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An examination of the feasibility and impact of a mindfulness and nature based intervention For at-risk middle school students

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An Examination of the Feasibility and Impact of a Mindfulness and Nature Based Intervention For At-Risk Middle School Students

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Abstract

Public schools are faced with the daunting task of both educating students and managing their behaviors exhibited at school. Unfortunately, many schools do not have prevention measures in order to decrease the amount of behavior problems and office referrals. Instead, they handle behavioral issues as they arise in a reactive manner and many times use detention and suspension as consequences. Thus, students miss academic and instructional time and often do not decrease the behaviors. A majority of students who are suspended will be suspended again in the future (Losen & Martinez, 2013). Another issue facing students is a dismal lack of time outdoors per day. Middle school and high school students often do not have a recess period and with the increase of technology and use of electronic devices, many students are not spending time outdoors after school hours either. This has led to a phenomenon coined by Richard Louv as 'Nature-Deficit Disorder' (2004). The current study used a blended mindfulness and nature intervention to increase students' time outdoors and to prevent common behavioral problems. Students with a high number of office referrals were chosen from a middle school in Chesterfield County, Virginia. They participated in eight sessions using the research-based MindUp curriculum with a nature walk at the end of each session incorporating certain aspects of mindfulness. A teacher report checklist measured students' classroom behaviors and individual office referrals were monitored. Students were interviewed at the conclusion of the intervention to assess the acceptability and feasibility on this prevention program. A case study analysis was used to evaluate the data. While most

students did report an impact and there were teacher reports of positive change in most of the participants, the results of the teacher rating scale were mixed, showing some improvements in areas and declines in other areas. Additionally, two participants received behavior referrals over the course of the intervention and the other two did not. The mindfulness and nature intervention was feasible and appears to be a promising prevention program that schools might consider incorporating into tiers of support.

Statement of the Problem

With the technology age upon us, it is becoming a growing concern that the children of this generation are spending excessive amounts of time indoors and glued to screens, whether it be computers, smart phones, iPads, television, or video games. Unless their parents are urging them to do so, children aren't spending as much time outside playing. In the 2008 book, *Last Child in the Woods*, Richard Louv coins a phenomenon known as 'nature-deficit disorder.' He urges that the only way to save children from the consequences of this disconnect with nature, which can include difficulties with attention, physical and emotional ailments, and decreased use of the senses, is through fostering a frequent and positive physical relationship with nature. He elaborates with countless sources of evidence that has shown that both spending time in nature and physical activity leads to better mental clarity and decreased stress levels (Louv, 2008).

There is no doubt that school can be stressful for children. Although the drop out rate has been steadily declining over the past few decades, it still remains at around 6 percent. This means that 6 percent of the youth across the nation either don't find school important or feel that the stress of school or home life is too overwhelming for them to handle. As reported by the Children's Defense Fund, every nine seconds a high school student drops out (2004). In order for the drop out rate to decline even more, it is necessary to provide children with coping strategies to deal with the stress they encounter. Some stressors that have been reported by youth include homework, teasing, pressure from peers, making poor grades, being isolated, pressure from parents, and standardized testing (White, 2012). Not only do children deal with these more common

issues, unfortunately some youth are faced with extenuating hardships within the home, such as abuse, neglect, financial issues, or living in dangerous communities. These types of experiences can only serve to exacerbate any underlying stressors that a child may already be feeling.

Ten to twenty percent of children have reported experiencing anxiety to the point of distress (Benjamin, Harrison, Settipani, Brodman, & Kendall, 2013). Furthermore, childhood anxiety does not seem to diminish over time. In fact, it has been determined that the symptoms of anxiety that go untreated worsen through adolescence and into adulthood. The implications of this could range from the manifestation of depressive disorders to substance abuse and dependence (Benjamin, Harrison, Settipani, Brodman, & Kendall, 2013). Regular or extended stress in youth can also lead to headaches, stomachaches, missing school, overeating and smoking (White, 2012). At the more extreme end of the spectrum, students may act out in ways that get them into trouble. Even at a young age, disciplinary referrals can have far reaching consequences. Forty-nine percent of students who began high school with three or more suspensions during elementary and middle school eventually dropped out (Balfanz, Byrnes, & Fox, 2012). In addition, it seems that suspending students does not do an adequate job of preventing those behaviors from recurring. A majority of students who are suspended, will be suspended again in the future (Losen & Martinez, 2013). Teaching students mindfulness strategies that they can employ when they are feeling overwhelmed could be a step in the right direction for keeping students out of trouble and in the classroom.

Review of Literature

Mindfulness is a practice that has its' first roots in ancient Buddhist meditations. However, Dr. Jon Kabat-Zinn, also known as the father of modern mindfulness, launched a non-religious Mindfulness-Based Stress Reduction (MBSR) program in 1979 at the University of Massachusetts Medical School. This has since become a mainstream and secular mindfulness practice with well documented studies displaying the efficacy of such a practice for both physical and mental health. As defined by Kabat-Zinn, mindfulness involves maintaining a present awareness of our thoughts, feelings, bodies, and environments. Beyond this awareness, the second prong of mindfulness involves acceptance. This means remaining aware of thoughts and feelings while never judging. When being mindful, there is no correct or incorrect way to feel or think and the focus is taken off of the past or the future, but brought into the present time and space (Weiss & Hickman, 2015). Techniques of MBSR include mindful breathing, mindful eating, and mindful meditation, among many others. Many of these have been adapted for children, and an especially interesting way to get children thinking about mindfulness is to interactively teach them about their brains and various brain structures (The Hawn Foundation, 2011). Yoga is another contemplative practice that has ancient origins and has gained a great deal of popularity over the past few decades. While there are many different branches of yoga, they all incorporate mindful breathing, mindful movement, and mindful thoughts in order to benefit the body and the mind simultaneously (Greenberg & Harris, 2012).

Another way to get children to practice mindfulness is through the incorporation of nature. Nature therapy refers to the applied practice of the novel field known as

ecopsychology. Ecopsychology is an emerging field that studies the relationship between humans and the natural world (Schroll, 2007). In broad terms, nature therapy refers to therapy that takes place in the outdoors rather than indoors. It can also be thought of as discovering what we can do for the natural world, but just as important is what the natural world can do for us, and specifically for our physical and mental health (Louv, 2008). Some wilderness therapies, especially those for adolescents, are based around the clients spending an extended period of time, weeks or even months, in nature in order to heal or find therapeutic benefits. Other forms of nature therapy, seen more with younger children, involve teaching them about nature, seasons, weather, and cycles, and then taking them outdoors to explore the natural environment in a mindful and therapeutic manner (Louv, 2008). Being such a new field, there is a definite gap in the research in regards to studies of the efficacy of nature therapy. This gap widens when trying to find evidence of the benefits of nature therapy with children. This proposed study will incorporate this approach with children.

Mindfulness in general is a much more extensively researched topic. However, again there is much more research in this area with adults than with children. Research on mindfulness techniques with adults has shown a definite link to overall wellness in physical health, pain relief, and diminished depression and anxiety. These effects are likely a result of the impact of contemplative techniques on the form and mechanism of neural circuiting which can lead to variations in immunity and reactions to stress. These findings have led to the growing adaptation of yoga and other mindfulness practices with children and adolescents. (Greenberg & Harris, 2012). A review of the literature reveals that indeed there is an increasing amount of articles about mindfulness interventions with

children and interestingly, a growing body of literature pertaining to mindfulness in parenting.

Mindfulness with Children and Adolescents

A study focusing on adolescents aimed to determine the outcomes of a group mindfulness intervention with adolescents suffering from a variety of mixed mental disorders (Tan & Martin, 2015). Out of one hundred and eight adolescents who were identified through mental health clinics and subsequently randomly divided into treatment and control groups, eighty were used in the final statistical analysis. The control group received "treatment as usual." The treatment group received their usual treatment in addition to the mindfulness-based program, "Taming the Adolescent Mind." This is a five-week program developed specifically for adolescents' developmental level. Main techniques of this program include sensory exercises and attention directing tasks. All participants in both groups were given a series of measures at three separate time points: pre-intervention, post-intervention, and three months post-intervention. These measures included a depression and anxiety scale, a self-esteem scale, a resilience scale, an avoidance scale, a mindfulness measure, and a behavioral checklist. The treatment group improved significantly more compared to the control group across all of the facets measured. Furthermore, mindfulness mediated the mental health outcomes, and these improved outcomes were still significant three months after the intervention had concluded.

