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Mindfulness Breathing and Self-Regulation: The Effects of COVID-19 on Children

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Abstract

The impacts of COVID-19 affected the self-regulation of children around the world. This resulted in dysregulated behavior. A study was conducted around mindfulness breathing and its effects on self-regulation. The participants in the study were children ages six to nine and the location of the study was in a public charter Montessori elementary classroom. The study consisted of implementing mindfulness breathing twice daily for a period of five weeks. Participants' behaviors were observed, and their dysregulated behaviors were tallied. The participants also took surveys before and after the intervention took place regarding their self-regulation. Additionally, the participants were interviewed about their feelings toward the intervention of mindfulness breathing and if they felt it had any effects on their self-regulation. Results showed that mindfulness breathing positively impacted the participants' self-regulation. Results also showed it had calming effects on the participants. Further studies using other social emotional learning strategies and curricula could positively impact the self-regulation of the participants.

Keywords: self-regulation, social emotional learning, mindfulness breathing

During the first few weeks of school during the COVID-19 pandemic, children were sent to the principal's office for unsafe behaviors such as tackling, stabbing with pencils, hitting, biting, etc. I observed the children exhibiting aggressive behaviors towards one another and using the classroom materials in inappropriate ways: throwing them, breaking them, using them as swords, etc. Many of the children had little to no self-regulation, especially the younger children. Children who were eight years old at the beginning of the year were the only children to have experienced a normal school year before COVID-19; the other children, aged six-seven, had never experienced a normal school year.

Self-regulation is an important characteristic to develop for children to become academically and socially successful (Thibodeau-Nielsen, et al., 2021). If the children are not able to regulate in the classroom environment, they will be unable to access the academic curriculum. In a traditional Montessori classroom, self-regulation is addressed with grace and courtesy lessons. With these lessons we discuss how to properly act within the classroom as well as outer society. The grace and courtesy lessons were not sufficient in addressing the lack of self-regulation entirely. The children continued to behave without self-control.

Lack of self-regulation was a common theme throughout the country as dysregulated behaviors were being observed in schools at all levels across the country due to the related stress of COVID-19 (Minkos and Gelbar 2021). Social emotional learning and mindfulness practices address the lack of self-regulation seen in all students at all levels. Mindfulness practices, such as mindfulness breathing, are accessible and able to be performed throughout the day without sacrificing hardly any time for instruction (Erwin et al. 2017).

To address this dysregulated behavior due to the effects of COVID-19, I conducted an action research study using mindfulness breathing. This study used qualitative and quantitative

methods including surveys, interviews, field notes, and anecdotal observations. The setting of this study was conducted in a lower elementary classroom with 28 children, 13 boys, 14 girls, and one non-binary child with the majority being white, middle class. This study aimed to address the impact of daily mindfulness breathing in order to help children exhibit less violent and destructive behaviors, develop self-regulation, become calmer, and advance more academically and foster better relationships with their peers.

Theoretical Framework

I identified “The Social Cognitive Theory of Self-Regulation” developed by Banduras (1991) as the theoretical framework for my action research, which states human behavior is heavily impacted by continuous self-regulation. This theory is essential for understanding the components of self-regulation. Banduras defined self-regulation as being the mediator of reactions to external stimuli and the foundation for those actions being purposeful. In other words, self-regulation is the ability to control one’s thoughts and behaviors (Thibodeau-Nielsen, et al., 2021). By regulating important parts of one’s life, one is better able to grasp the ability or control of their actions (Schunk, 2012).

Banduras (1991) described self-regulation as occurring through a set of three subfunctions: 1) self-monitoring, 2) judgmental, and 3) self-reactive influences. The self-monitoring subfunction of self-regulation focuses on reflecting upon one’s own actions, the circumstances under which they take place, and the outcomes of those actions (Banduras, 1991). Self-monitoring, also known as self-observation, is an important part of self-regulation because it allows for goal setting and evaluation of progress. The judgmental subfunction, also known as self-judgment, works as the way to judge and guide one’s actions and to determine whether the action itself is negative or positive by the influence of personal standards (Bandura, 1991). The

development of personal standards is vital to this subfunction and forms partly on how people in their lives have responded to their behavior as well as through their own evaluation of their behavior. Finally, the third subfunction, self-reactive influences (or self-reaction) provides the component by which principles control the course of an action (Banduras, 1991). Self-regulation is accomplished by creating rewards for one's own actions and "anticipative affective reactions to one's own behavior depending how it measures up to an internal standard" (Bandura, 1991, p. 256). These three subfunctions are what make up and influence self-regulation.

Literature Review

The purpose of this action research project is to acquire a solution to aid children who have become dysregulated due to the COVID-19 pandemic. This section reviews the scholarly work that has addressed the impacts of COVID-19, self-regulation, social-emotional learning, and mindfulness practices. This section will be organized under the following headings: impact of COVID-19; defining self-regulation as a theoretical framework; social-emotional learning to address self-regulation; and mindfulness practices and their outcomes. The theoretical lens through which this action research will be conducted can be seen under the heading "defining self-regulation".

