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Carina Ingoglia

*The College at Brockport*, [cingo1@u.brockport.edu](mailto:cingo1@u.brockport.edu)

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The Impact of a Mindfulness-Based Group on Anxiety in Sixth Grade Students

Carina Ingoglia

The College at Brockport, SUNY

**Abstract**

This study examines the impact of a five-week mindfulness-based group on levels of anxiety in sixth grade students. Anxiety is a prevalent problem among children and adolescents. Research shows the need for early intervention for students dealing with anxiety (Hirshfeld-Becker & Biederman, 2002). Research suggests that mindfulness techniques are effective in decreasing anxiety in adolescents (Skorman Cicero, 2013; Semple et al., 2005; Napoli et al., 2015; Semple et al., 2010). Each group in this study included discussing the students' anxiety concerns and practicing new mindfulness exercises. The group curriculum focused on paying attention to thoughts and feelings without judgment. Results show a decrease in overall anxiety levels among group members. Students also reported positive feedback about the group. This study provided further evidence that teaching mindfulness to students in schools can have a positive impact.

## Introduction

Anxiety disorders are one of the most common mental health problems among children and adolescents, and research shows that it continues to be a growing concern (Muris & Broeren, 2009). According to Skorman (2013) one in five children will experience debilitating anxiety or depression in childhood. Moreover, children of parents who have major anxiety disorders are at increased risk of developing childhood anxiety disorders (Hirshfeld-Becker & Biederman, 2002). These children have a 35-40% rate of developing an anxiety disorder, compared with rates of 5-10% in children of parents without anxiety disorders (Hirshfeld-Becker & Biederman, 2002). The anxiety that these children face can have impairments on several life domains.

Children who suffer from anxiety have more difficulty with social and academic functioning and are more likely to develop mental health issues as adults (Hirshfeld-Becker & Biederman, 2002). For example, children who have social phobia or separation anxiety may be at risk for school avoidance or failure as well as impaired social interactions. These children may be also at risk for developing major depression and alcohol abuse in the future (Skorman Cicero, 2013; Mian, Eisenhower, & Carter, 2015). According to Hirshfeld-Becker & Biederman (2002) anxiety disorders in children often present with comorbid major depression and disruptive behavior disorders, leading to even more impairment and risk for poor consequences. These negative affects can have a long-lasting impact on adulthood.

Childhood anxiety disorders persist through adulthood if untreated (Mian, Eisenhower, & Carter, 2015; Hirshfeld-Becker & Biederman, 2002; Duchesne, Vitaro, Larose, & Tremblay, 2008). Research has shown that those who suffer from adulthood anxiety disorders typically experienced childhood anxiety (Hirshfeld-Becker & Biederman, 2002). According to Hirshfeld-Becker & Biederman (2002) adult patients with panic disorder reported high rates of childhood

separation anxiety disorder, social phobia, and generalized anxiety disorder. Furthermore, a study of adolescents who were followed to early adulthood found that anxiety disorders during adolescence presented a strong risk for chronic anxiety disorders during young adulthood (Hirshfeld-Becker & Biederman, 2002). There is an overall increased risk for adulthood anxiety if anxiety symptoms are present during middle adolescence, especially if left untreated (Duchesne et al., 2008). Early treatment for children experiencing anxiety is imperative.

Research shows the need for early intervention for students dealing with anxiety (Hirshfeld-Becker & Biederman, 2002). A growing body of research suggests that mindfulness techniques are effective in decreasing anxiety in adolescents (Skorman Cicero, 2013; Semple et al., 2005; Napoli et al., 2015; Semple et al., 2010). Mindfulness is often defined as, “paying attention in a particular way: on purpose, in the present moment, and non-judgmentally” (Kabat-Zinn, 1994, p. 4). Mindfulness allows for increased self-awareness while focusing on acceptance (Snyder, Shapiro, & Trevaven, 2012). Mindfulness highlights acknowledgment of thoughts and feelings without immediate or habitual reactions (Skorman Cicero, 2013). Not only can practicing mindfulness change emotional and behavioral patterns, neuroscience has documented that mindfulness practices can alter the circuitry of the brain (Siegel, 2007). Overall, practicing mindfulness can teach students to acknowledge anxious feelings, become aware of maladaptive thoughts, reduce avoidant behaviors, and self-monitor one’s coping strategies (Semple, Reid, & Miller, 2005). Mindfulness will teach students to have more of an accepting relationship with one’s thoughts (Semple et al., 2005).

The purpose of this research study is to examine the impact of a five-week mindfulness-based group on levels of anxiety in sixth grade students. This study aims to answer the following question: What impact will a five-week mindfulness-based group have on levels of anxiety in

sixth grade students? This paper will examine the existing literature on anxiety disorders, anxiety in children and adolescents, and mindfulness.

### **Literature Review**

Existing research suggests that youth with anxiety disorders suffer considerable functional impairment and are at risk for poor outcomes if untreated (Kendall et al., 2016). Studies have shown that mindfulness-based interventions are effective at reducing anxiety and stress in a range of patient populations (Hoge et al., 2015). The review of the literature first defines anxiety and explores the impact of anxiety disorders on the population as a whole. Secondly, it explores anxiety in children and adolescents and addresses risk factors, impact of anxiety on academic performance, and impact of anxiety on social functioning. Lastly, the concept of mindfulness is introduced and explored through mindfulness and neuroscience, mindfulness with children and adolescents, and mindfulness interventions for children and adolescents with anxiety.

