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The Effects of Mindfulness on Students Academic Performance and Behaviors

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Abstract

This paper examines the effectiveness of mindfulness on students' academic performance and their behaviors, both emotionally and physically. This includes students with and without disabilities. Students are facing increased personal and school challenges. This increases students stress levels and their social and emotional needs. There are many mindfulness interventions that can help students learn coping strategies to deal with their stress and their social and emotional needs. These strategies include being more aware of their bodies, thinking about how they are going to respond to a situation instead of responding automatically, and having an open mind when observing different situations. Mindfulness interventions also help students be more successful in school by improving their attention, academic engagement, behavior, and overall well-being. With these findings it would be beneficial for teachers to incorporate a mindfulness intervention into their lessons. It would help with the student's behavior and academic engagement, thus allowing the teachers to teach more efficiently. Mindfulness interventions have been shown to benefit both students and teachers.

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CHAPTER I: INTRODUCTION

Mindfulness Background

Mindfulness is a practice that is based on eastern and western meditation techniques. These techniques are supposed to help people be more aware of the present moment, to not respond automatically, and to be unbiased when observing a situation (Malboeuf-Hurtubise, Lacourse, Taylor, Joussemet, & Amor, 2016; Oord, Bögels, & Peijnenburg, 2011; Weijer-Bergsma, Formsma, Bruin, & Bögels, 2011). Breathing and being aware of your body are big parts of mindfulness. Mindfulness has become more popular over the last 30 years.

Mindfulness has been shown to help people with clinical disorders such as anxiety and depression to change their behavior (Wilson & Dixon, 2010). Mindfulness interventions help people to be aware of what happens when they are under stress, to disengage from unpleasant emotions, and to regulate one's emotions (Malboeuf-Hurtubise et al., 2016). Mindfulness interventions also encourage self-management skills. This can help people to apply the skills that they learned through mindfulness in situations where they are facing a problem (Minkos, Chafouleas, Bray & LaSalle, 2017). Mindfulness interventions have been shown to have positive effects on adults, which in turn lead to more recent research focusing on school aged children and how mindfulness impacts them.

Challenges Students Face

Schools now a days are not only focusing on improving students' academic knowledge but are needing to focus on improving students' social and emotional well-

being as well. Students today are facing more challenges, both personal and at school, than they ever have before. Outside factors that can increase students' stress include single parent households, divorce, parental anxiety, violence in the community, death in the family, moving homes, homelessness, malnutrition, and low socioeconomic status (Malow & Austin, 2016). When students come from low income families, they have a higher chance of having mental health problems because they have less access to services (Steiner, Sidhu, Pop, Frenette, & Perrin, 2012). This leads to students having more emotional and behavioral disorders and increased stress. When students are not able to regulate their emotions, this will affect how they respond to situations, decision making, and their attention. This then follows the students to school where they have a hard time focusing in class, receive poor grades, have inappropriate behaviors, and have poor relationships. This all has a negative impact on students' overall academic performance.

School has become more stressful for students due to more high stakes testing and the push for students to meet standards (Malow et al., 2016). This affects students negatively because it is instilled in them that they need to do well on these tests and meet these standards, otherwise there are consequences if they don't. Examples of consequences include having to do more practice with the content, doing an intervention with the teacher or a staff member, or being placed into certain classes to help improve their skills that they are lagging. It can also cause or increase anxiety in students because they are worried about performing well on a test.

All of these challenges that students face at home and at school can increase their stress levels and impact their well-being and academic performance. There are other treatments that may help students, such as behavioral treatment or medications, but they have limitations (Weijer-Bergsma, Formsma, Bruin, & Bögels, 2011). Mindfulness interventions have been shown to help students learn coping strategies and to improve their overall well-being.

Mindfulness Interventions

With students having more challenges to face at home and at school, teachers are expected to help these students learn the content and help them with their social and emotional needs. Teachers are not given enough resources to help all students with their social and emotional needs. This then impacts the classroom in a negative way. Teachers are having to deal with students' disruptive behaviors and lack of engagement. This takes away teaching time and other students may have a harder time focusing as well. Mindfulness interventions have been researched and results have shown positive effects on students which then can help classes run more smoothly and with fewer distractions.

There are many mindfulness programs that can be used for interventions. Some of these programs are yoga, Mindfulness-Based Stress Reduction (MBSR), MindUp, Mindful Parenting, Learning to Breathe Program, Mindfulness in Schools Project, Soles of Feet for Students (SOF), Mindfulness Meditation, Social and Emotional Learning (SEL) Program, The Mindfulness-based Cognitive Therapy for children (MBCT-C), and The

Mindfulness-based Stress Reduction course for children (MBSR-C). These programs all have their pros and cons, and some are more beneficial for certain groups of students.

Research Question

Examining literature related to how mindfulness affects students' academic performance and their behaviors, both emotionally and physically, will provide guidance on what mindfulness interventions are most beneficial for students with and without disabilities. This literature will help support teachers in learning about different mindfulness interventions and which ones work best for various students.

CHAPTER II: LITERATURE REVIEW

Literature Search Procedures

Chapter Two reviews the published literature on the effectiveness of mindfulness in children and adolescents. It will examine the benefits of mindfulness on students' academic performance and their behaviors, both emotionally and physically. The literature was located for this thesis through searches of ERIC, Academic Search Premier, PsycINFO, SAGE journals, Science Direct, ProQuest, and SpringerLink with publication dates of 2008-2018. The keywords used to narrow my search were: "mindfulness", "mindfulness children", "mindfulness adolescents", "mindfulness academic", "mindfulness special education", and "mindfulness student behavior."

Students with Disabilities

Children face many challenges during their school years, and children with disabilities face even more problems. Some of these challenges are increased risk of stress, social-emotional and behavior problems, lower academic success, low attention span, and low self-esteem. Children can be diagnosed with a variety of disabilities, but the four main disability categories used in mindfulness studies were Other Health Disabilities (OHD) - Attention Deficit Hyperactivity Disorder (ADHD), Emotional and Behavioral Disorder (EBD), Specific Learning Disabilities (SLD), and Autism Spectrum Disorder (ASD). Research has been done to show the effectiveness of mindfulness on students' academic performance and behaviors who fall in one of these four disability categories.

OHD – ADHD. Students diagnosed with ADHD tend to have a hard time focusing, sitting still, having impulsive behaviors, and having executive functioning problems. Oord, Bogels, and Peijnenburg (2012) decided to do a study with both children with ADHD and their parents to determine the effectiveness of mindfulness training. The parents were asked to complete five different measuring scales on their children and themselves. The first was Disruptive Behavior Disorder Rating Scale, and this was used to measure inattention, hyperactivity, and oppositional defiant disorder. The second was Parenting Stress Index, and this was used to measure the parent's stress. The third was The Parent Scale, which was used to measure the parent's discipline styles, over reactivity, and laxness. The fourth was the Mindfulness Attention and Awareness Scale that measured parents' mindful attention and awareness. The fifth was The ADHD Rating Scale, and this was used to measure parents' own ADHD symptoms, inattentive behavior, and hyperactive/impulsive behavior. Using these five measuring scales, the researchers were able to determine both the children and parents' ADHD symptoms, parenting stress, parenting discipline styles, and mindfulness awareness of the parents. These measuring scales were given before the treatment, right after the treatment, and at the 8-week follow-up (Oord et al., 2011, p. 142).

For treatments, Mindful Parenting and Mindful Child Training were used. Both of these trainings follow an extensive manual. Mindful Parenting helps parents learn how to be present in a non-judgmental way, take care of themselves, accept that their child has difficulties, and answer to their child's challenging behavior rather than react (Oord et al., 2011, p. 142). Mindful Parenting also helps parents deal with parenting stress,

how to practice mindfulness with their child, and how to encourage them to participate in the meditation. Mindful Child Training helped children learn how to improve their focus and attention and apply mindfulness when faced with stressful situations.

Based on the data of how mindfulness affects children with ADHD and their parents, mindfulness training showed a significant reduction of inattention and hyperactivity/impulsivity of children with ADHD based on the results of their parents' ratings on the tests (Oord et al., 2011). Parents had a significant reduction of inattention and hyperactivity/impulsivity symptoms and showed more mindful awareness. Parent stress levels and overactivity discipline showed a considerable reduction as well. Overall, this study's data showed that mindfulness was effective for children with ADHD and their parents.

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common disorders among children. This can impact children both academically and socially. Medication and behavioral treatments are effective treatments for ADHD but have many limitations. Weijer-Bergsma, Formsma, Bruin, and Bögels (2011) found that there is a need to investigate other effective treatments for adolescents with ADHD. That is why they did this study on the effectiveness of mindfulness training for adolescents with ADHD and their parents.

Ten adolescents participated in this study, five boys and five girls. All of these adolescents had the DSM-IV classification of ADHD and were between the ages of 11 to 15 years old (Weijer-Bergsma et al., 2011). The adolescent's parents and school teachers were involved during this study as well. One week before the treatment began, the

adolescents, parents, and teachers were given a pretest. Then the 8-week treatment started, and there would be one session a week for one and a half hours. After the 8-week treatment, there was a post-test given. After the post-test, there were two follow-up tests, one 8-weeks after and one 16-weeks after. The 8-week training for adolescents was based on a program designed for children with ADHD. The adolescents learned to increase their attention and focus, be aware of themselves, and be able to self-control by using mindfulness exercises. The parents were given Mindful Parenting Training.

To measure the effectiveness of mindfulness training in adolescents with ADHD, several measures were used, focusing on behavioral problems and attentional functioning. The measures were Behavioral Symptoms: Youth Self Report (YSR), Child Behavior Checklist (CBCL), and Teacher Report Form (TRF); Executive Functioning: Behavior Rating Inventory of Executive Function (BRIEF); Mindfulness Awareness: Mindful Attention and Awareness Scale (MAAS); Parenting Stress: Parenting Stress Index (PSI); Parenting Style: Parenting Scale (PS); Fatigue: Flinders Fatigue Scale (FFS); Happiness: Subjective Happiness Scale (SHS); Computerized Test of Attention: Three computerized tasks – 1) Baseline Speed 2) Sustained Attention Dots 3) Sustained Attention Auditory (Weijer-Bergsma et al., 2011). After the pretest, post-test, and two follow-up post-tests', the data was collected to determine the effectiveness. The results showed that right after the treatment, the adolescents reported that their attention improved, and externalizing and internalizing problems were reduced. Their executive functioning improved as well. During the 8-week follow-up, adolescents were still maintaining the reduction of externalizing and internalizing problems, and

improvements in attention and executive functioning. However, during the 16-week follow-up, the adolescents did not maintain the reduction of problem behaviors, and the treatment for mindfulness seemed to diminish. Throughout the study/treatment, both the parents and adolescents reported their mindful awareness did not change. An interesting fact was that all of the informants besides the mothers reported improvement in adolescent functioning. Overall, the effectiveness of mindfulness training seemed to last several weeks after treatment for adolescents, but after a couple of months, it seemed to taper off.

Attention Deficit Hyperactivity Disorder (ADHD) is a prevalent disorder for children, and often it will continue into adolescence and even into adulthood. ADHD can affect an individual's behavior, executive functioning, and reduce the size of the prefrontal cortex. These can also affect academic success. Common ways to treat ADHD are medication and cognitive-behavioral therapies, and these both have limitations. Abdolahzadeh, Mashhadi & Tabibi (2017) considered two main features of ADHD as poor performance and weakness in maintaining attention and believed that mindfulness could help with treatment. There has been other research done in Iran that showed positive effects of mindfulness on maintaining attention. Abdolahzadeh et al. (2017) investigated how mindfulness-based therapy improves adolescent ADHD symptoms and what characteristics of mindfulness these adolescents have.

Abdolahzadeh et al. (2017) selected four high schools in Gonabad, Iran, and gave the SNAP-IV rating scale to parents of 200 students. After parents completed the rating scale, Abdolahzadeh et al. (2017) pulled the students' names who had certain

hyperactivity and attention deficits and then used the Diagnostic and Statistical Manual (DSM-IV) to diagnose forty students with ADHD. These students were chosen to be subjects, but other criteria had to be met: the students had to be between the ages of twelve and eighteen years old, had to have ADHD, had to be female, and had to be going to a public school (Abdolahzadeh et al., 2017). There were fifteen students in the intervention group and fifteen students in the control group. Students were randomly placed in one of these two groups. By the end of the study, the number of participants in both the intervention and control group was thirteen students. The participants' ages ranged from fifteen to eighteen years old and were all female.

The intervention group had eight treatment sessions that were each ninety minutes long, and the control group had no treatment sessions. During the sessions, students got to learn more about ADHD disorder and the effectiveness that mindfulness has on the symptoms of ADHD. Also, in each of the sessions, practical exercises were done and along with home exercises. Each student was given a pre- and post-test, and the parents were given the SNAP-IV rating scale again after the study (Abdolahzadeh et al., 2017). The SNAP-IV grading scale is a questionnaire for parents and teachers, but in this study, only parents filled them out, and it has questions about attention deficit, impulsivity, and hyperactivity ADHD. The one test given to the students was the Mindfulness Attention Awareness Scale, which assesses students' attention and awareness for experiences in everyday life and current events (Abdolahzadeh et al., 2017).

The eight-session mindfulness program used for the intervention group was based on the mindfulness-based stress reduction (MBSR) by Kabat Zinn. The first session focused on what the therapy was going to be like and the definition of mindfulness. The second session focused on how mindfulness practice can be used in everyday life. The third session focused on mindfulness eating and the students sharing their experiences with this. The fourth session focused on breathing exercises and meditation. The fifth session focused on physical verification exercise, and the students shared their feelings and thoughts about the exercises. The sixth session focused on both breathing techniques and physical verification. The seventh session focused on starting to practice mindfulness of the student's thoughts. The eighth session focused on reviewing that last session and having discussions about their results.

Abdolahzadeh et al. (2017) study results showed there were significant changes in students' mindfulness pre- and post-test for the intervention group, and there were no significant changes for the control group. The Mindfulness Attention Awareness Scale showed that students in the intervention group's post-tests were lower, which means that their mindfulness has increased. There were positive changes in the intervention students' ADHD symptoms such as attention deficit, impulsivity, and hyperactivity. The results also showed that the mindfulness therapy could help strengthen students' deficiencies that go along with a diagnosis of ADHD (Abdolahzadeh et al., 2017). Overall, these results are consistent with similar research that has been done and shows that mindfulness-based therapy is beneficial for female students with ADHD.

Children with Attentional Deficit/ Hyperactivity Disorder (ADHD) are at a greater risk of having difficulties with reading development due to having difficulties with executive functioning. When students struggle with reading development, they struggle with comprehension and reading fluency. The purpose of Idler, Mercer, Starosta & Bartfai's (2017) study was to explore how a brief mindfulness breathing exercise can affect students' reading fluency interventions who have attentional difficulties and if it can help improve attention and promote less stress as well. The breathing exercise was brief because students with attentional difficulties have trouble focusing and staying on-task.

Teachers from a private elementary school in Vancouver, British Columbia, identified students who had attentional and reading difficulties. Four students from grades third through fifth participated in this study (Idler et al., 2017). They had signed parental consent, and the students consented to participate in the study as well. One student was in third grade, two in fourth grade, and one in fifth grade. Three students' families spoke English at home, and one student's families spoke Filipino.