Impact of COVID-19

The COVID-19 pandemic led to schools closing around the globe to prevent further spread of the virus. From 2020-2022, children had untraditional school years, which included online learning at home away from peers and then social distancing once having entered back into the classroom space; however, many classrooms were not at full capacity until the current 2021-2022 school year. Many children under age seven never had a traditional school year. While schools were closed, a great deal of responsibility was put onto caregivers to have their

children at home, and researchers, Minkos and Gelbar (2021) and Thibodeau-Nielsen, et al. (2021) agreed this caused caregivers to experience considerable stress during the pandemic. In turn, this family stress affected the well-being of many children.

Thibodeau-Nielsen, et al. (2021) stated the privation faced during the pandemic in connection to family stress related to emotional distress of children as well as poorer self-regulation. The impacts of COVID-19 may have stunted self-regulation development for children. Similarly, Minkos and Gelbar (2021) stated the chronic stress and trauma from the pandemic affected children in a variety of ways including, “difficulty processing emotional and social responses, sustaining attention and utilizing memory effectively” (p. 418). This can manifest in behaviors such as physical aggression, irritability, regression of skills, and withdrawal (Minkos & Gelbar, 2021). The COVID-19 pandemic led to caregiver stress, which affected children to become dysregulated, unaware of the social constructs within a classroom, and overwhelmed in general. Current teachers will need to be prepared for this deregulation and other behaviors that have been generated from the pandemic.

Self-regulation development

The stunted development and/or loss of self-regulation (interchangeable for self-control) is crucial to address as it is an important characteristic for children to develop for them to be academically successful, have healthy relationships, and have good overall health throughout childhood and adulthood (Thibodeau-Nielsen, et al., 2021). Additionally, Woltering and Shi (2016) said strong self-regulation aids in adaptability against stressors, enables focus on goals, and causes students to be better at cooperating and exhibiting socially adaptable behaviors. Self-regulation is essential for children to be successful.

Social-emotional learning and mindfulness to address self-regulation

Self-regulation and emotional regulation are important aspects to address when supporting the well-being of children. Shonert-Reichl et al. (2015) stated effective education includes practices that aid in social-emotional health along with academic knowledge. It also fosters social-emotional competence, which encompasses self-regulation and will help facilitate resiliency in children when being confronted with stressful situations. In a similar manner, Woltering and Shi (2016) said that self-regulation and emotional regulation are important for not only academic success, but also socioemotional competence (p.1086).

Ng and Bull (2018) and Shonert-Reichl et al. (2015) agree that social emotional learning (SEL) can address social-emotional competence. Raimundo et. al. (2013) additionally stated that the focus of most SEL is to promote social emotional competence, which also prevents behavior problems. SEL is defined as the method by which both children and adults attain and practice the knowledge and skills necessary to comprehend and control emotions, set and accomplish positive goals, be empathetic for others, initiate and sustain positive relationships, and make responsible decisions (Ng & Bull, 2018, p. 338). Likewise, Bandura's three subfunctions of the Social Cognitive Theory of Self-Regulation include very similar ideas of controlling emotions (reactions) and making responsible decisions; therefore, addressing self-regulation would adequately be addressed within SEL.

SEL incorporates a variety of practices and programs. Raimundo et al. (2013) looked at the effects of a SEL program called the "Slowly but Steadily Program" which includes 40-60-minute lessons given by a school psychologist that are presented through instruction, storytelling activities, posters, and modeling, and then after, the children are able to practice what they have learned with reflection/brainstorming, role playing, constructive feedback, and social and self-

reinforcement (Raimundo et al., 2013, p. 167). Shonert-Reichl et Al. (2015) focused on the SEL program “Mind-Up,” which incorporates mindfulness practices. Within the program is a weekly 40-50 minute lesson and daily mindfulness breathing done three times a day. Other researchers have looked at mindfulness and SEL as two separate interventions to address social-emotional competence. Waldemar et al. (2016) used a combined SEL program along with mindfulness to address mental health as well as behavioral problems. Waldemar et. al. (2016) addressed their SEL using “Collaborative for Academic, Social and Emotional Learning (CASEL)”, which included 12 sessions of one hour each, which the researchers implemented rather than the classroom teachers. The mindfulness portion included mindfulness breathing before and after each session.

Mindfulness practices and their outcomes

Teachers are encumbered with numerous lessons each day and even more considering the learning loss from COVID-19, so a weekly intervention of an SEL program of about an hour may not be feasible. However, mindfulness practices are daily interventions that can be done for just a few minutes each day. Erwin et al. (2017) noted that school budgets and limited instructional time shouldn't be hindered by mindfulness practices because they are economical and can be performed anytime and anywhere.

Mindfulness is defined as the ability to concentrate on one's own thoughts and feelings and being aware in the moment in a non-reactive way (Shonert-Reichl et Al., 2015). Awareness is an important aspect to address in regards to self-regulation. Shonert-Reichl et. Al. (2015) explained that research has shown mindfulness practices can increase awareness and develop self-regulation, reflection, and empathy.

