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MINDFULNESS IN THE CLASSROOM

A MASTER'S THESIS

SUBMITTED TO THE FACULTY

OF BETHEL UNIVERSITY

ΒY

REGAN CERZA

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MINDFULNESS IN THE CLASSROOM

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APPROVED

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I would like to thank my mother for always being so loving and supportive. I feel truly blessed to have her in my life. She has always believed in me, encouraged me, and challenged me to be the best version of myself. Because of her, I have been able to do so many things that I otherwise would not have imagined doing. I would not be where I am today if it weren't for her.

Abstract

In recent years, there appears to be an increase in the number of children in grades kindergarten through 12th grade that struggle with issues such as mental illness, anxiety, emotional and behavioral disorders, etc. As a result, teachers are starting to witness more student behaviors in the classroom. Consequently, this impacts the learning environment of all students. Currently, there is a growing trend in the field of mindfulness. Mindfulness interventions have been suggested to help students with behavior regulation, academic performance, and prosocial behaviors. Research also suggests that mindfulness interventions are not only beneficial for students but teachers too. They have helped reduce teacher burnout rates, increase teacher self-worth, and increase student relationships with teachers. It is evident that educators need to change the teaching model that has been used for so many years with students. As behaviors become more prominent at school, we need to reframe how education is structured. Research suggests that mindfulness based curriculums are the key to helping reduce behaviors and increase academic performance.

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CHAPTER I: INTRODUCTION

Education in the United States

In the United States, it is said that the number of students achieving academically is very low when compared to other countries. In some areas of the country, there are schools where most students are not even close to performing at grade level in the areas of reading, science, and math. Some might say the teachers are to blame for this. Others argue that perhaps schools in the United States don't get adequate funding which is why students are doing so poorly. On the contrary, though, the United States is one of the topmost funded countries in education around the world (Bakosh, Snow, Tobias, Houlihan & Barbosa-Leiker, 2015). Knowing that this is the case, we must ask ourselves, what should we as teachers be doing to close that achievement gap?

A Closer Look at the Students

According to the United States Department of Health and Human Services (1999), about 20 percent of children in the United States have been diagnosed with a mental health disorder. This does not include the number of students that go undiagnosed. Of the 20 percent, about half of them are diagnosed with an emotional disturbance (Baker, Grant & Morlock, 2008). A mental health disorder can range from anything including depression, anxiety, eating disorders such as anorexia and bulimia, personality disorders, and psychotic disorders. These disorders can originate from a variety of different things including genetics, tough home life, trauma, or even environment. When a child suffers from a mental illness, they are less likely to perform well in school (Baker et al., 2009). They exhibit more behaviors in the classroom and tend to not have any drive or ambition to challenge themselves academically. Knowing that mental illness plays such a huge role in student achievement at school, educators need to determine what needs to be done to help students succeed. Although there is not much concrete evidence of what works when trying to increase academic achievement for students, researchers are starting to come to a common conclusion that students must first learn how to regulate their emotions and behaviors before they can learn how to learn at school (Bakosh et al., 2015). For example, a child who suffers from anxiety and depression may not be able to perform at their full potential and show others what they know academically if they are not in a healthy emotional state.

Interventions That Work

There is a lot of research on effective school-based interventions and programs that focus primarily on social and emotional learning (SEL). SEL programs focus on teaching students' social skills when interacting with others and coping strategies that work for them when they become overwhelmed (Bakosh et al., 2015).

The most promising interventions and programs for SEL are based on mindfulness. Mindfulness based interventions emphasize the importance of teaching students how to be present and increase social and behavioral skills. According to KabatZinn, mindfulness teaches students valuable skills such as kindness, self-control, self-awareness, and how to be present (Bakosh et al., 2015, as cited in KabatZinn, 1994). Research supports that students with learning disabilities, anxiety, and attention-deficit

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hyperactive disorder (ADHD) demonstrated higher academic success after participating in an SEL program compared to students that did not participate in one (Bakosh et al., 2015).

What is Mindfulness

Mindfulness is a popular buzz word especially in education in more recent years. It is a term that encompasses one's ability to be aware of themselves and their surroundings. This requires individuals to allow themselves to be in the moment, to be present and conscious of what is going on in their environment. Mindfulness stems from Buddhism and other traditions where consciousness and awareness are the fundamental components that are embraced (Brown & Ryan, 2003). The ideas behind mindfulness seem very straightforward and feasible, yet some people have a more difficult time practicing mindfulness than others. This can be due to many different factors including one's willingness to practice mindfulness, lack of knowledge and understanding of mindfulness, or even the environment.

Mindfulness and consciousness go hand in hand with one another. Both are centered around one's happiness. According to Brown and Ryan (2003), the two key and essential components of consciousness include awareness and attention. Awareness is the ability to be cognizant of one's environment at all times. Attention is the ability to consciously stay focused. When one has mastered the art of being attentive and aware, they are conscious and mindful as well.

Being mindful can be done in a variety of different ways such as having a conversation with someone and being aware of the tone of voice being used and what is

being said. One is also mindful when in the act of eating, you start paying attention to the flavor sensations going on in your mouth, thinking about how much is needed before your body is full. It can be incredibly challenging to be mindful due to all the distractions and disturbances many of us face in our day to day lives due to technology such as smartphones, checking emails, YouTube, social media, and even the news. We live in a world where our lives are consumed by the technology that surrounds us. It is getting to the point where even young children are forgetting how to run outside, play, and be a child. Many children, when asked what they did last night, will respond by saying they watched cartoons all night or played video games until midnight. We live in a world where it is difficult to be mindful due to all the distractions in our lives that consume us. We are forgetting how to live in the moment, be aware of our surroundings, and be mindful. At what point do we as teachers put our foot down and make a change for the betterment of our students?

Student behaviors stem from many different sources. These factors can include poor home life, poverty, classroom, environment, anxiety, mental illness, learning difficulties, emotional and behavioral disorders (EBD), divorce, peer pressure, etc. (Bakosh et al., 2015). Sometimes, it can be tough to pinpoint why a student is acting out. As teachers, we want our students to be successful but that is not always easy when our students start acting out for what appears to be no reason at all. If we want our students to be successful and do well in school, we need to figure out how to help them regulate their behaviors first. Students who spend most of the day acting out in school are not ready to learn. They must first learn the skills and tools to help them stay regulated. As teachers, we need to figure out what we can be doing to help these students.

This paper will be exploring the following question: How can we use what we know about mindfulness to help promote positive behavior? It will explore the key components of mindfulness and how it can be used to help students be successful in school. Teachers are constantly trying to figure out new ways to stop a nonpreferred behavior. Is mindfulness the missing key we need to help students perform better in school? If so, how can we implement mindfulness effectively in the classroom?

Research has already shown that mindfulness interventions, when used as intended can help promote behavior regulation, increase academic performance, and promote prosocial behaviors (Harpin, Rossi, Kim, & Swanson, 2016). Not only that, but mindfulness interventions can also improve teacher self-worth. Being a teacher is a tough yet rewarding job however, sometimes the stresses of teaching can take a toll, resulting in teacher burnout. Mindfulness interventions have also helped teachers create more meaningful relationships with their students, increase self-worth, and decrease teacher burnout rates (Jennings, Frank, Sonwberg, Coccia, & Greenberg, 2013).

Teachers need to acknowledge that what worked 50 years ago in the classroom may not work now. Due to the growing needs in behavior supports over the years, we need to look at how we view and structure classrooms and curriculum for students. The benefits that mindfulness interventions have to offer may be the answer to this issue many educators face daily.

CHAPTER II: LITERATURE REVIEW

Literature Search Procedures

Chapter II will review the literature that has been published on mindfulness. The research will first start by exploring what mindfulness is. Additionally, it will discuss the benefits of using it in any classroom, regardless of what is being taught and how to implement mindfulness strategies effectively. This information will not only give educators insight into what factors contribute to student behavior but also give them effective and simple ways to implement mindfulness in the classroom. All literature that was used when developing this thesis was located through search engines including Academic Search Premier, EBSCO, CLIC search, Google Scholar, and ERIC. These publications were from 1999-2019. When researching literature to use for this thesis, keywords used in the searches included "special education," "social skills," "martial arts," "social-emotional learning," "mindfulness," "yoga," "meditation," "school behavior interventions," and "education".

What Research Says About Mindfulness in the Classroom

Over the past few decades, educators have been exploring the many benefits of implementing mindfulness in the classroom. Many researchers are finding that education needs to start focusing on mental skills and socioemotional dispositions. These include skills such as emotional regulation, self-regulation, and prosocial behaviors (Davidson et al., 2012). In almost every study on mindfulness interventions implemented in classrooms, positive results were almost always guaranteed. There were many positive outcomes teachers noted about students that came from implementing mindfulness interventions into the classroom. This included students learning how to take ownership of their own actions and learning how their actions affect others and learning how to get in touch with oneself (Cheek, Abrams, Lipschitz, Vago, & Nakamura, 2017). Teachers also noticed more prosocial behaviors with peers, higher academic performance amongst students, a more positive classroom environment and better behavior regulation skills even after just as little as ten weeks of mindfulness interventions (Harpin et al., 2016).

Behavior Regulation and Self-Regulation

Across the board, one of the most prominent impacts of implementing mindfulness interventions and programs into the classroom were behavior regulation and self-regulation. In the United States, approximately 20% of children suffer from mental health problems that are severe enough to require mental health services (U.S. Public Health Services, 2000). Mindful practices have been predominantly beneficial for students in poverty, young children, and those who deal with a lot of stress and trauma.

In a study done in Denver, Colorado, Harpin et al. (2016) sought to see what effects a mindfulness curriculum would have at an urban school. The study was done in two fourth grade classrooms that averaged around 18 students per classroom. One of the classrooms was the control group while the other classroom received the mindfulness curriculum for ten weeks. Harpin et al. (2016) picked classrooms based on similar student characteristics and attributes to ensure more accurate results. An urban environment was chosen to conduct their study due to the high levels of poverty many students at the school faced. According to an article written by Duncan-Anedrade, he explained how when children live in poverty, they typically tend to be more stressed and less able to stay focused compared to peers not in poverty. They have a more difficult time thinking for themselves and get in fights at school more frequently because they do have the coping strategies necessary to self regulate (Harpin et al., 2016, as cited in Duncan-Anedrade, 2009).

In the study, Mindfulness curriculum was administered by an experienced Mindfulness instructor (AMR). The curriculum used for the intervention came from MindUp and Mindful Schools. Some of the things the students learned included how to be more aware, breathing, how the brain works, and calming strategies. Data was collected through surveys that were conducted before, during, and after the ten-week intervention. On the Mindful Schools Survey, every participant who participated stated that they liked the Mindfulness classes and will continue using the strategies they learned in the future. Many students remarked how they were able to control their anger much better than before. In the classroom, the teacher noticed that students were able to focus quicker and for longer periods of time. The teacher also remarked that students were also starting to pay more attention in class, were less impulsive, and noticeably calmer (Harpin et al., 2016).