After each student had consent, teachers completed a behavior rating scale, the Disruptive Behavior Disorder (DBD) rating scale, and this helped Idler et al. (2017) find students that had inattention symptoms and had attentional difficulties. Students completed The Verbal Knowledge and Matrices subtests from the Kaufman Brief Intelligence Test, Second Edition, to determine each one's cognitive functioning. Students also completed a mindfulness questionnaire at the beginning of the study to see if they had participated in any meditation or yoga trainings before. Then students

completed Oral Reading Fluency probes from the Dynamic Indicators of Basic Early Literacy Skills, 7th edition to determine students' reading fluency and see which level is their reading rate. Once the reading level was determined, the intervention began.

The intervention was given twice per week for six-weeks, a total of twelve sessions (Idler et al., 2017). Idler administered each session. For the reading fluency condition, the session lasted for about twelve minutes, and for reading fluency and mindful breathing condition, the session lasted for about fifteen minutes. Students during the reading fluency condition were working on improving their reading fluency skills and were asked about their stress levels and their attention span at the beginning of each session. Students during the reading fluency and mindful breathing condition completed a brief breathing exercise, then the rating about their stress levels and their attention span, followed by working on improving their reading fluency. The brief mindful breathing exercise was from the MindUP Curriculum (Idler et al., 2017, p. 327). After each session was completed, Idler completed a checklist to make sure he completed each of the intervention steps (Idler et al., 2017).

There were no consistent increases in students' reading fluency between either group conditions. Only one student showed higher ratings of attention and lower ratings of stress when they completed the brief mindful breathing exercise (Idler et al., 2017, p. 329). Even though there were no increases in students' reading fluency, the results showed that one student who had attentional difficulties had less stress and paid more attention after they participated in a brief mindful breathing exercise.

EBD. There is a great interest in the mindfulness curriculum and how it affects students with Emotional/Behavioral Disorders. There has been an increase in emotional dysregulation due to schools becoming more stressful for students. Schools are focused on standards-based grading and standardized tests to move students toward higher levels of achievement. These raise students' anxieties, and mindfulness activities could help elevate some of the anxieties students are facing. Mindfulness activities can help improve students' self-efficacy, resilience, and social skills.

To investigate how mindfulness affects students with Emotional/Behavioral Disorders, Malow and Austin (2016) conducted a study during a summer school program in a self-contained special education school with individuals with E/BD. There were fifteen adolescents from the ages of 15 to 17 years old. These students completed a pre- and post-test assessment and participated in mindfulness activities Monday thru Friday for ten to fifteen minutes at the beginning of the school day. The students' pre-and post-test assessments were from The Resiliency Scales for Children and Adolescents and included three scales. One scale was the MAS, which measured optimism, self-efficacy, and adaptability. The second scale was REL, which measured students' sense of trust, perceived access to support, comfort with others, and tolerances of differences. The last scale was the REA, which measured sensitivity, recovery, and impairment. The students were the ones to rate themselves (Malow & Austin, 2016).

The classroom teacher followed the six-session program from Learning to breathe: A Mindfulness Curriculum for Adolescents to Cultivate Emotion Regulation, Attention, and Performance (Broderick, 2013). During the mindfulness activities, the

session began with a centering exercise. A centering exercise is where the students found a comfortable place to sit and to focus on his or her breathing. The mindfulness activities were the teacher facilitating how the student should sit, how the student should breathe, what movements the students should do, and what to focus on (Malow et al., 2016). After each of the sessions, the students would give feedback on their levels of attending, stress, and focus.

All fifteen students participated in the mindfulness activities during the six-week program and seemed to be actively engaged. The results from the pretest to the post-test showed that the mindfulness curriculum had positive impacts on students with Emotional/Behavioral Disorders (E/BD). Students' optimism, self-efficacy, and adaptability significantly increased for 12 of the students. Students' sense of trust, comfort with others, access to support, and acceptance significantly increased for 9 of the students. Students' resiliency also increased for 11 of the students (Malow et al., 2016). Overall, there were a lot of positive outcomes for how mindfulness affected students with Emotional/Behavioral Disorders, and students even wanted to continue practicing mindfulness during the regular school year.

Students with Emotional and Behavioral Disorders (EBD) have more problem behaviors (aggression, impulsivity, disruptiveness, fighting) than appropriate behaviors (time-on-task, social interactions) in the classrooms, and traditional approaches seem less effective. There have been studies done with adults and some children on the effectiveness of yoga. Yoga has been shown to help adults and children without

disabilities overcome stress and have more appropriate behaviors. Yoga could also support students by increasing their coping skills and improve their overall well-being.

Steiner, Sidhu, Pop, Frenette, and Perrin (2012) wanted to determine the effectiveness of yoga on students at an urban elementary school with EBD. There were 41 children in fourth and fifth grade, ages 8-11 years old who enrolled. The special education director and teachers identified these students as having an emotional-behavioral disorder, either internalizing or externalizing symptoms. Students who were receiving counseling or taking medications could still participate in the study. Students were excluded if they were not able to comprehend English adequately. The yoga sessions took place in the school setting since students spend a lot of time there.

Students were placed into two one-hour yoga sessions per week for 3 ½ months and followed the Yoga Ed Protocol (Steiner et al., 2012). All of the sessions were done before lunch, and groups were chosen based on the students' class schedule so that they did not miss important content. A certified yoga trainer who had training with teaching yoga for children taught the sessions. Each yoga session had four steps. Step one started with relaxation training, focusing on breathing techniques. Step two focused on yoga postures and exercises, which takes up about half of the session. Step three focused on a social component where students worked with partners or in a group. Step four focused on meditation and imagery techniques where students worked on being able to visualize a calm and safe place to help relax them (Steiner et al., 2012).

Teachers, parents, and students were given pre- and post-intervention assessments. The yoga instructors completed the Session Attendance, Engagement, and

Behavior Checklist after each session. Out of 41 students, 37 students completed the study. The average attendance of students was around 90%, and the students were motivated to learn new mindfulness skills. Even though the students had emotional-behavioral disorders, there was no need for outside disciplinary action.

Overall, teachers, parents, and students were satisfied with participating in the Yoga Project. Teachers were most concerned with the scheduling of the sessions and students falling behind in classwork. Teachers reported that the students seem to enjoy the yoga sessions and that yoga helped the students to feel calm. Parents reported their children had increased relaxation, calm, happiness, and/or energy. Some parents (13%) reported that their child's attitude improved, and their child had more positive behaviors. Students reported that they felt calmer, more relaxed, and had increased energy and/or happiness. The Behavior Assessment Scale for Children, Second Edition Teacher Rating Scale-Child (BASC-2) data showed improvement in Internalizing Problems Composite, Adaptive Skills Composite, and Behavioral Symptoms Index. The Swanson, Kotkin, Agler, M-Flynn, and Pelham Rating Scale (SKAMP) showed improvement in the students' focus and reduced behaviors. This study showed the effectiveness of yoga intervention for students with emotional and behavioral disorders (Steiner et al., 2012).

Students who are academically engaged learn more and are likely to do better in school. When students are disengaged, they can have disruptive classroom behavior, and this is a problem for them and their peers in the classroom. When students are displaying disruptive behavior, they are not going to do well academically and are more

likely to have delinquent behavior later on in adolescence. Students with disabilities are more inclined to be academically disengaged, and since being academically engaged is so important, it is imperative to find an intervention that helps students to be more engaged and have positive classroom behavior. Felver et al. (2017) study was to replicate the 2014 study that they did to see if the mindfulness-based intervention, Soles of the Feet for Students (SOF), increase academic engagement and to see if it is socially valid with students with disabilities. Soles of the Feet for Students is an intervention that helps redirect students to focus their attention on the part of their body, specifically the feet when they are having intensive physiological and/or emotional stimulation.

For this study, school psychologist of a public school district in Oregon was approached during a monthly meeting to identify students on their caseloads who met the following criteria for the study: native English speaking, currently receiving special education services, in third through eighth grade, high rates of being off-task or disruptive, and are able to follow three-step instructions (Felver et al., 2017, p. 360). The psychologists came up with eight students from three different schools who were in fourth through eighth grade. The teachers, parents, and students were then asked to participate in the study, and they all consented.

To identify and confirm the student's behaviors, observations and teacher interviews were done. During the teacher interviews, they completed the Functional Assessment Checklist for Teachers and Staff (FACTS), and this assessed when students had the lowest rates of being academically engaged and when they had the most

disruptive behaviors (Felver et al., 2017). After teacher interviews, Felver observed the eight students' behavior for twenty-minutes during the time students were least engaged and had high disruptive behaviors to confirm what the teachers reported. These observations showed that all eight students showed low rates of academic engagement. Even though all eight students participated in the SOF intervention, only four of the students were randomly assigned to have data collected on them, and the interventionists did not know which students were chosen. The interventionists were trained by Felver on how to deliver the SOF routine to students and provided consultation as they were delivering the SOF routine as needed.

One student that data was collected on was Conway, a twelve-year-old boy in sixth grade who received special education services under the Emotional Behavioral disability category (Felver et al., 2017). His disruptive behavior was not following adult directions, verbal aggression, and talking during instruction time. Conway was most likely to have these disruptive behaviors to get attention from both peers and adults. The second student was Cobalt, a ten-year-old boy in fourth grade who received special education services under the Emotional Behavioral disability category (Felver et al., 2017). His disruptive behavior was verbal aggression towards adults and peers and physical aggression towards peers. Cobalt was most likely to have these disruptive behaviors to get attention from both peers and adults. The third student was Ash, a twelve-year-old boy in seventh grade who received special education services under the Other Health Impairment disability category (Felver et al., 2017). He had a medical diagnosis of attention-deficit/hyperactivity disorder. His disruptive behavior was not

staying in his seat and talking during individual work time. Ash was most likely to have these disruptive behaviors to get attention from the teacher and to not do a non-preferred activity. The fourth student was Ewan, an eleven-year-old boy in sixth grade who received special education services under the Emotional Behavioral disability category (Felver et al., 2017). His disruptive behavior was physical aggression towards school property, verbal aggression, not following adult directions, and self-injury. Ewan was most likely to have these disruptive behaviors to not do a non-preferred activity.

For this study, there were three phases. Phase one was the baseline, where data was collected for all students; at least three observations were done before each student started the SOF intervention. Phase two was SOF intervention. During the intervention, students met with their assigned interventionist for twenty to thirty-minute sessions, for five consecutive school days (Felver et al., 2017). The sessions were during times where the students would miss the least amount of instruction, and there would be the least disruption to classroom activities. During the sessions, students talked about different emotions they had felt during recent situations and how to use the SOF routine to stop even further emotional arousal. The students also set goals on when to apply the SOF routine during unpleasant events and were given homework to continue to practice the SOF routine outside of the daily sessions (Felver et al., 2017). Phase three was the post-intervention, where data was still collected on the student's academic engagement and disruptive behavior until the end of the school year (Felver et al., 2017). Social validity was measured for students by using a modified version of

the Children's Intervention Rating Profile and two open-ended questions. Social validity was measured for teachers by a short eight-item questionnaire that was made by Felver.

After analyzing the data that was collected, the SOF routine seemed to increase a student's academic engagement. Conway's baseline academic engagement was 45.7%, and after the SOF intervention, it was 71.2%. Cobalt's baseline academic engagement was 58.2% and increased to 79%. Ash's baseline academic engagement average was 27% and increased to 71.6%. Ewan's baseline academic engagement average was 59.4% and increased to 83.5%. Looking at the Children's Intervention Rating Profile and open-ended questions, students seemed to find that the SOF intervention was a positive experience for them. Students reported that SOF was a feasible and acceptable intervention and that they think it will help them do better in school (Felver et al., 2017). Teachers reported that they had a positive experience with SOF, and it was a feasible intervention. Most teachers saw that SOF was effective for their students, and the teachers that did not see a change said it was due to the timing of the intervention (Felver et al., 2017, p. 365).

Overall, the Felver et al. (2017) study showed that SOF intervention increased academic engagement for students with disabilities and improved their disruptive behaviors. The SOF intervention is brief, cost-effective, and it does not take up much classroom time. Students are able to use SOF and not draw any unwanted attention (Felver et al., 2017, p. 365). This study also showed that extensive training and experience is not likely required to deliver the SOF intervention to students.

A common obstacle that teachers face is the lack of engagement from the students, or they have difficulty paying attention. Studies have shown that engagement is linked to academic achievement. Students with emotional and behavioral disorders (EBD) often have off-task behaviors, which can be disruptive and get in their way of learning. Mindfulness-based interventions (MBI) have shown to increase academic engagement by fostering self-management skills (Minkos, Chafouleas, Bray & LaSalle, 2017, p. 436). MBI's tend to have a greater impact on students with more problem behaviors at the beginning of the study compared to students who have more typical behavior. Mindfulness-based interventions can be expensive, require training, and are time-intensive (Minkos et al., 2017, p. 437).

The purpose of Minkos et al.'s (2017) study was to see the effectiveness of a daily mindful breathing intervention that is pre-recorded on student's academic engagement with EBD. This study was done at an alternative school that mainly serves students with EBD, who all received special education services, ranged from fourth to twelfth grade and were split up into six classrooms, and 68 percent of students received free and reduced lunch (Minkos et al., 2017, p. 437). There were 38 students at the school, and only seven students were recommended by teachers to participate in the study. Students had to meet the criteria of having gone to the alternative school the year before and if they did not receive any more than two major office referrals in the first two weeks of school (Minkos et al., 2017, p. 437). Then they had to meet the second criteria of showing that they struggle with academic engagement. Only five students met all of the criteria, but the mindful breathing intervention was only done

with two students, due to one student not wanting to participate anymore, one student who showed academic engagement, and one student left the school. One student was fifteen years old, in the ninth grade, and the other student was sixteen years old, in the tenth grade. One teacher who participated in the study was female, and the other teacher was male, and they both had earned credits past a master's degree (Minkos et al., 2017).

The recording of the mindful breathing intervention was made with the help of a yoga teacher who had previous experience of making recordings for military veterans who were suffering from posttraumatic stress disorder. Five people with mindfulness expertise reviewed the recording, and the recording was tested on two students to ensure their understanding (Minkos et al., 2017). The mindful breathing recording was about five minutes in length, and students listened to it through headphones on their computers. DBR was used to collect data after an observation period by the participant's teachers on a daily basis. DBR includes rating three core target behaviors – academic engagement, disruptive behavior, and respectful behavior (Minkos et al., 2017, p. 438). Another measure that was used was the Systematic Direct Observation (SDO), and this was a fifteen-minute timed observation that was broken up into ten-second intervals and focused on the student's academic engagement. Two graduate students were trained on how to collect SDO data over three phases, and then they were the ones that collected data on the participating students. SDO data was collected less than half of the time as the DBR data collection. The teachers who implemented the recordings were given the Usage Rating Profile-Intervention Revised and students were

given the Children's Usage Rating Profile to assess the acceptability and feasibility of the mindful breathing intervention (Minkos et al., 2017, p. 439).

During baseline, teachers gave typical instruction, and data was collected on students' behavior by observations and teachers rating their academic activity. After the baseline phase, the mindful breathing intervention was introduced to the students by the researcher during the first session, and the second session was done by the teachers with the researcher's feedback. Then the intervention happened, and the recording was given daily to help students focus on their breathing. Teachers collected daily DBR data during the intervention phase, and if the teacher was gone, the students did not participate in the intervention. After the intervention phase, teachers completed the Usage Rating Profile-Intervention Revised and then were instructed to continue to use the mindful breathing intervention as much or as little as they wanted. Minkos et al. (2017) met with the students for about 20 minutes, one at a time, about how their experiences with the intervention went, and the students completed the Children's Usage Rating Profile. Six weeks after the intervention was completed, teachers were asked to collect DBR data as they did during the baseline phase. However, neither of the two students participated in the intervention after the study was completed because the teachers did not prompt them to (Minkos et al., 2017, p. 439).

