (Gill, 2014).

These examples support the use of nature as a partner and resource in the therapeutic relationship. This research supports school counsellors in that they can bring nature in the counselling office if conditions don't allow for bringing students outdoors.

Limitations of Nature-based therapy as a school counsellor

According to Reese and colleagues, school counsellors may face significant barriers to engaging students in creative nature-based, response-level interventions (Reese, 2016). School counsellors across most public institutions maintain high caseloads and may not be equipped to integrate nature-based approaches in school settings (Reese, 2016). Ethical concerns also exist for integrating nature into counselling settings such as concerns related to confidentiality and physical safety of students (Reese, 2016).

Cognitive Behavior Therapy applied in a forest environment

According to research, the benefits a forest environment can provide an important addition to existing therapies for patients with mental health disorders. For example, in the case of major depressive disorders, the therapeutic effect of cognitive-behavioral treatments might be increased when therapy is practiced in the forest (Kim et al., 2009). One study proposed a nine-day "Shinrin Yoku" camp to assess depressive symptoms in a population of people with alcoholism. It was found that depressive symptoms improved because of the therapy, and that participants with severe

depression had an even greater improvement in their condition (Shin et al, 2012)(Mathias et al., 2020).

At a medical conference in 2011, Dr. Jon Draud presented his opinion on the benefits of cognitive therapy applied in a forest environment (Draud, 2011). He referred to research conducted by Kim et al., (2009) to determine whether the location in which cognitive therapy was performed would affect the outcome. Dr. Draud stated that traditional psychotherapy is conducted between patient and doctor in an office setting, but newer modalities can effectively incorporate meditation and other behavioral experiments (Draud, 2011).

The research conducted by Kim et al., (2009), developed and tested the effect of cognitive behavior therapy (CBT) based psychotherapy applied in a forest environment on major depressive disorder. Kim and colleagues' study was to determine whether the location (the forest) in which cognitive therapy was performed would affect patient outcomes (Kim et al., 2009). Results were quite remarkable, as various physiological effects were examined including heart rate variability and salivary cortisol levels in addition to changes in depressive symptoms (Kim et al., 2009).

Research by Corazon et al., (2019) on Psycho-Physiological stress recovery conducted over the past eight years, resulted in findings that support outdoor, nature-based exposure as sound evidence base for psychological and emotional effect (Corazon et al., 2019). As a result of these studies, "Nacadia" Nature Based Therapy NNBT was developed by Corazon et al, (2019). It builds upon elements from Mindfulness-based stress reduction (MBSR) and CBT, integrated with theories from environmental psychology and ART (Attention Restoration Theory) (Corazon et al., 2019). NNBT practice can provide some insight into how nature benefits the addition of other therapies, in treating those with mental health issues.

Research supports the idea of incorporating CBT in a forest environment to mental health issues such as depression and anxiety (Kim et al., 2009). Realistically, it is not feasible to conduct all CBT in a forest, but patients can increase activity levels, practice meditation, or simply attempt to incorporate nature and exercise into their treatment regimens (Kim et al., 2009). This study is meant to stimulate us to be open to new forms of treatment for mental health issues, and how to best treat patients in a forest environment.

Chapter 3: Summary, Recommendations and Conclusions

Summary

Through review of Chapter 1 and 2, we have learned that youth who suffer from anxiety need many supports to manage their symptoms and create positive change in their lives. Cognitive Behavior therapy is a well- researched and effective therapy that successfully treats anxiety present in youth. Although studies show that CBT alone is not enough, and that medication (SSRI's) combined with CBT can be more effective in treating anxiety long term. Both these treatments are a top-down approach that manage the cognitive aspects and symptoms of anxiety. Yet, while Cognitive Behavioral Therapy targeting adolescents who have anxiety may be a valuable tool in supporting our students, this is hardly a practical or complete suggestion for most in educational settings. Most classroom teachers, with exception of counsellors, do not have training in CBT.

Research into how Nature can reduce anxiety in youth is promising. Studies have shown that being in a park-like setting reduces cortisol, “the stress hormone”, and can also boost the immune system, lower blood pressure, and create a physiological relaxation response. Nature as

a co-regulator of the nervous system and partner in the therapeutic relationship, combined with Cognitive behavior therapy strategies and mindfulness is a unique and powerful approach that has shown to be effective in some studies in treating with youth with anxiety. Therefore, the recommendations in Chapter 3 attempt to suggest some practical and innovative strategies that can be implemented by not only counsellors, but also the greater school system in supporting youth who have anxiety.