Mindfulness practices can include meditation, yoga, mindfulness movements, and breathing exercises. Erwin et. al. (2017) described a practice that an elementary teacher performed with their students called “Ninja Run,” which focuses on body movements and feelings. At the end of the exercise, the children would take five to ten slow restorative breaths. The result of performing this practice several times a day was that self-regulation and self-determination skills increased (Erwin et al. 2017).

Robinson (2020) engaged in mindfulness practices by reading aloud and fulfilling activities found in mindfulness literature such as “Meditate with Me” and *Who is my Neighbor?* These read aloud activities emphasized empathy and kindness and required focused engagement and listening from the children. Robinson (2020) also stated mindfulness focuses on slow, intentional breathing, and after using the breathing techniques, the children would be calmer and more engaged.

Higgins and Eden (2018) used mindfulness breathing to address the well-being of both the teachers and the students in the classroom. This was a ten-minute exercise done at the beginning of each math lesson in which the students were instructed to sit up comfortably but also be alert of their breathing. They were also instructed to notice if their minds were wandering from their breathing.

Conclusion

Breathing is an integral part of mindfulness practices and is seen throughout the literature in regard to mindfulness in varying degrees. Breathing also appears to be a tool that is sustainable for any busy classroom teacher to access. Mindfulness can be seen within SEL and its effects are similar in that it addresses self-regulation and social-emotional competence. As

these are characteristics that children may be lacking due to the impacts of the COVID-19 pandemic, they could be addressed through mindfulness practices.

The circumstances of the COVID-19 pandemic have led to a considerable regression or lack of development of self-regulation for children. Self-regulation seems to be remedied through social-emotional learning, which includes mindfulness practices. Breathing is a regular attribute to mindfulness practices and appears to be the most achievable intervention. The literature shows results from mindfulness breathing are usually done concurrently with some other intervention, whether that be another mindfulness technique or a SEL program. Drawing from the literature, I have used this information as a lens to conduct a study on how using mindfulness breathing practices exclusively twice a day will affect children's behavior and self-regulation who have been affected by the COVID-19 pandemic.

Methodology

The purpose of this research was to determine the effects of mindfulness breathing on self-regulation for children that have been impacted by the COVID-19 pandemic. This action research took place over six weeks, beginning the third week of January 2022. This action research used both qualitative and quantitative collection tools including daily tallies of dysregulated behavior, anecdotal observations, pre and post surveys, and weekly interviews. The four data collection tools utilized in this study are described in more detail below.

Participants

The population of this action research study included lower-elementary students in a Montessori classroom. The ages of the participants spanned from six to nine years in age. There were 28 participants in total including 13 male students, 14 female students, and one non-binary student. Most participants were white and came from middle class families. Three identified as

Latino and one Chinese. I was the sole researcher in this study. I was the lead teacher in a lead/assistant style teaching mode during the study. This was my first year teaching as an elementary Montessori teacher. I have prior experience as an assistant in an upper-elementary classroom and as an English teacher.

Description of intervention

Daily mindfulness breathing was employed each day twice a day for the span of six weeks. The first session happened in the morning after 8:15, once all the participants had arrived. The participants began their day by writing the date and the first work that they would do that day in their work journal. After many of the participants completed this task, I rang a Tibetan singing bowl to get everyone's attention and to signal the intervention was about to begin. The participants were then instructed to sit upright in their chairs they had chosen to work in that morning with their hands on their knees. I also invited all participants to choose a space that would distract them such as not sitting next to a peer with whom they would chat. They could also choose to come to the large rug at the front of the classroom and to sit upright with their legs crossed and their hands on their knees. The intervention did not begin until all participants were quiet and in this position. This same process happened after the participants came inside from recess (usually around 12:35pm), but during the afternoon session, they were all instructed to come sit on the rug.

After the breathing intervention was completed, I quietly instructed the participants to return to their workspaces to begin on the work they had written in their work journal. After the afternoon session, I would remind the participants I would be having conferences with them, with the exception of Tuesday afternoons - then we would move to cleaning up the classroom, and they would complete their assigned chores before transitioning to Music and P.E.

Several types of mindfulness breathing techniques were used throughout the study. The first technique I employed is called same breath. This consists of breathing in for a certain amount of time through the nose and exhaling for the same amount of time through the mouth. We began with three seconds in and three seconds out for three times. The participants worked up to six seconds in, six seconds out for eight times.

The second technique employed is called balloon breathing. This is similar to same breath, but the focus is on expanding the abdomen as you are breathing in as if you are blowing up a balloon. Then you release the air for the same amount of time as though you are releasing the air from a balloon.

A third type of mindfulness breathing used visualization. I would instruct the participants to take two deep breaths, and then I would walk them through some a visualization exercise such as laying on the grass and looking at the sky or laying on a cloud and moving higher in the air. While they were visualizing, they would also focus on their breath.

As the study went on, I allowed the participants to choose which type of breathing they would like to practice as well as the length of time they would like to breath. Each time I would try to practice extending either the amount of time we were breathing in or out or the amount of repetition we had for each type of breathing.