One student participated in the intervention on sixteen out of the twenty-seven days and showed an increase in academic engagement on the DBR data collection by his teacher (Minkos et al., 2017). The second student participated in the intervention on fifteen out of twenty-two days and showed an increase in academic engagement on the

DBR data collection by his teacher (Minkos et al., 2017). The SDO also showed an increase in academic engagement for both students. Both students showed a decrease in disruptive behavior, although one student did not maintain this after the intervention. After the teachers took the Usage Rating Profile-Intervention Revised, the ratings showed that the mindful breathing intervention was understandable and acceptable (Minkos et al., 2017, p. 441). The student ratings on the Children's Usage Rating Profile showed the same results and that there is not much effort required to participate in the intervention.

Even though there were only two students that participated in this study, the audio recorded mindful breathing intervention showed to have helped students with EBD increase their academic engagement and decrease their disruptive behavior as shown by the DBR and SDO measures (Minkos et al., 2017, p. 442).

Self-regulation of emotions and behaviors are critical skills for children to have for healthy development, and if they have deficits in any of these areas, their functioning is going to be greatly affected. This includes their functioning at home, in school, and in their community (Rush, Golden, Mortenson, Albohn & Horger, 2017, p. 347). Students who have Emotional Behavioral Disorders (EBD) are more likely to have poor academic success and have more behavior infractions than students with no disabilities. Research has been growing in looking at the effectiveness of mindfulness and biofeedback interventions on students with emotional and behavioral needs. It is important to find an intervention that is effective in improving students' social-emotional and behavioral skills, and that is not time-consuming or difficult to

implement. The purpose of this study was to look at the effectiveness of the HeartSmarts curriculum on students identified as emotionally disturbed (ED) and their on- and off-task behaviors (Rush et al., 2017, p. 350).

There were 31 students, 27 boys, and four girls, who participated in the study from four elementary and middle schools. Their ages ranged from eight years old to 13 years old, and all had a diagnosis of ED. Some students had additional diagnoses of Oppositional Defiant Disorder (ODD), Anxiety Disorder, Attention-Deficit/ Hyperactivity Disorder (ADHD), and Mood Disorders. Student and parent consent were given before the study. A total of six classrooms participated, three classrooms were the treatment group, and the other three were the control group (Rush et al., 2017).

Students in the study were observed for on- and off-task behaviors by psychology graduate students using The Behavioral Observation of Students in Schools (BOSS). The graduate students were trained on using the BOSS before they did their observations on the students. On-task behaviors included both passive and active engaged time, and off-task behaviors included off-task verbal, passive, or motor (Rush et al., 2017, p. 351). Each student was observed for two thirty-minute observations, one before the treatment and one post-treatment. Both of these observations were done during the morning time, and after each observation, teachers were asked if this was the typical behavior of the students.

The treatment group did one session during group time for twenty to thirty minutes a week, for twelve weeks, using The HeartSmarts curriculum. The control group did not participate in this curriculum and continued with weekly counseling and social

skills groups. The HeartSmarts curriculum was used to help students learn skills on how to respond to different emotional experiences and be more aware of their emotional states (Rush et al., 2017, p. 351). During the HeartSmarts curriculum, the emWave program was introduced during week six, and this program helped students see their heart and breath rates. The students were trained on how to use the program, and once they got the hang of it, they were able to do computer activities, and games were their emotions and thoughts would influence their physiological responses (Rush et al., 2017). They did these games and activities for about ten minutes, two times per week as well. These helped reinforce the mindfulness skills that they had been taught and using in the HeartSmarts curriculum.

Baseline data showed that the control group had slightly higher on-task behavior and less off-task behavior than the treatment group. After the HeartSmarts curriculum, the treatment group had higher on-task behavior, eighteen percent more, and a large decrease, fifty-four percent less, in off-task behavior compared to the control group (Rush et al., 2017, p. 353). These findings showed that the mindfulness and biofeedback interventions, HeartSmarts curriculum and emWave program, improved on-task behavior and significantly lowered rates of off-task behavior for students in elementary and middle school who are emotionally disturbed (Rush et al., 2017). These interventions also allow students to stay in the classroom and calm down, rather than leave the classroom and miss instruction time.

Students with emotional and behavioral problems face many challenges, including struggling to be successful in school, poor social skills, being suspended or

expelled, and being more likely to drop out of school. Schools need to find a feasible and effective program to help students reduce their stress and negative behaviors. Mindfulness-based stress reduction (MBSR) is a program that has shown to have many positive effects on various groups of people. MBSR has also shown to help students with emotional and behavioral problems regulate their own behavior (Solar, 2013, p. 45).

PEACE is a mindfulness practice that helps teenagers deal with difficult situations and to help complement coping mechanisms and interventions that are already in place by the special education teacher and school (Solar, 2013, p. 46). There are five steps in practicing PEACE. The first step is to Pause, and when a student faces a difficult situation, they need to stop what they are doing and take deep breaths. The second step is Exhale. After the students inhale, they should exhale while making an audible sound. Then continue to repeat deep inhale and making an audible sound when they exhale. The third step is to Acknowledge, and students can only move onto this step when they have learned the importance of taking deep breaths. When students are at this step, they acknowledge the situation that is occurring and accept it without judgment. Even if the situation triggers an emotional response, students need to let the experience happen and not get mad at themselves for their feelings or actions. The fourth step is Choose, and this step allows students to choose what their next steps are going to be after a situation occurred. This could take a couple of minutes, days, or weeks, but sometimes students need to make more immediate choices rather than wait (Solar, 2013, p. 46). It is very important in this step for students to find humor in their emotional response and the situation (Solar, 2013). The fifth and last step is to Engage;

students are able to talk to and work through various situations with someone they trust.

Overall, the mindfulness practice PEACE can help students be more aware and in control of their emotions and behaviors. PEACE can also help reduce students' stress, which in turn can help students improve their behavior at school and outside of school.

SLD. Students with severe learning disabilities (LDs) are likely to have both internalizing (depression, anxiety) and externalizing (attention, hyperactivity, aggression) symptoms. These students struggle with one or more of these subjects: reading, mathematics, or writing. Students with LDs may also have deficits in attention, memory, taking responsibility for their actions or handling situations without escalating them, and coordination. All of these factors for students with severe LDs make school very difficult. Mindfulness-based interventions have been shown in past studies to help reduce the symptoms and deficits of LDs. Most studies that have been done on students with LDs have been social skills-based, but only one other study has focused on decreasing emotional, behavioral, and social problems.

To evaluate the impact of mindfulness-based interventions on elementary students in special education with severe LDs who have both internalizing and externalizing symptoms, Malboeuf-Hurtubise, Lacourse, Taylor, Joussemet, and Amor (2016) conducted a study. Fourteen elementary students between the ages of 9-12 years old and their teachers participated in this study. The elementary school where the students were from was in a disadvantaged neighborhood, and over half of the families had a low socioeconomic status. There were eight girls and six boys. All of these

students were from a special education classroom for learning disabilities. The fourteen students struggled with reading, mathematics, and writing and were at least two academic school years behind their peers (Malboeuf-Hurtubise et al., 2016). Other support measures were used on the students such as remedial education, differentiation, and rehabilitation, but were not successful in helping the students progress in their learning. Speech pathology was also ruled out by a speech pathologist in order to make sure the students just had a learning disability.

The mindfulness-based intervention was eight weeks long, and the group would meet for 60 minutes, once a week. The sessions were shorter periods of time to keep the students' attention and only take up one class period per week. A total of eight mindfulness sessions were held. Each session included the expectations for the intervention, mindful eating, body scan meditation, breathing meditation, mindfulness through the senses, group discussions, walking/sitting meditation, and distribution of pebble stone (Malboeuf-Hurtubise et al., 2016, p. 475). The sessions were all videotaped and reviewed to make sure the interventions were valid. Teachers were given guides to help students practice in-class and were given logs to track when they practiced mindfulness in class. The students participating in the intervention were also given homework each week, and the students completed this work during class time.

Both students and teachers filled out pre and post-test forms. The teachers filled out The Behavior Assessment System for Children, Second Edition (BASC-II), which helps assess the students' LD symptoms and The Teacher Report Form regarding their students. The students filled out The Children and Adolescent Mindfulness Measure,

which help measure students' mindfulness, and The Self-Report Form (Malboeuf-Hurtubise et al., 2016).

The results of the students' Self-Report Forms showed significant differences in the levels of depression and anxiety, internalized symptoms. It showed that the score of the pretest for both depression and anxiety were much higher than it was on the post-test. At the beginning of this study, students felt demoralized because being in a special education class made them feel less than their peers and thought that they would never be good at school (Malboeuf-Hurtubise et al., 2016). After the mindfulness-based intervention, students looked at themselves differently and with more positive regard. The results of the Teacher's Report Forms showed that there were significant differences in mean aggression, inattention, and externalized symptoms. All of these were higher at the pretest than on the post-test. These results can be correlated with students being able to control their impulses, being more engaged in the classroom, and disengage from automatic responses.

Mindful exercises were practiced in between sessions, and these were most helpful for the students because they were able to practice the different techniques. There were significant decreases in students internalizing and externalizing symptoms due to severe learning disabilities. These decreases gave students a new perspective about themselves and helped them to have a new openness to learning, as well as to have a more positive classroom climate (Malboeuf-Hurtubise et al., 2016).

Students with learning disabilities (LD) are often associated with anxiety and school-related stress. There have been multiple other studies done on anxiety, but this

study researches the effects of mindfulness meditation on anxiety and social skills in students with learning disabilities. Mindfulness meditation (MM) was used in this study because it has been shown to help reduce stress, discourage negative self-thoughts, and encourage acceptance and self-understanding (Beauchemin, Hutchins, & Patterson, 2008).

Students were chosen from four high school classes that served students with the primary diagnosis of learning disabilities. There were 34 students who participated in the study, with their ages ranging from 13-18 years old (Beauchemin et al., 2008). Seventy-one percent were male, and the other twenty nine percent were female. There were two teachers who participated, and one was male, and the other was female. The teachers had no previous meditation training, and only about half of the students had some experience with meditation.

After the students were chosen, parents and students had to sign consent forms before they could participate in the study. Before students received mindfulness meditation training, the teachers and primary investigator received training by an expert on how to instruct the students (Beauchemin et al., 2008, p. 40). During the training, the teachers learned about the benefits of MM, the mindfulness approach, key principles, and opportunities to engage in MM. The MM initial training for students lasted about 45 minutes and was done over two separate sessions. The teachers and primary investigator-led this training. There was no script used, just a standard procedure to make sure each group received the same training. After the initial training, the teachers

led the rest of the sessions at the beginning of each class period, five days a week for five consecutive weeks (Beauchemin et al., 2008).

As well as MM interventions, the students and teachers were given pre and post-tests for this study. The students were given the Social Skills Rating System (SSRS) that assesses perceived social skills, The State-Trait Anxiety Inventory (STAI) that assesses anxiety, and attitudinal questions about their focus, the likelihood of using MM in the future, and rating the intervention (Beauchemin et al., 2008). The teachers were given the Social Skills Rating System (SSRS) that assesses social skills, academic performance, and problem behaviors. The pre and post-tests help determine how mindfulness mediation affected students with learning disabilities.

After the mindfulness meditation intervention was implemented, students' scores showed that their anxiety levels were lower, and their social skills improved from pre to post-test. The teachers' scores showed that the students' social skills and academic performance improved, and problem behaviors have decreased. On the attitudinal questions, students reported that the students enjoyed the MM intervention, the likelihood of continuing to use MM is high and helped them focus better in class. The teachers reported that the students, who did not participate in the MM intervention, did not tease the other students or seem bored during the sessions. This shows that there is feasibility for this intervention, especially when not all students are participating. Overall, this study shows that the positive outcomes of mindfulness meditation intervention are reducing anxiety and promoting academic performance and social functioning for students with learning disabilities.

ASD. Children with Autism Spectrum Disorder (ASD) often times have problem behaviors due to a lack of social skills, and this, in turn, can cause stress on their parents. Stress in parents with ASD children is four times greater than in parents with a standard developed child and is two times greater than parents with children who have other developmental disabilities. This higher stress level in parents can cause problems with family life and even marriage life (Hwang, Kearney, Klieve, Lang, & Roberts, 2015). There have been previous studies done that showed mindfulness interventions have helped children with ASD have fewer problem behaviors. Training their parents on mindfulness interventions helps them to give procedures to their children to help with their problem behaviors. The goal of Hwang et al. (2015) the study was to train parents who had children with ASD and problem behaviors in mindfulness to see the direct effects on their life, train the parents on how to teach mindfulness to their children, and to see the effects on children after receiving mindfulness training.

There were six mother and child dyads that participated in this study. The mothers' ages ranged from 34 to 48 years old, and they had not practiced mindfulness before this study. All of the children had a diagnosis of ASD, their ages ranged from 8 to 15 years old, and there were five males and one female (Hwang et al., 2015). The children's problem behaviors included verbal and physical aggression, breakages, and self-injury.

There were two stages to this study. Before stage one, the parents were given the following assessments: Freiburg Mindfulness Inventory to examine mindfulness, The Parenting Stress Scale to examine parenting stress, Beach Family Quality of Life to

examine the quality of life for families with children with disabilities, and The Child Behaviour Checklist to see the parents perceptions of their child's problem behaviors (Hwang et al., 2015, p. 3098).

During stage one, the mothers completed an eight-week mindfulness training. The sessions were 2.5 hours each, and after the mothers completed these trainings, they had a two-month self-practice period. The children were interviewed individually so that the authors could tailor the mindfulness intervention activities to them. There ended up being five basic mindfulness activities that helped get the children's attention by using sounds, bodily movements, and breathing (Hwang et al., 2015). One of the authors then developed a mindfulness program to train the mothers on becoming a mindfulness teacher to their children. The mindfulness program was eight weekly sessions with a break in between the seventh and eight weeks. This break was four weeks long and allowed the mothers to practice using mindfulness with their children. The mothers could then come back and describe their experience, and this will help them transition to continuing practicing mindfulness with their child for two months independently. The mothers were encouraged to be committed to practicing mindfulness because this was going to help them be better mindfulness teachers to their children. During stage two, the children received the mindfulness training that was taught by their mothers. The authors made three weekly home visits and had online meetings to help support mothers when delivering mindfulness activities. The mothers and children were then encouraged to continuing practicing mindfulness regularly for the next twelve months. They could decide which activity they wanted to do and when

they would practice it. If the mothers needed extra support, they could do group online sessions or use social media. All of the sessions were videotaped, with the exception of one child not wanting to be filmed (Hwang et al., 2015, p. 3097). A Paired Sample Wilcoxon Signed Rank test was used to identify differences between stages one and two outcomes.

Five out of the six mothers reported that their mindfulness increased, and three mothers reported it increased even more after the child mindfulness training. The mothers reported their parental stress decreased after stage two and then continued to decrease throughout the next year. Their quality of family life increased as well. Based on a Paired Sample Wilcoxon Signed Rank test, these results show there was a significant difference between stages one and two. There were also reductions in children's thought problems and in their anxiety (Hwang et al., 2015, p. 3099). Some children's aggressive behaviors reduced from the time before the study started to after the child mindfulness training. Overall, this study shows that parents who learn mindfulness and can teach it to their child with ASD can lower their stress levels and help lower their child's problem behaviors.