### **Anxiety Disorders**

Anxiety disorders comprise of disorders that all have excessive fear and anxiety and other behavioral disturbances as diagnostic criteria (American Psychiatric Association, 2013). Anxiety can be defined as “a mood state characterized by strong negative emotion in response to threatening life events or situations, either real or imagined” (Essau & Ollendick, 2012, p. 1). Anxiety is articulated through cognitive, physical, and behavioral response systems (Essau & Ollendick, 2012). Cognitively, a person views his or her experience as either dangerous or threatening. (Essau & Ollendick, 2012). Physically, the sympathetic nervous system is activated when one senses danger. Sympathetic nervous system activation mobilizes the body into action due to chemical and physical reactions (Essau & Ollendick, 2012). Behaviorally, one

experiences the fight or flight response, including an inclination to get out of the situation (Essau & Ollendick, 2012). Behavioral responses can also present as foot tapping, nail biting, or fidgeting. Fearful experiences are then often avoided to prevent anxious thoughts and feelings (Essau & Ollendick, 2012). Avoiding situations perceived as frightening will only relieve anxiety symptoms momentarily. Temporary relief allows anxiety to perpetuate and cause problems in the future (Essau & Ollendick, 2012). When anxiety becomes persistent and excessive it can be classified as a disorder (American Psychiatric Association, 2013).

Anxiety is the most common mental health disorder in the general population, with an early age onset (Kader Maideen et al., 2015). Globally, about 272.2 million people had an anxiety disorder in 2010 (Kader Maideen et al., 2015). Up to 20% of children and adolescents suffer from mental health issues, and anxiety and depression rank as the most prevalent and recurrent disorders (Cheng & Sun, 2015). Furthermore, females in particular are twice as likely to experience anxiety disorders compared to males (Kader Maideen et al., 2015).

Anxiety is a normal response to stress; however, it can be categorized as a disorder when it becomes severe or starts to impair one's life functioning (Kader Maideen et al., 2015). According to American Psychiatric Association (2013) excessive anxiety and worry about numerous situations is the critical component of generalized anxiety disorder. The severity, length, or frequency of the anxiety and worry about an anticipated event is out of proportion to the actual probability of it occurring (American Psychiatric Association, 2013). Individuals who experience this have difficulties keeping worried thoughts from interrupting their day-to-day functioning (American Psychiatric Association, 2013). Adults with a generalized anxiety disorder tend to worry excessively about work obligations, money, health, and family (American Psychiatric Association, 2013). Children with generalized anxiety disorder often overly worry

about their success (American Psychiatric Association, 2013). Finally, research has shown that anxiety impacts every aspect of life, from physical health to mental health (Wood et al., 2003).

The next section will discuss anxiety in children and adolescents.

### **Anxiety in Children/Adolescents**

One of the most prevalent mental health problems among children and adolescents is anxiety disorders (Nail et al., 2015). Prevalence rates for anxiety disorders in children and adolescents vary from 3% to 20% (Rasing et al., 2013). Children and adolescents will most likely experience fear and anxiety in their lifetime that is developmentally appropriate. Depending on the child's cognitive development and threat interpretation, their anxiety may increase throughout the course of childhood and adolescence (Essau & Ollendick, 2012). Anxiety is the body's way of preparing for fight or flight (Essau & Ollendick, 2012). This response is necessary to prepare the child when experiencing a dangerous situation. In fact, moderate anxiety levels improve performance and assist with transitions deemed as important (Essau & Ollendick, 2012). While moderate anxiety in children can feel stressful, it is often only temporary.

Since anxiety is a normal response at certain developmental periods, it is often hard to decipher "normal" from "abnormal" anxiety (Essau & Ollendick, 2012). Anxiety in children should be treated when (1) the excessive anxiety or worry occurs more days than not for at least 6 months; (2) the child has trouble controlling the worry; (3) the anxiety or worry are correlated with at least one of the following symptoms, which are restlessness, fatigue, difficulty concentrating, irritability, muscle tension, and sleep disturbance; (4) the anxiety symptoms cause significant impairment in important areas of functioning; (5) the disturbance is not due from effects of a substance or a medical condition; and (6) another mental disorder does not better explain the disturbance (American Psychiatric Association, 2013).



Research regarding anxiety in children and adolescents indicate that, without being treated, anxiety disorders can cause impairment in familial (e.g., getting along with siblings), social (e.g., friendships) and academic (e.g., school performance) functioning (Nail et al., 2015; Viafora, Mathiesen, & Unsworth, 2015; Mychailyszyn et al., 2010). Research also demonstrated the importance of identifying early risk factors for anxiety symptoms in children and adolescents. Having an understanding of the onset of psychopathology during adolescence is imperative (Rasing et al., 2013). The following subsections will discuss risk factors, the impact of anxiety on academic performance, and the impact of anxiety on social functioning.

### **Risk Factors**

In order to understand the onset and maintenance of anxiety in youth, risk factors need to be examined (Rasing et al., 2013). The first important risk factor is psychopathology in parents. 68% of children of parents experiencing anxiety show symptoms of an actual anxiety disorder (Rasing et al., 2013). Moreover, the likelihood of the development an anxiety disorder for these children is two to seven times more probable than children of parents without an anxiety disorder (Rasing et al., 2013). One reason for this is that these children may be experiencing more stress at home and their parents may lack proper skills for parenting (Rasing et al., 2013). The other reason is due to a genetic susceptibility, which makes the probability of developing an anxiety disorder increase (Rasing et al., 2013).

The second risk factor in developing anxiety during adolescence is gender. Research has shown that females are at a higher risk for developing anxiety disorders (Rasing et al., 2013; Tetzner & Schuth, 2016). Female adolescents are also more likely to experience depression and anxiety symptomatology (Rasing et al., 2013). Differences in gender begin when socialization has a significant impact on behavior (Tetzner & Schuth, 2016). Researchers postulate that these

differences are due to expectations regarding coping and expressing anxiety (Tetzner & Schuth, 2016).