Data collection

This study employed four data collection tools. One of these tools is quantitative in nature, two are qualitative and one is a mixture of both.

The quantitative tool used was a pre/post survey (see Appendix A). Before I started utilizing the mindfulness breathing intervention, the participants filled out a survey in which they could reflect on their own self-regulation. For each question, I explained each of the answers

with some examples in child friendly language. For example, strongly agree means that every day I have control of my actions; agree means sometimes I can control my actions for the most part; disagree means I can't control my actions; and strongly disagree means I can never control my actions. My assistant and I went around the classroom and helped reread the questions and answers again to any participants that struggled with understanding. We attempted to explain the questions and answers in a neutral way so as not to influence the participant's responses. They answered using their own perceptions of themselves. This same process was repeated for the post-survey after the five-week intervention using the same survey to compare the results.

Another data tool employed was a tally system of observable dysregulated behaviors (see Appendix B) such as disrespectful language, misuse of materials, and unsafe behavior. Behaviors qualifying as disrespectful would include insulting another child or teacher or use of profanity. Misuse of the materials could look like throwing materials, using the materials as a weapon, or breaking the materials. Examples of unsafe behavior include running in the classroom, harming another child (hitting, tackling, biting), or standing on top of tables. I used this tally system a week before the intervention was put in place as a baseline. This system was used throughout the day, and when I observed behavior that met any of the prior characteristics, I would note it in the tally including the date, time, type of behavior, participants involved and some specific details about the incident. This provided quantitative data on how many instances there were of observable dysregulated behavior during the morning and the afternoon work cycles.

To complement the tally system, I also utilized an anecdotal observation log of self-regulation (see Appendix C) in which I would write further detailed notes of dysregulated behavior or behavior that seemed regulated. There are two spaces on this log to write observations. For each observation, I wrote the time followed by several sentences of objective

observations – observations simply stating what happened without any opinion or commenting on the behavior. On this log, I also included a space for additional notes. These notes mostly consisted of abnormalities, which could have affected the behavior during that day such as a late start, several absences, or an activity that was not typical of the day.

The final data tool utilized was a conference form (see Appendix D). Every week I conducted individual conferences with each child. During this conference we went over their work and talked about any struggles they were having. During this study, I incorporated this questionnaire log as another measure to evaluate how the participants viewed their own self-control/self-regulation. This also evaluated how the participants felt about the interventions employed. During every other week of the study, I would begin their conference with the questions seen in Appendix D and would write their answers verbatim. If the participant did not understand the question, I would rephrase it in a similar manner for better understanding. Once I finished asking the questions, I would continue with the rest of the conference. Sometimes I would add in additional questions that seemed appropriate to the study. For example: “Are you actually participating in the breathing?” or “Is this breathing difficult for you?” These questions and answers were written on the side of the log. I would ask these questions every week to each participant unless the child was absent during their conference or there wasn’t enough time to get through the scheduled conferences that week. This questionnaire tool aided in understanding the participants perception of the intervention and whether they felt there was any effect or not.

Data Analysis

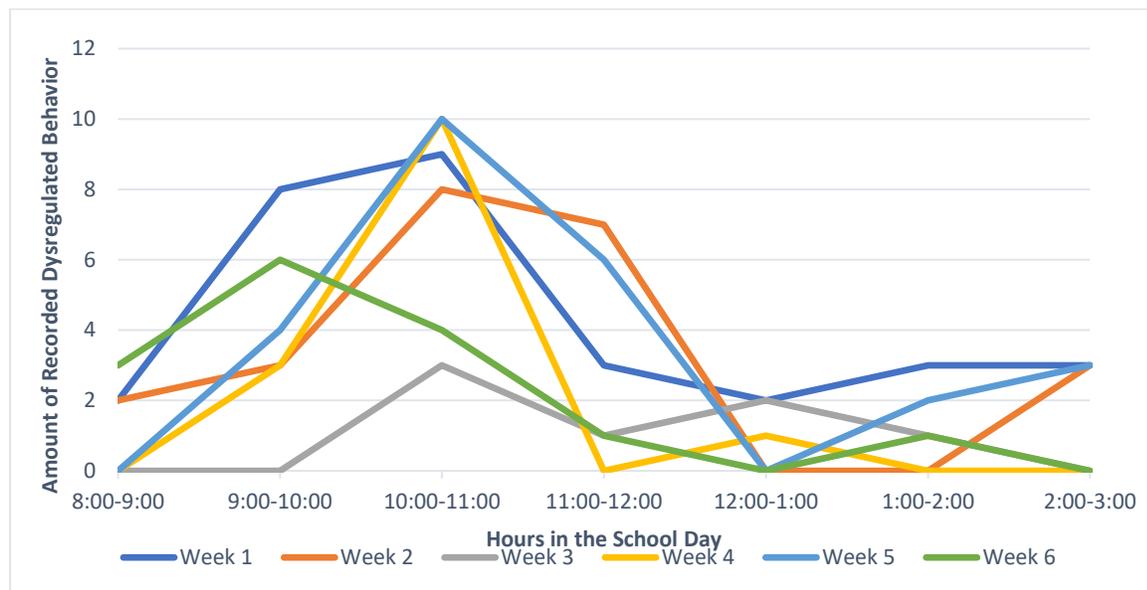
The purpose of this study was to determine whether mindfulness breathing is an effective way to address self-regulation in children who exhibit impulsive, unsafe, and dysregulated behaviors due to the COVID-19 pandemic.