Students without Disabilities

Students are facing more personal and family challenges that can be very serious, and schools need to find a way to help meet these students' needs. The studies that have been completed on meditation and school-age children have shown to have positive effects on the student's well-being. These positive effects include improved attention, concentration, social skills, self-esteem, self-regulation, self-control, and

frustration tolerance, decreased anxiety and behavioral problems, and helps the school have a more positive climate (Wisner, Jones & Gwin, 2010). However, meditation has shown to be more effective with students who have a disability, have increased daily stressors, and those who face more family and personal challenges.

Meditation used in studies, typically do not involve a religious or spiritual context, and there are two common types used: mindfulness meditation (MM) and concentration meditation (Wisner, Jones & Gwin, 2010). MM involves concentration of breathing, can involve bodily movement, and focuses on the present moment. Concentration meditation involves focusing on an object, word, or phrase to help keep the mind from wandering. Some meditation practices need to have trained and experienced instructors, where other practices can be easily taught to teachers or other school professionals to implement with students. Research has been done to show the effectiveness of mindfulness on students' academic performance and behaviors. The following studies and results reviewed for this thesis on students' stress and overall well-being, cognitive performance and classroom behaviors, internalizing problems, attention, response to mindfulness interventions, self-concept, and substance use will be discussed below.

Stress and Overall Well-Being

Children who are living in poverty and face environmental stressors on a daily basis are at a higher risk for externalizing and internalizing disorders, having poor academic performance, and for not having a healthy development compared to their advantaged peers. Long-term stress also plays a factor in children's involuntary

responses to stressors. Research has shown that mindfulness programs are beneficial to help both adults and youth be aware of their bodies, help them be more present in the moment, and to respond appropriately to stress. Mindfulness also helps reduce internalizing and externalizing disorders and helps improve sleep. There has not been much focus on the effects of mindfulness and the urban youth who are underserved and need interventions to help reduce social, emotional, and behavioral problems.

Mendelson et al. partnered with the Baltimore-based Holistic Life Foundation (HLF) to develop a study to show the effectiveness of a mindfulness program on urban youth. HLF is a non-profit program that helps inner-city youth improve their academic performance and emotional well-being. The staff at HLF were born and raised in the city and have strong ties to the community. The goals of the Mendelson et al. (2010) study were to collaborate with HLF's yoga and mindfulness program and evaluate the impact it has on children in an urban school setting. This study was designed to counter the effects of chronic stress that the students face every day.

Ninety-seven fourth and fifth graders participated in this study and were from four Baltimore City public elementary schools. There were fifty-five fourth graders and forty-two fifth graders, and thirty-eight were males and fifty-nine were females. Mendelson et al. mailed home a letter to the parents describing the study, and the students were given the same information during an assembly and presentation in the classroom. Both the student and parent/s had to give consent, and due to constraints only twenty-five students per school were randomly selected and able to participate in

the intervention. In the end 51 students participated in the intervention group and 46 students were in the control group.

Students in the intervention group participated in a twelve-week mindfulness program that consisted of four sessions per week and these sessions were held during non-instruction time. The sessions were held in a bigger space where students could do physical activities such as in a gym. There were 25 students in one intervention group and 26 in the other intervention group, and there were two HLF instructors to each intervention group. Each intervention group consisted of fourth and fifth graders. The mindfulness program included breathing techniques, yoga-based physical activity, and guided mindfulness activities. All of these components were made to help the students focus better and have a longer attention span, be more aware of both their body and mind, and how to respond appropriately to various stressors. After each session, students were encouraged to practice these skills both inside and outside of school.

Students took pre- and post- assessments to see the results of the mindfulness program. There were five assessments: The Responses to Stress Questionnaire, Involuntary Engagement Coping Scale, The Short Mood and Feelings Questionnaire – Child Version, The Emotion Profile Inventory, and People in My Life (assesses students' relationships both in and outside of school) (Mendelson et al., 2010, p. 988). These assessments were read aloud to the students to help with comprehension.

There ended up being a few students who had to withdraw from the intervention due to school transfers and unrelated injuries. At one intervention school, 73 percent of students completed at least three quarters of the program due to missing

days of school and at another intervention school only 40 of students completed three quarters of the program. Some of the teachers prevented students from going to the mindfulness programs for poor behavior, so that made numbers lower. Mendelson et al. (2010) had three focus groups, made up of three to seven students who participated in the intervention group, that were evaluated on their experience of the mindfulness program. In general, most of the students had a positive experience and felt that they learned skills that they could use in their daily lives.

Mendelson et al. (2010) had one teacher focus group at each of the intervention schools that consisted of four to five teachers. The teachers were supportive of the mindfulness program and thought that it could really help their students who struggled with behavior problems and focusing/paying attention. Teachers had mixed results. Some teachers saw improvements in their students, and some didn't really see any changes, if any at all. Teachers were interested in learning more about the curriculum, so they could continue to use the skills that the students learned in their classrooms.

There were significant improvements with the intervention group compared to the control group on the Involuntary Engagement assessment from the pre- to post-assessment. Of the five subscales of this assessment there were significant differences in three: Rumination, Intrusive Thoughts, and Emotional Arousal (Mendelson et al., 2010, p. 990). Other differences on assessments were not significant but showed a trend of depressive symptoms and negative affect lower for the intervention groups than the control groups. There were no significant differences with relationships for either group, but the control group seemed to trust their friends more than the intervention group.

Administrators, teachers, and students were accepting of the mindfulness program. Overall, Mendelson et al. (2010) showed that mindfulness programs helped urban students learn how to respond to stress in a more beneficial way and to have a positive effect on their overall well-being.

Children tend to have more social-emotional and behavior problems along with an increased risk of stress when they are from a lower socioeconomic background. This is due to children going through stressful life events such as separation/divorce of parents, changing homes, and death of a family member, stress of worrying about meeting their basic needs, poverty, and they are more likely to being exposed to violence and physical abuse. High stress levels, social-emotional difficulties, and behavior problems have a poor effect on how students perform in school. It also can lead to students developing depression, aggressive behaviors, low self-esteem, and anxiety. Mindfulness has proven to have positive outcomes on children's well-being, anxiety and stress levels, and an increased knowledge of school content for children who are from lower socioeconomic backgrounds. Previous studies have mainly focused on parent and teacher reports and perspectives, where Costello and Lawler (2014) study focuses on the children's perspectives on their coping behaviors and stress level.

There were 46 girls and 17 boys from sixth grade who participated in this study, and their ages ranged from 11-12 years old. These students were from two different schools that were at a social disadvantage in Dublin, Ireland. Permission was given by the school principals and all of the students returned signed parental consent forms. Teachers were invited to participate in a five-week mindfulness program in their

classrooms. Four teachers participated in delivering the mindfulness program and were interviewed at the end of the study. Before the five-week mindfulness program was given, Costello and Lawler (2014) did a pilot study on two students to assess the main components of the mindfulness program.

There were two mindfulness programs that the five-week daily mindfulness program was based on: The Mindfulness-based Cognitive Therapy for children (MBCT-C) and The Mindfulness-based Stress Reduction course for children (MBSR-C). The goal of the five-week mindfulness program was to help students develop coping strategies when stressed, instead of just reacting. Before the program began, teachers were given instruction by Costello and Lawler, and were provided with scripts and all necessary materials for each mindfulness session. The teachers had a choice of reading the script to their students or there was CD made with script that their students could listen to. Prior to the mindfulness program and after, students completed The Perceived Stress Scale, which includes ten items that measure the opinions of students' stress from the past month. The students also received self-reflective journals and logged their experiences and feelings by writing or drawing after each mindfulness session. Costello & Lawler conducted interviews with two of the teachers and sixteen students' on how the mindfulness program impacted student's stress levels.

The mindfulness program started off at about 3 minutes each day the first week and by the end of the fifth week, it was at a maximum of twelve minutes each day. Week one focused on breathing techniques and being aware of the body. Week two focused on breathing and relaxing each part of the student's bodies, part by part. Week

three focused on bubble-blowing, a technique that shows children to take a step back and think about their thoughts, and then try to let them go. Week four focused on the five senses along with breathing techniques to help children relax and be calm. Week five focused on nature and visualizing, kindness, and the students were shown a healing-lake visualization and took note that the lake was always changing, but still itself through all the changes.

Students had different thoughts and views of what stress meant to them and what caused stress in their own lives. The Perceived Stress Scale showed that there was a decline in the students' stress from before the mindfulness program and then after the program. However, even though their stress declined over the five-week program, most students were still ranked in the high-stress category. Costello and Lawler (2014) determined the mindfulness program helped most students be more aware in the moment and to help calm them, increased their ability to concentrate, and showed them how to tolerate and choose positive responses to stress. It helped many students detach from their feelings and thoughts, which helped them improve their reactions to stress. Both the teachers and students agreed that there was a decrease in classroom stress and mindfulness helped students to focus better in class. This program also helped prepare students to deal and react more positively to future stress by being aware of their own body.

During academic school years, students face a huge amount of stress due to teachers and parents wanting them to do well in school and work hard. Stress can also come from outside factors such as social relationships, being ill or disabled, parents

having marital problems, financial problems, or emotional difficulties (Anand & Sharma, 2014). All of these stress factors can impact students' overall well-being. Mindfulness-based interventions have shown to be effective in helping students treat their anxiety, externalizing disorders, help with self-regulation, and reduce stress and depressive symptoms (Anand & Sharma, 2014). The purpose of Anand and Sharma (2014) study was to examine the effectiveness of Mindfulness-Based Stress Reduction (MBSR) program on Indians adolescent's stress and well-being.

Thirty-three, ninth grade students from one class section, were recruited to participate in this study from a public high school (Anand & Sharma, 2014). There were fifteen girls and eighteen boys, and all them were able to read, write, and speak the English language. Students who had a neurological illness, a severe or chronic illness, or receiving psychotherapy/cognitive behavioral therapy were excluded from this study. Consent was given by the parents and the students to participate in this study.

Students took pre-assessments a week before the intervention began. One assessment was The School Situation Survey (SSS) and this measured student's perceptions of stress. Another assessment was the Personal Wellbeing Index School Children (PWI-SC) and this measured students' quality of life. The intervention was based on the MBSR program. There were eight sessions, one per week, that lasted forty minutes each. The sessions were delivered in the school auditorium during students' library time (Anand & Sharma, 2014). During the sessions, exercises were kept brief, students were given both formal and informal homework assignments for mindfulness meditation, role-play was used, and there were discussions had. Students were given

Weekly Meditation Forms to fill out for daily home practice of mindfulness meditation that was learned. One week after the intervention was completed, students completed the same assessments as before the intervention along with the Intervention Feedback Proforma. This was used to get feedback from students regarding the mindfulness intervention. Then three months later assessments were given again.

Results of the SSS show that there was a significant reduction in the subscale scores for students on peer interaction, physiological, academic stress, and emotional symptoms and a significant increase in the academic self-concept subscale from pre- to post-assessments and from follow-up assessments (Anand & Sharma, 2014). Results of the PWI-SC show that there was a significant increase in subscale scores for students on life achievement, physical health, personal relationships, being part of the community, and future security from pre- to post-assessments and from follow-up assessments (Anand & Sharma, 2014). There were also significant differences on the subscale's personal safety and standards of living. Students tended to practice mindfulness exercises on forty-seven of fifty-six days, and typically they practiced for eight and a half minutes. As far as the mindfulness intervention went, most students found it to be extremely useful and beneficial, the instructor was very involved, and they were able to apply the skills that they learned to stressful situations and to help them maintain focus (Anand & Sharma, 2014). Overall, Anand & Sharma (2014) study showed that the mindfulness intervention, MBSR program, positively affected Indian students in reducing emotional symptoms, academic self-concept, and academic stress. These findings are consistent with other studies that have been reported.

Attention is an essential factor for learning and a high number of students struggle to pay attention to daily activities such as sports, schoolwork, and social events. Students also struggle with depression, stress, and their overall well-being. This study focused on exploring different interventions to enhance students' well-being and looking at different coping strategies. The authors Lau and Hue (2011) have not seen another study that looks at the effects of mindfulness on adolescents' individual thoughts and behaviors and social factors in Hong Kong.

Lau and Hue (2011) chose students from two schools that were government-aided, and where there were lower learning performances and abilities. Students were given information about the mindfulness program at a school assembly, and this program was going to be offered as an after-school activity. After the assembly, 50 students, 25 from each school, showed interest and signed the consent form. These students' ages ranged from 14 to 16 years old. Then fifty students were asked to join the control group to complete the pre and posttests without receiving any interventions.

Lau and Hue's (2011) mindfulness program was based off the mindfulness-based stress reduction (MBSR) and was six weeks long with a two-hour session per week and a one-day retreat. There were four major activities done during this program: stretching exercises, practicing daily activities, body scan that includes focusing students' attention to their body, head to toes, and loving one's self and wishing others well in the world. These activities helped make students aware of their bodies. The same instructor led the same program at both schools. During the fourth week was when the one-day

retreat happened and after the retreat the students were encouraged to practice mindfulness at home.

The students in the mindfulness intervention and control group were given a pre and posttest at the same location. The following assessments were given: Mindful Attention Awareness Scale (MAAS), Scales of Psychological Well-being (SPWB), Depression Anxiety Stress Scales (DASS), and the Perceived Stress Scale (PSS) (Lau and Hue, 2011, p. 320 & 321). Throughout the program students used a self-recorded journal as well and turned them into the authors at the end of the program.

A couple of students decided to leave the program after the first lesson, so only the students who attended at least 80% of the time were included in these results. Baseline data showed there were no significant differences between the intervention and control groups. Teachers were interviewed and stated that they noticed improved concentration in some students. Teachers wanted to know more about the mindfulness program and how to implement it into their school curriculum. Students written responses showed that they had a positive experience with the mindfulness program and felt that these skills that they learned could be helpful throughout their daily activities.

The MAAS assessments showed that the students who were in the intervention group had improved their mindfulness and the students in the control group showed no change. The SPWB assessments showed that students in the intervention group had an increase in personal growth and the control group had a decrease. The DASS assessments showed that students in the intervention groups depression symptoms did

not increase and those in the control group had higher depression symptoms. The PSS assessments showed that there were no significant differences between the intervention and control groups. Lau and Hue (2011) study results showed that the mindfulness program helped improve the adolescent student's psychosocial health along with their well-being.

Children are at a greater risk today for having mental and emotional health problems and there is a need for prevention programs to help students strengthen their well-being. Mindfulness helps students develop emotional coping skills and strengthens their attention, which therefore helps with students' mental health prevention (Viafora, Mathiesen, & Unsworth, 2014, p. 1179). Mindfulness is a practice that can be used at home, going to sleep, or playing a sport. Viafora et al.'s (2014) study was done to see the effectiveness of an eight-week mindfulness program on students' protective coping factors in a school that was for children facing homelessness and then in a typical middle school. There have been no mindfulness studies with children facing homelessness. Students who are currently homeless or have experienced it in the past are at a greater risk for sleep disturbances, aggressive behavior, low self-esteem, non-compliance, and may have a shorter attention span. These students are also likely to face factors of neglect, malnutrition, parental mental illness, violence, maltreatment, friendship and school disruptions, and substance abuse (Viafora et al., 2014). All of these factors are likely to lead to children with increased mental health problems.

Mindfulness is about being in the present moment and not changing one's experience, but letting it happen naturally, and being more aware of what is going on.

When students are able to be aware of their thoughts and feelings and accept them nonjudgmentally, they are able to develop a new way to respond to situations instead of acting out on impulse or routine behavior. Mindfulness-based therapy used with children is relatively new, but studies have shown that it has many positive effects for children. It has shown improvements with anxiety, stress, quality of sleep, self-esteem, impulsivity, awareness, social and behavior problems, and interpersonal difficulties.