A study published earlier this year in the Journal of Developmental Psychology investigated the impact of a mixed mindfulness and social-emotional learning intervention in one hundred fourth and fifth graders. Schonert-Reichl, Oberle, Lawlow,

Abbott and Thomson (2015) investigated whether this intervention would impact the students' cognitive control, stress levels, overall well-being, pro-social behaviors, and school outcomes They used the MindUP mindfulness curriculum over twelve weeks with half of the students and the other half were in the control group who continued to receive a social responsibility program which was already being implemented, referred to the 'Business as Usual' Group. Pre- and post-measures of executive functioning, salivary cortisol, self-reported well-being and prosociality, and peer-reported prosociality were examined. Additionally, the students' final math grades were obtained from their school records. The group who received the MindUP intervention exhibited higher levels of cognitive control in comparison to the control group as measured by tests of executive functioning. The MindUP students also reported higher levels of emotional control, optimism, self-concept at school, mindfulness, empathy and perspective taking. Their peers were more likely to rate them as being prosocial and to be socially accepting of them and less likely to rate them as being aggressive. Their math scores were fifteen percent higher than their peers who did not receive the intervention. Finally, the students in the intervention group showed a greater decline in their self-reports of depressive symptoms over the period the intervention (Schonert- Reichl, et al, 2015).

Children who grow up in urban environments are sometimes faced with unique stressors not seen in their peers who live and attend school in suburban and rural settings. Violence, crime, and poverty are far reaching problems seen all over the U.S. but unfortunately can be an inevitable part of daily life for some children growing up in America's inner cities. Urban schools may therefore have a more dire need for interventions that facilitate emotional regulation and coping skills. Research has shown

that of the students who are most likely to drop out, a great proportion are minorities who attend large urban school systems. Mendelson, Greenberg, Dariotis, Gould, Rhoades, and Leaf (2010) studied 97 fourth and fifth graders across four Baltimore City schools to determine the feasibility and outcomes of a mindfulness intervention. The intervention group participated in a 45 minute mindfulness program four days out of the week for three months. The mindfulness intervention was implemented during the students' resource period and included yoga-based postures, breathing practices, and guided mindfulness exercises. Measures of involuntary stress responses, depressive symptoms, positive and negative emotions, and relations with peers and school were measured for both groups before and after the intervention. The control group received no treatment and was put on a wait-list to receive the intervention at a later date.

Students were enthusiastic about the program and reported positive experiences. Teachers were supportive of the program and most of them noted improvements in their students and acknowledged the benefits that the program had to offer. The intervention group showed no significant differences, as compared to the control group, on positive and negative affect, depressive symptoms, or relations with peers and teachers. However, a significant reduction in involuntary stress reactions of rumination, intrusive thoughts, and emotional arousal was observed for the intervention group compared to the control group. This has implications for the students' to be better able to self-regulate, to control worrisome feelings and thoughts, and for their overall social, emotional, mental, and physical health (Mendelson, et al, 2010).

Mindful Yoga

White (2012) examined the influence of mindful yoga in school-age girls. Factors that were evaluated were perceived stress, coping ability, self-esteem, and self-regulation. One hundred fifty five fourth- and fifth- grade girls participated in the intervention which included a weekly yoga class and daily homework .The research design used was a repeated measures, randomized, cluster design with the students randomly placed in either the intervention or control group. Measures of stress, coping, self-worth, and self-regulation were given one week before during the intervention and again after the two-month intervention was completed (White, 2012). The experimental group had one hourly yoga session per week and was required to complete ten minutes of yoga homework daily. Overall, there was no significant difference between the experimental and control group on any of the four scales. However, there was a significant increase for the experimental group on the all scales from the time of the pre-test to the post-test (White, 2012).

German researchers, (Stueck & Gloeckner, 2005) investigated the effectiveness of the Training of Relaxation with Elements of Yoga for Children technique on stabilization of personality, stress reduction, and anxiety reduction. This technique is comprised of 15 one hour long classes with three components: first relaxation, yoga exercises, and the final relaxation. An experimental and control group design was used Variables such as relaxation states, feelings of relaxation, concentration, overall well-being, and physiological measures of stress were measured throughout the course of training. Indexes of physical problems, emotional regulation, control, motivation, and stress coping abilities were measured. In addition, test anxiety, social skills, and self-effectiveness were measured before, after, and three months after training. . Results

showed significant decreases in aggression, helplessness in school, physical ailments, anxiety, shyness in social interactions and impulsivity. Significant increases were seen in emotional balance and reaction to a stressful situation. Seventy-one percent of parents reported that their children were more emotionally balanced and calm. Whereas, thirty-eight percent of parents reported their children showing more concentration while exemplifying less aggressive, temperamental, and impulsive behaviors (Stueck and Gloeckner, 2005).

Nature Therapy

A case study conducted in Israel examined the educational and therapeutic impact of nature therapy with a small group of elementary school students with special needs (Berger, 2006). The intervention consisted of nature therapy for one hour per week over the course of a year. The sessions began within the classroom with discussions of nature and the seasons and then gradually transitioned to outdoor explorations, asking the children to 'build a home in nature.' They worked on picking up some litter to make room for their 'home.' Their homes were to be built from only items that could be found in nature. The results indicated that nature played an important role on the therapeutic process. The children who were normally more solitary had bonded with one another. Group and personal responsibility was encouraged and took place. Both self-esteem and self-confidence increased, as measured by questionnaires. In addition, anxiety levels decreased and a sense of belonging increased. This was measured by qualitatively gauging the perceptions of teachers who knew these students well in addition to self-report questionnaire measures.

A longitudinal study published in the Journal of Environmental Psychology explored the impact of green space in urban English neighborhoods on emotional and behavioral problems in children. Additonally, Flouri, Midouhas, and Joshi (2014), examined the role of green space quantity in buffering the effects of risk factors experienced by the children in these urban environments, such as poverty and adverse life events. These children were followed from nine months old until seven years old. At ages three, five, and seven, neighborhood green space, emotional and behavioral problems, family socioeconomic disadvantage, life adversity, and neighborhood disadvantage were measured. Correlations were then explored between neighborhood green space, risk factors, mediators, and outcomes. Results showed that access to gardens, parks, and playgrounds were highly correlated with a lesser rate of conduct, peer, and hyperactivity problems. There was no relation between green space and child adjustment. However, children of lower socioeconomic status with more access to greenery presented with fewer emotional problems between the ages of three and five.

Not only does nature provide benefits for children in urban settings, but children in rural environments can also benefit from the close proximity of nature. Wells and Evans (2003) investigated the 'naturalness' of over 300 childrens' environments who lived in rural communities of upstate New York. They determined their relative entrenchment in 'naturalness' by evaluating the view from their living room, the view from their kitchen, how many live plants were in their home, and the material their yard included. The children were also administered a stressful life events scale and two measures of psychological distress. Findings suggested that the children with the higher presence of nearby nature were better able to cope with life's stressful situations. That is,

nature acted as a buffer or moderator to the impact of stress for these children (Wells & Evans, 2003). If just a room with a view of nature or having nature around the home can help to protect children from the harmful impacts of stress, then it is possible that immersing them in nature can only build upon those benefits.

Many studies have looked at the impacts of nature on specific disorders, such as ADHD, and have had remarkable findings. For example, Faber Taylor and Kuo (2004) found that nature activities helped to alleviate some of the symptoms of ADHD in children, such as inattention, impulsivity, and hyperactivity. In another study by the same researchers, it was found children with ADHD were better able to concentrate after walking in a park rather than when walking in a downtown or neighborhood setting (2008). Furthermore, Wells (2000) found that being nearby views and daily exposure to settings within nature promoted children's ability to pay attention and focus, which is essential for and improves cognitive abilities.

A 2015 study in England investigated the difference between playground-based playtime and nature-based playtime interventions on both the physical activity and self-esteem levels of school-aged children (Barton, Sandercock, Pretty & Wood, 2015). Fifty-two students participated and were split into the playground and nature groups. The playground intervention allowed free play on the concrete playgrounds with very few natural, green views, but gave participants access to jump ropes, bats, balls, and Frisbees. The nature-orienteering intervention took place on a field near the school that was surrounded by green areas and trees. The students were given a map and obstacle course that they were to follow and locate certain markers. The results showed that the students in the playground intervention engaged in more moderate-to-vigorous physical activity.

Although this may seem negative about the nature intervention, this could just mean that nature based activities can be suitable for children of all fitness levels. As far as self-esteem, both groups increased, and there was no significant difference between the two groups. This could be due to the fact that the intervention lasted only five days, but the researchers made another speculation that is intriguing. Since children of this generation spend so much less time interacting with nature than previous generations, perhaps this disconnect or nature deficit has become so strong that it is limiting them from even knowing how to go about receiving the benefits that nature has to offer.

The research in this field is expanding at a remarkable rate and is informing educators and those who work with children about the importance of natural contact for children from all walks of life. However, after a thorough review of the literature, it seems that a great deal of the research in this area has focused on investigating the current lack of natural contact and the negative effects associated with it. There were very few research studies found that actually implemented a nature education and exposure intervention and investigated the outcomes.