Recommendations

As a secondary school counsellor in my first year, I am faced with the daily challenge of helping students manage their anxiety at school. When I began this research, I based my knowledge on the statistics, but since the pandemic, I am certain anxiety is more prevalent than ever before and a pandemic in itself. My concern is that students I work with will often miss a considerable amount of school because of their anxiety and learning how to manage their own symptoms is crucial. I will take students for walks when they are experiencing panic attacks, and although our school is located on King George (a very busy highway), just a walk through the trees and around the block can help to calm their nervous system. In my office, I often teach students cognitive behavior therapy techniques as well as educating them about anxiety and their brain, the fight/flight response, and the power of mindfulness. The tools I have learned in my research have benefited me in my role as counsellor. My hope is that I will continue to work with groups of students exploring their connection to nature and the benefits it provides to their mental health.

Recommendations for counsellors and educators on addressing youth with anxiety are provided through the approach of using *Cognitive Behavior Therapy combined with Nature-Based therapy as an intervention for youth with anxiety*. A professional development workshop

presentation, “Let’s get outside” will be included in *Appendix A*, for school counsellors and educators on the overall benefits of Nature-based therapy combined with Cognitive behavior therapy for students presenting with anxiety. This presentation will include how counsellors can best support students with mindful, sensory, social skills building and self-regulating activities inside the classroom or outside in nature, as well as incorporating Cognitive Behavior Therapy tools such as deep breathing, muscle relaxation, mindfulness, and imagery as well as challenging negative core beliefs, building self-esteem and identity in Nature. This presentation borrows some ideas from “*Flow Learning Theory*”, developed by Joseph Cornell, using playful games and mindfulness in Nature as well as the CBT techniques based on *Cognitive therapy behavior, an information guide* from Rector (2010) and strategies from *The Anxiety workbook for Teens* by Schab (2008). Limitations and practicality of this program in a school- based counselling program will be discussed.

The presentation has the following objectives:

- Provide an understanding of the research on anxiety in youth
- Provide an overview of the research on treatments of anxiety including Cognitive Behavior therapy
- Provide an understanding of the benefits of Nature
- Introduce the four simple practices of Nature-based therapy and Cognitive Behavior therapy
- A discussion of the limitations and finding solutions for practicing Nature-based therapy outdoors
- Tips for counsellors providing the nature experience indoors

The presentation will include the four simple practices of Nature-based therapy and Cognitive Behavior Therapy in treating anxiety.

1. Mindfulness:

Focusing on three strategies to clear the mind and body. Practices include Sit spot, Walking Meditation and Accessing felt sense.

2. Reconstructing your life story: Nature as a Metaphor

Nature provides a way in which children can construct life experiences. This encourages students to find a deeper meaning within a traumatic experience or story. Youth can create stories and metaphors about their lives. There [are] metaphors in nature every day about things that we're going through in our lives that can be powerful. This practice of therapy can extend the process into further spiritual and transpersonal dimensions, permitting the student to connect to a larger self, providing new meaning, a sense of partnership and interdependence that she shares with nature (Berger & McLeod, 2006). An example could be using a river metaphor representing a journey and struggle of a student's life (Fisher, 2019). Another example could be a student finds a rock with a flower growing underneath and by using the student's narrative of what they need to grow and to be healthy in their own life and applying it to this flower can allow the student to connect it to their own story (Berger, 2008). Reconstructing life stories, allows students to recreate the narrative surrounding their perceived reality and create a new and preferable reality, which is an empowering practice and promotes meaning- making and post-traumatic growth.

3.Challenging negative core beliefs:

Challenging negative core beliefs and replacing them with Positive core beliefs is a Cognitive Behavior therapy practice. This can be achieved through journaling, group discussion and being actively involved in relationship with nature (Schab, 2008).

Some examples of this practice are using a notebook and writing positive believes about yourself on one side and negative beliefs on the other. Comparing these beliefs

and asking yourself/or with a counsellor is this true? Challenging these negative beliefs and replacing them with a positive belief about oneself, changes thinking patterns and can create a more positive sense of self as well as reducing anxiety about how one is viewed by others.