Lastly, stressful, traumatic, and adverse incidents throughout life are important risk factors to take into consideration. After children experience trauma, they are likely to experience an increased amount of fear related to the event (Donovan & Spence, 2000). According to Donovan & Spence (2000) children may have somatic complaints, avoid certain situations, and have trouble sleeping after experiencing a traumatic event. Further, children often experience a lot of stress throughout development, such as separation or divorce of parents, death of family members, conflict with family, and transitions regarding school. Research shows that clinically anxious children have witnessed more stressful events than non-anxious children, which suggests that an important risk factor in the development of anxiety disorders in children is stressful experiences (Donovan & Spence, 2000).

#### **School as a risk factor.**

It is also important to understand the role of the school environment in the development and maintenance of anxiety in children and adolescents. The school environment is full of stress-producing stimuli for youth (Mychailyszyn et al., 2010). In one study, researchers found school-related stressors to be most significant for children with anxiety disorders (Langley et al., 2004). Further, anxiety in elementary and middle school children has been found to be significantly associated with school-related problems (e.g. homework, peers, teachers, tests) (Barrett & Heubeck, 2000) Conversely, generalized anxiety disorder, separation anxiety disorder, and social phobia often lead to more issues at school (Mychailyszyn et al., 2010).

Social anxiety disorder is characterized as an extreme fear due to being separated from the household or his or her caregiver, which can often transpire when youth start school

(Mychailyszyn et al., 2010). Generalized anxiety disorder is characterized by excessive and uncontrollable worry about a number of events or activities that occurs more days than not for a period of six months (Mychailyszyn et al., 2010). Children with generalized anxiety disorder often experience concerns about academic performance and its implications for the future (Mychailyszyn et al., 2010). Social phobia is marked by a continuous fear pertaining to social and performance interactions (Mychailyszyn et al., 2010). School can be an extremely intimidating environment for children with social phobia due to the nature of academic and social expectations (e.g. oral presentations, asking questions, making friends) (Hofmann et al., 1999).

In conclusion, it is highly important for those working within a school setting to be aware of the risk factors for anxiety in children and adolescents. School counselors should pay attention to the students who display these risks and offer support when needed. If the students' anxiety is left untreated, it could have a negative impact on their academic performance.

### **Impact of Anxiety on Academic Performance**

According to Nail et al. (2015) global academic underachievement (e.g. poor grades) has been correlated with excessive anxiety. For example, a study done by Ialongo et al. (1995) found that youth scoring in the top third on a measure of anxiety symptoms in first grade were more likely to score in the bottom third of the sample in academic achievement in fifth grade. Similarly, a longitudinal study involving 1003 mothers of boys and girls, found a significant correlation between symptoms of anxiety in kindergarten and problems with academic success in ninth grade (Duchesne et al., 2005). In this study a set of questionnaires were mailed to the children's mothers and teachers to complete every spring between 1986 and 1993. These

questionnaires assessed the children's emotional climate, behavioral problems, and academic functioning.

In another study, parents and teachers rated a sample of children with anxiety disorders as experiencing more academic performance issues compared to children without an anxiety disorder diagnosis (Strauss, Frame, & Forehand, 1987). Children with anxiety in another study in the top quartile in the fall of first grade were found to be nearly eight times more likely to be in the lowest quartile of reading achievement, and almost two and a half times more likely to be in the lowest quartile in math achievement in the spring of first grade (Ialongo et al., 1994). It is clear that there is a negative association between anxiety and academic success.

It is important to treat anxiety in school-age children otherwise it will persist. For example, symptoms of anxiety in first grade were found to be an important indicator of children showing symptoms of anxiety in fifth grade (Mychailyszyn et al., 2010). Socially phobic or children with separation anxiety in particular may be at risk for school avoidance or failure (Hirshfeld-Becker & Biederman, 2002). These students are at risk for repeated absenteeism due to being afraid to come to school (Mychailyszyn et al., 2010). School avoidance and absenteeism can negatively affect academic success and interfere with learning.

It is clear that children with anxiety have a greater chance of experiencing difficulties with their academic performance. Anxious students are more likely to avoid coming to school and have lower achievement (Hirshfeld-Becker & Biederman, 2002; Ialongo et al., 1994; Duchesne et al., 2008). The studies mentioned in this section demonstrate that if anxiety is left untreated it could negatively impact student success (Mychailyszyn et al., 2010; Hirshfeld-Becker & Biederman, 2002; Ialongo et al., 1994; Duchesne et al., 2008; Strauss, Frame, &

Forehand, 1987; Nail et al., 2015). Not only could this negatively affect the students' academic performance, but also the student's social functioning.

### **Impact of Anxiety on Social Functioning**

Research indicates that anxiety in children can negatively impact social functioning (Nail et al., 2015; Viafora, Mathiesen, & Unsworth, 2015; and Mychailyszyn et al., 2010). Social functioning includes engaging in social interactions and interpersonal relationships. Peers typically rate children with anxiety as more socially withdrawn and shy, and are rated as less likeable and less popular, compared to children without anxiety (Coplan et al., 2007; Nelson, Rubin, & Fox, 2005). Additionally, highly anxious children, who were identified by their teachers, experienced more psychosocial problems and adjustment difficulties than did children rated as not having anxiety (Strauss, Frame, & Forehand, 1987). Furthermore, these researchers found that children who were identified as anxious children by their parents showed more complications compared to parent reports of non-anxious children.