Frequency of behaviors

The quantitative tool of tallying dysregulated behaviors served the purpose of observation and tracking frequency of dysregulated behaviors. Figure 1 illustrates the times of day when any participants were exhibiting dysregulated behavior.

Figure 1

Weekly Recorded Dysregulated Behaviors



The most instances of dysregulated behavior occurred between the hours of 10 o'clock and 11 o'clock (Figure 1). The least number of instances were between 8am and 9am and 12 pm and 1pm (Figure 1), which could be because the intervention of mindfulness breathing was done during or close to those hours. The intervention was employed each morning around 8:20 and in the afternoon at 12:35 each day, and the calming effects and less dysregulated behavior was observed during the hours closest to the time of the intervention.

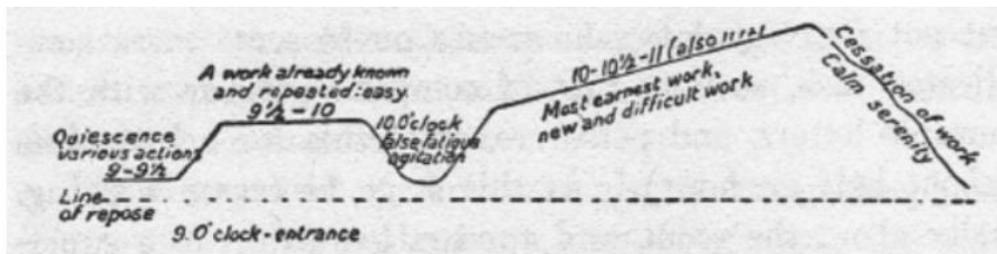
The peak time with the most instances of dysregulated behavior appeared around 2.5-3 hours after the intervention was employed- the third hour in the work cycle. This indicates the more time that passed after the intervention was employed, the more dysregulated behavior was

observed. This could mean the intervention was only effective for a few hours, and then, the calming and regulating effects expired.

This peak time of dysregulated behaviors is congruent with Dr. Maria Montessori’s idea of false fatigue. Dr. Montessori stated that the child will begin the work cycle settling in. Then they will have a period of work, and after that period of work is a dip (Figure 2). This dip can be categorized by lack of concentration, becoming unsettled, and agitation (Montessori, 2010).

Figure 2

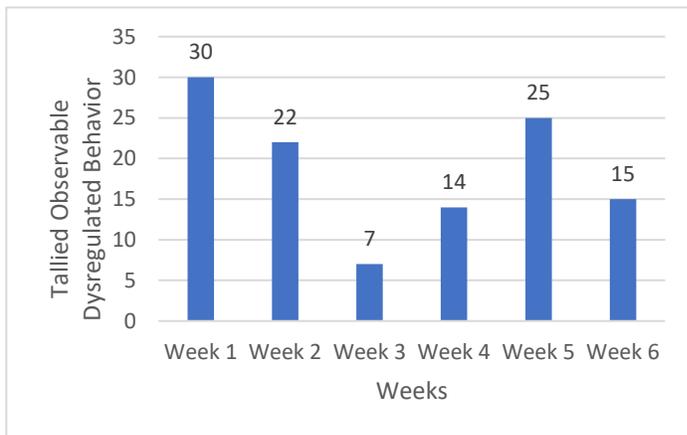
Dr. Montessori’s Description of the Work Cycle (Montessori, 2010)



To clearly see the amount of dysregulated behavior per week, reference Figure 3.

Figure 3

Tally of Dysregulated Behavior Per Week



It is clear the most instances of dysregulated behavior happened in the first week before the intervention began. The intervention seemed to have an effect because the number of dysregulated behaviors lessened in the weeks after. However, this data cannot be read accurately

without the evidence from another data tool. The use of the anecdotal observation form is imperative for looking at any irregularities in the data collection process. In these forms there is a section for notes in which I wrote observations or details of the day that might have affected behavior differently or affected my ability to tally behavior. These notes are pertinent for being able to assess the data in Figure 1 and Figure 3.

Table 1

Unusual Circumstances that Affect Data

Week:	Notes:
One 1/26/22- 2/1/22	N/A
Two 2/2/22- 2/8/22	2/2: No data was collected 2/3: 6 children were absent 2/4: 7 children were absent 2/8: All children were present for the first time in weeks
Three 2/9/22- 2/15/22	2/11: Researcher not present (no data collected) 2/14: Children went on ice-skating trip for the day (no data collected)
Four 2/16/22- 2/22/22	2/18: Two children did not participate in the breathing intervention for both the morning and afternoon session 2/21: President’s Day (no data collected)
Five 2/23/22- 3/1/22	2/25: I did not perform the breathing intervention
Six 3/2/22- 3/8/22	Preparation for Celebration of learning began this week.