There were 63 students from four classrooms, at two different middle schools, who participated in this study. The Meditation Initiative (TMI) helped Viafora et al. (2014) choose the two schools that were used for this study. Treatment group 1 (TG1) was made up of 48 students from three classrooms, at a charter middle school. There were two seventh grade classrooms who participated in the intervention and one sixth grade classroom made up of 20 students who were in the comparison group. The comparison group was going to participate in the mindfulness intervention after this study was completed. Treatment group 2 (TG2) was made up of 15 students in a seventh and eighth grade classroom at a charter school that serves students who are homeless or have recently lived in a homeless shelter. Students who participated in this study mainly identified as Hispanic (86%), African American (10%), White (8%), and Native American (5%) (Viafora et al., 2014, p. 1182). All of these students were able speak fluent English and read and write. Viafora et al. (2014) sent home a cover letter explaining the study, parent consent forms, and children assent forms. The students were given an incentive of getting a candy bar to bring back their forms by a certain date, whether they were going to participate in the study or not.

The Meditation Initiative offered an introductory session for the schoolteachers and administrators during a faculty meeting to better understand the purpose and potential benefits of the mindfulness course before this study was conducted (Viafora et al., 2014). A graduate in social work was the mindfulness instructor and had a decade of experience with children in classrooms and mental health settings, mindfulness practice, and taught mindfulness for a couple of years in those different settings (Viafora et al., 2014). The instructor used two manuals to help with mindfulness instruction. These two manuals were Planting Seeds: Practicing Mindfulness with Children and Still Quiet Place: Practices for Children and Adolescents to Discover Peace and Happiness. After the instructor had delivered instruction to TG1, "the instructor participated in a 10-week web-based training for teaching mindfulness to children and adolescents taught by Dr. Saltzman" (Viafora et al., 2014, p. 1182).

The mindfulness intervention was an eight-week course, one session per week, and each session was forty-five minutes long. There was a general format that each session followed. This format included mindfulness exercise, breathing exercises, mindful eating, introduction of new mindfulness practices to try at home, and then a discussion led by the instructor. Before the study started, baseline data was collected on a demographics questionnaire and three standardized scales. One of the assessments was The Child Acceptance and Mindfulness Measure (CAMM) and the CAMM assessed two categories, mindful awareness and accepting internal experiences without judgment (Viafora et al., 2014). Another assessment was The Avoidance and Fusion Questionnaire for Youth (AFQ-Y) and it assesses psychological inflexibility. Psychological

inflexibility includes cognitive fusion, not performing well when experiencing difficult emotions, and avoiding thoughts and feelings. The third assessment was The Self-Compassion Scale for Children (SCS-C) and this is a modified version for children. This assessment was created to use for students and their parents in a mindfulness-based stress reduction program (Viafora et al., 2014). After the study was completed, the three standardized scales were given again, and the intervention groups completed a participation evaluation questionnaire (PEQ) as well. The PEQ was used to evaluate students' experiences with the mindfulness intervention.

Viafora et al. (2014) study showed that both of the target groups had positive experiences from the mindfulness treatment over various categories. Target group 2 (TG2) seemed to have benefited more by really enjoying the sessions and using it in their daily lives compared to target group 1 (TG1). Although, TG1 showed significant changes of improvement on the CAMM from the pre- to post- assessment, but not on the other two assessments. TG2 did not show significant changes on any of the assessments and the comparison group also did not show any changes from the pre- to post- assessments. TG2 had eighty-six percent of students' rate that they loved or liked the mindfulness sessions and the same amount said they would recommend this program to their friends (Viafora et al., 2014). Seventy-nine percent of students said they would continue to use the skills that they learned during the mindfulness sessions, that it has helped them in school, and helped them to manage their anger. Seventy-one percent said the sessions have made them more patient and helped them interact with others differently as well. TG1 had much lower ratings, where 56 percent of students

said they would recommend this program to their friends and 64 percent said the mindfulness sessions have helped them at home (Viafora et al., 2014). Fifty-two percent said the sessions have helped them at school and twenty-eight percent said they liked the sessions and the same amount said they did not like it. Only thirty-six percent of students in TG1 said that the mindfulness sessions were helpful. Although, both TG1 and TG2 expressed that they were feeling more relaxed, calm, less stressed, and peaceful when they were practicing mindfulness. Overall, TG2 had more favorable reflections about the sessions than TG1.

Students who received the mindfulness-based intervention, especially students facing homelessness, found mindfulness to be helpful in dealing with their emotions and behaviors (Viafora et al., 2014). Students who are or have been homeless face many challenges, both mentally and emotionally, and have a lot of factors going against them. The mindfulness sessions targeted a lot of those domains and thus it may help homeless students more than other students who are not. These findings support Viafora et al. (2014) hypothesis. These results are consistent with other studies that mindfulness-based interventions if used consistently can help students emotionally, be more attentive, and enhance their academic success.

Cognitive Performance and Classroom Behaviors

Mindfulness is about being aware of the present moment and has been shown to improve working memory, emotional and cognitive control, well-being, and decreases anxiety. Chhabra & Parveen (2017) conducted a study to observe cognitive performance on individuals based on mindfulness, anxiety, and self-efficacy. Eighty-nine

students participated in this study, forty-three boys and forty-six girls. The students ranged in age from fourteen to eighteen years old, and they were randomly chosen from government schools of Chandigarh (Chhabra & Parveen, 2017).

There were two phases to this study and in phase one the students took three different questionnaires. One was Mindful attention awareness scale, and after the students took the questionnaire they were divided into low mindfulness, moderate mindfulness, and high mindfulness categories. The second was IPAT Anxiety scale questionnaire, and after students took the questionnaire they were divided into low anxiety, moderate anxiety, and high anxiety. The third questionnaire was the General Self Efficacy Scale. After students took the questionnaire, they were divided into low self-efficacy, moderate self-efficacy, and high self-efficacy. In phase two, The Stroop Task was given to each of the students, which is a task that measures executive control by showing the participants color nouns and having them state the color of the ink of which the noun is written (Chhabra & Parveen, 2017). If a student states the wrong color, the error is counted. There were five trials of The Stroop experiment and for each trial, there were twelve sub trials. Students were given clear instructions on what to do during the trials. The color nouns were shown to each student for 1.25 seconds and then a blank screen was shown for twenty seconds to give the students a break, so they wouldn't get fatigued (Chhabra & Parveen, 2017).

Results showed that anxiety and mindfulness were significantly negatively correlated (Chhabra & Parveen, 2017), as well as anxiety and self-efficacy. That means if one increased, the other decreased and vice versa. So, if students had low self-efficacy,

they think that they are going to fail at the task, which in turn increases their anxiety and affects their performances negatively. Self-efficacy and mindfulness were significantly positively correlated (Chhabra & Parveen, 2017). Results showed that students with higher mindfulness performed better on The Stroop experience and had fewer errors. Students with low anxiety had fewer errors and were able to pay attention better than students with high anxiety levels. When looking at self-efficacy, students with low and high self-efficacy had a high amount of errors compared to students with moderate self-efficacy (Chhabra & Parveen, 2017). Overall, the results showed that students with low anxiety, high level of mindfulness, and a moderate level of self-efficacy perform better on cognitive tasks (Chhabra & Parveen, 2017).

Children in urban elementary schools face many conditions in their communities and at home that lead to stress and a need for coping skills. Often times, children will bring this stress with them into the classroom and it impacts their academic success and their behaviors. Mindfulness has been typically used with older children in secondary schools, and there is a need to help children cope with stress in elementary schools as well. Harpin, Rossi, Kim & Swanson (2016) study is focused on fourth graders in an urban elementary school. The study is a ten-week mindfulness program that examines the impact on students' academic skills, classroom behaviors, and emotional regulation.

The elementary school is an urban school in Denver, Colorado, and is similar to other schools around it when it comes to poverty and diversity. Only fifteen percent of the students are not on free and reduced lunch, and eighty-three percent of the students and staff are not origins of white or Hispanic. Two classrooms of eighteen

students were chosen for the study. The principal chose one classroom to receive the mindfulness program during homeroom in the morning and the other class carried on with their normal routines. All eighteen students had parental consent to participate in the mindfulness program and only twelve students had parental consent to participate in the control group.

Harpin et al. (2016) used a blend of MindUp and Mindful Schools curriculums during the ten-week mindfulness program. The mindfulness intervention was given twice a week by a certified Mindfulness instructor (AMR) and lasted between twenty and thirty minutes. The curriculum consisted of how the brain works, breathing techniques, awareness of thoughts and body, perspective taking, heartfulness, and gratitude. Students and teachers were given two pre- and post-surveys to determine the effectiveness of the mindfulness program. One survey is The Fasttrack Social Competence Survey (FTSC) where teachers completed one for each student on their academic skills, prosocial behavior, and emotional regulation, both in the intervention group and control group. The second survey is The Child Assent Mindfulness Measurement Survey (CAMM) where students are assessed on awareness, if they have the ability to not judge internal experiences, and how they observe their internal experiences. The third survey is The Mindful Schools Survey that both the students and teachers take to assess their awareness of Mindfulness practices and their thoughts on the curriculum.

The FTSC results showed a significant increase in academic skills, prosocial behavior, and emotional regulation of the students in the intervention group. The

comparison group had an increase in scores, but they were not significant. The CAMM results showed no significant differences between the pre- and post-surveys for either of the intervention or comparison groups. The Mindful Schools Survey results showed that all students in the intervention group reported that they enjoyed having the Mindfulness program and gained a variety of benefits from it. About 75% of the students said they had taught someone they know about Mindfulness and gave various ways they used it during their days. Some examples are before a test, when they are angry or upset, to avoid fights, and to stop their mind from constantly thinking to help them fall asleep at night. Teachers reported that they felt the Mindfulness program benefited most of the students by helping them focus better in the classroom, be more in control of their actions, be more aware of their bodies, and improve their overall behaviors at school. Other teachers in the school even commented on how noticeable the students in the intervention groups behaviors had increased.

Overall, Harpin et al. (2016) ten-week Mindfulness program had positive impacts on the students in the intervention group by increasing their academic skills, prosocial behavior, and emotional regulation. There was an increase in the control groups behaviors as well. Teachers were able to increase their teaching time during the day and saw positive changes in themselves, as well as in the students.

Students are more successful in classrooms that are non-disruptive because they are able to concentrate better on the content. Mindfulness training has been shown to promote prosocial behavior and that helps with creating non-disruptive classrooms. Mindfulness is a skill that allows you to be in the present moment and to not have

automatic or routine behaviors. Mindfulness has been shown to improve attention control, self-regulation, and reduce psychological stress in children (Black & Fernando, 2013). Most studies that look at the effectiveness of mindfulness interventions on children have small sample sizes and need to be replicated using larger sample sizes. Black and Fernando (2013) study used a larger sample size of students to see the effectiveness of a mindfulness-based program and collected data on students' behaviors in the classroom by evaluating teacher reports. Black and Fernando (2013) also examined if additional sessions after the mindfulness intervention would benefit the student's classroom behaviors.

The study took place in an elementary school in Richmond, California, and the school chose to use the Mindful Schools (MS) program as the intervention. The elementary that was chosen was very diverse and most of the families were of low income. There were four hundred and nine students and seventeen teachers who participated in the study. The Mindful Schools (MS) program was used for a five-week intervention and then some students received an additional seven weeks after the initial intervention. The five-week MS intervention was given to students in fifteen-minute sessions, three times per week. The students who received the additional seven weeks after the initial intervention, had sessions once per week for fifteen-minutes. The classrooms were randomly selected to either receive the MS program or the MS program plus the additional seven weeks (Black & Fernando, 2013).

Two mindfulness meditation teachers instructed the MS program with the students during each session. Mindfulness sessions included mindful bodies, breathing

techniques, heartfulness, emotions, gratitude, and mindful eating, walking, and test-taking. The classroom teachers were given a one-hour information session on mindfulness and participated with their students for mindfulness classroom activities (Black & Fernando, 2013). The days when the instructors were not at the school, the teachers would do a short two-minute mindfulness practice with their students. The students were also encouraged to practice the skills that they learned during the MS program in their daily lives. Teachers collected data on each of these students using The Student Behavior Rubric by Kinder Associates. This rubric assesses four categories on students' behavior: self-control, participation, paying attention, and showing care and respect for others (Black & Fernando, 2013, p. 1243). This was a quick way for teachers to report on their students.

Baseline data showed that both groups had the same grade levels and the students' scores on the classroom behaviors were equivalent. The immediate post-intervention scores showed that all students, from both groups, classroom behavior had improved in all four categories (self-control, participation, paying attention, and showing care and respect for others). These improvements lasted up to seven weeks after the initial intervention (Black & Fernando, 2013). Students who participated in the MS program plus the additional seven weeks, showed continued increase in paying attention, whereas the five-week intervention group stayed the same. These results showed that there were not significant benefits gained by students from the additional one session per week for seven weeks after the initial five-week intervention.

Overall, this study shows that students who received a five-week mindfulness-based intervention, specifically Mindful Schools (MS) for this study, showed that teachers perceived students to have improved classroom behaviors (Black & Fernando, 2013). Improved classroom behaviors can lead to a non-disruptive classroom; therefore, students would be able to concentrate better on the academic content. Since the teachers participated in the mindfulness classroom activities, they may have benefited from the intervention as well.

Schools today are facing more pressure to improve students' academic performances, and to help with their social and emotional needs as well. Students social and emotional needs affect how their academic performance is going to be. Mindfulness based practices have been shown to have an effect on students' well-being and academic performances. There has been little research on the mindfulness practice, social and emotional learning (SEL) program, and how it affects students' stress levels, appropriate behaviors, and behaviors that benefit others. Schonert-Reichl, Oberle, Lawlor, Abbott, Thomson, Oberlander, and Diamond (2015) decided to continue to explore the effectiveness of SEL on children.

One hundred children in fourth and fifth grade were recruited for this study, but one child moved away, so there were ninety-nine children who participated in this study. Their ages ranged from nine to eleven years old, and most of the children lived in a two-parent home. The children all had similar demographic characteristics, so randomization was a success. There were four teachers who participated, and they all had over five years of teaching experience.

A suburban, middle-class community was chosen to pick four elementary schools from. The principals and one of the fourth and fifth grade classroom teachers in each school were told about the study and agreed to participate. They would not know whether they were getting the SEL (MindUP) program or the district program in their school/classroom. The MindUP program was mindfulness-based that helps aid social and emotional learning through twelve lessons, once a week. Each lesson was about 40-50 minutes long. The core of MindUP was focusing on breathing, and attentive listening for 3 minutes, three times a day. The lessons include self-regulation, positive mood, promotion of executive functioning, and social-emotional understanding. MindUP also promotes acts of kindness and participating in community learning activities to help build a positive classroom environment.

Trained research assistants administered all of the assessments and collected all of the student samples at the pre and post-tests. The trained research assistants were blind to student and teacher study conditions and the teachers were not blind to the students' study conditions. Students were given peer behavioral and self-report assessments during one class period, 45 minutes, and all the questions were read aloud to ensure their understanding. Some of the teachers implemented the MindUP program, which promotes better engagement from the students because the teacher already has rapport with their students. The teachers were asked to complete surveys and to record how many lessons they completed, and the implementation of the program using a lesson diary. The teachers who weren't implementing the MindUP

program, implemented the district Social Responsibility Performance Standards and were asked to report how many activities they completed every week.