Research has shown that generalized anxiety disorder has been linked to poor emotional regulation and problems with interpersonal processes (Priest, 2015). Generalized anxiety disorder symptoms may stem from deficits in emotion regulation (Priest, 2015). For instance, those with generalized anxiety disorder may not be able to tolerate uncertainty. Intolerance of uncertainty means cognitive and emotional reactions that come from ambiguity in the environment. This uncertainty can bias information processing and lead to reduced threat assessment and coping (Priest, 2015). This means that children with generalized anxiety disorder are more likely to misinterpret social interactions, leading to more interpersonal difficulties. Individuals with generalized anxiety also have difficulties balancing their own individuality and intimacy with others (Priest, 2015). According to Priest (2015) anxiety can lead to "interpersonal

over functioning” (e.g. caring for others excessively or being extremely accommodating) or “cutting off” (e.g. hostility, extreme submissiveness, or non-assertion).

Children and adolescents diagnosed with social anxiety disorder may have particular difficulties with social functioning. There may be particular negative consequences for children in elementary school with social anxiety because it can impair their social skill development, which is critical during this age (Liu et al., 2015). Difficulties with peer relationships and negative perceptions of the self and others are correlated with social anxiety symptoms (Liu et al., 2015). According to Liu et al. (2015) socially anxious seven-to-eight year old children in a study described more avoidance of school, lack of internal coping skills, and feelings of loneliness.

In conclusion, this section reviewed the importance of being aware of risk factors for the development of anxiety disorders, the impact of anxiety on academic performance, and the impact of anxiety on social functioning. If anxiety in children and adolescents is not treated it has the potential to negatively impact their academic performance. School counselors are in a good position to offer interventions to help reduce anxiety concerns in students. Specifically, mindfulness-based interventions have shown success in decreasing anxiety and fostering better coping skills in children and adolescents (Skorman Cicero, 2013; Semple et al., 2005; Napoli et al., 2015; Semple et al., 2010). The following section will discuss the practice of mindfulness.

### **Mindfulness**

Mindfulness training was adapted from Buddhist meditation practices and has increased in popularity in the last several years (Hoge et al., 2015). Mindfulness increases awareness and acceptance of present-moment experiences, including thoughts, emotions, and physical sensations (Hoge et al., 2015). The effects of mindfulness-based interventions have been well

documented in the literature. Mindfulness has been shown to be effective in treating stress, anxiety, depression, and chronic pain (Bränström, Duncan, & Moskowitz, 2011; Ussher et al., 2014; Hoge et al., 2015).

Each practitioner may have his or her own approach to mindfulness; however, they all share nonjudgmental acceptance of thoughts and feelings as a commonality (Skorman Cicero, 2013). According to Nanda (2009) bringing attention to our moment-to-moment experiences helps us realize that all emotive experiences have a beginning and an end. Our thoughts and feelings are constantly changing and are only temporary (Skorman Cicero, 2013). Mindfulness teaches one to embrace all experiences, whether positive or negative (Snyder et al., 2012). While people often have the urge to get rid of bad feelings and experiences, mindfulness teaches people to accept them instead. Through deep acceptance one can begin to move past it and feel liberation (Skorman Cicero, 2013). According to Kabat-Zinn (1994) nonjudgmentally accepting stressful thoughts and emotions can lead to the conclusion that they are just “thoughts.” This empowers individuals and helps them realize that having a thought does not make it true (Skorman Cicero, 2013).

One of the most empirically recognized mindfulness practice is Mindfulness-Based Stress Reduction (MBSR) created by Kabat-Zinn in 1979 (Chiesa & Serretti, 2009). MBSR was created to incorporate Buddhist mindfulness meditation into practices that are contemporary (Chiesa & Serretti, 2009). MBSR was first created as a group-based intervention for patients with chronic pain. More recently, MBSR has been used as a treatment for many different diseases, showing effectiveness with mental and physical disorders (Chiesa & Serretti, 2009). According to Chiesa and Serretti (2009) MBSR involves developing a certain kind of attention, including

nonjudgmental awareness, openness, curiosity, and acceptance of present experiences, which allows practitioners to be less impulsive and more reflective.

MSBR focuses on three specific techniques, which are body scan, sitting meditation, and Hatha Yoga practice. Body scan involves, “a gradual sweeping of attention through the entire body from feet to head, focusing non-critically on any sensation or feeling in body regions and using periodic suggestions of breath awareness and relaxation” (Chiesa & Serretti, 2009, p. 593). Sitting meditation includes attending to one’s breath, paying attention to the movement of the stomach, and a nonjudgmental state of awareness toward one’s thoughts (Chiesa & Serretti, 2009). Hatha Yoga involves “breathing exercises, stretches, and posture intended to strengthen and relax the musculoskeletal system” (Chiesa & Serretti, p. 593, 2009). MBSR includes in-group exercises as well as homework for at least 45 minutes a day, six days a week for eight weeks (Chiesa & Serretti, 2009). According to Baer (2003) MBSR is not only effective during and throughout participation, but also has lasting positive effects on participants’ quality of life. The following subsections will discuss: mindfulness and neuroscience, mindfulness with children and adolescents, and mindfulness interventions for children and adolescents with anxiety.

### **Mindfulness and Neuroscience**

Research has highlighted the importance of understanding how the brain is impacted by mindfulness. Developing mindfulness improves body, mind, and relationship functioning (Siegal, 2007). Studies have shown evidence that practicing mindfulness and paying attention to the present moment can improve immune functioning (Siegal, 2007). Furthermore, mindfulness improves self-control and increases empathy and relational satisfaction (Siegal, 2007).