The unusual circumstances noted in Table 1 seemed to have affected the number of dysregulated behaviors. When no data was collected for two days in week three (Table 1), there was a great drop in dysregulated behaviors (Figure 2). Week four also had one day where no data was collected, and it had the second lowest number of dysregulated behaviors tallied. The final week the intervention was performed had a 50% decrease in dysregulated behaviors, which is the greatest decrease with data collected for all days of the school week. During this final week, the

participants had mastered the routine preparing for and performing mindfulness breathing. Mindfulness breathing appeared to be effective in reducing dysregulated behaviors, but other factors impacted how effective it is in reducing dysregulated behaviors.

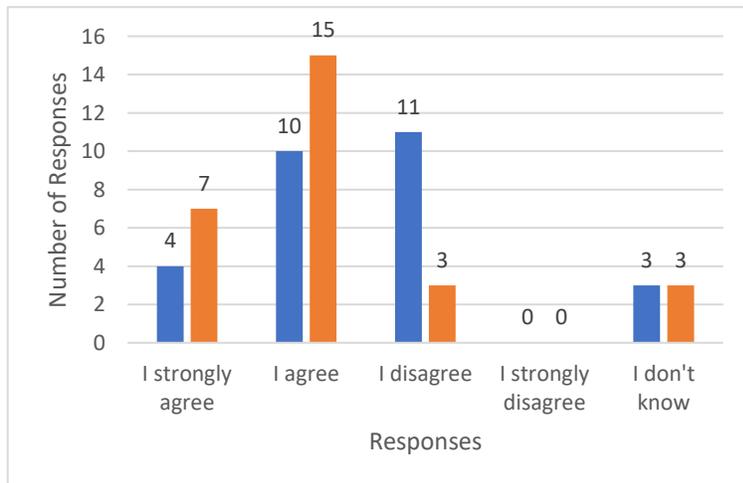
Other unusual circumstances seen in some of the anecdotal observations included tardiness. Every day, during the study, there were four to five participants who arrived late who either missed the intervention entirely or would interrupt the intervention. Some of the tallies for dysregulated behavior were behaviors committed by participants who did not engage in the mindfulness breathing.

Student Self-Perception

A pre and post survey was used to analyze the participant’s self-awareness or self-monitoring of their behavior. Self-monitoring is one of the subfunctions Banderas (1991) describes in their “Cognitive Theory of Self-Regulation”. This ability to reflect upon one’s own actions is an important component to self-regulation because when one can reflect on their behavior, they can decide whether that behavior was appropriate or not and change it accordingly.

Figure 4

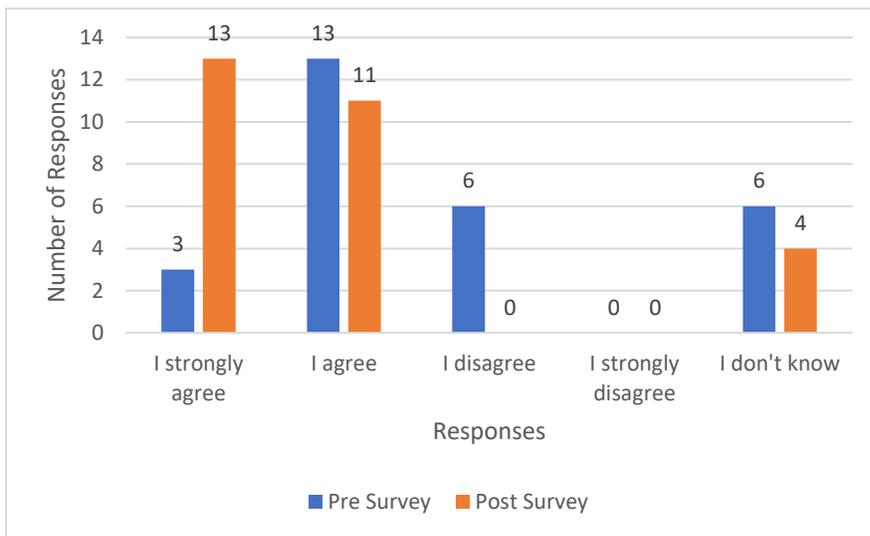
Pre and Post Survey Responses: I have control over all my actions all the time.



The results of the participants’ awareness of their self-control (Figure 4) is congruent with the results in Figure 2. At the beginning of the study, only 14 participants said they agreed or strongly agreed they had control over their actions all the time. At the end of the intervention, eight more participants agreed or strongly agreed. More participants believed they had better self-regulation with their bodies, and this correlates with the 50% decrease in dysregulated behavior in week one of the study to week six.

Figure 5

Pre and Post Survey Responses: I have control over all my words all the time.