3. Practicing Gratitude:

Students gain empowerment and gratitude through engaging in nature focused healing practices that give back to the earth. Being grateful for the earth and your symbiotic relationship to nature is a practice that can begin to transform your negative thoughts to positive. An action of gratitude can be practiced as appreciating and giving back to nature. Creating a mandala with natural objects, cleaning up an area, planting a tree, tending to a school garden, or putting bird feeders up in the winter demonstrates a deep and caring relationship with nature.

Conclusions

Potential benefits of this simple practice of Cognitive Behavior therapy and Nature-based therapy can include teachers, counsellors and students having a deeper understanding of the needs of students presenting with anxiety in schools. Students with anxiety can benefit from this practice in schools, with the goal of providing youth the tools to manage their anxiety.

Counsellor's can become aware of the power of nature as healing for our youth, as well as for ourselves as educators. As discussed in the review of the literature, it is important for counsellors to continue to assess their students for mental health risks.

Appendix A is a professional workshop for counsellors and teachers with strategies infused with the practice of Cognitive Behavior Therapy combined with Nature Therapy for youth with

anxiety. Appendix B includes has a list of resources for anxiety as well as crisis support, for students, educators, and counsellors.

Appendix A: “Let’s get outside”

A professional workshop for counsellors and teachers with strategies infused with the practice of Cognitive Behavior Therapy combined with Nature Therapy for youth with anxiety.

https://docs.google.com/presentation/d/135vdhH_LKiKxu7kChoYzH32Bhqs3EjOiYOln-RFNqh0/edit?usp=sharing

Appendix B: Online Resources for anxiety

Anxiety Disorders Association of Canada (ADAC) www.anxietycanada.ca

Anxiety Disorders Association of BC (ADABC) www.anxietybc.com

www.heretohelp.bc.ca BC Partners “Anxiety Disorders Toolkit”

Freedom from Fear (FFF) www.freedomfromfear.com

Canadian Mental Health Association (CMHA) www.cmha.ca

CMHA BC Division www.cmha.bc.ca

National Institute of Mental Health www.nimh.nih.gov/publicat/anxiety.cfm

Clinical Research Unit for Anxiety and Depression (CRUFAD) www.crufad.com

The Anxiety Panic Internet resource (tAPir) www.algy.com/anxiety

Changeways Programs www.changeways.com

www.ocfoundation.org/ocinkids A great website with lots of information and resources for parents and children coping with OCD

Center for Clinical Interventions: This website offers a range of free CBT based workbooks for managing anxiety.

Anxiety: <https://www.ccihealth.wa.gov.au/Resources/Looking-After-Yourself/Anxiety>

Health Anxiety: <https://www.cci.health.wa.gov.au/Resources/Looking-After-Yourself/Health-Anxiety>

Crisis Center Resource List:

Suicide Hotline at 1-800-SUICIDE (1-800-784-2433)

Crisis Services Canada <https://www.crisisservicescanada.ca/en/>

The Crisis Centre Distress Services (phone support – 604-872-3311)

[Suicide Prevention, Education and Counselling \(SPEAC\)](#)

Psychological First Aid offered by Psychologists

<https://www.psychologists.bc.ca/covid-19-resources> or call 604-827-0847

Indigenous Support Call the Hope for Wellness Help Line 1-855-242-3310 or Online chat at hopeforwellness.ca (For more information visit [Government of Canada- Hope for wellness Helpline](#))

YouthinBC 24/7 crisis line at 1-866-661-3311 or their [online chat](#) 12pm – 1am daily

B.C. Mental Health Walk-in Intake Clinics (Child and Youth Mental Health)

<https://www2.gov.bc.ca/gov/content/health/managing-your-health/mental-health-substance-use/child-teen-mental-health/mental-health-intake-clinics>

Foundry BC offers virtual drop-in counselling sessions by voice, video, and chat to BC's young people ages 12-24 and their caregivers

Call 1-833- FØUNDRY (that's FØUNDRY with a zero or 1-833-308-6379) or visit <https://foundrybc.ca/>

SFU Counselling <https://www.sfu.ca/education/centers-offices/sfu-surrey-counselling-center/contact-us.html>

Borstal <https://www.bcborstal.ca/clinical-counselling>

Diverse City <https://www.dcrs.ca/our-services/mental-health-and-substance-use-services/>

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