Farb et al. (2007) conducted a study testing momentary focus and attention, and compared the brain imaging findings of two groups of participants: one group trained in Mindfulness-Based Stress Reduction (MBSR) and the other not trained in MBSR. Both groups were given the same task to measure the impact of their training on their ability to pay attention in the moment (Farb et al., 2007). The individuals who were trained in mindfulness meditation repeatedly learned skills that helped them distinguish between two distinct levels of awareness: the self in the present experience and narrative chatter. The self in the present experience means that one is able to focus only on the present, and narrative chatter means focusing on the past and future (Farb et al., 2007). The results of the study showed that without training, participants were most likely not able to remove themselves from their mind's narrative chatter. Further, without mindfulness training participants were unable to "just live in the moment" and instead they are consumed by racing thoughts and self-judgments (Farb et al., 2007). Those trained in MBSR were able to process information from the 'bottom up', which means without pulling from past experiences and emotional patterns. Those who were not trained were only able to rely on 'top down' learning, which activates the part of the brain that pulls from emotions and past experiences (Farb et al., 2007). This groundbreaking study showed how practicing mindfulness can change ingrained patterns in the brain and allow people to become more aware of the present moment.

When individuals change the way they see the mind, the flow of mental experience can be transformed (Siegal, 2007). For example, "if we can disengage old habits of neural firing from creating their automatic and ingrained emotional reactions, such as depression or anxiety, we can reduce mental suffering and enhance the growth in our internal world toward mental health" (Siegal, 2007, p. 1). Shifting the focus of attention physically changes activity in the brain. With

repetitive practice, brain activation is transformed and can become new traits of the person (Siegal, 2007). As one practices this, neural circuit activation gets strengthened. This is the primary element of how ingrained patterns of psychopathology can be altered through mindfulness practices (Siegal, 2007). Mindfulness frees the person from prior learning that created patterns of functioning by training the brain to change its circuitry and creating new self-awareness (Skorman Cicero, 2013). This ability allows us to change habitual patterns, which helps us escape from negative cognitions, self-preoccupied rumination, and maladaptive patterns of emotional reactivity (Siegal, 2007).

Overall, mindfulness teaches individuals to pay attention to the present moment, instead of constantly ruminating about the past and present. This increased attention to the present moment can decrease anxiety in individuals. With consistent practice, mindfulness has been shown to impact to circuitry of the brain (Farb et al., 2007; (Siegal, 2007). This creates a new self-awareness and ability to change old habits. The next section will discuss teaching mindfulness to children and adolescents.

### **Mindfulness with Children and Adolescents**

During childhood and adolescence, the brain is still developing, which makes it easier to learn new strategies for emotional regulation and coping (Skorman Cicero, 2013). Mindfulness exercises teach children to pay attention to their moment-to-moment experiences, which helps to develop top-down reflection. Practicing being nonjudgmental and focusing on the present helps nurture calmness and well-being in children (Zelazo & Lyons, 2012). Children are naturally mindful and have curiosity about the world. Mindfulness supports children's natural inclination toward curiosity and wonder, while teaching them to reduce the influence of stress and anxiety through self-regulation and awareness (Skorman Cicero, 2013). Moreover, if children in schools

learn to be “fully-present,” they can increase the quality of their learning by being more focused, and can better deal with stressful situations (Napoli, Krech & Holley, 2005). Mindfulness can increase emotional stability, attention, self-control, perspective taking, and concentration in children (Zelazo & Lyons, 2012).

While there has been years of research involving adults, research on mindfulness-based interventions for use with children and adolescents is still growing (Perry-Perish et al., 2016). Several mindfulness interventions have been adapted for working with children and adolescents. Saltzman and Goldin (2008) studied the effects of mindfulness training for children and families. According to Saltzman & Goldin (2008) when teaching mindfulness to children, first it is imperative to use age appropriate language and communicate the lesson in a fun and appealing manner. Secondly, teachers must practice mindfulness themselves in order to effectively teach it to children. Thirdly, teachers must take into consideration that their interpretations of a child’s words or experiences may be different from the child’s interpretation of his/her words or experiences (Saltzman & Goldin, 2008). It is preferable to ask questions than to make assumptions about what a child means when describing his or her experience. Finally, one must use creativity when practicing mindfulness with children (Saltzman & Goldin, 2008).

Amy Saltzman is the founder of The Still Quiet Place, which is an adapted version of MBSR for children (Saltzman & Goldin, 2008). According to Saltzman & Goldin (2008) a good rule of thumb is that children can practice one minute per their age in years. Saltzman & Goldin (2008) recommend that each session include both formal practice (body scan, sitting, walking exercises) and informal practice (focusing attention and paying attention to present moment). Lastly, they recommend encouraging students to practice the exercises at home to strengthen their in-time class learning (Saltzman & Goldin, 2008).

This growing body of knowledge surrounding mindfulness with children has promising results regarding feasibility, acceptability, and benefits (Perry-Perish et al., 2016). According to Perry-Perish et al. (2016) results from a study involving mindfulness instruction showed a reduction in high blood pressure in high school students. Further, mindfulness in younger students has shown benefits in executive functioning and attention (Perry-Perish et al., 2016). Executive functioning can be defined as, “interrelated neurocognitive processes that are important for purposeful, goal-directed behavior” (Farooqi et al., 2016, p. 2). Moreover, studies of MBSR from an urban outpatient primary care clinic show possible benefits correlated with less conflict, better relationships, awareness of the self, anxiety, and stress (Perry-Perish et al., 2016). Finally, “randomized control trials of school-based MBSR compared with an active control group in urban settings have shown improvements in psychological symptoms (anxiety and depression), coping, somatization, self hostility, and reduced post-traumatic stress symptoms” (Perry-Perish et al., 2016, p. 174).

In summary, research has shown that mindfulness-based interventions are both feasible and beneficial for youth. Specifically, mindfulness fosters calmness, self-awareness, and self-regulation in children. It also has been shown to decrease stress, anxiety, and conflict. It is clear that mindfulness has positive benefits for children and adolescents. The next section will discuss mindfulness interventions for children and adolescents who experience anxiety.

### **Mindfulness Interventions for Children and Adolescents with Anxiety**

Existing research has shown the need for early intervention for children and adolescents with anxiety (Hirshfeld-Becker & Biederman, 2002). Focusing on coping skills and emotional awareness at a young age will prevent and/or reduce anxiety severity from childhood into adulthood (Hirshfeld-Becker & Biederman, 2002). Practicing mindfulness can teach children and

adolescents to notice anxious thoughts and feelings, reduce avoidant behaviors, and self-monitor one's coping strategies (Semple et al., 2005). Mindfulness meditation is connected with stress reduction and relaxation, and helps a person have an accepting relationship with his or her thoughts. Studies have shown positive results for teaching mindfulness to children and adolescents with anxiety (Semple et al., 2005; Napoli et al., 2015; Semple et al., 2010).

The study conducted by Semple, Reid, & Miller (2005) examined the feasibility and acceptability of a mindfulness training program for teacher-referred anxious children. The students who participated in this study included three boys and two girls, ages seven to eight, who were attending an elementary school in New York City. They implemented a six-week program that was delivered in 45-minute sessions, one session per week (Semple et al., 2005). Each participant acted as his or her own control in a within-subjects, pre-post design. The mindfulness program they used was adapted from two adult programs: Mindfulness-Based Stress Reduction and Mindfulness-Based Cognitive Therapy. At the end of the program, the participants' teachers reported improvements in academic functioning and reductions of problem behaviors. Further, improvements were reported for all of the children in at least one area, including academic functioning, internalizing problems, or externalizing problems (Semple et al., 2005). This study was unable to report on differences in anxiety pre and post intervention due to some limitations, which were that participants reported experiencing little anxiety on the pre-test and the measures they used were not suitable for children.

Another study conducted by Napoli et al. (2005) implemented a mindfulness program in two elementary schools called Attention Academy Program (AAP). This program's goal was to improve students' quality of life through practicing mindfulness (Napoli et al., 2005). The specific goals were to help the students learn to pay attention to the present moment, have a

nonjudgmental attitude toward their experiences, and to see each experience as new (Napoli et al., 2005). Their study included 120 males and 108 females. Students were then placed randomly into the experimental (those receiving AAP) or control group (those not receiving AAP). There were a total of twelve AAP training/control group sessions. The results of the study showed a statistically significant difference between the experimental and control groups. Those in the experimental group showed improvement in their selective attention, and their test anxiety was reduced (Napoli et al., 2005). Those in the control group did not show any significant improvements.

In another study including 25 children, ages nine to thirteen years old, Mindfulness-Based Cognitive Therapy for children (MBCT-C) was used as an intervention for children with attention and anxiety problems (Semple et al., 2010). The MBCT-C intervention was a 12-session group with a goal to improve both self-management of attention and self-regulation, while increasing social-emotional resiliency in elementary school students (Semple et al., 2010). The results of this study showed that MBCT-C was effective in decreasing attention-related problems as well as managing anxiety symptoms and behavior problems in children with clinical levels of anxiety (Semple et al., 2010).

The studies conducted in schools show that implementing mindfulness programs within the school setting is achievable, realistic, and highly beneficial. Research suggests that teaching mindfulness to students can lead to stress reduction, selective attention, self-awareness, decrease in anxiety symptoms, and increase in academic functioning (Semple et al., 2005; Napoli et al., 2015; Semple et al., 2010). The research design for this study is based on the existing successful small groups done in elementary and middle schools (Semple et al., 2005; Napoli et al., 2015; Semple et al., 2010). This current study implements a mindfulness-based group with sixth grade

students who are experiencing anxiety concerns, and aims to contribute to the growing body of research exploring the potential benefits of teaching mindfulness to children in a school setting. This study aims to answer the following question: What impact will a six-week mindfulness-based group have on levels of anxiety in sixth grade students? It is hypothesized that student anxiety levels will decrease after participation in the six-week mindfulness group.

### **Method**

This study examined the impact of a mindfulness-based group on anxiety levels in sixth grade students. The key variables are anxiety (dependent variable) and the mindfulness-based group (independent variable). The students were administered the Penn State Worry Questionnaire for Children (PSWQ-C) pre and post intervention to measure anxiety. The PSWQ-C is a 14-item self-report questionnaire designed to assess worry in children and adolescents aged seven to seventeen. The group's data were analyzed using a t-test to compare the mean scores of the PSWQ-C questionnaire pre and post intervention.

### **Participants**

Participants included in this study were six sixth grade female students that were recommended by their school counselor. Participants were between the ages of eleven and twelve. Recommendations were based on the student presenting with anxiety symptoms in her individual counseling sessions with the school counselor. The school counselor gave each student an envelope containing the parent/guardian consent form and recruitment letter to bring home to her parent/guardian. The school counselor then asked the student to return the form to her once it is signed. All six parent consent forms were signed and returned indicating their agreement for their daughter's participation in the study. Upon receiving parent consent forms; participants were invited privately to the counseling office during a free period to be informed

that they were selected to participate in a mindfulness-based group. Each participant was informed about the purpose of the group and that she will be learning mindfulness techniques to help reduce anxiety. Participants were then given the minor assent form to complete. Upon agreement for participation, the student was given the PSWQ-C questionnaire to complete. All six participants agreed to be in the group (N=6). Participants could choose to withdraw from the group, not complete the questionnaire, or not participate in a mindfulness-based activity without penalty. Participants were not given any incentives for participation.

### **Instruments**

The variable being measured for this study was anxiety. The instrument used for this research study was the Penn State Worry Questionnaire for Children (PSWQ-C). The PSWQ-C is a 14-item self-report questionnaire designed to assess worry in children and adolescents aged seven to seventeen. This questionnaire was designed to be comprehensive to children at the second grade reading level and above. Respondents were asked to indicate how often each item applies to them by choosing from the following responses for each item: “never,” “sometimes,” “often,” and “always.” Their responses are scored on a Likert scale from 0 (never) to 3 (always). Items 2, 7, and 9 are reverse-scored from 0 (always) to 3 (never), with greater scores indicating less worry rather than greater worry. Finally, item scores are summed to yield a total score. Total scores range from 0 to 42, with higher scores indicating greater tendency to worry (Chorpita et al., 1997).

The PSWQ-C has demonstrated favorable psychometric properties in small and large clinical samples. The PSWQ-C has high internal consistency, high convergent validity with related constructs, and acceptable discriminative validity between diagnostic categories (Pestle, Chorpita, & Schiffman, 2008). Further, the PSWQ-C is correlated with a scale measuring anxiety



disorder symptoms. PSWQ-C scores were found significantly associated with all types of anxiety disorder symptoms but in particular with symptoms of generalized anxiety disorder (Muris et al., 2001).

### **Procedures**

The students attended the mindfulness-based group during school for 30-minutes. The group began a week after obtaining all six minor assent forms and PSWQ-C questionnaires. The group met once a week for five weeks. This group met in the counselor's office during a free period so the students did not miss classroom instruction.

The five-week mindfulness group was created based on already existing mindfulness programs that were designed for school-age students. The first session included a conversation about confidentiality, an icebreaker activity, and a discussion about anxiety. The researcher defined anxiety and asked the students to share their own experiences, including what contributes to their anxiety. The students were asked to write down one of their worries on a piece of paper and put it in the "worry wastebasket." In the second session, the students learn the definition and benefits of mindfulness and participate in their first activity. In the rest of the sessions, the students shared their current thoughts and feelings related to anxiety and participated in new mindfulness activities. Some examples of mindfulness activities include: progressive muscle relaxation, meditation, and breathing exercises. On some days the students were given homework to practice the activity outside of the sessions.

The students completed the PSWQ-C post-test during the last group session. Pre and posttest data was collected and compared. Data was inputted into SPSS software and a t-test was conducted to compare the total mean scores from the instrument.

## Results

This study examined the impact of a five-week mindfulness group on levels of anxiety among sixth grade middle school students. It was hypothesized that participation in the group would decrease levels of anxiety among group members.

Outcome evaluation was conducted by comparing pre and posttest results from the PSWQ-C. Data was inputted into SPSS software and a t-test was used to compare pretest and posttest total mean scores from the instrument. As shown in Figure 1, the mean difference between total scores pre and post-test was 2.83 where  $t(6) = .728$ ,  $p = .5$ . The average pretest total score on the PSWQ-C was 25.17 as compared with a lower average posttest mean score of 22.33. While there was an overall decrease in total scores between pre and posttests, results were found non-significant.

Further analysis was conducted by comparing individual questions on the PSWQ-C pre and posttest. Participants were asked to rate their answers on a four point Likert-type scale where 0 is 'never true,' 1 is 'sometimes true,' 2 'most times true,' and 3 'always true.' Higher scores yield higher levels of anxiety. The question with the most significant difference between pre and post was question nine ("I never worry about anything"), with a mean difference of .5 where  $t(6) = 2.23$ ,  $p = .08$ . The pretest mean on this question was 3.0 and dropped to 2.5 on the posttest. The second question with the most significant difference was question number one ("My worries really bother me"), with a mean difference of .7 where  $t(6) = 2.0$ ,  $p = .10$ . The pretest mean on this question was 2.0 and dropped to 1.3 on the posttest. The third question with the most significant difference was question number eight ("When I finish one thing, I start to worry about everything else"), with a mean difference of .4 where  $t(6) = 1.63$ ,  $p = .18$ . The pretest mean on this question was 1.0 and dropped to .6.

It should be noted that the means of three questions increased slightly posttest. Question number three (“Many things make me worry”) had a pretest mean of 1.5 and slightly increased to 1.67. Question number ten (“I’ve been a worrier all my life”) had a pretest mean of 1.0 and increased to 1.3. Lastly, question number thirteen (“I worry all the time”) had a pretest mean of .83 and increased to 1.3. None of these mean differences were found statistically significant.

**Paired Samples Test**

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 pretesttotal - posttesttotal	2.83333	9.53764	3.89373	-7.17581	12.84248	.728	5	.499
Pair 2 PreQ1 - PostQ1	.66667	.81650	.33333	-.19019	1.52353	2.000	5	.102
Pair 3 PreQ2 - PostQ2	.00000	.89443	.36515	-.93864	.93864	.000	5	1.000
Pair 4 PreQ3 - PostQ3	-.16667	.98319	.40139	-1.19846	.86513	-.415	5	.695
Pair 5 PreQ4 - PostQ4	.33333	1.21106	.49441	-.93760	1.60426	.674	5	.530
Pair 6 PreQ5 - PostQ5	.16667	.98319	.40139	-.86513	1.19846	.415	5	.695
Pair 7 PreQ6 - PostQ6	.33333	1.21106	.49441	-.93760	1.60426	.674	5	.530
Pair 8 PreQ7 - PostQ7	.33333	1.03280	.42164	-.75052	1.41719	.791	5	.465
Pair 9 PreQ8 - PostQ8	.40000	.54772	.24495	-.28009	1.08009	1.633	4	.178
Pair 10 PreQ9 - PostQ9	.50000	.54772	.22361	-.07480	1.07480	2.236	5	.076
Pair 11 PreQ10 - PostQ10	-.33333	.51640	.21082	-.87526	.20859	-1.581	5	.175
Pair 12 PreQ11 - PostQ11	.50000	1.51658	.61914	-1.09155	2.09155	.808	5	.456
Pair 13 PreQ12 - PostQ12	.33333	1.03280	.42164	-.75052	1.41719	.791	5	.465
Pair 14 PreQ13 - PostQ13	-.50000	1.04881	.42817	-1.60066	.60066	-1.168	5	.296
Pair 15 PreQ14 - PostQ14	.16667	.75277	.30732	-.62332	.95665	.542	5	.611