This study implemented a blend of mindfulness and nature therapy techniques with a group of middle school students who were exhibiting behavioral problems in school. In reviewing the literature, it doesn't appear that any researchers have taken quite this approach; therefore, there is a need for research in this area, especially for students who aren't responding to the traditional discipline that is provided in schools.

Methods

Hypotheses

This study assessed the impact of a group counseling program integrating mindfulness and nature therapy on the mindful awareness, frequency of problem behavior, and teacher perceptions of middle school students identified as at-risk by discipline referrals to the school office. Research questions included:
Were classroom behavior problems of at-risk students impacted by this intervention?
How feasible was a nature based mindfulness program within a public middle school?
Was there be a change in teacher perception of at-risk students following this intervention?

It was hypothesized that classroom behavior problems will decrease during the Nature Mindfulness Fusion program.

Furthermore, it was hypothesized that teacher perception of at-risk students will be more positive following the Nature Mindfulness Fusion program.

Finally, it was hypothesized that the Nature Mindfulness Fusion program will be well-received by students, teachers, parents, and administrators.

Participants

Participants were four eighth-grade students at a middle school in Chesterfield County Public Schools. Participants were identified based on the number of office referrals they had received during the 2015-2016 school year. Students with greater than five office referrals during the current school year were considered for participation. Students with active IEPs, English Language Learner (ELL) status, or office referrals that had resulted in long-term suspension, expulsion, home-bound instruction, or any

alternative placement were automatically excluded. Students were identified through the Success program at their school, which is a program that provides support for students who have been retained. Students were given pseudonyms to protect their identity which will be used in this paper. Pseudonyms are Sarah, Joseph, Arianna, and Alan. The students' Success teacher was also a participant in this study and will be referred to by the pseudonym, Ms. Grant.

Measures

Classroom Behavior and Teacher Perceptions Teacher perception of students were measured using a behavioral checklist called the Conners 3- Teacher Report, Short Form (Appendix A). This was an abbreviated version of the Full form and is made up of 41 items to which the teachers can respond: Never, Occasionally, Often, or Very Often. Based on the teacher's responses of the student's behavior, the Conners yielded scores on the following scales: Inattention, Hyperactivity/Impulsivity, Learning Problems/Executive Functioning, Defiance/Aggression, and Peer Relations. (Gianarris, Golden & Greene, 2011). Their teacher was also given a pre- and post- intervention survey (Appendix C) to fill out including likert, multiple choice, and open-ended items. Referrals to administration were also monitored during the intervention and through the end of the school year.

Feasibility Students were interviewed at the conclusion of the intervention. Interview questions were designed to gauge their feedback to the program as a whole, their impression of the various aspects of mindfulness and integration of nature, what they would have liked to be different, and whether or not they feel the program had a personal impact on them (Appendix B).

Procedures

The students identified by the researcher and Success teacher were given informed consent forms to have signed by parents in order to be part of this intervention group. Students were also asked for their assent to participate. Once the group was formed and consent had been received, the students' teacher was given a Conners 3-Teacher Report to complete regarding each student's behaviors pre-intervention. She also completed a brief survey (Appendix C). The behavioral referrals to the office were monitored throughout the intervention and through the end of the school year. Their teacher also completed a Conner's at the conclusion of the intervention and completed a follow-up survey. Observational data was gathered throughout the intervention during the group sessions.

The intervention took place twice a week for four weeks and followed a modified version of the MindUP Curriculum for grades six through eight. The MindUP curriculum is a research-based curriculum and has been designed to follow the five-point framework of competencies designated by the Collaborative for Academic, Social and Emotional Learning (CASEL). These include self-awareness, self-management, social awareness, relationship skills, and responsible decision making. It can help children and adolescents to improve focus, concentration, and academic performance. In addition, it teaches strategies for reducing stress or anxiety, handling peer-to-peer conflicts, managing emotions and reactions, and developing greater empathy towards others. The sessions were held during the students' Success period, in order to not disrupt their academic schedule. Sessions lasted approximately forty minutes. Each session followed a lesson plan from the MindUP curriculum. Lessons were taught in the following sequence over

four weeks: How Our Brains Work, Mindful Awareness, Focused Awareness: The Core Practice, Mindful Movement, Perspective Taking, Expressing Gratitude, Performing Acts of Kindness, and Taking Mindful Action in the World. Sessions were held in the 'Nature Center' at Falling Creek, which consists of picnic tables and a garden in front of the school. At the end of each session, the group moved outdoors for a nature walk through the nature trails located behind the school. The students were instructed to remain silent and observe nature during the first five minutes of each nature session. The rest of the nature walk was open for discussion.

When the weather was not conducive for the nature walk on two occasions, the session was moved to the next day. When a student was absent, a brief review session was held at the beginning of the next session when they were present.

Analysis

In the analysis of this data, a descriptive style of analysis was primarily used. Each student's progress throughout the intervention was reported in a narrative format, as in a case study. Being that this study was a case analysis, each student's data was compared only to their own data from before the intervention, rather than investigating changes in the group as a whole. Teacher reports on the Conner's Behavior Rating Scale were also used for comparison purposes. In addition, survey and observational results were reported.

Results

Description of Intervention Sequence

The first session began with brief introductions and an icebreaker activity, where each group member would say three things about themselves, two being true and one

made up. The rest of the group had to guess which fact was false. The students were excited about and actively participated in this activity. Joseph was hesitant. His turn was skipped, and he went at the end. The group then set rules of confidentiality and respect for other group members. Students had already been briefed about what the entire intervention would entail when they received the parental consent and assent forms. This session focused on a very general overview of how the brain works and the function of three major parts of the brain: the amygdala, the hippocampus, and the prefrontal cortex. Activities included a discussion of how people acquire different skills and then an analogy was presented using each brain structure as a member of a football team. Joseph and Alan became engaged with this analogy, which led to some off-topic discussion of football. With redirection, the group focused back on the discussion of the brain. The group then filled out a worksheet that helped them to identify how each brain structure can help them in everyday life. When we moved to the nature walk, the students laughed when they were instructed to remain silent for the first five minutes of the walk. They required a few reminders to stay silent, especially Arianna, but were generally compliant with this instruction. The rest of the walk was spent exploring the nature trails behind the school, including walking by the Falling Creek Reservoir.

The second session focused on teaching students the difference between mindful and unmindful thoughts and how this can apply to their lives. Students were read a poem and then asked to try to hold the details in their mind for 30 seconds and then recall the poem. Sarah commented that she thought the poem was weird and that is why it was hard for her to remember. Alan said it felt like when he was trying to study for a test. This activity led into a discussion about how our minds can wander when we try to stay

focused and how mindfulness involves focusing attention on what is happening in the moment. We talked about how letting go of judgments helps to be mindful and gather more information about a situation before forming an opinion. This idea really resonated with the students and we started to discuss how a lot of school conflicts and drama that comes up is a result of students being judgmental of one another. This idea was wrapped back into how we can be judgmental of ourselves and our thoughts. We then had an activity where students labeled various behaviors as mindful or unmindful and students were provided with a toolbox of statements that could serve as reminders to be mindful. A glitter jar was used to display a metaphor for our minds and how thoughts swirling around can cloud our judgement. During the nature walk, students were more quiet during the silent period than they were in the first session but still needed two reminders. After the silent period, Arianna shared that some of her friends were thinking of skipping school that day but that she decided not to because she remembered that we had our group meeting. When asked what about the meeting motivated her to stay, she shared that she likes being able to get out of the building and be outside.

The third session is where the "Core Practice" was introduced, which is the practice of focused awareness. Students were taught how to use their breath and awareness to calm and focus their minds. They were guided through an exercise where they sat still and brought awareness to their breath and body. The exercise was then added to by playing a bell sound twice with a Tibetan song bowl and the students were instructed to focus on listening to the sound for as long as it lasts, and then go back to paying attention to their breath. The students giggled a bit when the bell first rang. Alan said that he felt like it was tickling his ears and Arianna said she felt like the sound was

circling around her. After the first round, they were more collected and did not find it as humorous. A discussion was led to explore their reactions to the core practice. The students agreed that it was hard to focus and they felt their mind wandering but that they did feel somewhat more relaxed than before. They were reassured that feeling was normal and like many other things in life like sports, mindfulness takes practice. The group then discussed what effects this might have on their brain and linked the information back to what was covered in the first two sessions. Students were invited to practice the mindful breathing activity throughout their day when they feel they might need it. They agreed, unenthusiastically. During the silent period of the nature walk, students were instructed to continue practice deep breathing while noticing the sounds in nature, such as birds chirping and leaves blowing in the wind. The discussion after focused on how they might not typically pay attention to the details in nature. Students shared that they do feel like they noticed more than they typically would on a walk through the park and that it seemed like the birds were chirping louder than they normally do.