One limitation of the study was when it was conducted. This study was conducted in the mid to early 1990s making this data over 20 years old. With that, some of the data from the findings could be considered outdated. Some things that worked well then might not work well now. Another limitation of the study was the death of the classroom teacher who helped implement the MT curriculum in the classroom. Due to this, there is uncertainty on how instructions were given to the students when writing letters to Kabat-Zinn (Harpin et al., 2016).

Overall, students from the study had a positive response to the mindfulness curriculum. The curriculum had been developed over 30 years prior to the intervention. The key concepts that were taught from the curriculum were still relevant and effective even after all the time that passed (Harpin et al., 2016).

In another study done in Ontario, Canada, Viglas and Perlman (2017) used a mindfulness-based intervention called Mindful Schools that focused on self-regulation, impulsivity, and behavior regulation. The purpose of the study was to provide students with an opportunity to practice self-regulation skills. By doing this, students increase their social and emotional regulation skills. A Strengths and Difficulties Questionnaire (SDQ) was given to teachers before and after the intervention to monitor prosocial behavior and hyperactivity. Students were administered the Head-Toes-Knees-Shoulders (HTKS) assessment. This assessment measures self-regulation. Results from the intervention showed an increase in self-regulation in the Mindfulness group after the intervention was completed (Viglas & Perlman, 2017).

The Mindful Schools intervention focused on both "internal" and "external" mindful awareness practices. Some of the topics covered in the Mindful lessons included mindful breathing, kindness, and acting with intention and awareness. At the end of the six weeks, the Viglas and Perlman (2017) noted significant increases in self-regulation and prosocial behavior from the Mindfulness Group. They also noted a substantial decrease in hyperactivity with the Mindfulness Group. The Control Group's data had no

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significant changes during the six-week period. One of the biggest takeaways from the data had to do with students that had low self-regulation scores on the HTKS at the start of the Mindful Schools intervention. Students that had lower scores initially improved dramatically in their ability to self-regulate. The findings from this study supported the idea that implementing mindfulness-based programs into the classroom can be beneficial for students. Especially students who lack lower executive functioning and social competence (Viglas & Perlman, 2017).

Stress and anxiety can cause students to misbehave at school. When a student starts acting up in school, this not only disrupts the learning environment in the classroom but also deprives the student who misbehaved from learning because of getting sent to the office. In middle school, many students naturally experience a lot of stress due to all the changes going on in their lives such as puberty, home life, lockers, showing up on time to class, and peer pressure (Martinez & Zhao, 2018).

Martinez and Zhao (2018) at Kansas State University conducted research on an experimental treatment involving Muse brain-sensing headbands. The headband gets synched to an app that monitors and trains the brain on how to self-regulate. It was predicted that student office referrals would decrease with the use of a Muse headband (Martinez & Zhao, 2018).

The Muse headband is an Electroencephalography (EEG) system that collects data on brain activity over a duration of time (Krigolson, Williams, Norton, Hassall, & Colino, 2017). It is used to help teach people how to be more mindful. With the use of a Bluetooth connection, the Muse headband syncs up to an app on a tablet, computer, or smartphone. When using the headband, the user will get immediate feedback on their brain activities. The program uses various sounds such as birds chirping, a flowing river, or rain, to help guide and teach users how to calm down and focus on breathing (Martinez & Zhao, 2018).

In 2017, Martinez and Zhao did a study on the Muse headbands with a group of middle school students who averaged five or more office referrals for one year. A total of 19 students participated in the study. Ten students were in the treatment group while the other nine were in the control group. None of the students in the study were on an Individualized Education Program (IEP). Each participant in the treatment group was given a Muse account which tracked their personal progress throughout the course of the intervention. One day a week, every participant would go into an assigned quiet room and wear the Muse headband for three minutes over 20 sessions. Each time a student completed a Muse session, they would receive points on their account based on how well the participant was able to stay restful and calm. Students would hear birds chirping every time their brain was being restful (Martinez & Zhao, 2018).

They found a significant change in the number of office referrals in the treatment group. The number of referrals dropped from 6.33 to 1.78. In the control group, there was not much of a significant change in office referrals. They increased from 4.22 to 4.44 referrals. The treatment group also got points on the Muse app depending on how calm they were able to stay while using the headband. Every single student increased their score by the end of the intervention, the biggest increase being an increase of 317 to 424 (Martinez & Zhao, 2018). The data collected from this study

shows that even as little as three minutes of guided meditation with the headband one day a week can make a huge difference in student behavior. Even though a small group of students was used for this study, the results collected are very promising. This data suggests that students were able to use calming strategies learned from the Muse program in the classroom to calm their bodies instead of acting out in class and getting sent to the office.

In other parts of the world, researchers are finding similar results in students' ability to cope when using a mindfulness intervention or program. One of the most notable benefits of implementing a mindfulness program included better coping strategies. These coping strategies help students deal with everyday stressors such as school, work, friends, and family. There have been many studies suggesting that children who learn coping strategies are less likely to have depression, are able to regulate their behaviors, and will do better in school (Sheinman, Hadar, Gafni, & Milman, 2018).

In Israel, Sheinman et al. (2018) used a whole-school mindfulness education (WSMED) model on students in grades third through sixth from 20 different public schools. A total of 646 students participated in the study. One school had been using a WSMED model for 13 years. Another school had been using it for a year while others had not ever used it before. The purpose of the study was to see how likely students were to use coping strategies learned from mindfulness training in their daily lives. It was theorized that students who had been using the WSMED model longer would be more likely to implement more coping strategies than those who had not been utilizing the program for as long. They wanted to determine how well students who had been using the WSMED model for one year or less would implement mindfulness into their daily lives. They also wanted to see if there were any differences between gender and age (Sheinman et al., 2018).

Mindfulness-based sessions were taught once a week and lasted 45 minutes per session. The program is an ongoing intervention and is held each year in the selected schools. Some classes have been running the program longer than others, the longest being 13 years. Sessions were taught by mindfulness instructors and were held in a designated "mindfulness room". All homeroom teachers participated in the mindfulness sessions with their students. In addition to teachers attending the sessions with their students, they also attended monthly mindfulness trainings, which taught them how to implement mindfulness practices in the classroom with their students (Sheinman et al., 2018).

To evaluate the WSMED model, Sheinman et al. (2018) created a "Situation Questionnaire" consisting of five challenging scenarios that students face in their daily lives. All questions are open-ended. The questions asked students about exam stress, concentration, sleep, dealing with anger, and disappointment. Based on student responses, they were able to determine appropriate mindfulness-based coping strategies for the students. Questionnaires were administered towards the end of the year by homeroom teachers. Once all questionnaires were completed, each student's questionnaire was evaluated using a mindfulness scale. Each question could get up to six points depending on the response. Students who scored six on a question provided three mindfulness-based practices and zero meaning no mindfulness-based practices were addressed (Sheinman et al., 2018).

Results from the questionnaire showed that students who had been receiving the mindfulness program for a long time were more likely to use mindfulness strategies when compared to students who had not had any training prior to the intervention. They also noted that across the board, participants that were nine had the most difficult time utilizing mindfulness practices while children age ten showed the highest ability to use mindfulness coping strategies. Additionally, girls showed a higher likelihood of using mindfulness coping strategies compared to boys (Sheinman et al., 2018).

One of the biggest limitations of the study was the possibility of using this program model in other schools. In the study, teachers were given monthly mindfulness training by mindfulness instructors. For this to happen, schools must have adequate funding to support this program. Not all schools have the funding to take on this type of program. Another limitation of this study was space. Mindfulness lessons were taught in a designated mindfulness room. Some schools might not have space or resources to support the type of environment needed for lessons.

For some schools, the WSMED model has been used for 13 years while others have not had the opportunity to use it as long. The results from this program show that the longer a program like this is used on students, the more likely they are to implement mindfulness coping strategies into their daily lives (Sheinman et al., 2018).

One study used an intervention called Meditation on the Soles of the Feet (SoF). SoF is a mindfulness-based intervention program that is used to help treat aggression

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for individuals with intellectual disabilities and mental illnesses. The purpose of this study was to see if the SoF intervention would help adolescents with Asperger syndrome reduce aggressive behaviors. In previous years, the SoF intervention was administered to students with Autism who displayed physical aggression for many years. They predicted that adolescents with Asperger syndrome would have even more success with the intervention due to their cognitive abilities (Singh et al., 2011a).

For the SoF intervention, three adolescents ages 13, 15, and 18 diagnosed with Asperger syndrome participated in the study. The participants attended public schools and were all on behavior intervention plans. Each participant had a history of physical aggression both at home and school for at least two years. Physical aggression incidents were recorded by each participant's family member. They occurred around 30-50% of the time when their family was around. Baseline data for the SoF intervention was collected on the third, fourth, and sixth week of the program. The intervention was delivered at home by each participant's mother. Each mom was trained prior to the intervention beginning. For the first five days, the participants would participate in 15minute sessions where they would sit comfortably with their eyes closed and feet flat on the ground. Participants were guided to be present and concentrate on the soles of their feet until they felt calm. The SoF intervention was implemented for 30 weeks. At the beginning of the intervention, each participant averaged around three to five instances of aggression. By the end of the intervention, participants did not show any aggression at all. Four years after the SoF intervention program, families reported that the participants still weren't showing signs of physical aggression (Singh et al., 2011a).

Results from the SoF program showed significant changes in aggression in all three boys with Asperger syndrome. One of the biggest limitations of the study was the number of participants in the study. Although the results from the intervention were significant, a larger sample size would have made the data more compelling. Another limitation of the study was that only family members were recording data for the intervention. Families may have some biases on what they consider aggression compared to others. An unbiased evaluator would help make the data more credible. Ultimately, the results from the SoF program show great insight into a program that works well for adolescents with Asperger syndrome. Participants across the board showed less aggression throughout the course of the program. After four years of follow up, results still showed that the program helped each participant reduce their aggression (Singh et al., 2011a).

In another study done using the SoF intervention, Singh et al. (2011b) evaluated the effects of the program on adolescents with autism spectrum disorder who displayed physical aggression. The intervention was administered the same way as the SoF intervention administered to adolescents with Asperger syndrome (Singh et al., 2011a). The intervention lasted one year with follow-ups every year for the following three years after the SoF intervention took place (Singh et al., 2011b).

At the beginning of the intervention, physical aggression occurred with each participant 10-30 times per day. At the end of the intervention, families indicated through charting that each participant did not exhibit any physical aggression after one year. Follow-ups were made one year after the intervention and for the next three years. Families reported that physical aggression occurred less than five times per month over the course of three years (Singh et al., 2011b).

Like the previous study done on the SoF program, physical aggression went down significantly for all three participants. In some cases, participants went from having 30 instances of physical aggression per week to having only one or two instances. One of the biggest limitations of the study like the previous study was the number of participants. Overall, the SoF program has some very promising data. In both studies, participants decreased their physical aggression significantly. This would be a great program to implement across other settings to help reduce physical aggression (Singh et al., 2011a; Singh et al., 2011b).