The students were measured on five independent sources: behavioral assessments of executive functioning, child self-reports on their well-being and prosociality, year-end and teacher-reported math grades, prosociality from peer nominations, and children's salivary cortisol measured by biological assessments. The following measures and assessments were used: flanker test, hearts and flowers task, Interpersonal Reactivity Index, Resiliency Inventory, Marsh's Self-Description Questionnaire, Seattle Personality Questionnaire for Children, Mindful Attention Awareness Scale, Social Goals Questionnaire, and peer nominations.

Teachers who implemented the MindUP program completed all twelve sessions and one teacher completed 81% of the recommended core breathing practices and the other teacher completed 95%. Teachers who implemented the social responsibility program completed all of their sessions in twelve weeks. There were no significant differences in the baseline data of executive functioning (EF). The posttests show that students who received the MindUP program had faster EF but were no more accurate than compared to the students who received the district training. Students from the MindUP program showed shorter reaction times and outperformed the comparison students in their ability to attend and reduce distractions. There were no significant differences in the baseline or post-test data for cortisol secretion and no significant difference in baseline self-reports. Post-tests for self-reports show a significant difference between the two comparison groups. Students who received the MindUP

program showed significant improvements in empathy, school self-concept, mindfulness, optimism, and emotional control. Their symptoms of depression decreased significantly. Students who received the district training significantly decreased social-emotional well-being, which seems reasonable because the district training focuses on social-responsibility. There were significant differences between the baseline data of prosocial dimensions, and students who were in the MindUP program had higher scores on starts fights. Even though baseline data differed, results showed those students who received the MindUP program, their prosocial behavior scores improved from pre to post-test. Their peers rated them as having less aggressive behavior from pre to post-test as well.

Overall, the social and emotional learning program, MindUP, is fairly easy to administer and shows positive results in children. Students showed improvement in their well-being, executive functioning, higher math performance, and prosocial behavior.

Internalizing Problems

Internalizing problems, like depression and anxiety, especially in childhood, can lead to things such as suicide, drug and alcohol abuse, delinquency, and even unplanned pregnancies. There has not been much research done on mindfulness interventions with students who have internalizing problems, at a clinical level. One study showed that students with clinical level internalizing problems who had a mindfulness intervention, did not show a decrease in their anxiety, but the results showed that students' academic performance, problem behaviors, and attention improved (Lam, 2016, p. 3294).

Depression and anxiety are common internalizing problems with Chinese children. The purpose of Lam (2016) study was to see the effectiveness of a mindfulness-based cognitive intervention on students with sub-clinical internalizing problems, to see if the intervention would reduce them. Lam (2016) also assessed if the intervention was still maintained after three months of completion.

Students from seven separate classrooms at one Hong Kong elementary school who exhibited high levels of internalizing problems were chosen to participate in this study. Students were in fourth to sixth grade, and the parents reported them to have high levels of internalizing problems or the students did themselves. Ninety-three students and parents participated by completing the Revised Children's Anxiety and Depression Scale and The Strengths and Difficulties Questionnaire (Lam, 2016). Then twenty students with the highest internalizing problems, but not high externalizing problems were chosen to do the nine-week mindfulness intervention. These students also could not have a developmental disability, not be the most hyperactive or disruptive, or have a disabling physical condition (Lam, 2016). There were eleven girls and nine boys, but only seventeen of the twenty students completed the whole intervention. In order to complete the intervention, students had to participate in six out of the nine sessions. Students were given small souvenirs after they completed the assessments and the intervention program (Lam, 2016).

There were two stages to this study, screening and the intervention. The screening stage recruited students to participate in the study and the intervention stage was a pre and post randomized control trial with a treatment group or waitlist control

group (Lam, 2016). During the screening stage, parents had to give consent via a letter, and the parents and students who had given consent were also contacted by phone to confirm their participation in the study.

The intervention was after school and there were nine sessions, that lasted for eighty minutes. The sessions were held in a classroom with teaching staff present as well. The intervention was based off of Mindfulness-based Cognitive Therapy and had some mindful exercises from the Inner Kids Program (Lam, 2016). Students were also given MP3 players that had audio guided practices already recorded on it, so they could practice at home. Students were given small gifts if they had good behavior, attended the sessions, and practiced at home. There were two groups, Group 1 was made of ten students who received the intervention during the first semester and Group 2 was made of ten students who received it during the second semester, as an open trial design (Lam, 2016). Both groups had similar gender and ages in each group, and each of the participants completed three assessments on internalizing problems (Lam, 2016).

One of the assessments was The Revised Children's Anxiety and Depression Scale and this assessed depression and anxiety in children. Another assessment was The Penn State Worry Questionnaire for Children and measured worry in children. The third assessment was The Child Behavior Checklist and it measured children and adolescents behavioral and emotional problems. The students also filled out a questionnaire about their overall experience with the mindfulness intervention. The Strengths and Difficulties Questionnaire was completed by the parent and/or teacher and measured

five subscales about peer relationship problems, hyperactivity/inattention, conduct problems, emotional symptoms, and prosocial behavior (Lam, 2016, p. 3298).

Results of Lam (2016) study showed that Group 1 had larger reductions in most internalizing problems than Group 2. However, both groups had symptom reductions, whether they were in the immediate intervention group, waitlist group, or during the follow-up period. Symptom reduction was significant for Total Anxiety, Total Internalizing, Panic Disorder, and Generalized Anxiety Disorder (Lam, 2016). When the data was pooled together, there were no significant differences between Group 1 and Group 2, but Group 1 had higher reductions in symptoms as shown on the self-report. During the three-month follow-up for Group 1, symptoms continued to drop after the intervention was done and there were significant differences from the pre- assessments to during the follow-up period. Results on the students' overall experience with the mindfulness intervention was that it was a favorable experience and eighty-five percent of the students found it helpful (Lam, 2016). Only five percent of students said that their internalizing problems did not improve. A little over half of the students stated they would continue to use the tools that they learned during the intervention after it was completed.

Overall, the nine-week mindfulness intervention showed to have small to medium effects on Hong Kong elementary school students with internalizing problems that were subclinical (Lam, 2016). For both groups their anxiety decreased, although it was not a significant amount and their anxiety levels were still down even after the three-month follow-up. Hong Kong school staff gave positive feedback about the

mindfulness intervention, and the students who participated were accepting of it and found it feasible.

During adolescence, many disorders can peak, especially anxiety, depression, and eating disorders. These disorders can affect students' academic success, relationships, physical health, and employment. There have been no intervention programs that address all three of these disorders, and if an intervention could be developed, it would save schools money and time. Mindfulness-based interventions have been shown to have positive effects on adults with anxiety and depression. The purpose of Johnson, Burke, Brinkman & Wade (2016) study was to see the effectiveness of a mindfulness-based intervention on students' anxiety, depression, and eating disorders in a randomized controlled study. The study also looked at further benefits of students practicing learned skills at home.

Four secondary schools, three public and one private, in Adelaide, South Australia participated in the study. These schools were contacted by email and then followed up with a telephone call. A public primary school also wanted to participate in the study and Johnson et al. (2016) let the school be a part of the study. All five of these schools fell into the low socioeconomic status. Students in year seven of school were still in primary school and students in year eight of school were in secondary school. These two years were considered crucial developmental points because abstract reasoning capacity has developed and common mental health disorders emerge (Johnson et al., 2016). Three hundred and eight students participated in the study. The mean age was thirteen years old and almost forty eight percent of participants were

female. Around twenty-two percent of the students had anxiety or were in the clinical range for depression at the beginning of the study (Johnson et al., 2016).

Parents and students gave consent to use their questionnaire data because the mindfulness-based intervention was already considered part of the curriculum (Johnson et al., 2016). Classes from each of the schools were randomized to a mindfulness group or a control group. Both groups, mindfulness and control, did not have significant differences in baseline characteristics (Johnson et al., 2016). The mindfulness-based intervention used was .b Mindfulness in Schools curriculum and is based on adult mindfulness-based stress reduction and cognitive therapy programs, but modified for adolescents using reviews (Johnson et al., 2016). The mindfulness-based intervention was eight lessons long, one per week, and Johnson led all of the lessons. During each lesson, she taught various mindfulness practices and then encouraged the students to use a homework manual and practice these at home (Johnson et al., 2016). Eighty-seven percent of students participated in at least six out of the eight lessons. The control group did not receive a mindfulness-based intervention and just participated in the normal curriculum. All of the students participating in the study completed pre-, post-, and follow-up questionnaires. Students completed these questionnaires either on paper or online using survey software.

One questionnaire used for the primary school students was the Depression Anxiety Stress Scale – Short form (DASS-21) and this measured negative affect. A second questionnaire used was the Eating Disorder Examination-Questionnaire (EDE-Q), which shows any weight concerns and can be risk factors for eating disorders (Johnson et al.,

2016). A third questionnaire used was the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) and this measured how the students had been feeling about various things over the past two weeks.

One questionnaire used for the secondary school students was The Child and Adolescent Mindfulness Measure (CAMM) and this measured the student's mindfulness. A second questionnaire used was the Difficulties in Emotional Regulation Scale (DERS) and this measures how students regulate their emotions. Another questionnaire used was The Self-compassion scale (SCS) and this measures self-compassion. At the end of the intervention, students were asked how much they practiced the mindfulness techniques at home. Eleven weeks later, the students were asked how much they have used the mindfulness techniques that they learned from the intervention (Johnson et al., 2016). The students and teachers who participated in the intervention group were also asked to rate the mindfulness intervention.

Staff reported that this mindfulness-based program was not expensive and taught good practical strategies. The study however showed there were no improvements in any of the three areas, anxiety, depression, or eating disorders right after intervention or during the follow-up. Some students even reported that their anxiety was higher after the intervention, and Johnson et al. (2016) believe this could be due to students being more aware of their emotions than they were before.

Adolescence is a very crucial time in someone's life and can help determine their future. Adolescents in secondary education have a lot of demands and stressors put on them, especially when it comes to board examinations. These examinations put a lot of

stress on students because they want to get high scores as it helps them get into the colleges they want. These examinations can also cause other problems such as anxiety, lack of sleep, concentration, lack of appetite, and lowered self-esteem (M. & Dhanalakshmi, 2016). The purpose of M. & Dhanalakshmi (2016) study was to see the effectiveness of Mindfulness Based Stress Reduction (MBSR) intervention on adolescent Indian students' anxiety, self-control, and academic performance who have upcoming board examinations.

M. & Dhanalakshmi (2016) looked at schools in the Thrissur district and chose six schools randomly. Three hundred adolescent students, fifteen to eighteen years old, were randomly chosen to participate in the study. After students gave consent, these students took an anxiety and self-control questionnaire. The anxiety questionnaire was the State-Trait Anxiety Inventory (STAI) and the self-control questionnaire was the Self-Control Scale. Fifty-one students identified as having high anxiety, low academic performance, and low self-control (M. & Dhanalakshmi, 2016). These students were randomly put into an experimental or control group. Twenty-five students were in the experimental group and twenty-five students were in the control group. The extra student was put in the experimental group, but their data was not used.

The experimental group received an eight-week mindfulness intervention based on MBSR. The intervention sessions were done before school started, and instruction was given by M. & Dhanalakshmi and an assistant. Each session was forty-five minutes long and over the eight-week course students learned Body Scan Meditation, Mindful Yoga I, Sitting Meditation, Mindful Yoga II, and enhanced body functions (M. &

Dhanalakshmi, 2016, p. 392). Students were encouraged to practice the mindfulness techniques regularly. At the end of the intervention, students were given the same anxiety and self-control questionnaires. Student's academic performance was also evaluated. These questionnaires and academic performance were evaluated a month after the intervention was completed.

Results showed that there were no significant differences on anxiety, academic performance, and self-control between the students in the experimental and control group. There were significant differences from the pre-test scores to the post-test scores on anxiety, academic performance, and self-control for the experimental group. There was a significant difference between the pre-test and post-test for academic performance for the control group, but no significant differences for anxiety or self-control scores (M. & Dhanalakshmi, 2016). Post-test scores to follow-up scores showed that there were no significant differences on anxiety, academic performance, and self-control for either the experimental or control group. Overall, these results show that MBSR intervention is effective in reducing students' anxiety and increasing their self-control which in turn helps improve their academic performance. The mindfulness intervention also helps students to be able to deal with stressful or unpleasant thoughts and feelings in an appropriate way (M. & Dhanalakshmi, 2016).

Research on the effects of mindfulness has grown over recent years and the effects of mindfulness on adolescents has also become more popular. Baer, Smith, Hopkins, Krietemeyer, & Toney (2006) conducted a study on measures of mindfulness and the results showed there were five distinct factors. Baer et al. (2006) then made the

Five Facet Mindfulness Questionnaire (FFMQ) and this questionnaire helps to study participants' awareness and attention in the present moment to their thoughts and feelings. The five facets are observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience. The study done by Ciesla, Reilly, Dickson, Emanuel & Updegraff (2012) observed the effectiveness of three of the five facets on mindfulness, daily stress, rumination, and depressive mood on teenagers. The three facets that were observed were acting with awareness, nonjudgment, and nonreactivity.

Teenagers were recruited to participate in this study at a local high school in Ohio, and the students who were interested received more information about the study and information from their parents. Consent had to be given by the parents and student, prior to being enrolled in this study. The study started off with one hundred and one students but ended up with seventy-eight students due to the number of days that the students participated in the study, they had to participate in at least three days. The students who participated were fourteen to eighteen years old and sixty-one percent were females. There was not much diversity with ninety-four percent Caucasian, four percent Native American, and two percent biracial (Ciesla et al., 2012, p. 763).

Students were asked to complete a packet of questionnaires regarding dispositional mindfulness and demographics (Ciesla et al., 2012, p. 763). After this initial packet was filled out, the students were asked to complete a daily questionnaire for seven days on the computer. If students did not have a computer at home, there was

one designated for this study at the high school that they could use so all students had equal access to participate in the study. Participation was monitored and reminders were given to the students by their preferred method of communication after a day was missed. Students who participated in the study were reimbursed up to fifteen dollars, depending on how many days they participated, and they were also entered into a drawing to win an mp3 player.

The Five Facet Mindfulness Questionnaire (FFMQ) was used as a measure in this study. Only nonreactivity, nonjudgment, and acting with awareness facets were examined, even though all facets were given (Ciesla et al., 2012). A second measure was The Positive and Negative Affect Schedule; Sadness Subscale (PANAS-S) which measures students' positive and negative feelings and emotions by self-report. A third measure was a modified version of the Response Styles Questionnaire and this measured rumination (Ciesla et al., 2012). The questionnaire was modified by shortening it and rewording questions to assess rumination. The last measure used with students was students reporting how many stressful life events happened each day during the study. The students decided which life events were applicable (Ciesla et al., 2012).

Results showed mindful nonjudgment and nonreactivity lessened the effect of life stress on daily changes in dysphoric effect (Ciesla et al., 2012). Mindful acting with awareness did not affect dysphoria when it came to life stress. All three, nonjudgment, nonreactivity, and acting with awareness, lessened the effect of life stress on rumination. Students who were more mindful were less likely to experience increased dysphoric mood and rumination after stressful life events occurred. Students with

higher rumination intervened the effects of interaction between mindfulness and stress. Students who were able to respond to their internal experiences with nonjudgment and in an accepting way, instead of reacting to them, were least likely to experience negative effects. Ciesla et al.'s (2012) findings were similar to other existing studies on the effects of three out of five facets (nonjudgment, nonreactivity, acting with awareness) on mindfulness, daily stress, rumination, and depressive mood in teenagers.

Attention

Mindfulness has become more popular and has shown positive effects on people's behaviors suffering from clinical disorders. Wilson & Dixon (2010) conducted a study on the effectiveness of mindfulness on elementary students' attention. The study took place in Southern Illinois at a private elementary school. There was a total of twelve students who participated in this study, five of whom were male and seven female. The students were in the second and third grade (Wilson & Dixon, 2010). These students were chosen by the principal because of the teacher's concerns about their behaviors and group interactions.

Wilson & Dixon (2010) defined "attending" as a student being engaged in what is going on during a particular time in class. "This included looking at or in the direction of the teacher or student who was talking, following instructions, looking (and/or completing) a worksheet, and engaging in classroom activities" (Wilson & Dixon, 2010, p. 138). Baseline data was collected on how much each student attended during class by doing thirty-minute observations. The observers would sit at the back of the classroom and would wait fifteen minutes before they started collecting data. They would listen to

a pre-recorded tape that helped collect data every 10 seconds and told them when to move on to the next student (Wilson & Dixon, 2010). Students were observed in a counterclockwise rotation, so if there was more than one observer, they would be observing the same student at the same time. After the thirty-minute observation, the observers would leave the classroom.

The mindfulness intervention was implemented for fifteen minutes each day over five days. The mindfulness intervention included exercises that were tailored to meet the developmental needs of elementary students (Wilson & Dixon, 2010). One mindfulness exercise was, Silent Game, which helped introduce Mindfulness to the students, and was used once or twice a day. Another exercise was the Breathing Exercise and it focused on students breathing. After the students became familiar with each exercise, these two exercises were combined and the exercise name became, Silent Game 2. As the intervention went on, the exercises became longer and more structured as mindfulness exercise (Wilson & Dixon, 2010). The students liked the Silent Game 2 the best and reported practicing this exercise on their own. Other two exercises that were used were Noticing Self Exercise and Mindful Eating Exercise. After the mindfulness exercises, observers collected data in the same manner as they did when collecting the baseline data.

Baseline data showed an average of sixty-eight percent of students attended to class. After the mindfulness intervention exercises were given, the data showed an average of eighty-seven percent of students attended to class. This showed an increase of eighteen percent of students attending to class. After the intervention was done, data

showed a decrease of students attending to class by fourteen percent. All of this data showed that the mindfulness exercises may have helped students attend to class better (Wilson & Dixon, 2010).

Over the past decade, children with attention deficit hyperactivity disorder (ADHD) has increased and with technology becoming more prevalent, this may cause more attentional problems. Children who struggle with focusing and attention related skills tend to not be successful in school. The purpose of Tarrasch's (2018) study was to see if mindfulness practices have any impact on students' attention in elementary school.

There were one hundred and one students from an elementary school in central Tel Aviv that participated in this study. These students were in grades third through fifth. There was an experimental group, students who received the mindfulness-based intervention, and a control group, students who did not receive the intervention. There were fifty-eight students from the fourth grade in the experimental group, twenty-eight were girls and thirty were boys. For the control group, there were twenty-two third graders, eleven girls and eleven boys, and twenty-one students from the fifth grade, twelve girls and nine boys (Tarrasch, 2018). Parents gave consent for their child to participate in the study and the students knew that they could drop out of the study at any time, for any reason.

Attention tasks were given over two days to all students before the experimental group received the mindfulness-based intervention. These attention tests were typically given individually in a quiet area, but due to time and having to be done at a school,

students were given these tests in groups of four. There would be three groups testing at a time and each group would have their own experimenter. These attention task sessions were about thirty minutes long.

The students in the experimental group participated in a ten-week mindfulness-based intervention based on the Mindfulness Based Stress Reduction (MBSR) (Tarrasch, 2018). They adapted MBSR to be a more personalized game like for students in elementary school. The mindfulness intervention was once a week, in groups of three to four students, and each session lasted about forty-five minutes. During every session, the goal was to increase students' awareness of their thoughts, feelings, and physical processes (Tarrasch, 2018). Sometimes homework was given for students to teach their parents an exercise they learned and then it would be discussed at the beginning of the next session (Tarrasch, 2018). After each session, there was a discussion that follows for students to talk about their feelings, difficulties, and if they discovered anything. When students were learning yoga practices, there were caricature drawings to go along with the different positions, and the practices were more playful and physical than those that an adult would practice. If students were struggling to focus during the session, they would play a short game, and then go back to following the lesson plan. The students in the control group received their normal instruction.

One measure used was the Computerized Continuous Performance Task (CPT) and this measured student's sustained attention. This task took student's twelve minutes to complete. Valid data was taken for ninety-three students due to some students not understanding the task or not following directions. The second measure

used was the Conjunctive Visual Search Task and this assessed students' selective attention. This task took students twelve minutes to complete. Valid data was taken for ninety students due to some students misunderstanding the task. The students took these two attention tasks one week before the experimental group received mindfulness instruction and one week after the sessions were completed.

Looking at the attention tasks before the mindfulness intervention and then after, the students in the experimental group showed significant improvement in their accuracy, but not for the control group. These results by the CPT and Conjunctive Visual Search Task suggest that the mindfulness intervention used for elementary school students helped improve their attention more than the control group (Tarrasch, 2018). These results are consistent with previous study findings of positive effects of mindfulness on school age children. Overall, students in elementary school who can improve their impulsivity and attention are more likely to do better in school and improve their well-being (Tarrasch, 2018).

Response to Mindfulness Interventions

There have been studies done on the effectiveness of mindfulness interventions on children over the past ten years and studies have shown positive results. Researchers have not examined the differences in how male and females react to the interventions. During adolescence, males and females mature and develop at different rates. Mindfulness interventions may be more beneficial if they were tailored to meet the emotional and social needs of males and females. Bluth, Roberson, and Girdler (2017)

decided to explore how males and females respond to a mindfulness intervention and if there were any differences.

The researchers recruited participants who were between the ages of 13-18 years old and who could understand and read English. If a participant scored low on the Kutcher Adolescent Depression Scale, they could not participate in the study. There was a total of fifteen participants, ten females and five males. Participants were randomly selected to participate in a control group or in a mindfulness intervention group. The mindfulness intervention group had more females than males, 62% were females. Participants were compensated for their time.

Participants went through a six-week mindfulness course called Learning to BREATHE (L2B). A long-time mindfulness practitioner of thirty-five years was the instructor of L2B to these participants. L2B's purpose was to help students take on teenage stress and was tailored to adolescents. Adolescents were actively engaged, and the meditations were shorter. Participants were given assignments to practice mindfulness skills learned that week at home.

Before the study started, participants went to a laboratory and got their stress response such as heart rate, cortisol, blood pressure, and heart rate variability monitored by the Trier Social Stress Test (TSST) to determine baseline data. After the laboratory, participants were sent a link to an online survey to complete before the intervention started. The following assessments were on the online survey: The Children and Adolescent Mindfulness Measure, Self-Compassion Scale, Student's Life Satisfaction Scale, Perceived Stress Scale, Positive and Negative Affect Schedule, Spielberger State

Anxiety Inventory, and the expectation and credibility scale. During the intervention, participants met weekly for an hour and a half. Their engagement was assessed by content utterances, percent attendance, and home practice completion.

After the intervention, participants were sent a second online survey to complete. Participants went back to the laboratory as well to get their post-intervention stress response monitored, filled out a questionnaire about how their lab experiences differed, and if they used any stress techniques.

The sample size was small, and the results should be interpreted with caution. After the first intervention class, there were no significant differences in course expectations between males and females. Females seemed to have a slightly higher belief this intervention was going to have positive outcomes. Females attended more classes than males, tended to complete home practice more frequently than males, and contributed to class discussions, content utterances, more than males. Females had an increased systolic and diastolic blood pressure from the pre to post intervention during the speech tasks and males only had an increased diastolic blood pressure. Neither females nor males had any change in heart rate stress reactivity from the pre to post intervention. Females had a decrease in cortisol levels, which indicated there was less of a stress response and males had a small increase in cortisol levels, which indicated more of a stress response. On the self-report online questionnaire females reported a big decrease in anxiety levels and males only showed a medium decrease from pre to post intervention. Females reported a small increase in mindfulness and perceived stress whereas males reported a small decrease in mindfulness and no change in perceived

stress. Positive affect for females did not change from pre to post intervention, however males had a strong increase.

All female participants reported using a form of stress reduction they learned during their mindfulness intervention and only three males used a technique learned during the post lab. There were more females than males in this study and that may have skewed the results. Females may also have had a stronger belief in mindfulness helping improve their overall well-being than males. Overall, the two variables that changed the most from pre to post intervention were positive affect for males and anxiety in response for females.

Dariotis et al.'s (2016) study looked further into Mendelson et al.'s (2010) study by getting the perspectives of both the students and teachers about their experiences with the mindfulness and yoga school-based program. Implementation of mindfulness programs in schools has a huge impact on how students are going to respond and how seriously the program is being taken and supported. Research on mindfulness programs and the effects it has on students in a school-based setting has become more popular, especially after finding positive effects on students' overall well-being. However, there has not been much research done on the implementation of mindfulness programs or getting qualitative feedback from the students (participants) and teachers. Dariotis et al. (2016) used two main research questions that guided this study: What went well with the program and what did the students and teachers not like? What additional factors encouraged participation or hindered it?

The three schools that participated in the intervention are in extremely economically disadvantaged neighborhoods. Dariotis et al. (2016) chose twenty-two students out of one hundred twenty- two students in fifth and sixth grade who participated in Mendelson et al. (2010) study. There were six focus groups, two at each of the three schools. Classroom teachers chose which students were going to participate in this study based on program attendance, grade, sex, and engagement. Out of the twenty-two students, over half were fifth graders and there were slightly more females in one school and slightly more males in another school. The focus groups resembled the demographic characteristics of those who participated in the intervention, for the most part. Nine out of eleven fifth and sixth grade classroom teachers participated in the study across all three schools.

The focus group discussions and interviews were completed after the intervention of the mindfulness program and were led by a female representative. These discussions and interviews were held in a private area in the school, were conducted during non-instruction time, and lasted about thirty-five minutes. The focus groups varied from two to six students and each student was interviewed separately for each of the focus groups, except one. One of the teachers participated with the focus group of students, another was with two other teachers, and the others did individual interviews due to timing. Dariotis et al. (2016) made student and teacher questions that pertained to barriers and facilitators of the program, and what their recommendations would be to fix these barriers and what the facilitators could do differently. These discussions and interviews were audiotaped so later on they could be transcribed. Three

members on the study team, who were trained and had experience with inductive coding and analyzing data, organized themes and subthemes from the transcripts.

The four main themes were identified were: program delivery factors, implementer communication with teachers, promoting program buy-in, and instructor quality (Dariotis et al., 2016). The students at all three schools agreed that they would not change the content of the mindfulness program. The students and teachers offered feedback about the timing of the intervention. The intervention was held during resource time, so students would miss art class, music class, etc. or it was offered during part of the students' lunch time and the students did not like that. This even made some students resent the program. Students would choose to do an activity they enjoyed rather than participate in the mindfulness program, which brought attendance down. Teachers also had concerns with the timing because teachers didn't know which students were supposed to go to the intervention, especially when all of the students were transitioning at the same time. The teachers also didn't know when they were supposed to be coming back to class and had to spend time looking for their students. Students reported the settings of the programs had some distracting elements such as dust, wetness, bugs, and windows in the doors, so other students who were not participating in the program could look in on the students.

Teachers from all three schools reported that they felt like they got insufficient training on what the intended goals of the mindfulness program were and how to best support their students. Teachers reported that more communication with them about their students' attendance, progress, and behaviors from the facilitator would have

been nice. Sometimes they could not verify where their students were on certain days due to not knowing if the student attended the intervention or not. Teachers from one school reported they would get occasional emails, but that was not enough.

Teachers reported that the facilitators should have held classroom sessions because students could have learned and practiced how to use these skills in the classroom. Some students even felt that they would have liked to role play the program techniques they learned to better understand them. If students used these skills regularly it would become more of a routine for them and they would more likely use these skills when faced with a problem or a stressor. At all three schools, teachers reported that they were willing to attend mindfulness training if it was integrated into staff development days or during faculty meetings. Both students and teachers felt that the program should have been longer, so that the students would continue to use the skills learned already and to learn more techniques to deal with stress. They also felt that students' participation should be voluntary and not mandated by the teachers or their parents.

Students reported that the instructor showed them respect by being nice, not yelling at them, and treating them fairly. The students reported that the instructors would model the behavior they wanted to students to display. Students would also get rewards for good behavior, which typically didn't happen in other places. Teachers reported the students liked having a positive role model to look up to and the male students from the two schools liked having a male role model. Overall, Dariotis et al.'s (2016) study showed the students and teachers liked the content of the mindfulness

program and had some great suggestions on how to improve future studies using mindfulness programs in school settings.

Self-Concept

Current educational systems not only help students develop cognitive skills, but they also help develop emotional skills (Palomino, 2017). Students who are in primary school years develop self-concept, thus making this time very important. Students become aware of their popularity, successes, failures, how well they do in school, how their teachers react to them, and their own attitudes (Palomino, 2017). Students who have negative thoughts about themselves tend to perform poorly in school. Students also have factors out of their control that can influence the development of their cognitive and emotional skills and their self-concept such as economic and cultural circumstances, school absences, and unstructured or little parental control. Mindfulness based programs have been shown to help students improve their academic performance and help regulate and be more aware of their emotions and behaviors. The purpose of Palomino (2017) study was to analyze the perceptions of self-concept with primary school students who were at a disadvantage from economic, social, personal, or cultural situations.

The study took place at an Infant and Primary Education school in the province of Granada in Spain (Palomino, 2017). Twenty-six students participated and completed the questionnaire for this study. Seventeen students were male and the other nine were female. Thirteen students ranged from nine to ten years old, eight students ranged from eleven to twelve years old, and five students ranged from seven to eight years old. The

students were mainly in the mainstream classroom but had some special classes a couple hours a week to meet their various needs. Some students had a curricular lag, irregular schooling, lack of language from immigrant students, and faced challenges to make inclusion difficult. These special classes are called compensatory education classes. More students without disabilities in this study, about seventy percent, had compensatory classes compared to students with disabilities. The compensatory education teacher participated in the study by helping the students fill out the questionnaire and the tutor just made sure the students filled out the questionnaire (Palomino, 2017).

Self-concept cannot be directly observed but can be drawn from personal reports and behavior from the students (Palomino, 2017). Data was collected from the students using the Multidimensional Self-Concept scale and this scale measured seven dimensions. The seven dimensions were academic self-concept in mathematics, language, general academic self-concept, physical ability, physical appearance, peer relations, and parent-child relations (Palomino, 2017, p. 5). The students were told in detail about the questionnaire by the research team and they made sure the students understood the questions that were being asked in this questionnaire. The questionnaire could be answered with yes or no. The students were also told that their answers would be kept anonymous and confidential. The school's management and teachers were contacted, and parental consent was given before the study took place.

Results showed that students' relationships with their peers and parents affects how they view their physical makeup. Students view their own ability when it comes to

a physical activity or academic performance by the relationship that they have with their peers or what knowledge they possess (Palomino, 2017). Students who do not have positive perceptions about themselves tend to be rejected by their peers. These results show that students perceptions have an effect on their relationships with their peers and with academic performance in core subjects (Palomino, 2017). The results also show that how students view their physical self is shaped by their relationships with their family and peers. Overall, this study showed that self-concept is very important for students and will affect their relationships and academic performance, either in a positive or negative way.

Substance Use

Adolescence is a prime time for students to start using substances and current prevention programs are mainly focused on the dangers of using substances. These prevention programs rarely stop adolescents from trying or starting to use substances. Research has shown that mind-body practices may help reduce substance use when used with a prevention program and may also help with risk factors by reducing anxiety, and improving self-regulation and mood (Butzer, LoRusso, Shin & Khalsa, 2016). Yoga is a mind-body practice that helps with psychological and physical health and overall well-being. Yoga typically consists of four techniques: breathing exercises, relaxation strategies, improve emotional regulation and attention, and physical exercises and postures. Butzer et al. (2016) study wanted to see if school-based yoga helped reduce the risk factors, behavioral and emotional, and to see if it helped promote protective factors for substance use.

One urban public school, grades seven through twelve, in Boston, Massachusetts participated in this study. Students had to take exams for vocabulary, reading comprehension, and math skills to attend this school. Graduation rate was almost ninety-nine percent and about thirty-five percent were students of low income. The demographics of the school were primarily Asian and White students (Butzer et al., 2016). Two hundred and nine students participated and one hundred and thirty-two were females and seventy-seven were males. The students were only eligible to participate in the study if they were in seventh grade and registered for physical education (Butzer et al., 2016).

An explanation of the study was given to the students and teachers during homeroom and was given to parents on orientation night. Participation in the study was voluntary. Parental and student consent were needed for data collection on students who wanted to participate, but not for the yoga program because it was incorporated into the physical education curriculum (Butzer et al., 2016). There was a total of fifteen physical education classes and eight were assigned the yoga group and seven were assigned to the control group, which was just a regular physical education class (Butzer et al., 2016). Students who were participating in the study completed different questionnaires at four times, one pre-intervention, one post-intervention, six months post-intervention, and one-year post-intervention (Butzer et al., 2016). Students completed the questionnaires during their scheduled physical education class using laptop computers and were aware that their answers were confidential.

One questionnaire was The Brunel University Mood Scale (BRUMS) and this assessed the students' moods. A second questionnaire used was The 10-item Perceived Stress Scale to see what students considered stressful situations. The UPPS-P Impulsive Behavior scale was used to measure impulsivity. Three questionnaires were used to measure emotional self-control; The 5-item Soothability scale of the Kendall-Wilcox Self-Control Schedule, Anger Control subscale of the Children's Anger Management Scale (CAMS), and 5-item Sadness Control subscale from the Children's Sadness Management Scale (CSMS). Four questionnaires were used to measure emotional dysregulation; 10-item scale adapted from the 54-item Affective Lability Scale, 7-item Anger Coping subscale of the Wills Coping Inventory, The 3-item measure for Sadness Rumination adapted from CSMS, and The 3-item Anger Rumination subscale of the CAMS. Another questionnaire used was thirteen questions from the Youth Risk Behavior Survey and this measured students' willingness to experiment with substances (Butzer et al., 2016). Substances included cigarettes, alcohol, marijuana, and other drugs. The Youth Risk Behavior Survey helped to see student's actual substance use. The last survey was only for the yoga group and given to them after the intervention. It was a 12-item Yoga Evaluation Questionnaire that assessed how much they liked the yoga class and the regular physical education class.

The yoga intervention used for this study was a thirty-two-session version of the Kripalu Yoga in the Schools (KYIS) Curriculum (Butzer et al., 2016). After every three yoga sessions, a review session was added to review the prior lessons taught. The KYIS curriculum goals are to develop social and emotional learning skills using yoga and

mindfulness (Butzer et al., 2016, p. 611). The sessions were given during the students' regular physical education class, only if they were in the yoga group and were about thirty-five minutes long. With physical education classes being scheduled twice per six-day cycle, one to two sessions were given per week over a six-month period. A typical session included warm-ups, breathing exercises, yoga poses, experiential content, and relaxation (Butzer et al., 2016). Each yoga session was taught by a lead teacher and one assistant who were not school staff. There was a total of two lead teachers, one male and one female, and five female assistants. The control group received a typical physical education class twice per six-day cycle, one to two classes per week over a six-month period.

Students in the control group at the primary school level reported they were more willing to smoke cigarettes during the second questionnaire testing than students in the yoga group. There were no other significant differences between the two groups during this time. Females in the yoga group at the secondary school level reported significant increases in emotional self-control, where there were no significant changes for males in the yoga group (Butzer et al., 2016). It was the opposite for the control group, males reported significant increases in emotional self-control and there were no significant changes for females. For both the yoga group and control group, all students reported significant increases in willingness to smoke cigarettes, drink beer, smoke marijuana, and try drugs between the first questionnaire set and the second questionnaire set (Butzer et al., 2016). However, the willingness to use substances decreased from the second questionnaire set to the last questionnaire set, but not

significantly. Only willingness to smoking cigarettes decreased significantly for students in the yoga group.

Students reported that they liked a normal physical education class significantly more than the yoga sessions. Although students in the yoga group still reported that they practiced the yoga techniques outside of school more than the control group. Butzer et al. (2016) study showed that the yoga intervention helped females to improve their emotional self-control and helped both males and females to decrease their willingness to smoke cigarettes. The study also showed that females had greater long-term benefits from being in the yoga sessions and males benefited more from being in a general physical education class. Overall, yoga had positive effects on students' risk factors and substance use over an extended period of time (Butzer et al., 2016).

CHAPTER III: DISCUSSION AND SUMMARY

Summary of Literature

There have been many studies done on the effectiveness of mindfulness with adults and these have shown positive results. Since these studies have shown positive results, research has become more popular on the effectiveness of mindfulness with children in elementary and secondary schools. Research has shown that mindfulness has many positive effects on students' academic performance and behaviors. Students now a days face more personal and family challenges than they ever have before and this includes students with disabilities and without disabilities. These challenges affect students' internalizing and externalizing problems, executive functioning, attention, academic engagement, behavior, stress, and overall well-being. Mindfulness-based interventions have shown to help improve all of these.

Palomino (2017) study showed that self-concept is very important for students and will affect their relationships and academic performance, either in a positive or negative way. Some students who were in a special education class felt like they were not capable of succeeding in school and lost confidence in themselves. After a mindfulness-based intervention was used, students looked at themselves in a more positive way and this helped their academic performance. Pretests showed students having higher anxiety levels than on posttests after participating in mindfulness-based interventions (Beauchemin et al., 2008; Hwang et al., 2015; Lam, 2016; M. & Dhanalakshmi, 2016; Malboeuf-Hurtubise et al., 2016). Students with low anxiety had fewer errors and were able to pay attention better than students with high anxiety

levels (Chhabra & Parveen, 2017). In Bluth et al. (2017) students reported using a form of stress reduction that they learned during their mindfulness intervention and the two variables that changed the most from pre to post intervention were positive affect for males and anxiety in response for females. Students showed improved attention and executive functioning, as well as reduced internalizing and externalizing behaviors on the posttests and during the 8-week follow up period compared to the pretests (Weijer-Bergsma et al., 2011).

Students who received the mindfulness-based intervention, especially students facing homelessness, found mindfulness to be helpful in dealing with their emotions and behaviors (Viafora et al., 2014). In one study, staff reported that the mindfulness-based program used was not expensive and taught good practical strategies. The study however showed there were no improvements in any of the three areas, anxiety, depression, or eating disorders right after intervention or during the follow-up. Some students even reported that their anxiety was higher after the intervention, and Johnson et al. (2016) believe this could be due to students being more aware of their emotions than they were before. This was the only study where students did not show improvement, but staff thought the students learned strategies that were beneficial to them and related to their lives.

Students have the challenge of paying attention in the classroom while there are typically many distractions going on. Some students really struggle to ignore these distractions, and this affects their learning. Students who participated in a mindfulness intervention showed improved attention. One student showed higher ratings of

attention and lower ratings of stress when they completed the brief mindful breathing exercise (Idler et al., 2017). In Wilson and Dixon (2010) baseline data showed an average of sixty-eight percent of students attended to class. After the mindfulness intervention exercises were given, the data showed an average of eighty-seven percent of students attended to class. This data showed that the mindfulness exercises may have helped students attend to class better. The CPT and Conjunctive Visual Search Task suggest that the mindfulness intervention used for elementary school students helped improve their attention more than the control group (Tarrasch, 2018). Students with ADHD symptoms such as attention deficit, impulsivity, and hyperactivity, showed positive changes after participating in a mindfulness intervention. The results also showed that the mindfulness therapy could help strengthen students' deficiencies that go along with a diagnosis of ADHD (Abdolahzadeh et al., 2017).

Students' academic engagement improved after participating in mindfulness interventions. The Felver et al. (2017) study showed that SOF intervention increased academic engagement for students with disabilities and improved their disruptive behaviors. Students reported that SOF was a feasible and acceptable intervention and that they think it will help them do better in school. Minkos et al. (2017) study using an audio recorded mindful breathing intervention showed an increase in academic engagement and decrease in students' disruptive behavior with EBD. Steiner et al. (2012) also showed improvement in the students' focus and reduced behaviors.

Findings showed the mindfulness and biofeedback interventions improved on-task behavior and significantly lowered rates of off-task behavior for students in

elementary and middle school who are emotionally disturbed (Rush et al., 2017). Solar (2013) study showed the mindfulness practice PEACE can help students be more aware and in control of their emotions and behaviors. PEACE can also help reduce students' stress, which in turn can help students improve their behavior at school and outside of school. Costello and Lawler (2014) and Ciesla et al. (2012) showed that the mindfulness program helped most students be more aware in the moment and to help calm them, increased their ability to concentrate, and showed them how to tolerate and choose positive responses to stress. It helped many students detach from their feelings and thoughts, which helped them improve their reactions to stress. Mendelson et al. (2010) showed mindfulness programs helped urban students learn how to respond to stress in a more beneficial way and to have a positive effect on their overall well-being.

Mindfulness interventions improved students' overall well-being. Harpin et al.'s (2016) ten-week Mindfulness program had positive impacts on the students in the intervention group by increasing their academic skills, prosocial behavior, and emotional regulation. Schonert-Reichl et al. (2015) noted improvement in students' well-being, executive functioning, math performance, and prosocial behavior. Lau and Hue (2011) found the mindfulness program helped improve the adolescent students' psychosocial health along with their well-being. Anand & Sharma (2014) study showed that the mindfulness intervention, MBSR program, positively affected Indian students by reducing emotional symptoms, academic self-concept, and academic stress. Mindfulness curriculum had positive impacts on students with Emotional/Behavioral Disorders (E/BD). Students' optimism, self-efficacy, adaptability, sense of trust, comfort

with others, access to support, and resiliency significantly increased (Malow et al., 2016). Yoga had positive effects on students' risk factors and substance use over an extended period of time (Butzer et al., 2016). Dariotis et al.'s (2016) study showed the students and teachers liked the content of the mindfulness program and had some great suggestions on how to improve future studies using mindfulness programs in school settings.

Limitations of the Research

Mindfulness is a very broad topic and there have been more studies done on how mindfulness affects adults than how it affects children and adolescents. In order to find the benefits of mindfulness on children and adolescents' academic performance and their behaviors, both emotionally and physically, I had to narrow my search. I had to narrow my search to "mindfulness children", "mindfulness adolescents", "mindfulness academic", and "mindfulness student behavior." Most of the studies that came up when these keywords were used, were on students not in special education. Even though some of these students had underlying challenges of their own such as anxiety, homelessness, family problems, and low socioeconomic status. In order to find studies on how mindfulness effects students in special education, I searched "mindfulness special education". Using these keywords, there were four main disability categories in mindfulness studies. These categories were Other Health Disabilities (OHD) - Attention Deficit Hyperactivity Disorder (ADHD), Emotional and Behavioral Disorder (EBD), Specific Learning Disabilities (SLD), and Autism Spectrum Disorder (ASD). Overall, using these keyword phrases I was able to find studies on how mindfulness affects children and

adolescents' academic performance and their behaviors, both with and without disabilities.

There were limitations when researching the effects of mindfulness on students' academic performance and their behaviors. One limitation was a majority of studies had small sample sizes. A second limitation is there were no studies done with students under the disability category Developmental Cognitive Disabilities (DCD). Lastly, there were minimum studies done with students in middle school. Middle school is a time where students are finding themselves, going through hormonal changes, and facing more challenges. Some studies included students in that age range, but they were not specifically done in a middle school.

Implications for Future Research

Future research should focus on having bigger sample sizes. Most of the studies that I reviewed had small sample sizes. Having a bigger sample size would help show more accurate results on how mindfulness affects students both academically and behaviorally and reduce outliers. Researchers should also include more studies with the general student population when they are not focusing on students with disabilities. Some of the studies were done on a specific student population and/or the school staff helped pick which schools or classrooms the mindfulness interventions were used with. Focusing on the general student population would also help get more accurate results on the effects of mindfulness.

There are many different mindfulness interventions and researchers should focus on finding out which interventions are most accessible for schools and best for

students with and without disabilities. This would include looking at the cost of the intervention, the time that is needed to implement it, who can give the intervention, if the students want to and are willing to participate, involvement of teachers, and both students' and teachers' thoughts about the different interventions. Finding the most accessible and best mindfulness interventions would help schools to know which interventions may benefit their students the best.

Implications for Professional Application

The literature regarding how mindfulness affects students with and without disabilities should lead teachers to incorporate mindfulness practices into their teachings. Mindfulness interventions are becoming more popular and research has shown that these interventions have had positive effects on students. Students are having to face more personal and family challenges and these challenges are affecting how they perform in the school setting. Mindfulness could help students improve their attention, academic engagement, behavior, stress, and overall well-being. If mindfulness can help students in these positive ways, teachers would benefit as well.

Teachers are not able to just teach students; they have to focus on many other factors too. Two important factors are classroom management and engagement. If mindfulness interventions are able to improve students' behaviors, engagement, and well-being, it would help teachers be able to teach students more efficiently. Teachers wouldn't have to focus so much on students' behaviors and engagement. They would have more time to go over concepts that students may not be grasping, and teachers would be able to help students one on one more. This would help students be more

successful with their academics. A mindfulness intervention would benefit the teacher and the class as a whole by helping the class to run more smoothly, with fewer disruptions. Mindfulness interventions have also shown teachers different strategies on how to deal with stress and be more aware of their bodies. Along with improve their overall well-being.

Students have more familiarity and typically a better relationship with their teacher. They would respond better to their teachers doing a mindfulness intervention, rather than someone random coming into the classroom. A couple barriers would be that teachers would have to be willing to take the time to learn a mindfulness intervention and would have to find time in their lesson plans to do it. Depending on the grade level and subject, some teachers may find it easier to find extra time than others. If students have more than one teacher, it would be beneficial to designate one of the teachers to do a mindfulness intervention with the students. Overall, implementing a mindfulness intervention with students would benefit both students and teachers in a positive way.

Teachers can and need to be more aware of all of the personal and family challenges that students are facing now a days and how these challenges affect students school performance. Mindfulness interventions have been shown to have positive effects on students in both elementary and secondary school settings who are facing challenges. Teachers can improve their overall teaching by incorporating a mindfulness intervention to help their students learn new skills to be able to deal with different challenges in a positive way and to help their class run more smoothly.

Conclusion

Mindfulness interventions have been shown to have positive effects on student's with and without disabilities academic performance and their behaviors. These positive effects include improving student's anxiety, executive functioning, attention, academic engagement, behavior, stress, and overall well-being. Most students enjoyed participating in a mindfulness intervention and found it helpful as they were able to apply what they learned to their daily lives. Teachers should incorporate mindfulness interventions into their lessons to help benefit their students and themselves.

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