The fourth session focused on having students become aware of internal physical sensations, both when relaxed and active. This session and every subsequent session began with the Core Practice. Students then took their own pulse using a pulse point on their wrists and wrote their pulse rate down. They then did jumping jacks and retested their pulse. After their heart rate returned to normal, students were led through a mindful breathing exercise and a body scan where they were guided to scan and relax their body from head to toe. Their pulse was then retested. Every student except for Joseph had a lower pulse rate at the last point than they did before the jumping jacks. The group

discussion about this activity led into the connection of how emotions can lead us to the same heightened state that the jumping jacks caused. Students described various physical ways they can tell if they are excited, upset, or angry. The idea of how breathing can help relax and slow the body down was introduced. Students were asked to share situations where they might find this practice helpful to calm them down. Some ideas that were shared were when their parents are nagging them, when they feel like fighting someone at school, when they are nervous about a big test, or when they find out someone has been talking behind their back. During the nature walk, students were instructed to focus on their internal sensations as we walked up the steepest hill on the trail and then asked to practice their breath. They shared that they felt their breaths were moving faster once they got to the top of the hill and it was harder to breathe slowly.

The fifth session focused on the idea of perspective taking. Students were read a story and instructed to take the perspectives of different characters in the story. The story involved four different characters caught up in disagreements at school that was getting them into trouble and affecting their lives in multiple ways. They filled out a worksheet focusing on one characters' words, thoughts, and actions and used their points as evidence to determine the character's perspective. They then were able to rewrite the story from that character's perspective and share how that would change the outcome of the story. Two of the students were upset with the characters that they had been assigned, and this was used an example of how we will often come across people that we might not agree with but that it is still valuable to learn how to take their point of view. The students seemed to really enjoy being able to change the outcome of the story and were more creative than expected. Our discussion included how stepping back from the

situation and considering the thoughts and feelings of others will help them to make more mindful choices. Students were then invited to share a situation where they wish they would have acted differently and how the outcome might have changed. The students showed insight with their responses and a common theme was identified of situations where they acted without thinking and either ended up hurting others, themselves, or both. Arianna and Sarah both shared recent situations where they had gotten in trouble for something they did at school. For the nature walk, students were asked to think about a peer or teacher who had done something to upset them at school and take their perspective. If they felt comfortable, they were instructed to try to let go of the upsetting feelings by imagining them as a leaf blowing away in the wind or a ripple of water flowing off into the distance. Some of the students did not seem receptive to this idea, stating that they don't deserve forgiveness. They were assured that they did not have to do anything that they did not feel comfortable with but reminded that the idea was not about the others deserving forgiveness, but just about seeing it from their perspective and letting go of the negative feelings for their own personal benefit. This idea was difficult for the students because they said they did not want the person that had hurt them to think what they had done was acceptable. Their feelings were validated and the nature walk continued. At this halfway point through the intervention, the termination process began by letting the students know there would only be three more sessions. They did not seem bothered by this fact but said that they would miss getting out of class and walking around.

The sixth session revolved around the idea of expressing gratitude. This session focused on teaching students the meaning of gratitude, the importance of expressing

gratitude, and allowing them to identify people and things in their life for which they are grateful. Students were asked to share positive things that were done lately either by themselves or others and these were written down by the researcher. Students mostly named things done by others, such as their parents buying them something they wanted, a teacher letting them make up assignments or giving extra credit, or friends being there for them during a difficult time. Then on a large sheet of paper the group assigned each thing to different categories: polite gestures, kind acts, kind words, and volunteering/donating. Students then brainstormed different ways to give thanks for these positive things. Some ideas that were shared including, saying thank you, writing a thank you note, buying them something they would like, or doing something nice in return. The activity for this lesson involved making a bracelet out of a string of beads or just a string of beads to put in their pocket or backpack. Students were instructed to mindfully pick out each bead to represent someone or something they are grateful for. They were then directed to look at or even touch the beads throughout the week if they are feeling upset and remember all the things they have to be thankful for. The students said they might forget to but they were asked to just try if they could remember. During the nature walk, students were instructed to think about things that nature provides us that they are grateful for. After the silent period, this led into a discussion about trees and how they provide us with oxygen, paper, and wood for many different purposes. Also discussed was the importance of lakes and rivers for drinking water. Some students commented how they had never really thought about how nature provides us with so many of our basic needs, such as shelter and water.

The seventh session focused on the benefits of being kind to others, both for the students and the people they are being kind to. The ideas of perspective taking, gratitude, and empathy were weaved into this session. First, the group was asked to come up with compliments for themselves as a group, focusing on positive effort or behavior rather than physical or material aspects. They shared things such as how they all got along and haven't had any conflicts, how they listen to each other when they are speaking, and how they have been calm and follow directions. The idea of kindness was discussed in general, and students paired up to come up with a definition of kindness. One group defined kindness as doing something that makes others feel good and the other group defined it as doing something that helps others. The idea was introduced that kindness can also be looked at as resisting the urge to do something that might hurt someone. The group then brainstormed a list of acts of kindness that could be performed at school or at home and each student was given a sheet of paper to write the list down as they shared. The list included: helping out around the house, helping out with younger siblings, holding a door for someone, including someone who might feel left out, giving someone a compliment, and sharing notes with a classmate who was absent. The students were asked to take the list with them and treat it as a "scavenger hunt" to try to complete as many as possible before the next session. They were also instructed that they could add to the list if they thought of new ways to be kind to others. After the silent period of the nature walk, which was increased to ten minutes for the last two sessions, we discussed acts of kindness that could be performed in nature, such as refraining from littering, cleaning up litter (safely without touching broken glass), and recycling to conserve resources.

The final and eighth session focused on taking mindful action on a larger scale. Students first brainstormed ways that they might be able to positively influence their school, neighborhood, or city. Students named volunteering, helping with students who have special needs, or helping at church. They described that it seems overwhelming and it's hard to feel like one person can make a difference. These feelings were recognized and expanded into a larger discussion about how many people putting forth a small effort can make a large and lasting change. As a group, we decided that we would walk the halls and the perimeter of the school and pick up any trash, using gloves and not touching any glass. We discussed how that would help the students, the teachers, the staff, but especially the custodial staff who clean up after others daily. The students commented how it would have felt overwhelming if just one of them was doing all the work, but since we were all doing it together it didn't seem like as huge of a task. During this final nature walk, students were encouraged to draw together all the lessons that we had covered and walk mindfully through the woods, whatever that meant for them. There was no chatter and the students really seemed to be present and taking in the surrounding nature. Our discussion focused on how they can practice any of the things that we had learned at any time in order to help them and how nature can be an ideal place to practice mindfulness and find peace when life may seem hectic. Students were interviewed about their reactions to the intervention at the end of this session. They seemed happy to give feedback and most students provided insightful input.

Interpretation of Scores

The scores below represent the students' T-Scores on the Conners' Teacher Report, short form measure. Their teacher rated their current behaviors as she observed

them in the classroom. The higher the score, the higher the level of undesired behavior. A t-score of 50 represents an average score and any score between 40 and 59 would be considered within the average range, indicating typical levels of concern. Scores between 60 and 69 are considered Elevated and indicate more concerns than are typical. Any score above 70 is considered Very Elevated and indicates many more concerns than are typically reported.

Student	I Pre	I Post	H/I Pre	H/I Post	LP/EF Pre	LP/EF Post	D/A Pre	D/A Post	PR Pre	Pr Post
Sarah	75	90	45	76	69	68	70	89	90	46
Alan	45	42	53	46	44	54	45	45	58	51
Arianna	74	62	78	85	65	66	83	90	90	58
Joseph	45	45	43	43	54	57	45	62	84	64

I= Inattention, H/I= Hyperactivity Impulsivity, LP/EF=Learning Problems/Executive Functioning, D/A= Defiance/Aggression, PR= Peer Relations

Table 1- Pre- and Post- Intervention Data for participants

High scores on the Inattention scale may indicate poor concentration and attention, difficulty keeping their mind on work, careless mistakes, and distractibility. High Scores on the Hyperactivity/Impulsivity scale may indicate high activity level, restlessness, impulsivity, and the tendency to become easily excited. High scores on the Learning Problems/Executive Functioning scale may indicate that the student struggles with reading, spelling, and/or math, may have difficulty remembering concepts, difficulty starting or finishing projects, and poor planning. High scores on the Defiance/Aggression scale indicates that the student may be argumentative, defy requests from adults, have poor control of anger, display aggressive or bullying behaviors, and may be manipulative.

High scores on the Peer Relations scale may indicate difficulty with friendships, poor or limited social skills, and that the students may seem to be unaccepted by groups.