Martial Arts. In a study done at a middle school in Boston, Wall (2005) wanted to see if a mindfulness-based stress reduction (MBSR) program that implements Tai Chi (TC) could help students with well-being, relaxation, self-care, self-awareness and behavior regulation. Sessions were held one day a week for an hour at a time for five weeks. Each week, the program covered different things. Wall (2005) wanted to evaluate the effects of a mindfulness program with Tai Chi to see if that could help students with emotional regulation, self-care, self-awareness, sleep, and a sense of interconnection. The themes included relaxation response, use of koans, setting and use of a bell, mindful eating and interconnection, and intention and completion. Lessons integrated mindfulness practices with Tai Chi (Wall, 2005).

At the end of the five-week program, students in the program expressed that they felt calmer and more relaxed. Students noted they were more aware of their surroundings and felt less stressed. One of the biggest limitations of the study was the length of time Wall (2005) spent on the study. Five weeks is a short amount of time and more time would have strengthened the study. Another limitation of the study was the measures used to collect data for the intervention. The study went well but there is not a lot of concrete data to support this conclusion. Overall, the study has some potential to be a good intervention for students. Additional studies on this program are needed to determine the effectiveness (Wall, 2005).

In another study, Milligan, Badali, and Spiroiu (2015) used Integra mindfulness martial arts (MMA) on 29 children ages 12-17 with learning disabilities (LDs) to see if it would help them with behavior regulation. They hypothesized that individuals in the MMA program would show decreased levels of anxiety, increased levels of behavior regulation, decreased negative self-talk, increased attention, and higher levels of academic achievement. Individuals with LDs often have difficulties with emotional regulation and often will try to avoid situations they find emotionally or mentally challenging. The MMA program incorporates mindfulness, cognitive therapy, and behavior regulation practices into a specialized martial arts program (Milligan et al., 2015).

The program consisted of 20 sessions lasting one and a half hours per session. Sessions were held once a week. There were two groups for MMA sessions. One group was for beginners and the other group was for the advanced level of MMA for individuals that completed the beginner's course. MMA focuses on mindfulness meditation and mindfulness movement. Mindfulness meditation includes sitting and walking meditation, body scan, and breathing awareness. Mindfulness movement includes guided, focused, and controlled breathing (Milligan et al., 2015).

Participants were awarded points for showing expected behavior and completing homework assignments. Points were used to promote participants to a yellow belt in martial arts. Points were taken away for negative behaviors. Each session included guided meditation, a skill (ex: dealing with tough emotions), the case (an example/story of the skill), yoga, and martial arts training. Participants are given a CD that helped them with guided meditation practice at home (Milligan et al., 2015).

Feedback surveys were administered to both parents and participants in the study to determine the validity of the study. Qualitative interviews were also given to parents and participants to gain a better understanding of how well the program works. 17 parents completed MMA surveys along with 16 children in the advanced group and 13 in the beginner MMA group. According to parents in the study, the MMA program helped improve their child's emotional and behavioral regulation and relationships with others. 54% of participants in the advanced group reported that the MMA program was successful in helping them with relationships, emotional and behavioral regulation, and felt more present. 92% of participants in the beginner MMA group reported higher levels of academic performance, increased fitness levels, improved personal relationships, and increased emotional and behavioral regulation. The most common outcome both parents and participants stated that in the past, school used to be a huge

stress on them, but MMA helped teach them skills to help decrease stress (Milligan et al., 2015).

One of the biggest limitations of the MMA study was the lack of a control group. Although results from the study were very successful, a control group would have helped make the validity of the results stronger. Another limitation is convenience. The MMA program was administered during non-school times, making it difficult to always make it to sessions. Also, participants were asked to pay for this program. For some people, this is a huge factor depending on their financial situation. Overall, the study was very successful. All participants and parents felt the program helped increase academic performance, increase calmness, improve personal relationships, and increase self-regulation (Milligan et al., 2015).

In another study that used the MMA program, Milligan et al. (2017) wanted to evaluate the effectiveness of the program on academic performance, emotional, and behavior regulation of high school students. In the study, 36 high school students from a rural school participated in the MMA program. Like the MMA program discussed in the previous article, the program lasted 20-weeks. Unlike the previous study, the MMA program in this study was delivered at school during normal school hours. Students were excused from class to participate in the study. They predicted that students who participated in the MMA program would have decreased levels of stress, higher levels of academic achievement, increased emotional/behavioral regulation, and enhanced wellbeing (Milligan et al., 2017). The Child and Adolescent Needs and Strengths, Intake Version (CANS) was administered to all participants in the study to collect baseline data for the program. The assessment was an interview used to rate the severity of each participant's mental health status. This helped determine each student's levels of anxiety, impulse control, mood, trauma, defiant behaviors, and hyperactivity. Teachers were also interviewed as well. This helped gather information on their perception of each student involved in the MMA program (Milligan et al., 2017).

Both teachers and students reported positive outcomes upon completion of the MMA program. It was noted that there were significant differences in academic achievement, social competence, behavioral/emotional regulation, and confidence. Many students also noted significant differences in their ability to calm down when feeling stressed, they were more focused in class, more accepting of challenging situations, and felt more aware of themselves and their surroundings (Milligan et al., 2017).

One of the biggest limitations of the study was the number of participants. Like the MMA study discussed in the previous article, not many students participated in the study. A larger sample of students would have made results from the study more compelling. Another limitation was the lack of a control group. Without a control group, it is difficult to determine the effectiveness of the program. Overall, like the previous MMA study, this study appears to be very effective and beneficial for the students that partook. Students and teachers both agreed that is helped students with behavior regulation, anxiety, confidence, and academic achievement (Milligan et al., 2017). **Yoga.** There are many mindful practices that teachers can use to help support a more positive environment in the classroom. One activity that has been shown to help students de-escalate is yoga. Yoga has helped some students cope with stress and do better in school (Grossman, Niemann, Schmidt, & Walach, 2003). Yoga typically consists of calm breathing, meditation, and postures. When these three things are put together, it enhances a person's ability to focus the mind and regulate emotions by relaxing the body (Steiner, Sidhu, Pop, Frenette, & Perrin, 2013).

In one urban school, Steiner et al. (2013) sought out to see how a yoga-based intervention would impact students with an emotional behavioral disorder (EBD). The main objective of the intervention was to determine whether a yoga-based intervention would help reduce behaviors by teaching students coping strategies. They hoped that students would willingly participate in yoga sessions at school, both teachers and students would be on board with the intervention, and that the yoga intervention would reduce behaviors at home and school (Steiner et al., 2013).

The intervention consisted of 74 students with EBD in fourth and fifth grade. Students selected for the program were identified by a classroom teacher or special education teacher. The yoga intervention was held twice a week during the school day for three and a half months. Each session was led by a certified yoga instructor and lasted an hour per session. The yoga instructor used the Yoga Ed Protocol curriculum when implementing the intervention with students (Steiner et al., 2013).

Each session started with relaxation training. During this time, students learned various breathing techniques. Next, students did various yoga poses to help stretch out

the body. After completing the poses, the instructor would have the students play a partner or group game. This helped students engage with their peers more and be more social. At the end of each session, students would engage in a guided meditation to help calm the body back down and focus back on deep breathing (Steiner et al., 2013).

To measure progress on the yoga intervention, assessments were given before and after the intervention. The Behavior Assessment Scale for Children, Second Edition Teacher Rating Scale-Child (BASC-2 TRS-C) was used first. This assessment is used to measure specific behaviors using a four-point frequency scale. Parents were given a parent version of this behavior rating scale too. Parents were also given a background information questionnaire to determine each student's family background. Students were given three different assessments to measure anxiety levels, mental well-being, and emotional competence. Teachers were also given The Swanson, Kotkin, Agler, M-Flynn and Pelham Rating Scale (SKAMP). This tool is a teacher observation assessment rating scale used to determine social constructs and academic achievement. Lastly, teachers, parents, and students were given the *Satisfaction with Intervention* questionnaire which asked teachers open-ended questions on how they felt the yoga intervention went (Steiner et al., 2013).

Results from the intervention show promising data. 100% of the teachers involved in the intervention were satisfied with the results and 64% requested a continuation of the yoga program. The primary concern most teachers had dealt with scheduling issues that could arise in the future. Some teachers were worried students were not spending enough time on academic tasks and getting behind as a result. 72%

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of parents reported a positive change in their children. Many parents stated their children seemed more calm, relaxed, and happy. They also noted higher energy levels in their children. 13% of parents noted more positive behaviors such as wanting to help around the house. Teachers reported on the SKAMP that their students were more focused on class. On the BASC-2, teachers remarked that students were able to regulate their behaviors much better after the intervention (Steiner et al., 2013).

The yoga intervention overall suggested being very successful. Teachers, parents, and students had nothing but positive things to say about the program. One of the biggest challenges of the study that most teachers noted was scheduling. Many teachers felt that they had to give up some of their academic time for the intervention. Other than scheduling concerns, all teachers would recommend using this program again in the years to come (Steiner et al., 2013).

In another study done on boys with ADHD, Jensen and Kenny (2004) wanted to know what the effects of a yoga intervention would have on them. The researcher hypothesized that boys with ADHD could reduce behavioral and attention deficit symptoms with the use of a yoga program. Boys in the study ranged from 8-13 years old. The intervention consisted of 20 sessions and had 11 participants participate in the yoga. Sessions were led by a certified yoga instructor. There were an additional eight participants who acted as a control group (Jensen & Kenny, 2004).

Each session was held once a week for an hour. Yoga sessions focused on respiratory, postural, relaxation, and concentration training. In addition to the group sessions with the yoga instructor, students were asked to complete daily yoga sessions at home. During the first four days of the intervention, the boys work watches that monitored daily activity. Parents also journaled about the type of activity their child engaged in daily. The control group engaged in a non-yoga intervention where they engaged in cooperative games for one hour each month. Games included activities that focused on things like taking turns, sharing, and listening (Jensen & Kenny, 2004).

There were many instruments used to measure ADHD behaviors and symptoms. This included The Conners' Teacher Rating-Revised: Long (CTRS-R:L) and the Conners' Parent Rating Scale-Revised: Long (CPRS-R:L). These two assessments were used to rate ADHD and other related behavior problems. The Test of Variables of Attention (TOVA) was also used. The TOVA is used to measure one's attention when determining if one has ADHD. Participants in the study also work an Actigraph. An Actigraph is an activity monitor typically worn on the wrist (Jensen & Kenny, 2004).

Although none of the participants in the yoga group attended all 20 yoga sessions, significant differences were noted between post and pretests that were administered. Results from the CPRS indicated that students were able to regulate their behavior much better after receiving the yoga intervention. These results were also evident in the control group too. The Connors's Global Index subscale indicated that students with ADHD were focused, calm, and less impulsive after the intervention. Parents also agreed that their child's behavior became more manageable and more willing to engage in family activities after the yoga intervention (Jensen & Kenny, 2004).