Similarly, the same awareness is seen with the second question in the survey regarding control over words. Only sixteen participants agreed or strongly agreed at the beginning of the intervention versus 24, which is again an increase of eight participants. The other responses from the survey had little change with only one or two responses being different. The information from Figures 4 and 5 in correspondence with the data in Figure 3 indicates not only was there a decrease in dysregulated, uncontrolled behaviors, but also that the participants had enough self-awareness to notice that change as well. Mindfulness breathing affects the self-monitoring and self-reactive influence subfunctions within self-regulation.

Student perceptions of the intervention

As another form of qualitative data, each participant was interviewed biweekly about how they feel about the intervention. The questions asked during the interviews were:

1. How do you feel about the daily mindfulness breathing?
2. Do you think it has had any effects on your behavior? If so, what?
3. Are you able to have better self-control? Why or why not?

Below are some of the responses that the participants gave during their interviews during their conference in the final week of the intervention.

Table 2

Interview Responses for 03/07/22- 03/10/22

<i>Responses</i>	<i>Out of 28 Children</i>
Said they liked it.	19
Said they it has made them calmer or more relaxed	18
Said the mindfulness breathing has affected them in some way.	16
Said they had better self-control because of the mindfulness breathing.	14
Said they don't know if it has affected them or if they have better self-control.	8
Said they don't think the mindfulness breathing has affected them.	6
Said they didn't like it because they wanted to get to work, or it took too long.	4
Said it helps them when they are feeling frustrated or mad.	4
Said it's a good way to start the day or good after recess.	3

Many of the participants had positive remarks regarding the mindfulness breathing. More than half, 64% of the participants said that it calms them down. One participant said in their conference, "I like [mindfulness breathing] because it renews us and gets us ready for the day. It calms us down from recess when recess is really action packed." Some participants said they used the mindfulness breathing in other situations when they were feeling frustrated or mad. One participant stated, "I feel really good [about mindfulness breathing] because it helps me a lot

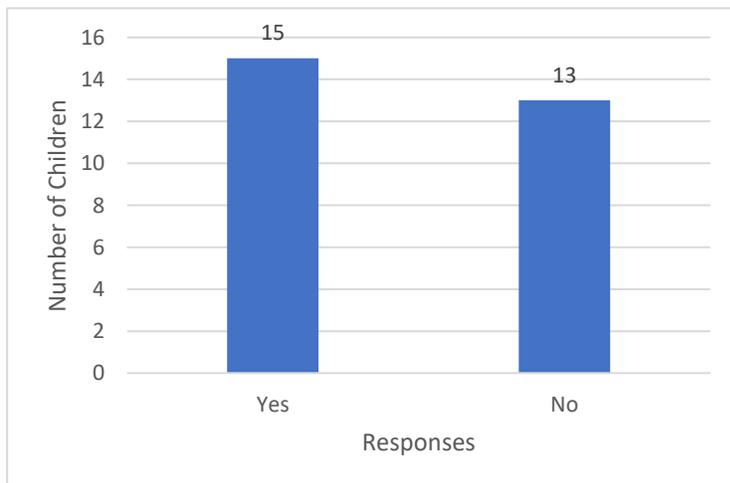
sometimes when I am mad and need to calm down. It has made me better from crying and being mad.” When considering their self-control, half the class said that it did impact their self-control. Regarding self-control, one participant said, “It has helped me calm down before we start working.” Another participant said, “[I do not do] too much running, not a lot of jumping, or skipping but sometimes tiny skips.” In regard to it affecting their behavior a child told me, “It stops me from saying things I don’t mean to say. I think it has helped me not say unkind things.”

Many participants had positive feedback about the intervention; though there were some participants who had negative feedback. Four out of the 28 participants said they did not like it. One said they don’t like it because “it takes up time that I can work and learn.” Another said they don’t like it because they “want to get to what [they] are doing fast.” One participant said they thought it was good at times, but it was bad at times because they didn’t feel like doing it. Similarly, another participant said they think it calms them down and they like it “but [they] don’t like waiting.”

In the post-survey, I added the question “Would you like to continue doing mindfulness breathing?” with the choice of yes or no.

Figure 5

Children Who Wanted to Continue with Mindfulness Breathing



Many of the participants (15) said they would like to continue with the mindfulness breathing intervention. On one of the post-surveys with the answer no, a participant wrote a note next to their answer that said, “I don’t like to do it when not everyone participates.” Most of the participants enjoyed participating in the intervention

Conclusion

The purpose of this action research project was to determine whether mindfulness breathing influenced the self-regulation of children who have been impacted by the effects of COVID-19. The implementation of mindfulness breathing for five weeks had some positive impacts on self-regulation. The dysregulated behaviors of the participants appeared to be lessened compared to initial data taken before the intervention began; though, it is not a great difference, and the data is slightly varied. A trend of less dysregulated behavior was recorded up to two hours after the intervention was implemented throughout the study. Therefore, the mindfulness breathing is most effective in reducing dysregulated behavior closer to the time when it was performed. The survey responses from before and after the study regarding their self-regulation aligned with lessened dysregulated behaviors and more self-control from the beginning to the end of the study.