Student Case Studies

Sarah

Sarah is a Hispanic, female student. Her teacher describe her as sweet and caring but identified the areas that she needs to work on as responsible decision making and choosing not to skip school. Ms. Grant rated her as likely to be highly receptive to this intervention.

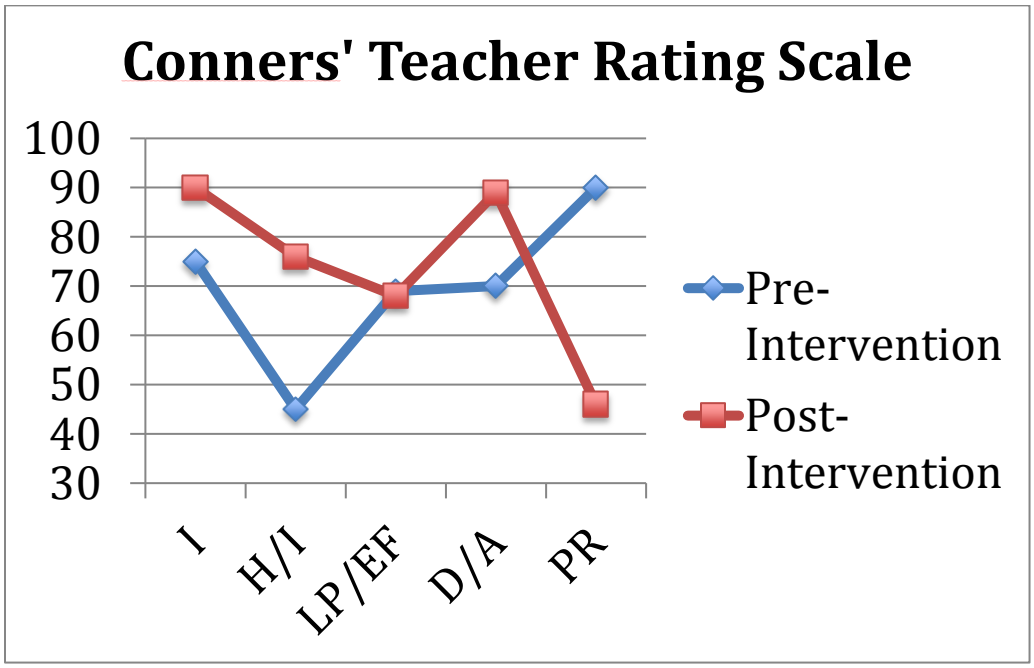
Pre-Intervention Office Referrals	During and Post-Intervention Office Referrals
6	1

Table 2- Pre- and Post- Intervention Referral Data for Sarah

Prior to the start of the intervention, she had six office referrals this school year. Three were for skipping school or leaving school grounds and the other three were for defying and refusing teacher requests. She received detention for most referrals but was suspended once. During the course of the intervention, she received one office referral for skipping class. With encouragement, Sarah participated actively in the intervention. She would sometimes make fun of some of the activities and roll her eyes. Sarah enjoyed the nature walks but had a difficult time with not talking during the silent periods. Over the course of the intervention, she became more engaged, especially during the core practice and seemed to take this seriously. She often commented on how she could feel a difference afterwards.

There was variability in teacher completed Conners' reports. Sarah showed marked signs of improvement in the area of Peer Relations, dropping to the Average

range from Very Elevated. Her score for Learning Problems/Executive Functioning stayed constant, in the Elevated range. This is an area that would not be expected to change. However, she showed an increase in negative behaviors in the areas of Inattention, Hyperactivity/Impulsivity, and Defiance/Aggression. Survey results indicate



I= Inattention, H/I= Hyperactivity Impulsivity, LP/EF=Learning Problems/Executive Functioning, D/A= Defiance/Aggression, PR= Peer Relations

Figure 1- Pre- and Post- Intervention Conners' Data for Sarah

that her teacher noticed a positive change in Sarah in the areas of interpersonal relations and impulse control. Although she increased in some areas on the Conners' scale, the intervention seemed to be effective for her as she had less office referrals. Sarah reported that the program impacted her by reminding her to think before she acts.

Alan

Alan is an Ethiopian, male student. Ms. Grant described him as a hard worker who learns from his mistakes; however, he gets highly stressed about school very easily.

She rated him as likely to be somewhat receptive to the intervention and rated emotional regulation as the highest priority for him.

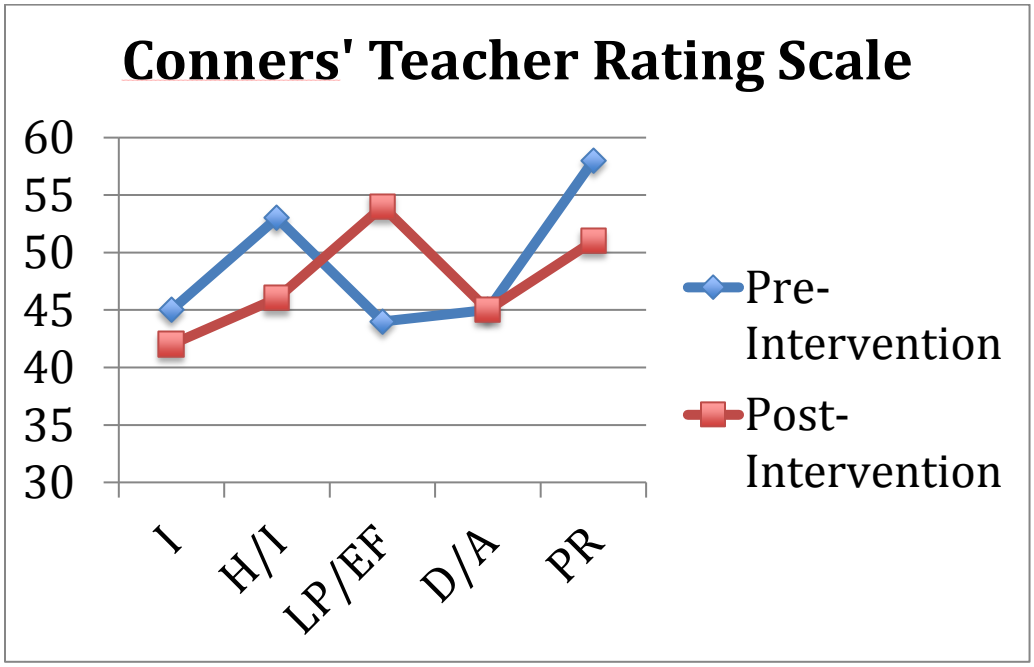
Pre-Intervention Office Referrals	During and Post-Intervention Office Referrals
5	0

Table 3- Pre- and Post- Intervention Referral Data for Alan

Prior to the start of the intervention, he had five office referrals which were all for skipping class. He has since had no office referrals. Alan needed encouragement to participate in the intervention. He often complained about the nature walks, stating that it was too hot out or that his shoes would get dirty, but once the group was out on the trail he did not seem to mind. He was quiet but would open up with encouragement, especially if he saw that other students were participating. He was never defiant, just sometimes reluctant with the mindfulness activities. He became less dismissive about the core practice as the intervention progressed.

Results of the teacher Conners' indicated little to no change in Alan's behaviors over the course of the intervention. It is important to note that all of his behaviors had been rated within the Average range on the pre-intervention measure so there were no areas of significant concern prior to the intervention. Although his scores did decrease for Inattention, Hyperactivity/Impulsivity, and Peer Relations, scores increase for Learning Problems/Executive Functioning, and stayed constant for Defiance/Aggression.

All scores remained within the Average range. Teacher survey results also indicated no change in behavior but that he was participating in class more and seemed motivated to do well on his SOLs. The only impact that Alan reported from the intervention was learning more about nature.