After comparing pre and posttest data, the results from the group support the original hypothesis that anxiety levels would decrease after participation in the group. The results from the PSWQ-C show an overall decrease in anxiety and worry among group members.

### **Discussion**

This study aimed to contribute to the growing body of research exploring the potential benefits of teaching mindfulness to children in a school setting. After comparing pre and posttest data, the results from the intervention support the hypothesis that a mindfulness-based group will decrease anxiety levels among participants in the group. Results from the PSWQ-C show a decrease in total anxiety levels post intervention.

Overall, anxiety levels among participants decreased post intervention, which suggests that the mindfulness group had positive results. While there was an overall decrease, the results were not statistically significant. Moreover, ten out of the fourteen questions showed a decrease in scores post intervention, while one question stayed the same, and three questions increased slightly. The increased scores on the three questions may be due to an increase in awareness of anxiety among participants. They may be more cognizant and mindful of their worried thoughts compared to before the group. Another reason for this may be due to how the posttest was administered, which was during the last group session, rather than individually with the researcher like the pre-test. The different setting for taking the posttest may have affected the participants' answers or they may have rushed through it to be done.

Overall, the findings from PSWQ-C showed encouraging results. There was an overall decrease in anxiety levels post intervention. While it is not statistically significant, results appeared to be clinically significant. Students themselves reported looking forward to the group, that it felt good to share their experiences with others, and that it helped them to learn to relax

and breathe. They reported learning that their worries “have a beginning and an end” and that they don’t have to view their worried thoughts as “good or bad.” The students reported that the group was an overall positive and helpful experience and wished it could have gone longer.

### **Limitations & Future Research**

There are several limitations to be considered with this research study. The first limitation to this study is found in sample size and population. The group was made up of only six participants who were all female sixth grade students and Caucasian. The sample was not diverse in age, gender, race or culture, therefore not generalizable to the larger population. Future research needs to use a larger more diverse sample size in order to understand the overall impact of mindfulness.

Another limitation of this study was the research method chosen. This study used a quantitative method to examine its impact. While a quantitative method can be a very useful and effective method to examine differences, this study may have benefited from also using qualitative methods to gain a deeper understanding of the impact of the group. The verbal feedback from the participants added as much value to the findings as the quantitative results. Future research should combine both quantitative and qualitative research methods to better assess the impact of the group.

Another limitation to this research study was the limited amount of time allowed to complete the research. The mindfulness-based group was originally planned to be six weeks but got shortened to five weeks due to unexpected snow days and NYS testing. Two group sessions had to be combined into one, so the group was more “rushed” than preferred. Furthermore, to save time, the researcher had to administer the posttest during the last group session, instead of meeting with each student privately to take the test. Future research should aim to run the group

for six to eight weeks to allow for better development of mindfulness skills. It is also recommended to have the students take the posttest individually and privately with the researcher.

Two final limitations of this research were participant attendance and posttest completion. Two of the group members did not attend every session. Furthermore, one of the students skipped one of her questions on the posttest, which could have impacted results slightly. Future researchers should actively encourage group attendance so participants can get the most out of the group.

### **Conclusion**

Research has shown that anxiety in school age children continues to be a growing concern (Muris & Broeren, 2009). According to Skorman (2013), one in five children will experience incapacitating anxiety or depression in childhood. Children who suffer from anxiety have more difficulty with social and academic functioning and are more likely to develop mental health issues as adults (Hirshfeld-Becker & Biederman, 2002). Research shows the need for early intervention for students dealing with anxiety (Hirshfeld-Becker & Biederman, 2002). A growing body of research suggests that mindfulness techniques are effective in decreasing anxiety in adolescents (Skorman, 2013). Teaching mindfulness to students can help improve their executive functioning, self-regulation, attention, and social competence (Thierry, Bryant, Nobles, & Norris, 2016). Such improvements can have a positive impact on their academic and social success.

This study provided further evidence that practicing mindfulness techniques can have a positive impact. Participants in this study showed an overall decrease in anxiety levels post intervention. Moreover, participants reported that they enjoyed and looked forward to the group, felt relaxed after the group, and asked for it to continue after the five-week program. Overall, the

five-week mindfulness-based group had a positive impact on the sixth grade students in this study.

Further research is needed to understand the impact of mindfulness on anxiety levels over a longer period of time and with a larger more diverse sample. Nonetheless, this study and existing research show the positive benefits of teaching mindfulness to students and that implementation of such programs is entirely feasible. Given that anxiety among students continues to be a growing concern, mindfulness programs should be adapted into the educational system. Implementing mindfulness programs into educational culture can have a powerful and positive impact on students. School counselors are in the unique position to offer such programs during the school day, which can have a positive impact on students' social/emotional and academic domains. Finally, school counselors can use this information to provide evidence for the benefit of mindfulness groups for students experiencing anxiety.

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