One of the biggest limitations of the study was attendance. None of the students attended all 20 yoga sessions. The average number of sessions attended was about 14.

Another limitation is the sample size used for the intervention. Only 11 boys were assigned to the yoga intervention group and eight in the control. The small sample size makes the strength of the study weak (Jensen & Kenny, 2004). Despite the limitations, the results from the study are very promising.

Like the study done by Jensen and Kenny, they wanted to see what the effects of a yoga intervention would have on students with ADHD. Often, children with ADHD need medication to help them stay on task and focused. It was hypothesized that yoga could be a great alternative in helping children with ADHD stay focused and alert. In the study, Jensen and Kenny included both boys and girls from India. A total of 40 students from ages 9-12 participated in the study. Twenty students were in the experimental group and the other 20 students were in the control group. All children in the study were diagnosed with ADHD based according to DSM-IV criteria (Abadi, Madgaonkar, & Venkatesan, 2008).

This intervention took place at a psychiatric institute in Iran. Pre and post-tests were administered to all 40 students. This helped collect baseline data and postintervention data to help determine the validity of the study. Students in the experiment group met twice a week, 45 minutes per session for eight weeks in a yoga program. Each session started off with ten minutes of breathing exercises which helped warm up the muscles. Next, participants would engage in 25 minutes of yoga positions that helped increase balance, posture, and strength. Sessions ended with ten minutes of relaxation (Abadi et al., 2008). To gather data for the intervention, the Child Symptoms Inventory (CSI-4) which measures a child's ADHD symptoms was used. This was administered to both parents and teachers before and after the yoga intervention. Results from the CSI-4 showed a reduction of 3.18 in the yoga group which is significant. The control group had a reduction score of only 0.40. The results suggest that the yoga intervention had a significantly positive impact on children who exhibited symptoms connected with ADHD. Students in the yoga group were calmer, less impulsive, and more focused than students in the control group after the intervention (Abadi et al., 2008).

One of the biggest limitations was the lack of communication between parents, teachers, and researchers. Although the yoga intervention was successful for students with ADHD, if teachers and parents can not reinforce the intervention at home and school, the students will ultimately revert to their previous behaviors (Abadi et al., 2008).

Overall, the study was very successful. Even though the yoga intervention worked well for students with ADHD, this is an intervention that could work well for many students in the classroom as well. Many students struggle to stay focused and attentive at school. This study gives teachers valuable information on things they can be doing in the classroom to help all students stay focused, calm, and attentive.

In a study done with 155 fourth and fifth-grade girls, a similar intervention conducted with the young boys in the previous study. There were 70 participants in the intervention group and 85 in the control group. The purpose of the study was to see if an eight-week program that implemented mindful movement could help decrease stress and help girls develop coping strategies, boost their self-esteem and increase selfregulation at school (White, 2012).

To determine the initial stressors each participant was affected by, the Feel Bad Scale was administered prior to the intervention. The scale helped determine the types of stress each girl encounters, how severely it affects them, and how frequently they are affected by that stress. The Schoolagers' Coping Strategies Inventory was used to determine the coping frequency and coping effectiveness of each participant in the study. A subscale of the Self-Perception Profile for Children was used to measure each girl's self-esteem and the Healthy Self Regulation subscale of the Mindful Thinking and Action Scale for Adolescents was used to measure each participant's ability to be mindful (White, 2012).

Girls who participated in the intervention met for 60 minutes after school one day per week. The girls also worked on ten minutes of yoga homework six days a week. The control group met before and after the yoga intervention to collect baseline and after intervention data. The curriculum used to teach each yoga session was inspired by Kabat-Zinn's Mindfulness-Based Stress Reduction (MBSR) program but with a twist (White, 2012).

Although there were no significant differences between the intervention and control group over time, promising insights were gained from the intervention. For example, student baseline scores for self-regulation and self-esteem increased after the intervention. This could be due to the time of year the intervention occurred or from the yoga intervention. It was also noted that over the duration of the intervention, the intervention group was more likely to show greater abilities in coping, self-esteem, and self-regulation than the control group (White, 2012). The duration of the intervention makes it more challenging to argue the effectiveness of this intervention, however, the findings gathered from the intervention are encouraging. Overall, more data is needed to strengthen the researcher's arguments on the effectiveness of the yoga intervention but, the results from the intervention show some promising data.

Yoga interventions have not only been suggested to help children with ADHD, EBD, and young children in elementary school, they can also be an effective intervention for middle school age students too. In one study done on students in sixth grade, Bergen-Cico, Razza, and Timmins (2015) wanted to assess the impact a yoga program focused on self-regulation would have on students that are almost teenagers. They also wanted to determine if the mindful yoga program could be successfully implemented into an English Language Arts (ELA) curriculum. They also believed that students exposed to the mindful yoga program would have more success in their ability to selfregulate when compared to students in the control group (Bergen-Cico et al., 2015).

A total of 144 sixth grade middle school students participated in the study in Boston, Massachusetts. Seventy-two students were in the mindful yoga group and 72 students were in the control group. The students in the intervention group were given yoga interventions by their ELA teachers during their normal ELA time. Teachers delivering the intervention had to complete a 30-hour YogaKids program and a 200-hour registered yoga teacher certification through Yoga Alliance. The students were split
between four ELA classes. Students in the control group were taught by a single ELA teacher and broken up into four classes as well (Bergen-Cico et al., 2015).

On days the intervention was administered, students would start each session in their classroom by standing and focusing on a single pose for two minutes. The teacher administered the intervention 12 minutes per week, three days a week. The ELA teacher used various yoga pose cards from the YogaKids Tools for Schools ToolBox. Each card also included information on what each yoga pose was supposed to promote (ex: concentration, balance, etc.) and different strategies for implementing it into the classroom. After the two minutes of yoga, the teacher would then guide students through two minutes of mindful meditation (Bergen-Cico et al., 2015).

The intervention and control group both completed a pretest assessment at the beginning of the school year which was used to gather baseline data for the study. There were additional assessments in January and May which were used to measure progress on the intervention. To measure self-regulation, the Adolescent Self-Regulation Inventory (ASRI) was used. The classroom teacher also kept a weekly log, indicating what the students did each week. The log also included the teacher's reflection on how they thought the intervention was going. At the end of the intervention, students were asked to write a written reflection of how they felt the yoga program went. The ELA teacher also reached out to parents to ask them if they felt the yoga program had a positive impact on their child (Bergen-Cico et al., 2015).

Results from the mindful yoga program showed some significant differences between the control group and the intervention group. Total regulation at the beginning of the school year was 124.23 for the intervention group and 122.92 for the control group. Student total regulation at the end of the intervention was significantly higher in the intervention group (127.48) than the control group (120.33). Short-term and longterm scores were also higher in the intervention group than the control group as well. The teacher noted that her students were calmer and more enjoyed the experience. Some noted that they wished other teachers would implement this too. Others remarked that on days they did not do mindful yoga, it became much harder to stay focused. The teacher also felt calmer and at ease too (Bergen-Cico et al., 2015).

One of the biggest limitations of the study was the duration of time spent on each session in the intervention. Each session only lasted four minutes which is not a lot of time especially since it was not practiced daily. Daily practice could have yielded more powerful results. Overall, results from the program show strong evidence of using a yoga program to promote self-regulation for students (Bergen-Cico et al., 2015).

Academic Achievement

When students act out in the classroom, it impacts the learning environment of others and their ability to learn in the classroom. When students know how to selfregulate and be mindful, their ability to perform well in the classroom increases because they have the right mindset to succeed and reach their full potential (Oaklander, 2015).

In the United States, more and more teachers are starting to become concerned with the progress many students are making. Considering how well-funded schools are in the United States compared to other parts of the world, it is truly shocking that schools in the US are not even in the top ten around the world. If inadequate funding is not the issue, we need to determine what the root cause of this issue is so that students in the US are given the tools needed to succeed (Baksh et al., 2015).

One thing educators and researchers are considering is a child's "readiness to learn." Before a student can learn things like reading, math, and science in the classroom, they must first learn how to regulate their behavior and emotions. Once they have mastered this, they are ready to learn. Programs that focus on student's readiness to learn to include social and emotional learning (SEL) programs. SEL programs that specifically integrate mindfulness into them have helped students be more ready to learn. SEL programs based on mindfulness teach students how to be present, be aware of themselves and others, self-regulate, and be kind (Bakosh et al., 2015).

In Chicago, Illinois, Bakosh et al. (2015) used the mindful-based social-emotional learning (MBSEL) program adopted from Kabat-Zinn on third-grade students. Ninetythree students were in the intervention group. Ninety-eight students were in the control group. The study lasted eight weeks (one school semester) using a daily ten-minute prerecorded audio-guided program based on the mindfulness-based stress reduction (MBSR) that was originally created and used in a study done by Kabat-Zinn. They wanted to know if implementing a mindfulness program would increase student test scores in reading, writing, spelling, social studies, math, and science (Bakosh et al., 2015).

During each session, students were encouraged to partake in focused awareness exercises. Students were given opportunities to follow along in guided breathing practices as well as engage in moments of silence. In some of the sessions, students were even encouraged to move around and do some mindful movements in their seats. During the last two minutes of each practice, students were asked to journal about their experiences and reactions from the practice that day. Students were given the option to either draw or write down their responses (Bakosh et al., 2015).

After the intervention was completed, data was collected on student grades to determine the impact the study had on student academic achievement. In the areas of reading, science, writing, and social studies, student grades increased. With the exception of math, students in the intervention group made more academic gains than students in the control group. Along with all the academic gains that came from this intervention, classroom teachers also collected data on student behavior over the eightweek period. Student behaviors in the classroom dropped by over 50%. Classrooms went from averaging around four behaviors a day per week to only one and a half behaviors a day per week. Teachers excluded any field trips or special events from the data to help make the data consistent and precise (Bakosh et al., 2015). Overall, this study shows some promising data on the effects of a mindfulness intervention on young students in correlation to academic performance. Results from the study show that mindfulness interventions show promising data on academic achievement after an eight-week intervention that lasted only ten minutes per day.

In another study that also used the MBSR program, M. and Dhanalakshmi (2016) worked with a group of 300 high school students to determine if the MBSR intervention would help reduce stress, increase academic performance, and improve self-control. An anxiety inventory and self-control scale were administered to students. Additionally, academic scores provided baseline data on the effectiveness of the intervention (M. & Dhanalakshmi, 2016).

High school is a time of transition and change for many students. It is a time when students need to start thinking about their future and what they want to do once they graduate from high school. There is an added level of stress and pressure to figure out what the next chapter of life should look like. Lots of pressure is placed on high school students from many different people and things including parents placing high expectations on academics, tests, peer pressure, and life pressure. All these stressors in their life affect a student's ability to focus and concentrate at school which affects their academic performance. The purpose of this study was to determine and examine the effects of the MBSR program to see if it could help increase academic performance and reduce anxiety for adolescents (M. & Dhanalakshmi, 2016).

Each session of the MSRB intervention lasted 45 minutes. The first two weeks started with what is called Body Scan Meditation. Body Scan Meditation is used to help prepare the mind to meditate by calming down and concentrating. The goal of Body Scan Meditation is to relieve stress and get the body relaxed. Weeks three and four focused on Mindful Yoga. The goal of Mindful Yoga is to train the body and brain on how to be aware and in the moment. At this time, students also started learning how to breathe. On weeks five and six, students engaged in Sitting Meditation. Sitting Meditation aims to teach students how to have a mindful state and be in the moment. The last two weeks of the intervention was Mindful Yoga. Mindful Yoga sessions focused on making students embrace being in the moment and rhythmic breathing (M. & Dhanalakshmi, 2016).

At the end of the eight-week program, they found some promising data on the MSRB intervention. Overall, results showed statistically significant differences between the control and test group in post-test score results. This data concludes that students receiving the intervention had better control of stress and anxiety management. Students in the intervention group also improved in their academic performance compared to students in the control group (M. & Dhanalakshmi, 2016).

In another study done by Anand and Sharma, they sought to see how a mindfulness program would impact 33 school-age students around ages 13-15 years old. The purpose of the study was to determine if a Mindfulness Based Stress Reduction program (MBSR) would help improve a student's well-being, academic performance, and stress levels. The intervention was derived from Kabat-Zinn's MBSR program which was developed in the '90s. The intervention consisted of eight weekly sessions lasting 40 minutes per session (Anand & Sharma, 2014).

MBSR sessions strived to teach students how to sit and walk mindfully, meditate, and listen mindfully. Role-play was used a lot during each session to help increase student engagement. It also helped enhance awareness of each concept being taught. After each role-play session, students participated in a discussion, debriefing what each lesson was about. The MBSR program was delivered in the school auditorium during the school day (Anand & Sharma, 2014). When all these skills are taught successfully, students are more likely to be successful in the classroom because they have learned specific tools to help them regulate their body using mindfulness.

Pre and post-assessments were administered to students to gather information on the validity of the MBRS program. The School Situation Survey (SSS) was used to determine each student's stress levels and where most of their stress at school came from. Stressors included academics, academic self-concept, teachers, and peers. The Personal Wellbeing Index School Children (PWI-SC) that measures a student's quality of life domain. There were seven items that covered standard of living, health, life achievement, relationships, safety, connectedness with the community, and security. Students also filled out a Weekly Meditation form which students used to log their daily meditation practice at home. The last assessment used to gather data was the Intervention Feedback Proforma. This was used to gather feedback on the effectiveness of the program (Anand & Sharma, 2014).

Results from pre to post-intervention data show a significant increase in academic self-concept, meaning students started to feel more competent at school. It also showed a significant decrease in academic stress, peer interactions, and psychological /emotional symptoms. 81% of participants felt that the program was very useful and 83% of participants felt very satisfied with the MBRS program (Anand & Sharma, 2014).

One of the largest limitations of the program was the sample size. Only 33 students participated in the study. Although the results from the study were very positive, a larger sample size would have yielded a stronger argument. Another

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limitation of the study was the duration of the MBRS program. The program only lasted eight weeks and there was no follow up after the intervention was completed to see how well students used mindfulness strategies once the intervention was over.

Overall, the intervention was a huge success, especially in academic performance. Students felt more confident at school, had less anxiety about school, and performed better in the classroom (Anand & Sharma, 2014).

Prosocial Behavior

Prosocial behaviors are behaviors that others exhibit towards one another that is socially acceptable. When one is exhibiting prosocial behavior, they are focusing on someone else's happiness (Gross, Stern, Brett, & Cassidy, 2017). Prosocial behaviors can include things such as helping an elderly person cross the street, opening the door for a stranger, doing something special for a friend, or volunteering time at a food shelf. There are many things that tie into one's ability to exhibit prosocial behavior towards others. For example, children who have a more difficult time with behavior regulation struggle to stay calm, making it difficult for them to address the needs of others. Homelife is another factor in prosocial behavior. Parents and guardians who attend to children during times of need are more likely to have prosocial children versus children who don't get their needs met at home (Gross et al., 2017).

For students to be successful in school, students must show prosocial behavior and self-regulation. Prosocial behavior and self-regulation go hand in hand. For one to be prosocial, they must first learn how to self-regulate (Gross et al., 2017; Viglas & Perlman, 2017). In the study done by Viglas and Perlman, the researchers both uncover the importance of teaching young children in kindergarten self-regulation skills. They believe that teaching kindergarteners self-regulation skills at an early age would help children develop prosocial behaviors that would be important especially as they got older (Viglas & Perlman, 2017).

Mindfulness has shown to have a positive impact on a student's ability to selfregulate, thus, helping students develop prosocial behaviors (Viglas & Perlman, 2017). They tested a mindfulness program on young kindergarten children. At the end of the six-week intervention, they concluded that not only did self-regulation increase for students in the intervention group, their pro social behavior was positively impacted as well. The Strengths and Difficulties Questionnaire (SDQ) is a behavior screening questionnaire that was used to measure prosocial behavior in children for this study. This questionnaire was originally developed by Robert Goodman. It was concluded that children who received the mindfulness based program showed a significant increase in prosocial behavior compared to students in the control group. Children were found to be more considerate, helpful, caring, willing to share, and friendly to others compared to the control group. The research shows that implementing a mindfulness program in the classroom, even for a short amount of time has a significant positive impact on a young child's prosocial behavior (Viglas & Perlman, 2017).

In another study, researchers Kimberly Schonert-Reichl and Molly Lawlor investigated the effects of a Mindfulness Education (ME) program on students in grades fourth through seventh grade. Exactly 246 students from six different classrooms participated in the study along with six other classrooms that acted as the control group. They wanted to know how the program would impact young adolescents in the classroom on social and emotional competence, optimism, and school self-concept (Schonert-Reich & Lawlor, 2010).

In more recent years, it has become an ongoing issue that many children in school suffer from social, emotional, and behavioral problems. These issues affect a student's ability to be successful in school, create meaningful relationships with others, and become successful lifelong learners as they venture off after high school into the real world. As teachers, we can reduce levels of stress, anxiety, and other mental illnesses children face each year by implementing interventions early on when children are young (Greenberg, Domitrovich, & Bumbarger, 2001). By implementing a mindfulness intervention to students at a young age, researchers Schonert-Reich and Lawlor strive to reduce the number of students who struggle in school due to their inability to cope, make friends, and succeed in school.

The ME program focuses on teaching students social and emotional competence through lessons that foster "mindful attention awareness" (p. 138). By utilizing the ME program, they hoped to see a change in student behavior and mindset in hopes of increasing student achievement. The four domains measured to determine the effectiveness of the ME program included optimism, self-concept, positive affect, and social-emotional functioning in school. Additionally, they wanted to see if the ME program would increase social and emotional competence and decrease problematic behaviors (p. 140). To begin the study, Greenberg et al. administered a questionnaire that was read aloud to the students by the research assistants. Another questionnaire was administered to the students at the end of the study as well. Additionally, all teachers filled out pretest and posttest student behavior checklists. The ME program is comprised of ten lessons that are taught by classroom teachers. Lessons were taught once a week, each lesson lasting around 40-50 minutes. Daily core mindfulness attention exercises were also done three times per week, three minutes per session with the students. The program emphasized on teaching students how to quiet their mind, pay attention, manage negative emotions and thoughts, and acknowledging yourself and others (p. 143).

To assess the validity of the ME program, teachers were asked to write in a journal where they then recorded what they did each day. Teachers also filled out a fivepoint Likert-type scale which asked teachers to rate the effectiveness of the program on their students, one being not a significant difference and five being a significant difference (p. 144). On the scale, teachers reported an average score of 4.14, meaning most teachers noticed a significant difference in their students. One teacher remarked, "I noticed considerable growth in my students; awareness of their place in the world around them and their ability to articulate their feelings and thinking in class discussions" (p. 145). Teachers also reported on the effectiveness of the ME program on their students' abilities to manage social and emotional regulation. The average rating from teachers was 4.60. Teachers felt that the ME program helped teach students how to become more self-aware, making for a more positive classroom environment. Many

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students took the skills they learned from the ME program and practiced the skills in their everyday life, which helped improve their relationships with others, the ability to play on a sports team, and schoolwork (Schonert-Reich & Lawlor, 2010).

Overall, Schonert-Reich and Lawlor were pleased with their findings from the ME program. The intervention was designed to help students with social and emotional learning. Results from the intervention provided promising information on the effectiveness of the intervention. Teachers noted that students in the intervention group exhibited more prosocial behaviors. Students were able to exhibit more positive emotions and were more positive and optimistic too. Teachers noted that students were more supportive of their peers, creating a more positive classroom environment (Schonert-Reich & Lawlor, 2010).

One limitation of the study was the number of participants the participated. The number of participants makes the legitimacy of the data less valid when compared to a study that has a larger number of participants. Another limitation of the study was the absence of a follow-up on classrooms once the intervention was complete. This makes it difficult to argue the lasting effects of the intervention on students once the intervention was complete (Schonert-Reich & Lawlor, 2010).

In another study, done in Vermont, Beauchemin, Hutchins, and Patterson (2008) found 34 high school students ages 13-18 that had been diagnosed with a Learning Disability (LD). The study took place in a private school that specialized in working with students diagnosed with an LD. Lots of research suggests that many students that have an LD also suffer from anxiety, social skills, and academics. They believed that mindful

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meditation (MM) program help students decrease their anxiety and stress, help promote social skills, and increase academic performance through a five-week MM program. To collect data for the study, three different assessments were used. One measured social skills, another measured anxiety levels, and the last measured ones attitude towards certain things and situations (Beauchemin et al., 2008).

Pre and post-intervention data were gathered when collecting data for the MM program. The program was implemented by classroom teachers every day for about five-ten minutes per session. The intervention lasted five weeks (Beauchemin et al., 2008).

Results from the intervention showed significant improvements from pre to post-test data. In social skills, students went from scoring in the 31st percentile to averaging in the 43.5 percentile. Teachers also noted some significant increases in social skills among students too. They also indicated students were starting to perform better academically too. In the post-test, teachers remarked that 28.8 percent of their students in the MM were performing well academically. At the end of the five-week program, 33.6 percent of students were showing higher levels of academic achievement (Beauchemin et al., 2008).

One of the largest limitations of the study was the duration of time spent on the MM program. Five weeks is a short amount of time, making it difficult for students to retain what they learned from the MM program. Unless the teachers continue using the MM program each day in the classroom, many of the students will likely revert to where they were before the MM program. Overall, the study has strong evidence of how the MM program was able to not only help students with social skills but also academic performance and anxiety too (Beauchemin et al., 2008).

In another study, which used the MBSR (Mindfulness Based Stress Reduction) program as discussed before. Koszycki, Benger, Shlik, and Bradwejn (2007) wanted to see if the MBSR program would help reduce symptoms for individuals diagnosed with a social anxiety disorder (SAD) by improving mood, quality of life, and their ability to function. This study was being compared to a cognitive-behavioral group therapy (CBGT) program. Individuals with SAD struggle to engage in appropriate social conversations with others. When put in a situation where they must interact with peers, they become extremely anxious, uncomfortable, and quiet. It was believed that the MBSR program would be a good cognitive-behavioral therapy for individuals with SAD. If the program is effective, it could help reduce SAD symptoms in patients (Koszycki et al., 2007).

A total of 58 participants partook in the study. All participants in the study voluntarily signed up to be part of the MBSR trial. The MBSR program was administered by a trained instructor. The intervention first started off with a one-to-one orientation interview. Next, each participant attended eight weekly two and a half-hour group sessions plus a meditation retreat. The program taught participants about stress and various meditation techniques that can be used to help them with their SAD symptoms. Participants needed to complete daily meditation using audiotapes on most weeks. On weeks two to four, participants were asked to not use the audiotapes for guidance. The CBGT group started off with a one-to-one therapy treatment interview with a therapist and 12 weekly two and a half-hour group sessions (Koszycki et al., 2007). The Social Interaction Scale (SIAS) and the Social Phobia Scale (SPS) were used to determine the types of social fears each participant had. The Interpersonal Sensitivity Measure (IPSM) was used to measure sensitivity to social behavior of others, social feedback and alleged or actual undesirable judgment by others. The Beck Depression Inventory (BDI-II) was used to determine depressive symptoms of participants over a two-week period. Another scale was used to assess severe lifetime disability attributable to emotional problems. A final inventory was used to determine each participant's life satisfaction (Koszycki et al., 2007).

At the end of the trial, it was concluded that both the MBSR and CBGT programs were both effective treatments for individuals with SAD. Participants in the CBGT group noted a more significant decrease in social anxiety compared to those in the MBSR group. It was noted that the CBGT program did a much better job in reducing SAD symptoms than the MBSR program however, both studies are very valid interventions for individuals with SAD (Koszycki et al., 2007).

One of the largest limitations of the study was how the intervention was administered. This type of intervention would not be practical to use in the classroom unless it was modified. Intervention sessions were held once a week for two and a half hours. This would not be a practical program to use in a school setting otherwise. Overall, the MBSR program is a great program to use with individuals that suffer from SAD. Participants in the program were able to relieve many of their SAD symptoms after a few weeks of intervention. The MBSR program would need to be adapted to a school setting but would be very beneficial for students suffering from social anxiety (Koszycki et al., 2007).

Interventions for Teachers

Mindfulness interventions have shown to be very effective when teachers and researchers have implemented them with students, but it is important to acknowledge that teachers can also benefit from mindfulness interventions too. Mindfulness can help reduce stress, improve self-regulation during stressful situations, enhance selfawareness, and increase social and emotional competence. It is important for teachers to take the time to tend to their needs so that they can be in the right mindset to be good teachers to their students. Teachers who take care of themselves are the ones who create a strong classroom environment, student behaviors decrease, and academic achievement increases (Jennings et al., 2013).

In one study done in Pennsylvania, Jennings et al. (2015) wanted to evaluate the Cultivating Awareness and Resilience in Education (CARE) program on a group of educators. Teachers must have a lot of social and emotional competence (SEC) in order to best support all the social and emotional needs of each student in the classroom. When teachers struggle to support students socially and emotionally, their academic achievement suffers and their behaviors in the classroom increase. Hence, it is very important for teachers to take good care of themselves so they can be there for their students (Jennings et al., 2013).

The CARE program focuses on the development of well-being, classroom effectiveness, anxiety, health, mindfulness, and burnout of teachers. The program

focuses on SEC by helping maintain relationships between students and teachers and social and emotional learning (SEL). The CARE program incorporates mindful awareness exercises, emotion skills practice, and compassion boosting activities. The aim is to help give teachers the skills needed to reduce stress, manage difficult behaviors, create a positive classroom environment, and create meaningful relationships with students (Jennings et al., 2013).

Typically, the CARE program is implemented over four to six weeks. Teachers sign up for this program as a professional development opportunity. The total length of the program is 30 hours. The program is administered in four day-long sessions. In addition to the sessions, teachers also have intersession coaching with a CARE coach on the phone. There is also a booster held about two months after teachers complete the program (Jennings et al., 2013).

In the present study, the results of the CARE program were examined over a two-year span of time with multiple teacher groups to see how effective the program was. Fifty-three teachers were part of the study around 22-60 years old. In the first year, Jennings et al. (2013) piloted two cycles of the CARE program on teachers. They hypothesized that teachers in the CARE program would show increased levels of wellbeing, efficacy, burnout, and mindfulness when compared to the control group. They also theorized that teachers would find this program to be beneficial for all teachers (Jennings et al., 2013).

To collect data for the program, several different questionnaires and scales were administered before and after the CARE program. The evaluations included a depression scale, a physical symptoms checklist, an efficacy questionnaire, burnout and time pressure measures, a mindfulness questionnaire, and overall program evaluation on the effectiveness of the CARE program (Jennings et al., 2013).

After collecting data from the questionnaires and scales, it was concluded that significant positive results were documented indicating the effectiveness of the CARE program for teachers on their well-being, efficacy, burnout, and mindfulness. Results indicated significant outcomes. Teachers indicated that they were able to create more meaningful relationships with their students, manage difficult behaviors more easily, and increase academic achievement (Jennings et al., 2013).

One limitation of the study is the availability of the program. Teachers must find a way to get funding and approval if they would like to take part in the CARE program. Not all schools will have the time or resources to allow teachers to use professional development time on the CARE program. Overall, the CARE program appears to be a very promising program for teachers. The results from the program were very successful and many teachers reported positive remarks about the effectiveness of the program (Jennings et al., 2013).

In another study, Anderson, Levinson, Barker, and Kiewra (1999) wanted to address the negative effects of stress and burnout that many teachers face in their jobs. It is becoming increasingly more important for teachers to find time to take care of themselves so that they can put their best foot forward when working with students. Optimistic data has been found when utilizing a standardized meditation (SM) class with teachers. The purpose of the study was to explore the effects of a five-week Standardized Meditation program and if it could help teachers with stress management. They wanted to know if meditation helped reduce stress, teacher burnout, and anxiety. They also wanted to see if stress at work could be improved with the use of meditation. Last, they wanted to know how likely teachers would be to follow through a meditation program (Anderson et al., 1999).

A total of 45 teachers participated in the experimental group and 46 teachers were in the control group. All teachers were full time and from either Pennsylvania, Illinois, or Missouri. The lead author of the program plus seven instructors for the American Meditation Society volunteered to teach meditation classes. The meditation program lasted five weeks. Teachers were asked to practice meditation twice a day for 20 minutes at home and at school. Classes were held weekly for 90 minutes after school. Participants were also given an additional follow up session was held a month after the five-week program had been completed. Three different instruments were used which measured stress levels and burnout of teachers in the study such as the Teacher Stress Inventory (TSI) which was used to measure levels of teacher stress. Teachers were given a pretest to gather baseline data along with a posttest which was used to determine the effectiveness of the SM program. A post-test was given at the end of the five-week program and again after nine weeks (Anderson et al., 1999).

Results from the study showed some positive results on the effects of the SM program on teachers. Data from assessments indicated that teachers had lower levels of stress and anxiety, experienced decreased levels of burnout, and lowered overall perception of stress. As a result, all these things will ultimately lead to a more positive

classroom environment, better student-teacher relationships, and higher levels of academic achievement among students. One limitation is the feasibility of implementing the SM program in schools. It is suggested that school psychologists should advocate for programs like the SM program in schools to help teachers with stress and burnout. Although this is a viable option, not all schools will be open to this idea due to other school obligations that need to be addressed or lack of adequate funding to support a program like this. Ultimately, the SM program is a good option for schools that have the funding and resources to support this program. Results from the program show some promising insight on how to reduce teacher burnout and stress (Anderson et al., 1999).

Frank, Reibel, Broderick, Cantrell, and Metz (2015) wanted to examine the effects of the mindfulness-based stress reduction (MBSR) program on the stress and well being of teachers. The MBSR program is a program previously discussed that had been used with students. They hypothesized that teachers in the intervention group would show significant changes in social and emotional well-being, stress, sleep, and self-efficacy (Frank et al., 2015).

Data was collected before starting the intervention as a means for gathering baseline data in the intervention and control group. A total of 36 high school teachers participated in the study. Eighteen were in the MBSR group and 18 teachers were in the control group. The program lasted eight-weeks in length. Teachers in the MBSR group were assigned to do 25-30 minutes of mindfulness meditation six days a week using a guided meditation CD. MBSR sessions with an instructor lasted two hours, one day a week. MBSR training was delivered by a certified MBSR instructor. Each class focused on meditation, group discussions, and mindfulness skill-building activities. The goal of MBSR classes was to help teachers become more aware of their mind and body, enhance interpersonal communication, and enhance one's presence when conversing with others. Some of the discussions included how teachers could implement mindfulness practices in the classroom. Teachers were also encouraged to share their experiences implementing parts of the MBSR program in their classrooms (Frank et al., 2015).

To measure progress for the MBSR program, six different tools were used to evaluate the program. One tool was used to measure stress and anxiety. Another tool called the Pittsburg Sleep Quality Index (PSQI) was used to measure adult sleep patterns, disturbances, and habits. A Self-compassion scale (SCS) is used to measure self-kindness individuals have for themselves. A burnout inventory was used to measure symptoms individuals experience when feeling stressed at work. A mindfulness questionnaire and self-efficacy scale were also used to measure mindfulness (Frank et al., 2015).

Results from the MBSR program showed a significant improvement in the ability to self-regulate. Teachers noted that mindfulness practices were incredibly helpful in helping them stay calm and focused (Frank et al., 2015).

One limitation of the study was that results showed that teachers were unable to exhibit acceptance of themselves even after the eight-week MBSR program. By increasing the duration of the MBSR program, it is possible to receive more promising data in this area. Ultimately, results from this program along with other studies done on

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the MBSR program provide strong evidence for why the MBSR program can be beneficial for teachers and students (Frank et al., 2015).

In a study done by Maria Napoli, she wanted to see what the effects of a mindfulness training class would have on elementary school teachers. Specifically, Napoli wanted to see how practicing mindfulness could affect teacher behavior and their perception of their students and personal life. In the study, Napoli recruited a fourth-grade teacher and two third grade teachers. The teachers were trained in bimonthly for 45 minutes per session. The class ran from September 2000 to May 2001. Each mindfulness session focused on breathing and being in the moment. Teachers also attended an eight-week intensive mindfulness program. The group met for two and a half hours per week, one day a week plus an eight-hour session of silence. The classes consisted of meditation, body scan, movement, and group discussion. The instructor also provided feedback to participants in the program on homework that was given (Napoli, 2004).

At the end of the mindfulness program, each teacher was interviewed lasting about one and a half hours. Questions focused on how mindfulness practices impacted how they handle their classrooms and students. They were asked if they noticed any changes in their students since implementing mindfulness in the classroom or if they found any mindfulness strategies that they found effective for their students in the classroom. Teachers also answered questions about how mindfulness influenced their personal lives outside of school too (Napoli, 2004). Results from interviews showed that mindfulness had many positive effects on both teachers and students. For example, the curriculum was changed to include mindfulness in health and physical education. Teachers commented on how mindfulness helped them prioritize curriculum and realize what is truly important for their students to know. Others commented on how they would use mindfulness strategies at the beginning of a lesson such as body scan to help their students relax. Teachers remarked how mindfulness helped them and their students become less stressed and exhibited lower levels of anxiety. Students also appeared to be more on task. All teachers noted how their quality of life improved after the mindfulness program (Napoli, 2004).

One of the biggest limitations of the study was the lack of a control group. Although the results from the mindfulness program were very positive, there was no control group to compare the mindfulness group too, making it difficult to determine the validity of the program. Overall, more data on the study is needed to prove the validity of the study but the study has some strong potential for being a very promising study (Napoli, 2004).

In another study, Roeser et al. (2013) used a mindfulness training (MT) program like the study done by Napoli on two different groups of teachers. The studies included teachers from both Canada and the United States. They wanted to know if an eightweek (32 hours) long MT program going to be achievable for teachers. They also wanted to know if the MT program would help reduce psychological and physiological indicators of stress and burnout at the end of the program and during a three-month follow-up when compared to a control group. Additionally, they wanted to know if the MT program would exhibit greater mindfulness, focused attention and working memory, and self-compassion by the end of the program. The purpose of the study was to help reduce teacher burnout rates and stress upon completion of the MT program (Roeser, et al., 2013).

A total of 58 public school teachers from Canada along with 55 public school teachers from the United States participated in each study. In the Canada sample, 26 teachers were in the mindfulness group and 32 teachers were in the control. In the United States, 28 teachers were in the mindfulness group and 27 were in the control group. To collect data for the studies, teachers filled out surveys that assessed stress, burnout, and well-being. Blood pressure and heart rate were also assessed before and after the study to collect baseline data and post-program data. Additionally, a mindfulness evaluation survey and mindfulness journal were collected at the end of the program. To ensure the program was administered with consistency, only one mindfulness instructor was used to deliver the intervention to groups at both Canada and the United States (Roeser et al., 2013).

Results from the studies showed that the MT program had many positive impacts on teachers including lowered levels of work stress and feelings of burnout. Teachers in the control groups reported feeling more mindful after the program. Participants in the Canada study showed greater improvements in focused attention and working memory which increased self-reported mindfulness over time. All teachers in the MT program showed more affirmation of self-compassionate thinking after the MT program has been completed and at the three-month follow-up. A total of 87% of teachers completed the eight-week mindfulness program. Most teachers indicated they would recommend this program to their colleagues (Roeser et al., 2013).

One of the biggest limitations of the study was that most data from the study was based on teacher self-report. To help with this, a wider variety of behavior rating scales that measured anxiety, burnout, and mindfulness like some of the previous studies mentioned could be used. Another limitation of the study was teacher motivation. All teachers in the study were very motivated to sign up for the eight-week MT program. If the MT program was required of teachers, it is unknown how teachers would respond to the program, especially if they did not want to partake in it. With that being said, the need for programs like this is very high. Overall, the program shows some promising improvements in teacher stress, burnout, and anxiety after completing an eight-week MT program (Roeser et al., 2013).

CHAPTER III: DISCUSSION AND SUMMARY

Summary of Literature

Much of the research backs up and supports the effectiveness of mindfulness strategies for helping students improve behavior regulation, academic achievement, and prosocial behavior (Harpin, Rossi, Kim, & Swanson, 2016). Not only that, there are many benefits for teachers as well (Jennings, Frank, Sonwberg, Coccia, & Greenberg, 2013).

Behavior regulation and self-regulation were some of the most prominent impacts noted when implementing mindfulness interventions. Behavior and selfregulation refer to one's ability to regulate their feelings and emotions. In several studies done on mindfulness interventions, behavior regulation and self-regulation were significantly impacted positively. For example, in one ten-week study done in Denver, Colorado, the MindUp and Mindful Schools curriculum was used on elementary students at an urban school. After the ten-week intervention was completed, teachers noted that students were more focused, less impulsive, and calmer (Harpin, et al., 2016).

In another study done using Muse headbands, Martinez and Zhao (2018) wanted to see if a self-guided meditation program could help increase behavior regulation. Results from the data showed that after the intervention was completed, students were getting significantly fewer office referrals due to their ability to self regulate in the classroom (Martinez & Zhao, 2018).

Mindfulness has been shown to help individuals all over the world. In one study done in Israel, great success was found when implementing a mindfulness intervention

on students in grades third through sixth. Again, students had many positive outcomes with behavior regulation upon completion of the program (Sheinman et al., 2018).

Martial arts interventions have also been proven to be very successful in helping students with behavior regulation. Some studies implemented mindfulness interventions that incorporated a martial arts curriculum to see if that would help individuals develop coping strategies that would help them self-regulate. Results from interventions indicated significant improvements in academic achievement, social competence, self-regulation, and self-confidence. (Milligan et al., 2015; Milligan et al., 2017; Wall, 2005).

There is a lot of research to back up that yoga interventions can also help students with ADHD or EBD. In three studies done with students, yoga interventions were evaluated to see if they could help reduce ADHD and EBD symptoms in students. At the end of the interventions, not only were the students more focused and alert in class, their behavior regulation skills had increased too (Abadi et al., 2008; Jensen & Kenny, 2004; Steiner et al., 2013). In other studies, done on students without ADHD or EBD, similar results were concluded as well (Bergen-Cico et al., 2015; White, 2012).

Academic achievement was noted as being another prominent benefit of implementing mindfulness interventions. Many research studies used the MBSR model coined by Kabat-Zinn as their basis for creating effective interventions (Bakosh et al., 2015). They noted that interventions that used a variation of the MBSR intervention had many positive student outcomes. This included a greater focus on academic tasks, increases in behavior regulation, lower levels of stress and anxiety in the classroom, and higher levels of academic performance. As a result, many students showed greater levels of academic achievement (Bakosh et al., 2015; Anand & Sharma, 2014; M. & Dhanalakshmi, 2016).

Prosocial behavior was impacted positively when mindfulness interventions were implemented. Prosocial behaviors are behaviors that are socially acceptable when interacting and conversing with peers (Gross et al., 2017). In three mindfulness studies done on young adolescents and students in high school, they found that after each intervention had been implemented, students in the intervention groups showed more prosocial behaviors than the students in the control groups. These behaviors included an ability to make friends, respond appropriately to social situations, were more positive, and optimistic (Beauchemin et al., 2008; Schonert-Reich & Lawlor, 2010; Viglas & Perlman, 2017).

Not only were interventions effective for students, but teachers also benefited from mindfulness interventions as well. In many mindfulness studies, the focus was on helping students. For students to be successful, however, teachers must take care of themselves first (Jennings et al., 2013). In many studies done on classroom teachers, they found that mindfulness interventions helped reduce teacher burnout rates, enhanced classroom performance, and even improved student relationships (Anderson et al., 1999; Jennings et al., 2013; Roeser et al., 2013). In another study, teachers commented on how focused and calm they felt after completing a mindfulness intervention. They even commented on their ability to self-regulate more successfully (Frank et al., 2015).

Limitations of the Research

To limit the search parameters for the research topic, keywords such as "education," "intervention," and "mindfulness" were used to narrow down the types of studies needed to address the research question. Some of the articles found while researching this topic that were not utilized for this research included studies about adults that were not in the field of education. Articles that did not include teachers or children in grades kindergarten through 12th grade in the studies were not included. Articles that included students in college were intentionally not used when gathering information on this topic. This is because the point of the research is to help teachers and students in elementary and secondary schools increase behavior and selfregulation, academic achievement, and prosocial behaviors. Although some of the mindfulness strategies discussed could be beneficial for all individuals, the purpose of this research was to evaluate and examine effective mindfulness interventions that have worked with individuals in grades kindergarten through 12th grade.

Mindfulness research is still a new and emerging topic in the field of education. Due to this reason alone, there is a limited amount of research on how mindfulness interventions can help improve school conditions for both teachers and students. This made finding articles with compelling data more challenging. Research needs to be taken to the next level. For example, larger sample sizes, longer interventions and more frequent and consistent follow-up on how interventions are going years after they have been implemented will help make the argument for implementing mindfulness in classrooms imperative.

Implications for Future Research

We still have a lot to learn about how mindfulness can enhance education for students in kindergarten through 12th grade. In most of the studies, small intervention and control groups were used. Some intervention groups were as small as three. Other studies did not even include a control group to compare the intervention group with. This made the data biased and subjective because there was no group to compare the intervention group with. Although each study included compelling data indicating that mindfulness interventions either helped students, teachers, or both, it is hard to tease out if significant progress was made due to each intervention being successful or if due to there not being a control group to compare some of the intervention groups with, some of the interventions may have appeared to be effective when in reality, they were not.

Future research should also have additional follow-ups with participants after each intervention. In several mindfulness interventions, researchers would intervene for a period of time but once the intervention was over, there would be no follow-up years after the intervention took place. Because of this, it is hard to say how effective some of the interventions were. Some of the mindfulness interventions completed by researchers lasted only five-weeks with no follow-ups after the interventions were completed. How can we say an intervention is effective if no one is checking to see if the intervention worked years after it was implemented? Following up on each mindfulness intervention will help determine which interventions worked and which ones need to be reevaluated and modified.

Implications for Professional Application

In education, the term mindfulness is starting to become a more prevalent and recognizable word. In more recent years, teachers are starting to accept that students these days are not like how they were many years ago. Teaching strategies that were used 50 years ago just aren't going to cut it now anymore. According to the United States Department of Health and Human Services (1999), mental illness rates for children are rising. Additionally, children are starting to become diagnosed with several other disorders such as ADHD, EBD, specific learning disability (SLD), etc. As a result of all this, student academic achievement rates are low, behaviors such as physical or verbal aggression are high, and students are forgetting how to converse with peers.

Mindfulness could be a key to this issue that all educators face. Mindfulness interventions have shown to help students be better versions of themselves. When mindfulness interventions are taught with consistency and fidelity, teachers and students both positively benefit from it.

At school, teachers spend a large portion of their day dealing with defiant and disruptive students. These behaviors end up taking priority over teaching due to the immediate danger some of these behaviors exhibit. Students need to learn strategies and skills to help them self-regulate when they start to become anxious. Mindfulness interventions have been shown to help students do just that.

One goal of teaching is to help students achieve high academic standards. As teachers, we want our students to push themselves academically to their fullest potential. With the growing number of disabilities and mental health problems such as

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anxiety and depression many students face, many students are beginning to also suffer academically. Although mindfulness interventions will not necessarily guarantee students will automatically get smarter once they start an intervention, they will benefit students. According to research, several mindfulness interventions have shown to help students stay more focused and attentive in the classroom. As a result, students can be more successful in the classroom because they are calmer, more focused, and attentive (Anand & Sharma, 2014; Bakosh et al., 2015).

Prosocial behaviors are socially acceptable behaviors one displays when conversing with others. At school, it is important for students to exhibit prosocial behaviors because that is how children make friends or get jobs as they get older. Individuals that have poor social skills also suffer from issues such as anxiety, depression, emotional or behavioral disorders, etc. Research supports that mindfulness interventions can help increase prosocial behaviors (Viglas & Perlman, 2017).

Teacher burnout rates have increased over the years. Teachers need to take care of themselves first before they can take care of their students' needs. Teachers are feeling stressed out and exhausted due to the high demands of the job and student behaviors. Mindfulness interventions can help reduce stress, anxiety, well-being, and burnout rate of teachers. In some cases, teachers felt as though they were able to create more meaningful relationships with students after completing a mindfulness intervention (Jennings et al., 2013).

If mindfulness has taught educators one thing, it is that we need to find ways to implement it into classrooms across the board if we want students to achieve to high academic standards and be successful. We need to become more proactive and implement mindfulness curriculum into our classrooms if we want our students to reach their full potential.

Conclusion

Students in the United States have lower academic rates than in other countries (Bakosh et al., 2015). This is due to a variety of different reasons such as stress, anxiety, having a learning disability, an emotional or behavioral disorder, or mental illness. As a result, students struggle with academic performance, behavior regulation, and prosocial skills. In Addition, teachers are becoming burnt out too. Research shows that mindfulness interventions could be a key to helping students be more successful at school and teachers less stressed and burnt out.

References

- Abadi, M. S., Madgaonkar, J., & Venkatesan, S. (2008). Effect of yoga on children with attention deficit/hyperactivity disorder. *Psychological Studies-University of Calicut*, *53*(2), 154.
- Anand, U., & Sharma, M. P. (2014). Effectiveness of a mindfulness-based stress
 reduction program on stress and well-being in adolescents in a school setting.
 Indian Journal of Positive Psychology, 5(1), 17-22. Retrieved from https://search-proquest-com.ezproxy.bethel.edu/docview/1614312543?accountid=8593
- Anderson, Vidya L, Levinson, Edward M, Barker, William, & Kiewra, Kathleen R. (1999). The effects of meditation on teacher perceived occupational stress, state and trait anxiety, and burnout. *School Psychology Quarterly, 14*(1), 3-25.
- Baker, J. A., Grant, S., & Morlock, L. (2008). The teacher-student relationship as a development context for children with internalizing or externalizing behavior problems. *School Psychology Quarterly*, 23(1), 3-15. https://doi.org/10.1037/1045-3830.23.1.3
- Bakosh, L., Snow, S., Tobias, R., Houlihan, M., & Barbosa-Leiker, J. (2016). Maximizing mindful learning: Mindful awareness intervention improves elementary school students' quarterly grades. *Mindfulness, 7*(1), 59-67.
- Beauchemin, J., Hutchins, T., & Patterson, F. (2008). Mindfulness meditation may lessen anxiety, promote social skills, and improve academic performance among adolescents with learning disabilities. *Complementary Health Practice Review*, *13*(1), 34-45.

- Bergen-Cico, D., Razza, R., & Timmins, A. (2015). Fostering self-regulation through curriculum infusion of mindful yoga: A pilot study of efficacy and Feasibility.
 Journal of Child & Family Studies, 24(11), 3448-3461.
 https://doi.org/10.1007/s10826-015-0146-2
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality & Social Psychology*, 84(4), 822-848. https://doi.org/10.1037/0022-3514.84.4.822
- Cheek, J., Abrams, E., Lipschitz, D., Vago, D., & Nakamura, Y. (2017). Creating novel school-based education programs to cultivate mindfulness in youth: What the letters told us. *Journal of Child & Family Studies*, *26*(9), 2564–2578.
 Doi:10.1007/s10826-017-0761-1
- Davidson, R., Dunne, J., Eccles, J. S., Engle, A., Greenberg, M., & Jennings, P., et al. (2012). Contemplative Practices and Mental Training: Prospects for American Education. Child Development Perspectives, 6(2), 146–153.
- Frank, J., Reibel, L., Broderick, D., Cantrell, P., & Metz, T. (2015). The effectiveness of mindfulness-based stress reduction on educator stress and well-being: results from a pilot study. *Mindfulness, 6*(2), 208-216.
- Greenberg, M. T., Domitrovich, C., & Bumbarger, B. (2001). The prevention of mental disorders in school-aged children: current state of the field. *Prevention* & *Treatment*, *4*, 1–62.

- Gross, J. T., Stern, J. A., Brett, B. E., & Cassidy, J. (2017). The multifaceted nature of prosocial behavior in children: Links with attachment theory and research. *Social Development, 26*(4), 661-678.
- Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2003). Mindfulness based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research, 57,* 35-43.
- Harpin, S., Rossi, A., Kim, A. K., & Swanson, L. M. (2016). Behavioral impacts of a mindfulness pilot intervention for elementary school students. *Education*, *137*(2), 149–156. Retrieved from

http://ezproxy.bethel.edu/login?url=https://search.ebscohost.com/login.aspx?di rect=true&db=aph&AN=120179274&site=ehost-live&scope=site

- Jennings, P. A., Frank, J. L., Sonwberg, K. E., Coccia, M. A., & Greenberg, M. T. (2013). Improving classroom learning environments by cultivating awareness and resilience in education (CARE): Results of a randomized controlled trial. *School Psychology Quarterly*, 28(4), 374-390. https://doi.org/10.1037/spq0000035
- Jensen, P., & Kenny, D. (2004). The effects of yoga on the attention and behavior of boys with Attention-Deficit/hyperactivity Disorder (ADHD). *Journal of Attention Disorders, 7*(4), 205-216.
- Koszycki, Benger, Shlik, & Bradwejn. (2007). Randomized trial of a meditation-based stress reduction program and cognitive behavior therapy in generalized social anxiety disorder. *Behaviour Research and Therapy, 45*(10), 2518-2526.
- Krigolson, O. E., Williams, C. C., Norton, A., Hassall, C. D., & Colino, F. L. (2017). Choosing
 MUSE: Validation of a low-cost, portable EEG system for ERP research. *Frontiers in Neuroscience*, *11*, 1-10. Doi:10.3389/fnins.2007.00109
- M. M., Anila., & Dhanalakshmi, D. (2016). Mindfulness based stress reduction for reducing anxiety, enhancing self-control and improving academic performance among adolescent students. *Indian Journal of Positive Psychology*, 7(4), 390-397.
 Retrieved from https://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=121144252

&site=ehost-live&scope=site

- Martinez, T., & Zhao, Y. (2018). The impact of mindfulness training on middle grades students' office discipline referrals. *Research in Middle Level Education Online,* 41(3), 1-8. https://doi.org/10.1080/19404476.2018.1435840
- Milligan, K., Cosme, R., Wolfe Miscio, M., Mintz, L., Hamilton, L., Cox, M., . . . Phillips, M.
 (2017). Integrating mindfulness into mixed martial arts training to enhance academic, social, and emotional outcomes for at-risk high school students: A qualitative exploration. *Contemporary School Psychology*, 21(4), 335-346.
- Milligan, K., Badali, P., & Spiroiu, F. (2015). Using integra mindfulness martial arts to address self-regulation challenges in youth with learning disabilities: A qualitative exploration. *Journal of Child & Family Studies, 24*(3), 562-575.
 https://doi.org/10.1007/s10826-013-9868-1
- Napoli, M. (2004). Mindfulness training for teachers: A pilot program. *Complementary Health Practice Review, 9*(1), 31-42.

Oaklander, M. (2015). Mindfulness exercises improve kids' math scores. Time.Com,

N.PAG. Retrieved from

https://search.ebscohost.com/login.aspx?direct=true&db=aph&AN-

100705096&site=ehost-live&scope=site

Roeser, R. W., Schonert-Reichl, K. A., Jha, A., Cullen, M., Wallace, L., Wilensky, R., ... Harrison, J. (2013). Mindfulness training and reductions in teacher stress and burnout: Results from two randomized, waitlist-control field trials. *Journal of Educational Psychology, 105*(3), 787-804. https://doi-

org.ezproxy.bethel.edu/10.1037/a0032093

- Schonert-Reichl, K., & Lawlor, A. (2010). The effects of a mindfulness-based education program on pre- and early adolescents' well-being and social and emotional competence. *Mindfulness, 1*(3), 137-151.
- Sheinman, N., Hadar, L., Gafni, L., & Milman, D. (2018). Preliminary investigation of whole- school mindfulness in education programs and children's mindfulnessbased coping strategies. *Journal of Child and Family Studies, 27*(10), 3316-3328.
- Singh, Nirbhay N., Lancioni, Giulio E., Singh, Angela D. A., Winton, Alan S. W., Singh, Ashvind N. A., & Singh, Judy. (2011a). Adolescents with aperger syndrome can use a mindfulness-based strategy to control their aggressive behavior. *Research in Autism Spectrum Disorders*, 5(3), 1103-1109.
- Singh, Nirbhay N, Lancioni, Giulio E, Manikam, Ramasamy, Winton, Alan S.W, Singh, Ashvind N.A, Singh, Judy, & Singh, Angela D.A. (2011b). A mindfulness-based

strategy for self-management of aggressive behavior in adolescents with autism. *Research in Autism Spectrum Disorders, 5*(3), 1153-1158.

- Steiner, N., Sidhu, T., Pop, P., Frenette, E., & Perrin, E. (2013). Yoga in an urban school for children with emotional and behavioral disorders: A feasibility study. *Journal of Child & Family Studies, 22*(6), 815–826.
- U.S. Public Health Service. (2000). *Report of the Surgeon's General's Conference on Children's Mental Health: a national action agenda*. Washington, DC: Department of Health and Human Services.
- United States Department of Health and Human Services. (1999). Mental health: A report of the surgeon general—Executive summary. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health. Retrieved September 15, 2003, from http://www.surgeongeneral.gov/library/mentalhealth/summary.html
- Viglas, M., & Perlman, M. (2018). Effects of a Mindfulness-based program on young children's self-regulation, prosocial behavior and hyperactivity. *Journal of Child and Family Studies, 27*(4), 1150-1161.
- Wall, R. B. (2005). Tai chi ad mindfulness-based stress reduction in a Boston middle school. *Journal of Pediatric Health Care, 19,* 230-237. doi: 10.1016/j.pedhc.2005.02.006.
- White, L. S. (2012). Reducing stress in school-age girls through mindful yoga. *Journal of Pediatric Health Care, 26*(1), 45-56.