I= Inattention, H/I= Hyperactivity Impulsivity, LP/EF=Learning Problems/Executive Functioning, D/A= Defiance/Aggression, PR= Peer Relations

Figure 2- Pre- and Post- Intervention Conners' Data for Alan

Arianna

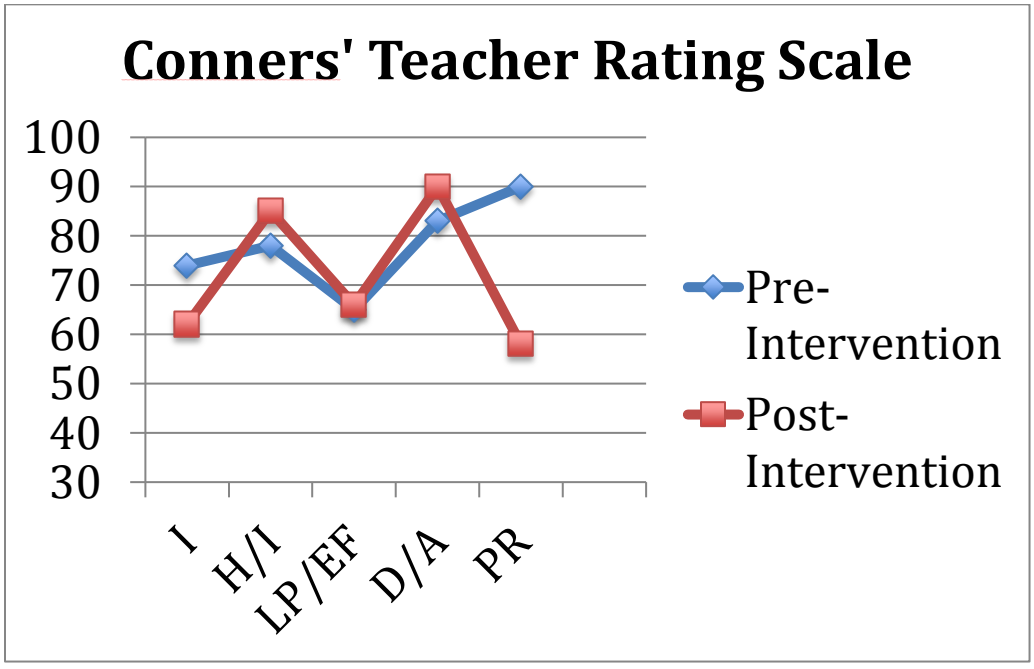
Arianna is an African-American, female student. She is outgoing, social, and described as easily getting mixed up in school drama. She was rated as highly receptive to this program and self-management was the highest priority for her.

Pre-Intervention Office Referrals	During and Post-Intervention Office Referrals
5	1

Table 4- Pre- and Post- Intervention Referral Data for Arianna

Prior to the intervention, she had five office referrals for defiance, classroom disruption, minor physical/verbal altercations, and disrespect. She had been suspended twice and received detention for the rest of the referrals. During the course of the

intervention, she received one referral for fighting with another student and was suspended, resulting in her missing two sessions. A brief review session was held at the beginning of the next session where she was present to cover the material that she had missed. During group sessions, Arianna shared openly and got along with other group members. As the intervention progressed and she became more comfortable, she did start showing subtle signs of defiance, such as continuing to talk during the silent portion of the nature walk, even when redirected to stay silent. She was very talkative and sometimes distracting to other group members, talking about unrelated topics and joking around. She often giggled during the core practice, but this decreased over time.



I= Inattention, H/I= Hyperactivity Impulsivity, LP/EF=Learning Problems/Executive Functioning, D/A= Defiance/Aggression, PR= Peer Relations

Figure 3- Pre- and Post- Intervention Conners' Data for Arianna

Results of the teacher Conners' report indicates that Arianna showed improvements in the area of Inattention and a significant improvement in the area of Peer Relations. Her levels of Hyperactivity/Impulsivity and Defiance/Aggression increased

slightly and her level of Learning Problems/Executive Functioning stayed constant. Teacher survey results indicated somewhere between no change and positive change in behavior over the course of the intervention. She noted positive changes in behavior in the area of self-awareness. The intervention was slightly effective in helping Arianna to become more aware of herself and how her actions could effect others, but was not able to help her with avoiding a confrontation with another student and getting into trouble. However, Arianna reported that she felt the intervention impacted her by helping her to calm down when she is upset.

Joseph

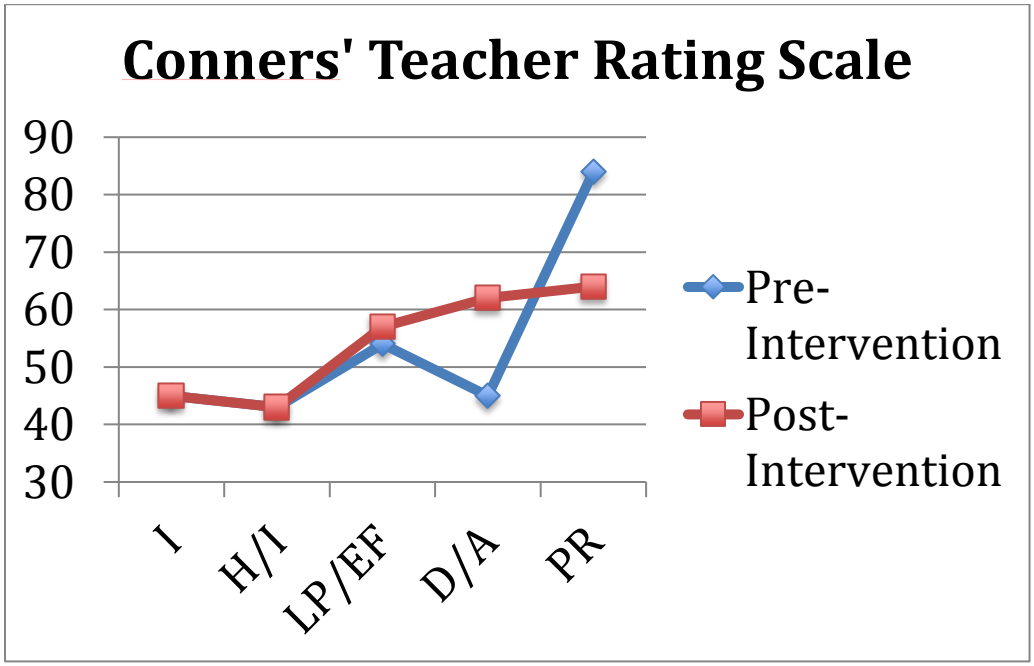
Joseph is a Hispanic, male student. His teacher describes him as generally a hard worker but that he will sometimes show work avoidance if he is not having a good day. However, he is extremely quiet and doesn't share his feelings. He was rated as likely to be not at all receptive to somewhat receptive to the intervention and his highest priority was working on interpersonal relations.

Pre-Intervention Office Referrals	During and Post-Intervention Office Referrals
5	0

Table 5- Pre- and Post- Intervention Referral Data for Joseph

Prior to the intervention, Joseph had five office referrals for skipping class. He has since had no office referrals. Joseph was extremely shy and quiet throughout the intervention. Even as the intervention progressed, he showed only a slight increase in engagement and sharing. When he would share in the group, it was always a surface level observation. On nature walks, he seemed more comfortable when he would be walking with Alan and seemed to talk more with him. Joseph was respectful,

cooperative, and followed all directions for activities. However, during discussions, even with encouragement, he would not engage.



I= Inattention, H/I= Hyperactivity Impulsivity, LP/EF=Learning Problems/Executive Functioning, D/A= Defiance/Aggression, PR= Peer Relations

Figure 4- Pre- and Post- Intervention Conners' Data for Joseph

Results of the teacher Conners' report indicates that Joseph's behavior stayed fairly constant in the areas of Inattention, Hyperactivity/Impulsivity, and Learning Problems/Executive Functioning, all in the Average range both before and after the intervention. Joseph displayed a slight increase in Defiance/Aggression, from Average to High Average. However, his Peer Relations score decreased from Very Elevated to High Average, which was Ms. Grant's main area of concern. Survey results confirmed this with a rating of a positive change, mostly in the area of interpersonal relations. Joseph reported that the program impacted him by teaching him how to breathe deeply to calm down.

Discussion

The current study investigated classroom behaviors and office referrals of four eighth grade students over the course of a mindfulness and nature based intervention. The case analyses revealed that each student was impacted positively in some way by the intervention. Although two of the participants did receive referrals over the course of the intervention, they all were exposed to various aspects of mindfulness and how to implement mindfulness practices in the daily lives, which some reported doing so.

The school principal and Success teacher were both receptive to the program and confident that it would be helpful for these students. Meetings were held individually with the principal and teacher prior to the start of the intervention to gain their approval. The principal seemed very interested in the idea and approved the mindfulness intervention presented and the nature walk aspect. Her only concern was whether the students would be missing academic coursework, which was of course respected and the students were pulled for intervention during their success period. Although some consent forms took longer than others to be returned, all parents ultimately gave consent for their students to be a part of the group without any need for further clarification beyond what was outlined on the consent form.

The students were rated across the spectrum by their teacher, from likely to be not at all receptive to likely to be highly receptive to the intervention. This proved to be the case as the intervention progressed. Some students were more engaged and participatory, while others were reluctant and reserved. The students showed some initial apprehension but also curiosity about what the group would be about during the first session, even though they had been briefed when they received the consent forms. They wanted to

know exactly what they would be doing and when this was explained to them in detail, along with the potential benefits, this eased their confusion. The students seemed most excited about being able to get out of class, get out of the building, and walk around outside.

The mindfulness curriculum used was feasible for this group of students. It was engaging, included hands on activities, and the lessons were relatable to real-life situations. The curriculum included a poster that was used during the first session. Other materials were necessary for some lessons and activities, but these were inexpensive and can be reused with other groups in the future.

The nature walks were also feasible. One barrier to the nature walks was the weather outside. However, there was only rain on two of the scheduled intervention dates, and these were easily rescheduled to the next day. Students did have some difficulty remaining quiet during silent period of the nature walks. However, this aspect was found to be integral to reinforcing the concepts of mindfulness and being present. Another barrier was proper footwear, but as the intervention progressed, students seemed to remember to wear the right kind of shoes on the intervention days.

Another way of gauging feasibility was by interviewing students at the conclusion of the intervention. When asked their general thoughts on the program overall, responses ranged from just being okay to that they enjoyed it. Students unanimously agreed that they enjoyed the nature walk aspect more than the mindfulness lessons. When asked why, most students responded that it felt less like work and it was something different than what they are used to during the school day. When asked what should be changed about the group, they said either a larger group would be more fun,

taking a field trip to an actual park, and that the nature walk should be a longer portion of each session. Each student shared at least one positive impact that the group has had on them, either from the mindfulness lessons, the nature walk, or both. Overall, the group seemed well-received by the students and they showed insight into the benefits that it had for them and can continue to have if they choose to continue practicing the skills that they were taught. At first, they seemed to just want to get out of class, but after a while they did seem more eager to be a part of the group, especially for the nature walk.

Results of the teacher rating scale indicate mixed results. Each student did show improvement in at least one area measured. Although most students also showed an increase in some areas of negative behavior, this could be attributed to stress from SOL testing or the fact that the end of the year is approaching and sometimes student behaviors can increase as summer approaches. All students showed a positive increase in the area of peer relations, with the exception of one student who was already in the average range. Teacher survey results indicated either no change or positive change for each student and at least one area listed was endorsed as a positive change for each student. Although two of the students did receive referrals during the intervention, the other two did not, and since the conclusion of the intervention none of the students have received any office referrals. This intervention seemed to make school more engaging for these students, since they did not skip school as often as they did before the intervention began.

Implications for School Psychologists

. School psychologists or school counselors could implement some or all aspects of this curriculum with virtually any type of counseling group they are leading, depending

on the students' ability levels. Some aspects of the mindfulness curriculum may also be helpful for individual counseling cases. Though the planning of the group was time intensive, the group sessions were easily fitted in to the researcher's schedule as a school psychology intern. Coordinating a setting to meet in and a time for all students where they will not miss academics may prove to be one of the more challenging aspects of a group like this; however, those issues arise in any groups that a school psychologist may facilitate. Meeting with the principal and teacher beforehand to thoroughly explain the premise of the group and the potential benefits was helpful in gaining buy-in on an administrative level, as well as coordinating the group. Practitioners may find that students would benefit from them utilizing the therapeutic and calming aspects of nature in their works with students, both individually and in groups. Taking a walk in nature is something that was appealing to these students and so this may help with buy-in if a student is resistant to counseling.

Future Research and Limitations

In future research, it may be beneficial to complete this sort of intervention in the Fall rather than the Spring. Winter would not work because of the temperature outside. Completing the intervention at the beginning of the year, would allow for the monitoring of classroom behaviors and office referrals for the whole rest of the school year. This could then be compared to the previous school year to note any difference. The intervention may also want to be lengthened. Meeting twice a week was an adequate frequency, but four weeks may not have been long enough to see the desired impact and change in behavior for these students. The intervention could also be used with various groups of students, such as students with ADHD or as a bullying prevention program.

Each group session was allotted forty minutes and after factoring in travel time, this left the sessions with about thirty minutes, which proved to be insufficient. A full hour block would be helpful in able to incorporate all the aspects of the MindUp curriculum, as well as the nature walk. The MindUp curriculum was feasible for the middle school level. At times, some of the activities seemed below their age-level and the students seemed bored so the researcher had to embellish on the spot to engage the students. However, this curriculum was feasible for a small group and the results indicate that it could be beneficial for entire classrooms, as well. Teachers might want to look over lessons and tweak them slightly to meet the needs of their individual classrooms, however

Overall, the nature aspect of the intervention was much more attractive to the students than the mindfulness lessons. As eighth graders, they are not required to take Physical Education classes, so they often do not get to leave the school building from the time they arrive until they time leave. Since these students skip class sometimes, that may also be a preventative measure. However, the students commented on how great it was to get outside, how stuffy the school building is, and how fresh the air felt. Teachers may want to consider having outdoor lessons, on occasion.

Since ecopsychology is a burgeoning field, researchers may run into some difficulty when searching for scholarly articles on this topic. While the term 'ecotherapy' will return results surrounding the therapeutic approach, using the term 'ecopsychology' will yield more research-based articles that may be of interest. Other search terms that may be helpful include combining 'nature' with the terms mental health, health, or well

being. Nature connectedness may be another helpful way of phrasing this concept in research. Richard Louv's books contain many credible sources on this topic, as well.

This study could have been improved through altering the dosing of the intervention by increasing frequency and intensity, such as longer session length and higher number of sessions total. Another limitation was that there was no direct link between the mindfulness and nature walks. The researcher had to come up with ways to tie the two together and make that connection for the students. However, this study did demonstrate that the mindfulness and nature based intervention could be beneficial for students who receive office referrals. Though they might still receive an office referral, it provides them with the tools to resist the types of behaviors that would result in one. Frequent review and reminders of the mindfulness skills may help those students in making the choice to use their strategies rather than react in a way that might get them into trouble.

Appendix A

Items on the Conners 3 – Teacher Short Form

1. Is constantly moving.
2. Has to stuggle to complete hard tasks.
3. Innatentive, easily distracted.
4. Makes mistakes.
5. Bullies, threatens, or scares others.
6. Cannot do things right.
7. Is angry and resentful.
8. Excitable, impulsive.
9. Is fun to be around.
10. Has trouble keeping his/her mind on work or play for long.
11. Has poor social skills.
12. Actively refuses to do what adults tell him/her to do.
13. Is happy, cheerful, and has a positive attitude.
14. Cannot grasp arithmetic.
15. Tries to get even with people.
16. Has trouble getting started on tasks or projects.
17. Acts in sneaky or manipulative ways.
18. Does not understand what he/she reads
19. Tells the truth; does not even tell “little white lies.”
20. Appears to be unaccepted by group.
21. Is hard to motivate (even with highly desirable rewards).
22. Restless or overactive.
23. Is good at planning ahead.
24. Fidgets or squirms in seat.
25. Is patient and content, even when waiting in a long line.
26. Doesn’t pay attention to details; makes careless mistakes.
27. Is one of the last to be picked for teams or games.
28. Spelling is poor.
29. Has trouble keeping friends.
30. Leaves seat when he/she should stay seated.
31. Behaves like an angel.
32. Talks out of turn.
33. Is difficult to please or amuse.
34. Is perfect in every way.
35. Forgets things already learned.
36. Has a short attention span.
37. Does not know how to make friends.
38. I cannot figure out what makes him/her happy.
39. Is sidetracked easily.
40. Do you have any other concerns about this student?
41. What strengths or skills does this student have?

Appendix B

Student Interview Questions

What did you think of this program overall?

What did you like the most?

What did you like the least?

How would you suggest the program be changed?

Did you prefer the indoor mindfulness lessons or the outdoor activities? Why?

In what ways do you think this program has impacted you?

Appendix C

Pre-Intervention Survey for Teachers
How receptive do you think the student will be to a mindfulness program with nature therapy?

1 2 3 4 5 6
Not at all Somewhat Highly receptive

Which skill would you assess as the highest priority for this student?
__Self-awareness
__Interpersonal relations
__Emotional regulation
__Impulse Control
__Perspective-taking/Empathy

How would you describe this student? What are your greatest concerns?

Post-Intervention Survey for Teachers

How would you rate the change in behavior of this student over the course of the intervention?

1 2 3 4 5 6
Negative change No change Positive Change

In what areas have you noticed any positive changes in behavior? (check any that apply)
__Self-awareness
__Interpersonal relations
__Emotional regulation
__Impulse Control
__Perspective-taking/Empathy

Please describe how effective you think this intervention was for this student and in what ways.

Appendix D

Parent/Guardian Informed Consent

Identification of Investigators & Purpose of Study

Your child is being asked to participate in a research study conducted by Nahal Khalatbari, MA from James Madison University. The purpose of this study is to investigate the impact and feasibility of a mindfulness and nature based intervention with students who have received a high amount of office referrals this school year. This study will contribute to the researcher's completion of her Ed.S. Thesis.

Research Procedures

Should you decide to allow your child to participate in this research study, you will be asked to sign this consent form once all your questions have been answered to your satisfaction. This study consists of an intervention that will be administered to individual participants in their school in a group setting. Topics covered during the group sessions will include: How Our Brains Work, Mindful Awareness, Focused Awareness: The Core Practice, Mindful Movement, Perspective Taking, Expressing Gratitude, Performing Acts of Kindness, and Taking Mindful Action in the World. At the end of each session, the group will go outside of the school building for a nature walk (weather permitting). Your child will be assigned homework each weekend of spending one hour outdoors, if possible. Your child will be supervised at all times. At the conclusion, your child will be asked to provide answers to a series of questions related to how this intervention has impacted them. Your child's teacher will also fill out behavior rating scales and surveys at the beginning and conclusion of the study to determine if there was an impact. Observational data will be gathered during the group sessions.

Time Required

Participation in this study will require 2 hours of your child's time per week for four weeks. Over the course of the intervention, the study will require 8 hours of your child's time. This will be scheduled in a way that will be least disruptive to his/her academic schedule.

Risks

The investigator does not perceive more than minimal risks from your child's involvement in this study (that is, no risks beyond the risks associated with everyday life). The group will be held at a time where your child will not be missing academic course work. During the first group session, all students will agree and sign a pledge that anything shared within the group is not to be repeated to others who are not part of the group or talked about with group members outside of group time. The importance of this will be emphasized. However, there is still a risk that information shared during the group could be repeated if a group member does not cooperate with the rules.

Benefits

Potential benefits from participation in this study include a reduction in negative stress reactions, increased self-awareness, and knowledge about the brain and nature. Additionally, this intervention can help children and adolescents to improve focus, concentration, and academic performance. In addition, it teaches strategies for reducing stress or anxiety, handling peer-to-peer conflicts, managing emotions and reactions, and developing greater empathy towards others.

Confidentiality

The results of this research may be presented at a conference in the future. Your child will be identified in the research records by a code name. The researcher retains the right to use and publish non-identifiable data. When the results of this research are published or discussed in conferences, no information will be included that would reveal your child's identity. All data will be stored in a secure location accessible only to the researcher. Upon completion of the study, all information that matches up individual respondents with their answers will be destroyed.

There is one exception to confidentiality we need to make you aware of. In certain research studies, it is our ethical responsibility to report situations of child abuse, child neglect, or any life-threatening situation to appropriate authorities. However, we are not seeking this type of information in our study nor will your child be asked questions about these issues.

Participation & Withdrawal

Your child's participation is entirely voluntary. He/she is free to choose not to participate. Should you and your child choose to participate, he/she can withdraw at any time without consequences of any kind.

Questions about the Study

If you have questions or concerns during the time of your child's participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

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Questions about Your Rights as a Research Subject

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cocklede@jmu.edu

Giving of Consent

I have read this consent form and I understand what is being requested of my child as a participant in this study. I freely consent for my child to participate. I have been given satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

_____
Name of Child (Printed)

_____
Name of Parent/Guardian (Printed)

_____ _____
Name of Parent/Guardian (Signed) Date

_____ _____
Name of Researcher (Signed) Date

Appendix E

YOUTH ASSENT FORM

IRB # 16-0385

I am asking you to be in this study because you are in middle school and you have been sent to the office a lot this year. I would like to know if a group that teaches how to pay attention, breathe, and think will help you. We will go outside at the end of each group. This research will take you two hours a week for four weeks.

There will be two hour-long groups every week for four weeks. The start of the group will be in a classroom where we learn things like taking deep breaths, things about the brain, and being nice to others. At the end of each group, we will go outside for a walk outside your school, if it is not cold or raining. You will have 'homework' of going outside for one hour over the weekend. At the end of the four weeks, you will fill out a short survey about what you think of the group, like what you liked most, what you did not like, and how the program could be better. The group will be at a time that will not get in the way of your schoolwork.

There are no likely dangers from being in this group. I want to do this to see how it could help you and other students. This kind of group has been shown to help students pay attention, focus more, and do better in school. It also teaches ways to lower stress, deal with other students, deal with your feelings, and think of the feelings of others.

Things you say during the group sessions, things you do during group, and answers to the survey will be used in the final project. Your answers will not be put in a way that tells others who you are. In the final results, I will use a code name, not your real name. In the first group, we will all agree and sign a pledge that anything said in the group will not be talked about outside of the group. There is still a chance that something you say could be talked about if a group member does not listen to this rule. You can stop being a part of the study at any time.

We have asked your parents for their okay for you to do this study. Please talk this over with them before you choose if you want to do it.

If you have any questions at any time, please ask the group leader.

If you check "yes," it means that you want to be in the group and have read everything that is on this page. You and your parents will be given a copy of this form to keep.

_____ Yes, I would like to participate in the study.

_____ _____

Signature of Subject Date

_____ _____

Signature of Investigator Date

(Investigator's contact info)
Nahal Khalatbari
(804)-743-3620
khalatnl@dukes.jmu.edu

Teacher Consent Form

Consent to Participate in Research

Identification of Investigators & Purpose of Study

You are being asked to participate in a research study conducted by Nahal Khalatbari from James Madison University. The purpose of this study is to investigate the feasibility and impacts of a mindfulness and nature based intervention on at-risk students. This study will contribute to the researcher's completion of her Ed.S. Thesis.

Research Procedures

Should you decide to participate in this research study, you will be asked to sign this consent form once all your questions have been answered to your satisfaction. One of your students has been chosen to participate in a mindfulness intervention group. Your involvement in this study will include complete behavior rating scales and a brief survey at the start and conclusion of the intervention.

Time Required

Participation in this study will require approximately 1-2 hours of your time.

Risks

The investigator does not perceive more than minimal risks from your involvement in this study (that is, no risks beyond the risks associated with everyday life).

Benefits

Potential benefits from participation in this study include contributing to this under researched area that could be promising for students.

Confidentiality

The results of this research may be presented at a conference in the future. The results of this project will be coded in such a way that the respondent's identity will not be attached to the final form of this study. The researcher retains the right to use and publish non-identifiable data. While individual responses are confidential, aggregate data will be presented representing averages or generalizations about the responses as a whole. All data will be stored in a secure location accessible only to the researcher. Upon

completion of the study, all information that matches up individual respondents with their answers will be destroyed.

Participation & Withdrawal

Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind.

Questions about the Study

If you have questions or concerns during the time of your participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

Nahal Khalatbari
Department of Graduate Psychology
James Madison University
khalatnl@dukes.jmu.edu

Dr. Tammy Gilligan
Department of Graduate Psychology
James Madison University
Telephone: (540) 568-6564
gilligtd@jmu.edu

Questions about Your Rights as a Research Subject

Dr. David Cockley
Chair, Institutional Review Board
James Madison University
(540) 568-2834
cocklede@jmu.edu

Giving of Consent

I have read this consent form and I understand what is being requested of me as a participant in this study. I freely consent to participate. I have been given satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

_____
Name of Participant (Printed)

_____ _____
Name of Participant (Signed) Date

_____ _____
Name of Researcher (Signed) Date

Appendix F

Teacher Consent Form

Consent to Participate in Research

Identification of Investigators & Purpose of Study

You are being asked to participate in a research study conducted by Nahal Khalatbari from James Madison University. The purpose of this study is to investigate the feasibility and impacts of a mindfulness and nature based intervention on at-risk students. This study will contribute to the researcher's completion of her Educational Specialist Thesis.

Research Procedures

Should you decide to participate in this research study, you will be asked to sign this consent form once all your questions have been answered to your satisfaction. One of your students has been chosen to participate in a mindfulness and nature-based intervention group. Your involvement in this study will include completing behavior rating scales and a brief survey at the start and conclusion of the intervention.

Time Required

Participation in this study will require approximately 1-2 hours of your time.

Risks

The investigator does not perceive more than minimal risks from your involvement in this study (that is, no risks beyond the risks associated with everyday life).

Benefits

Potential benefits from participation in this study include contributing to this under researched area that could be promising for students.

Confidentiality

The results of this research may be presented at a conference in the future. The results of this project will be coded in such a way that the respondent's identity will not be attached to the final form of this study. The researcher retains the right to use and publish non-identifiable data. While individual responses are confidential, aggregate data will be presented representing averages or generalizations about the responses as a whole. All data will be stored in a secure location accessible only to the researcher. Upon completion of the study, all information that matches up individual respondents with their answers will be destroyed.

Participation & Withdrawal

Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind.

Questions about the Study

If you have questions or concerns during the time of your participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

Nahal Khalatbari
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Dr. Tammy Gilligan
Department of Graduate Psychology
James Madison University
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Questions about Your Rights as a Research Subject

Dr. David Cockley
Chair, Institutional Review Board
James Madison University
(540) 568-2834
cocklede@jmu.edu

Giving of Consent

I have read this consent form and I understand what is being requested of me as a participant in this study. I freely consent to participate. I have been given satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

_____
Name of Participant (Printed)

_____ _____
Name of Participant (Signed) Date

_____ _____
Name of Researcher (Signed) Date

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