Apart from the improvement on self-regulation, mindfulness breathing also had some other positive impacts on the participants. Many of the participants stated they felt calmer and relaxed after mindfulness breathing, so it can be concluded that mindfulness breathing could reduce anxieties or worries that come up in a typical school day. About half the participants wanted to continue mindfulness breathing as part of the daily routine we have established in the past five weeks, so it is a pleasant routine activity the participants enjoyed. Some participants also stated that they use mindfulness breathing in other parts of their lives outside of school when

they are feeling upset or frustrated. The mindfulness breathing has had an impact outside of the classroom as well. Mindfulness breathing was also a very easy intervention to implement. It hardly took up any extra time, and it was an enjoyable way to start off the school day.

Action Plan

To proceed from this action research study, I will continue to utilize mindfulness breathing in my practice as it has been implemented in the study because the intervention proved to have an impact on the dysregulated behavior; however, there was a trend for spiked dysregulated behavior around one and a half to two hours after the breathing had been carried out. To remedy this, another session of mindfulness breathing could take place around 10:00am with the children who are partaking in dysregulated activities or who are not working. Taking small groups who need mindfulness breathing will ensure the children who are concentrated on work do not get interrupted.

As an additional course of action, I would like to have a peace corner. Some of the participants said they used the mindfulness breathing techniques that were implemented outside of the intervention time. Having a peace corner in which there were mindfulness breathing practices or other practices such as yoga or visualization could help other students find calm and regulate outside of the time when we all do it together. To create this corner, I would have activity cards with mindfulness practices explained and a timer. The child could then come to this corner and perform the mindfulness practice for the allotted time. This would allow the children to have access to mindfulness breathing at all hours of the day. This would also serve as a place for me to send students to who were exhibiting dysregulated behaviors.

One of the factors that affected the accuracy of the intervention was tardy students. Some students did not have the opportunity to participate in the mindfulness breathing. To remedy this,

I would have some parent education on the importance of being at school on time in order for their child to participate in the mindfulness breathing which has proven to be affective in reducing dysregulated behaviors. The previous suggestions could also aid in this problem because I could send them to the peace corner to do mindfulness breathing on their own or I could gather these late children along with other children exhibiting dysregulated behavior and do a small session of mindfulness breathing with them.

Although there were improvements with mindfulness breathing, there still needs to be other supplemental interventions to have a greater impact on self-regulation. Mindfulness breathing was an intervention used along with many social-emotional learning (SEL) curriculums such as in the “Slowly but Steadily Program” explored by Raimundo et al. (2013) and “The Mind-Up” program considered by Shonert-Reichl et Al. (2015). However, there were not many studies that looked at mindfulness breathing alone- it was done with some sort of SEL program. To further the development of self-regulation, it is important to include more SEL to compliment mindfulness breathing. With more social-emotional learning and Grace and Courtesy lessons, mindfulness breathing could have a greater impact than when done alone. Also, the typical school day of a teacher is rarely typical, so mindfulness breathing can have varied impact depending on other factors such as absences, meetings, something not in the usual routine, specials, etc.

Mindfulness in Montessori

Part of the Montessori curriculum is fostering independence. Moving forward with mindfulness breathing, rather than leading the mindfulness breathing myself, which is teacher centered rather than student centered, I would like to have the children lead the mindfulness breathing to encourage independence and student-led activities. This would also allow the

children to have other mindfulness breathing techniques, and this could be a great way for them to share those techniques with their peers if they are leading it.

Mindfulness breathing has been a wonderful addition to the daily routine as many of the children said they enjoyed it, it brought them calm, and helped develop self-regulation. The children know exactly how to sit and prepare to begin breathing, so it only takes a few minutes each morning and afternoon. When I forgot to do it, I always had a child who reminded me to ring the singing bowl to get ready for mindfulness breathing. It has been so stress-relieving for me as a teacher to have to redirect less because the children are more regulated. Not only do the children feel calmer, but I feel calmer and happier as a teacher.

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Appendix A

Pre and Post Survey of Self-Control

Name: _____ Date: _____

1. I have control over all my actions all the time.
 - a. I strongly agree
 - b. I agree
 - c. I disagree
 - d. I strongly disagree
 - e. I don't know

2. I have control over all my words all the time.
 - a. I strongly agree
 - b. I agree
 - c. I disagree
 - d. I strongly disagree
 - e. I don't know

3. I physically hurt other children even if it's not my intention. (For example, by hitting, kicking, pushing, tackling, stabbing with pencils, throwing things at others, etc.)
 - a. All the time
 - b. Most times
 - c. Sometimes
 - d. Occasionally
 - e. Never

4. I am disrespectful to the materials. (For example, I throw materials, I break materials, or I misuse the materials.)
 - a. All the time
 - b. Most times
 - c. Sometimes
 - d. Occasionally
 - e. Never

5. I use unkind/disrespectful words to my classmates or teachers.
 - a. All the time
 - b. Most times
 - c. Sometimes
 - d. Occasionally
 - e. Never

Appendix C

Anecdotal Observation of Self-Regulation

Morning Work Cycle Objective Observations of regulated and deregulated behavior and reactions to the behavior.

Date: _____

Time:	Observation:

Notes:

