

Mindfulness Practices to Improve Stress Management in the Secondary Classroom

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## **Abstract**

The purpose of this study was to gain insight about how mindfulness practices and information sessions about stress management affected self-reported stress levels of adolescent high school students. This study was intended to provide insight into how participants reacted to self-awareness practices and stress management strategies that relied on their metacognitive abilities. As anticipated, student participants reported high levels of stress due to various factors, including planning for college. Many students reportedly found the mindfulness practices and information sessions beneficial immediately after each experience but did not see a long-term trend of being less stressed overall. The treatment group for the study consisted of 16 student participants enrolled in 11<sup>th</sup> grade English class, who participated in 15 mindfulness sessions. The control group included 6 students who also were enrolled in 11<sup>th</sup> grade English classes with the researcher as their teacher. The null hypothesis was retained as students in the treatment group did not report being significantly less stressed than students in the control group after the intervention. However, observations and some descriptive data suggested the intervention was well-received and further investigation of the value of interventions such as the treatment used in this study are warranted, given the many stressors high school students report experiencing.

# **CHAPTER I**

## **INTRODUCTION**

### **Overview**

Educators have the responsibility of facilitating learning environments that promote student growth and wellbeing. Often, teachers, administrators, and even parents can become overly focused on the academic growth of students because they are worried that their students will not be successful. Pressure such as this sometimes can cause students to feel overwhelmed and stressed (Bradley, Mccraty. Atkinson, Tomasino, Daugherty, & Arguelles 2010). This study explores how stress affects students who are likely to feel overwhelmed with school, work, and college preparations.

Although stress management typically is not taught explicitly within secondary education, potentially it could be implemented in a cohesive way through instruction in core content areas such as English and Social Studies. Students who feel overwhelmed, stressed, or depressed may not be aware of coping mechanisms because such mechanisms are not widely discussed as a part of the educational system or at home. Bradley et al. (2010) suggests that making students aware of resources and effective coping mechanisms might improve-their chances of avoiding mental health problems and facilitate their achievement so they can become well-rounded and healthy members of society. The literature related to this issue indicates that educating students about the importance of self-assessment, reflection, and mental health in the secondary classroom may allow students to continue use of these resources, strategies, and coping mechanisms into their adult lives.

This researcher became interested in the effects of students' stress within the classroom in her role as a high school English teacher. She observed that students vocalized their concerns

about being overwhelmed with school and planning for college and she wished to learn more about teaching coping mechanisms for stress management in the classroom setting.

### **Statement of Problem**

Many students experience mental health concerns and/ or high levels of stress, which if not addressed, can influence their academic and personal lives in a negative manner. This study sought to explore the effect of mindfulness practices and psychoeducation within the classroom in helping to prevent such issues from becoming detrimental to student success and wellbeing.

### **Hypothesis**

ho1: mean initial stress levels for the treatment group = mean initial stress levels for the control group

ho2: mean post intervention stress levels for the treatment group = mean post intervention stress levels for the control group

### **Operational Definitions**

According to the most recent publication of Webster's dictionary (2016), stress is defined as a wide range of symptoms that affect a person's mood, thinking, and behavior in a negative way which inhibits personal or academic growth. For purposes of this study, examples of student manifestations of stress include depression, anxiety disorders, schizophrenia, eating disorders, addictive behaviors, the need for constant improvement, and placing pressure on oneself to achieve success at all times, sometimes manifested as a fear of failure.

## **CHAPTER II**

### **REVIEW OF THE LITERATURE**

This literature review explores issues related to student mental health concerns and their effects on student achievement within the classroom setting at the secondary and collegiate levels. The review describes the definition of mental health issues, how these issues are addressed within school settings, and coping mechanisms for teachers to incorporate within their own learning environments with the intent of learning more about promoting achievement for students with mental health concerns. Because the classroom environment is a place where social, emotional, and academic growth occur, educators must be prepared and able to promote, support, and understand a broad range of developmental stages, including mental health, when planning and implementing instruction. Section one elaborates on stress related issues in the classroom setting. Section two address the components of intrinsic motivation and mental health issues related to school. Section three discusses student wellness and mental health management. Section four describes strategies to assist students in coping with stress. And finally, section five is a summation of the research collection.

#### **Stress Related Issues in the Classroom Setting**

##### **Identifying Mental Health Issues**

Concerns related to stress, anxiety, and depression frequently are reported by high school students across the United States. Windhorst and Williams (2016) found that “the prevalence and severity of mental health issues among North American post-secondary students is increasing” over time (p. 232). It is reported that “about six million children and adolescents have a mental health disorder so severe that it disrupts their daily functioning” (Gall & Stixrud, 2008, p.56). According to Suldo, Thalji-Raitano, Kiefer, and Ferron (2016), the traditional definition of what



is meant by “good mental health” has shifted over time. These authors explain that previously, individuals who were diagnosed with a specific mental disorder were considered to be in poor mental health while those who were not diagnosed were not targeted. Currently, further study of the human brain and emotions have changed the perception of good mental health so that now it is viewed as “optimal functioning, including personal happiness as defined by feeling good about life (hedonic tradition) and/or striving for excellence and functioning well in life” (p. 435). Given this paradigm shift, many students who report high levels of stress or anxiety who have not been diagnosed with a specific mental health disorder still could be considered as suffering from mental health issues. Since school is not only a place of academic growth but also a setting for personal and social growth, it would serve a broader population of students for teachers to conceptualize positive or good mental health as “a state of emotional, psychological, and social well-being” framework versus only a concern for students with mental health diagnoses (Windhorst, & Williams, 2016, p. 233).

### Consequences of Mental Health Issues on Academic Achievement

Jahan, Siddiqui, Mitwally, Zubidi, and Zubidi, (2016) explain that while “academic stress is a normal, desirable, and beneficial part of our lives ... [high levels of] stress are [also] associated with depression, drug abuse, anxiety and suicide” (p. 17). Having students gauge stress levels and how they are coping with stress is essential within the school setting and could help students develop insight and stress management strategies. A study by Jang and Pak (2017) suggests that poor mental health might be caused by attempts to achieve “perfectionism.” Jang and Pak suggest one of the characteristics of perfectionism is that people seek unattainable and unrealistic goals and then “constantly reproach themselves about not achieving those goals” (p.

64). The authors maintain that knowing one's own strengths, weaknesses, and how to reflect on them to adjust and make improvements is something that should be paired with traditional curricula.

Suldo et al. (2016) found in their cross-sectional study that students who were identified as having good mental health “were more successful in terms of academic skills (e.g., higher reading scores on statewide achievement tests, higher GPA), behavioral engagement (e.g., better school attendance, more attentive and compliant in class), and affective engagement (e.g., more positive attitudes about one's academic abilities)” (p. 437). In contrast, their counterparts felt less confident in their studies and had overall outlooks about school that often were bleak. In a similar study, Jose and Valsaraj (2015) “found that students who had <69 marks for the previous term test had a higher stress when compared to students who had >90 marks” (p. 9). These researchers suggest that implications of these findings for future studies are that as mental health issues arise, schools should consider new and alternative ways to teach coping mechanisms within the classroom so that students enter adulthood successfully with positive coping skills and better overall mental health status.

## **Components of Intrinsic Motivation and Mental Health Issues Related to School**

### **Metacognition**

While metacognition is difficult for teens because they still are developing self-regulation, an understanding of emotional intelligence can be beneficial in promoting a positive mental state. Torbat and Zare (2016) examined the relationship between self-regulation and the emotional intelligence of high school students and found that when students were asked to speak

about their feelings during structured seminars and share their feelings through “emotional literacy,” a person’s stress and anxiety levels can be reduced significantly.

### Goal Setting

According to researchers such as Torbat and Zare (2016), a key component to all academic success is goal setting. Travers, Morisano, and Locke (2015) completed quantitative and qualitative research regarding the effects of goal setting in an academic context. They also used “diary based reflective growth goal setting methodology” to determine how goal setting affected participants’ academic outcomes (p. 225). The results of their research were divided into three themes: personal organization and time management, emotional and psychological control, and interpersonal-skills development. The findings indicated that “the reflective growth goal-setting process seemed to trigger key psychological mechanisms which then had an effect on academic outcomes: self-reflection, growth goals, and academic outcomes. Psychological growth (e.g., heightened self-esteem, or self-confidence) appeared to affect students’ beliefs in their own abilities, and this positivity subsequently impacted on their studies” (p. 233-34). Thus, it appears that students who set their own goals may be more likely to feel intrinsic motivation and have a more positive mental state while completing their academic workload.

### **Student Wellness and Mental Health/ Stress Management**

Identifying what wellness options are available for staff and students within schools as well as whose responsibility it is to identify students with mental health issues is extremely important to prevent students from becoming mentally unstable and help those students who are experiencing high levels of stress and associated problems. Jordan (2013) completed a study in which a School Climate Survey, developed by Johns Hopkins, was given to 879 students and 153 staff members within high school settings across the mid-Atlantic. The School Climate Survey

consisted of nine Likert scale questions relating to student perceptions of support services and resources and nine Likert scale questions relating to staff perceptions of supports offered through the school. She found that over 75% of teachers and about 60% of students agreed with the statement “the adults at this school feel responsible for students' social and emotional development” (p. 48). In other words, the majority of participants felt that teacher's take on a sense of responsibility for student well-being. Because of this, teachers may feel it is their role to identify social and emotional needs of his/her students. This suggests there is a need for training about students' social and emotional needs for general education classroom teachers.

In a study reported by Jose and Valsaraj (2015), the researchers asked students to rate themselves and identify their stress levels. Subsequently, the students completed a mental health related online course which detailed ways to cope with stress. “The findings of the study indicated that academic stress management programme was effective in reducing academic stress but not effective in improving academic performance” (p. 12). This finding suggests that although simply learning about coping mechanisms can help students develop ways to manage stress, effective ways to integrate student wellness within the classroom as an active curriculum component have yet to be defined.

### **Strategies to Assist Students Cope with Stress in the Classroom**

#### **Teaching Coping Skills**

Studies suggest that students who are able to better manage stress, anxiety, and other common mental health issues are likely to experience more effective academic growth. According to Mitchell and Mitchell (2012), “Coping strategies are specific efforts that individuals employ to manage stress, both behavioral and psychological, so they can tolerate,

reduce, or minimize stressful events. Previous studies show that coping plays a central role in adaptation to stressful life events” (p. 17).

In order to teach coping mechanisms in an efficient and relevant manner, Mitchell, Darrow, Haggerty, Neill, Carvalho, and Uschold (2012) suggest implementing curriculum infusion which is “an educational approach by which content is drawn from several subject areas to focus on a particular topic or theme” (p. 25). The study that they conducted involved nine faculty members who embedded the topics of “wellness in general, resiliency, depression, anxiety, relationship issues, identity, eating disorders, and other mental health issues” within their regular classroom curricular across English/ Media, Art, and Health classrooms (p.26). This approach encouraged organic conversations and questions for students and faculty about both the subject matter and related mental health issues.

#### Other Interventions

Windhorst and Williams (2016) conducted a study which promoted alternative coping mechanisms and stress management techniques. These mechanisms and techniques involved having students participate in therapy sessions with animals, spending study or reading time outdoors, and nature-based guided meditation to help students bring back focus to a particular lesson or topic. While students reported feeling less stressed and more confident, they did not report feeling more academically successful.

#### Coherence and Mindfulness Practices for Students with Stress and Anxiety

Bradley et al. (2010) suggest that one way for students to decrease stress levels is to become “coherent or mindful.” This approach involves students returning to a “distinct state—termed psychophysiological coherence—associated with the activation of sustained positive emotions” (p.263-65). Within the study, tenth grade students who were identified as having high

levels of stress and anxiety were asked to participate in mindful practices to enter a state of coherence. Mindfulness and coherence practices are a type of meditation that increases awareness of one's self and allows students to take time to refocus and reorganize their thoughts through a program called TestEdge. This intervention involved students actively breathing and thinking about positive things from their own experiences, which would stabilize their heart rates, mood, and motor functions. Findings from the practices "indicate that these students had attained an effective level of emotional self-regulatory competence through the skills taught in the TestEdge program" (p.268-271) and were able to stabilize themselves over time. Students who were surveyed self-reported that they were less stressed and more able to manage their emotions after the coherence and mindfulness sessions.

### **Summary**

In summary, the research suggests that there is a negative correlation between students' experience of stress and mental health issues and their levels of achievement and success at school as found by Mitchell et al. (2012), Jose and Valsaraj (2015), and Suldo et al. (2016). While attitudes and theories about mental health needs have changed throughout the years, this literature review suggests that there are various strategies and coping mechanisms that can be paired with and infused within secondary curricula to promote positive student mental health within today's classroom settings. Specifically, students may benefit from mindfulness and coherence practices to help self-regulate their emotions and alleviate stress and anxiety.

## **CHAPTER III**

### **METHODS**

The purpose of this study was to determine whether implementation of lessons to teach mindfulness and coping mechanisms for stress reduction would affect students' self-perceptions and self-assessment of their well-being. These lessons included mindfulness practice sessions during the first five minutes of English class each school day and three information sessions regarding mental health. Students in a group which received the lessons and a group which did not receive the lessons rated their stress levels before and after the series of sessions was completed on a survey which included Likert type, multiple choice, and open-ended questions. This survey was administered on Survey Monkey, an electric survey provider. Survey responses were examined to determine whether the interventions appeared to reduce stress levels and to compare the coping skills of the two groups.

#### **Design**

A quasi-experimental pretest-posttest design was used to measure the effect of the mindfulness and mental health information sessions on students' perceptions of their stressors and coping skills.

#### **Participants**

Participants in this study included high school juniors in both Honors and Standard Levels. These 69 students were enrolled in four different English classes and participated in the Preliminary Survey, 33 of whom identified their gender as male, 33 who did so as female, 1 who did so as "other," and 2 who did not respond to that item. In terms of race or ethnicity, 49 participants reported they were white, 7 reported they were African-American, 5 reported they

were Hispanic, 1 reported being Asian, 6 reported being Mixed Race, and 1 reported being “Other”. After the Preliminary Survey, the four classes were divided into a control and treatment group, each comprised of two classes which were presumed to be similar in terms of initial stress and achievement levels. In the control group, (of which eight out of 49 students completed both of the voluntary Pre and Post Intervention surveys), participating students took the surveys but did not participate in the mindfulness and coherence lessons or mental health information sessions. Students in the other two classes (16 out of 51 students) served as the treatment group and did participate in the lessons and information sessions. All participants were chosen based upon their similarities in age, socioeconomic class, and English class teacher, and all were enrolled in College Preparation classes indicating their probable intention to pursue higher education. This likelihood, combined with observations, led the researcher to anticipate that the participants in each class likely experienced similar levels of stress about their post-secondary plans.

### **Instruments**

The instruments in this study were surveys containing Likert Scale-type questions and narrative responses which were administered online using Survey Monkey. Initially, all participants were given a Preliminary Survey (a copy of which is in APPENDIX A) on which they were asked to report demographic information and primary sources of stress. Students in both the control and treatment groups then were asked to complete the Pre Intervention Survey (located in APPENDIX B), on which each identified their current stress level, feelings of being in control, confidence level, and knowledge level about mental health maintenance and resources. On this survey, students also were asked to choose or list the primary causes for their stress and the coping mechanisms or strategies which they already implemented.



After the treatment group participated in the mindfulness sessions, the control group completed the same Survey again (APPENDIX B) and the treatment group completed the survey in APPENDIX C, which contained the same items as the Pre Intervention Survey but also asked several additional questions about the treatment group participants' perceptions of the mindfulness lessons and mental health information sessions. For example, the survey asked participants to rate their own personal growth, if any, from the experience.

## **Procedures**

### Preliminary Survey

The Preliminary Survey was administered first to gauge all participants' prior knowledge about coping mechanisms for stress management (APPENDIX A). This survey was administered before the Pre Intervention Survey and before the mindfulness or information sessions were conducted. In total, 69 Students voluntarily completed the Preliminary Survey using a code to identify their responses anonymously.

### Pre Intervention Survey

The Pre Intervention Survey then was completed by all participants who were willing to do so on Survey Monkey in order to assess student stress levels and knowledge about using positive mental health strategies and to provide data for comparison of initial and Post Intervention stress levels between the control and treatment groups. A total of 24 students completed the Pre Intervention Survey (18 in the treatment condition and 6 in the control condition). As noted above, a copy of the Pre Intervention Survey is located in APPENDIX B.

### Intervention

Prior to the intervention, students in the treatment group watched a brief video about HeartMath, the program used to implement the mindfulness intervention, and the science behind

rhythmic breathing. For three weeks, students in the treatment group participated in mindfulness lessons intended to increase self-awareness and reduce stress levels. The lesson contents included the components described below.

- Fifteen sessions of meditation and breathing exercises for five minutes before starting English class to promote mindfulness and coherence (A description of lessons is located in APPENDIX D.)
- Three information sessions in which the school's guidance counselor and crisis counselor shared information with students about mental health awareness and gave resources to the students to help them prepare for their senior year. These sessions occurred during English class once a week (Thursdays) during the intervention period. (Contents of the sessions are summarized in APPENDIX E.)

#### Post Intervention Survey

After the treatment group participated in three weeks of the intervention, including the three mental health information sessions, both groups of students completed parallel versions of a Post Intervention Survey to again assess their stress levels and knowledge about using positive mental health strategies. As noted, the control group's Pre and Post Intervention Surveys were the same and are located in APPENIDIX B. The treatment group's Post Intervention Survey, located in APPENDIX C, included the same items as the Pre Intervention Survey in APPENDIX B but also contained five additional items about the mindfulness lessons and information sessions in which the treatment group participated. Participants' scores were calculated by totaling the Likert scale ratings reported on items one to three to yield a total score for each student of up to 10 points possible per item and 30 points total. The ratings for each of items one to three could range from (1) feeling more stress or less support to (10) feeling less stress and

more support. The means were compared for the control and treatment groups to determine if they differed from one another before, and in particular, after the intervention period.

The treatment group's responses to the supplemental Post Interventions Survey items (APPENDIX C, items 6-10) also were summarized to determine if the participants found value in the intervention, retained any strategies for future use, or if they planned to implement the strategies learned on their own.

Finally, narrative data from the surveys were tallied to learn if they offered any insight into how students in the treatment group felt about the discussions regarding stress management and the mindfulness sessions.

## **CHAPTER IV**

### **RESULTS**

The purpose of this study was to determine whether implementation of an intervention that involved lessons to teach mindfulness and coping mechanisms for stress reduction would affect students' self-perceptions and self-assessment of their well-being. The tables and narrative descriptions below highlight the results from the Preliminary, Pre Intervention and Post Intervention Surveys used to assess the effectiveness of the intervention.

#### **Preliminary Survey Data**

Of the 100 total students enrolled in the English III classes, 69 students elected to complete the Preliminary Survey Data. The majority of students, 49, identified as White/ Caucasian, which is an indicator of the school's population as a whole because the school's racial makeup is similar. Most students (63) ranged in age between 16 and 17 and all were high school juniors. Preliminary data revealed that 83% of the students reported that they plan to take the SAT/ ACT or both and 72% of the students reported that they planned to pursue post-secondary education. Four students indicated plans to attend "tech school," 10 students indicated plans for employment, and five indicated plans to join the military. Data further revealed that 44% of the students reported being stressed about school or planning for the future. This response may have suggested that students felt underprepared to handle the stress associated with post-graduation and life planning. These students were chosen for this study because they were in the process of applying to colleges and completing required high stakes testing for graduation.

Sixty-nine students completed the preliminary study (located in Appendix A). Students reported their post-secondary plans, primary sources of worries, and their preconceived notions about what "mindfulness meant" in the following ways:

As seen in Table 1 below, on the preliminary survey, 57 or 83% students reported that they are currently planning to take either the ACT or the SAT or both.

**Table 1**

*Item 5: Tally of Test plans*

<b>Test plans</b>	<b>N</b>
SAT only	11
ACT only	2
Both SAT and ACT	42
Neither	12

Also, 50 or 72.4% of the 69 students reported that they plan to attend a community college, college or university after graduation. Those responses follow in Table 2.

**Table 2**

*Item 6: Tally of Post graduation plans*

<b>Plans after High School</b>	<b>N</b>
Community College	9
College or University	41
Technical School	4
Getting a Job	10
Military	5

The students were asked in Item 7 of the Preliminary Survey to select from a list what the primary source of their worry was. Their responses are tallied in Table 3.

**Table 3**

*Item 7: Tally of Primary sources of worry*

<b>Primary source of worry</b>	<b>Number of replies</b>
My school work	26
Worrying about	18

the future and getting into college	
My family	6
My friends	3
Other	
All of the above	4
Everything	1
Family, friends, future, school.	1
First 2 points	1
Life	1
Mental and relationship problems	1
No Stress	1
Teachers not preparing you for a test or not reviewing with the class	1
When I'm not medicated	1
Work	1
Work and school	1
Working out	1

Item 8 asked students to define "mindfulness or coherence" practices. As defined in this study, "Mindfulness and coherence practices are a type of meditation that increases awareness of one's own self and allows students to take time to refocus and reorganize their thoughts".

- 7 out of the 69 students knew what mindfulness was and could accurately describe "mindfulness or coherence" practices in their own words.
- 31 students said "I don't know" when responding and did not attempt to define it.

Item 9 asked students if they ever use any mindfulness or coherence practices and which ones, if so, and whether they found them helpful for reducing stress? Replies indicated:

- 19 students reported yes and 26 said no.
  - The remaining 24 students either reported that they didn't know, didn't understand the question, or did not leave a response.
  - Of the 19 students who said yes, 10 reported that they had used variations of the following: inhale/exhale technique, cars/computers/games/music, yoga, wrestling, spending time alone, breathing techniques, and sleeping.
  - Of the 19 students who reported yes, 17 reported that they were helpful or stress reducing.

### **Comparison of Stress between Treatment and Control Groups**

#### **Pre and Post Intervention Survey Items 1-5**

To test whether the intervention was perceived as effective, mean totaled ratings for items 1-3 on the Pre and Post Intervention Surveys were compared via T-tests for the treatment and comparison groups. These items assessed student perceptions of their degree of daily stress in the school year, how well they felt they coped with stress, and how many resources they felt were in place to help when they feel distressed at school. Descriptive statistics and results of the T-tests follow in tables 4 and 5, respectively.

**Table 4**

*Descriptive statistics of Pre and Post Intervention Stress total scores (Totaled ratings for Survey items 1-3)*

<b>Stress otal Score Items 1-3</b>	<b>Group</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>SEM</b>
Pre Intervention	Treatment	18	14.889	5.88	1.386

	Control	6	14.000	3.16	1.291
Post Intervention	Treatment	18	16.11	4.56	1.075
	Control	6	16.50	6.47	2.642

**Table 5**

*Results of t-test for independent samples comparing mean total Pre and Post Intervention Stress*

*Total Scores (Totalled ratings for Survey items 1-3)*

Mean Total (Items 1-3)	T	df	Sig. (2- tailed)	Mean Difference	Std. Error of difference	95% Confidence Interval of the Difference	
						Lower	Upper
Pre Intervention	.350	22	.730	.889	2.538	-4.375	6.153
Post Intervention	-.163	22	.872	-.389	2.385	-5.336	4.558

*Equal variances assumed*

The results indicated that neither the Pre ( $p < .730$ ) nor Post ( $p < .872$ ) intervention's mean Stress Total ratings for items 1-3 on differed significantly across the treatment or control groups, so null hypotheses 1 and 2 were both retained (ho1: mean initial stress levels for the treatment group = mean initial stress levels for the control group; ho2: mean post stress levels for the treatment group = mean post stress levels for the control group).

Responses to Item 4 on the Pre and Post Intervention Surveys, which asked respondents, "How do you relieve your stress? Select all that apply" were tallied for the 24 students who completed both instruments. Results follow in Table 6.

**Table 6**

*Summary of self-reported methods of stress relief*

Stress Relief Method	Pre n	Pre %	Post n	Post %	Change in n
Eating	11	45.8	10	41.7	-1
Sleeping	15	62	18	75	+3



Exercise/Activity	7	29.2	2	8.3	-5
Computer Games/Social Media	7	29.2	11	45.8	+4
Talking with someone	9	37.5	8	33.3	-1
Meditation	2	8.3	10	41.7	+8
Other	I do not Ranting Play Games on my phone Essential Oils		Essential Oils Don't have stress Writing Sitting in misery Listening to music I do not		

Responses to Item 5 on the Pre and Post Survey (“What are the effects you feel from stress, select all that apply”) were tallied for the 24 students who completed both instruments. Results follow in Table 7.

**Table 7**

*Summary of effects felt from stress for total sample*

*(Item 5 Pre and Post Survey) (n=24)*

Effects of Stress	Pre n	Pre %	Post n	Post %	Change in n
Anxiety	17	70.8	14	58.3	-3
Depression	12	50	12	50	0
Mood swings	15	62.5	16	66.7	+1
Insomnia	11	45.8	8	33.3	-3
Lower grades	11	45.8	11	45.8	0
Over eating	8	33.3	10	41.6	+2
Relationship problems	8	33.3	9	37.5	+1
Other	Major break down None Not wanting to go to	1 each	Don't have stress Under eating Panic attacks	1 each	

	school/ work Malnutrition				
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### **Post Treatment Survey (Treatment Group Supplemental Items 6-10)**

In addition to the Pre Intervention survey items, which the control group completed twice, the 18 students in the treatment group responded to 5 additional items (items 6-10) on their version of the Post Intervention Survey which is in APPENDIX C. Ratings for item 6 range from “1: least stressed” to “10: most stressed”. Ratings for item 7 range from “1: being way more stressed” to” 5: being way less stressed”. Ratings for item 9, which asked students if they found value in the sessions, ranged from “1: yes” to “5: not at all”. Responses to items 8 and 10 were binary choice (yes or no). Descriptive statistics of these responses for the supplemental Treatment Group items follow in Table 8.

**Table 8**

*Descriptive Statistics for responses to Post- intervention Survey items from Treatment group*

<b>Item</b>	<b>N</b>	<b>Mean</b>	<b>range</b>	<b>Standard deviation</b>
6. After participating in the mindfulness and coherent lessons as well as learning about mental health maintenance, have you become less stressed? (1 being not at all, 10 definitely).	18	6.222	1-10	2.102
7. How did you feel immediately after each of the mindfulness activities?  1 way more stressed  2 a little more stressed  3 the same as before the activity  4 a little less stressed  5 a lot less stressed?	17	4.118	3-5	.697

9. Did you find value in the mindfulness sessions? (1=yes, 5 somewhat, 10 no)	17	4.111	1-10	3.066
8. What could our school do better in order to help you manage stress?				
Provide a Break Room for Students	2			
Regular Breathing Exercises Before Every Class	4			
No or Less Homework	3			
Less Overall School Work	5			
Nap Time	1			
Nothing	1			
Support Dogs	1			
More Guidance Counselor Scheduling Hours	1			
Explain The Resources Available More Often	1			
It Is Not the School's Responsibility	1			
10. Will you use the guided breathing techniques from our warmups in the future?				
Yes	12			
No	6			

## **CHAPTER V**

### **DISCUSSION**

#### Connections to the Literature

The purpose of this study was to determine whether implementation of lessons to teach mindfulness and coping mechanisms for stress reduction would affect students' self-perceptions and self-assessment of their well-being. Similar to the study that Bradley et al. (2010) conducted, this study sought to identify ways in which students could decrease their stress levels by becoming “coherent or mindful.” The researcher used practices similar to the TestEdge program used by Bradley et.al (2010) which involved students actively breathing and thinking about positive things from their own experiences, which would stabilize their heart rates, mood, and motor functions. Similar to reports conducted by Bradley et al. (2010), 100% of students in this study reported feeling the same level of stress, a little less stressed, and way less stressed immediately after each mindfulness session due to their stabilized heart rates, mood, and motor functions.

#### Qualitative and Quantitative Data Analysis

The narrative responses that were gathered before the study suggested students were stressed due to their school work load as well as planning for their futures. Most of the students reported that they planned to attend a post-secondary institution, such as college or university, and were worried about how they would prepare for this next step.

Comparison of ratings designed to assess stress indicated that the treatment and control groups' total ratings for items 1-3 on the Pre Intervention ( $p < .730$ ) and Post Intervention Survey tests ( $p < .8720$ ) did not differ statistically significantly, so null hypotheses 1 and 2 were retained.

Other narrative responses provided insight as to what the treatment group students thought of the mindfulness sessions and the value that they found in it. Overall, about two thirds of the participants said that they would continue using the techniques from the guided breathing sessions. According to Item 7 on the Post Intervention Survey for the treatment group, the majority of students reported feeling somewhat less stressed immediately following the sessions but based on the data from the t-tests described above, they did not feel less stressed on a daily basis outside of the classroom.

While there was insight gained as to why students are stressed and how the educational community can help reduce this type of stress, limitations of this study, including time, participant willingness to share information, and motivation to participate affected the reliability and generalizability of these findings.

### **Implications of the Results**

Students reported that the largest stress factors that they experienced were school (26 reported) and planning for the future and college (18 reported). These responses appear to suggest that students are feeling under-supported academically and feel ill-prepared to transition from high school to college even though almost 83% of 69 students initially surveyed reported that they planned to attend a college or university. Study results may indicate that schools, as institutions, may focus too exclusively on high-stakes testing and student graduation rates rather than student readiness for post-secondary experiences and their mental readiness to succeed after graduation. The stress levels reported by students related to preparation for the future suggest that although schools might be preparing students for graduation, they may not be focused sufficiently on helping students prepare for the future because most students reported worrying about what they would do after high school

Overall, 100% of students in the treatment group reported either “feeling the same as before” the activity, being “a little less stressed”, or being “way less stressed” after the mindfulness activities and four students explained that they wished they could participate in the breathing exercises before each class period as a sort of “reset and unwind” before learning material. Overall, students found some value (mean 4.1 on a scale from 1:valued to 10:not valued) in the sessions but since the study was limited to only 15 sessions, they might have experienced a longer lasting effect if the sessions were repeated across multiple classes and over a longer interval throughout the school year.

When looking at how student coping mechanisms changed from the Pre and Post Intervention Surveys, the treatment group reported an increased level of “Meditation” from 8.3% to 41.7%. During each of the sessions, students were quiet, actively listening, and focused on their breathing. For the short time during the breathing exercises, their cell phones were off and there were very limited distractions. It is possible that the increase in reports of practicing meditation might suggest that students enjoyed being “unplugged” from social media and appreciated the time to refocus before class. The entire treatment group participated in each session, even those (33 students) who opted not to complete both a Pre and Post Intervention Survey. Their voluntary participation suggests that these students must have enjoyed or found some value in the exercises because they participated in them.

### **Theoretical Consequences**

Many (26) students reported on the Pre and Post Intervention Surveys that they felt overwhelmed by the amount of schoolwork given. It could be argued that using mindfulness activities in schools is counterproductive since they take away from academic time. One student

even reported in narrative that it is not the school's responsibility to teach or manage student stress. By trying to eliminate stress by providing coping mechanisms within the classroom, educators actually may be creating a more stressful situation for some students. This possibility warrants further investigation.

### **Threats to the Validity**

When examining the reported stress levels between the Pre and Post Intervention Surveys for both the control and treatment groups, there is about a 20% reported decrease in overall stress levels of students. While this finding could be attributed to the intervention, it also could be related to the timing of marking period change. About half-way through the treatment period, the third marking period ended for students. It could be that students are more stressed at the end of the marking period (when the treatment period started and the Pre Intervention Survey was given) and less stressed at the beginning of a new marking period (when the Post Treatment Survey was given). While coincidental, this timing may have had some effect on the validity of student reporting and could be controlled in future studies.

Student reporting was voluntary and the number of students who completed surveys dwindled from 69 in the Preliminary Survey to 24 in the Post Intervention Surveys, including both treatment and control group participants. Students who felt overly stressed or no stress at all may have been more willing to complete the survey because they felt more invested in the topic, thus biasing the results. Also, since students did not see a "grade" or "reason" for participating in the data collection, some may not have completed the surveys.

Other factors threatening the validity of the study include the small sample, non-random

assignment to groups, and, as noted, the limited duration of the interventions and offering the mindfulness activities occurred only once a day in one setting.

### **Implications for Future Research**

This study suggests many implications for future research. For example, it may be useful for researchers to examine the value of homework. Students in this study reported that one of the major causes of stress resulted from having too much schoolwork and homework. They were stressed because they felt unable to balance homework with sports activities and their jobs outside of school. Researchers might study whether or not homework increases academic achievement.

Future research might include conducting a longitudinal study that investigates the implementation of stress management strategies throughout high school and after students graduate to determine if these strategies contribute to students developing into more capable adults who report lower levels of stress and higher levels of preparedness in stressful situations. Additionally, it would be useful to learn whether teens who acquire stress management skills attain more post-secondary success.

### **Conclusions**

This study revealed that high school students are worried about a multitude of factors, but most specifically, they are stressed about school and preparing for college. These findings suggest that it is important for educators to be intentional about preparing students to handle stressful situations independently to enable them to succeed in post-graduation experiences. Results of this study suggest that schools should provide specific resources for students to assist them in reaching out for needed support while in high school. For example, cultivating environments that limit distractions, teaching students how to limit their own distractions, and



creating questioners who do not become overwhelmed under pressure should be encouraged. Because students reported feeling depressed and anxious when stressed implies that it would be valuable for educators to inspire and encourage students to seek help and ask questions for themselves so that they can be self-advocates.

While according to the Treatment group's responses to Post Intervention Survey Items 7-9, the mindfulness sessions did lessen student stress immediately after each session, it was not clear that this brief intervention would have a lasting impact on students in the Treatment group's overall wellbeing. However, students were attentive and appeared to focus more specifically for the beginning of English class which was helpful regarding classroom management and enhanced time allocation as no time was wasted on preparing for the lesson. Further study is warranted to learn about schools' potential role in causing and ameliorating stress and responding to related mental health concerns experienced by students.

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## APPENDIX A: Preliminary Survey

**Sign In:** Please use your first and last initials and the 4 digit number of the month and day of your birth (example: BW0505)

1. What is your race? (Choose One)

White/Caucasian

Black/ African American

Hispanic

Asian

Mixed Race

Other

2. What is your gender?

☐ Male

☐ Female

☐ Other

3. How old are you?

☐ 15

☐ 16

☐ 17

☐ 18

☐ 19

4. Overall, what grade do you usually achieve in your classes? State your overall GPA below.

5. Do you plan to take the SAT or ACT?

☐ SAT Only

☐ ACT Only

☐ Both

☐ Neither

6. What are your plans after high school?

- ☐ Community College
- ☐ College or University
- ☐ Technical School
- ☐ Getting a job
- ☐ Military
- ☐ Other (please specify)

7. What is your primary source of stress?

- ☐ my school work
- ☐ worrying about the future and getting into college
- ☐ my family
- ☐ my friends
- ☐ Other (please specify)

8. Define what "mindfulness or coherence" practices are

9 . Did you ever use any? Which? Did you find them helpful for reducing stress?

**APPENDIX B:**  
**Pre Intervention Survey for All Participants and**  
**Post intervention survey for Control Group**

**Sign In:** Please use your first and last initials and the 4 digit number of the month and day of your birth (for example: if your name was Ben Warren and you were born May 5<sup>th</sup>, you would sign in **BW0505**)

1. On a scale from 1 to 10, 1 being EXTREMELY stressed and 10 being not stressed at all, how stressed do you feel on a daily basis during the school year?

1          2          3          4          5          6          7          8          9          10

2. On a scale of 1 to 10, 1 being not well at all and 10 being very well, how well do you think you handle your stress?

1          2          3          4          5          6          7          8          9          10

3. On a scale of 1 to 10, 1 being there are no helpful resources and 10 being there are plenty of helpful resources, would you say there are a lot of resources in school to help you when you are feeling distressed?

1          2          3          4          5          6          7          8          9          10

4. How do you relieve your stress, select all that apply.

- ☐ Eating
- ☐ Sleeping
- ☐ Exercise/ Activity
- ☐ Computer Games/ Social Media
- ☐ Talking with Someone
- ☐ Meditation
- ☐ Other (please specify)

5. What are the effects that you feel from stress, select all that apply.

- ☐ Anxiety

- ☐ Depression
- ☐ Mood Swings
- ☐ Insomnia
- ☐ Lower Grades
- ☐ Over Eating
- ☐ Relationship Problems
- ☐ Other (please specify)

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**APPENDIX C:**  
**Post Intervention Survey (Treatment)**

**Sign In:** Please use your first and last initials and the 4 digit number of the month and day of your birth (example: BW0505)

1. On a scale from 1 to 10, 1 being EXTREMELY stressed and 10 being not stressed at all, how stressed do you feel on a daily basis during the school year?

1          2          3          4          5          6          7          8          9          10

2. On a scale of 1 to 10, 1 being not well at all and 10 being very well, how well do you think you handle your stress?

1          2          3          4          5          6          7          8          9          10

3. On a scale of 1 to 10, 1 being there are no helpful resources and 10 being there are plenty of helpful resources, would you say there are a lot of resources in school to help you when you are feeling distressed?

1          2          3          4          5          6          7          8          9          10

4. How do you relieve your stress, select all that apply

- ☐ Eating
- ☐ Sleeping
- ☐ Exercise/ Activity
- ☐ Computer Games/ Social Media
- ☐ Talking with Someone
- ☐ Meditation
- ☐ Other (please specify)

5. What are the effects you feel from stress, select all that apply

- ☐ Anxiety

- ☐ Depression
- ☐ Mood Swings
- ☐ Insomnia
- ☐ Lower Grades
- ☐ Over Eating
- ☐ Relationship Problems
- ☐ Other (please specify)

6. After participating in the mindfulness and coherent lessons as well as learning about mental health maintenance, have you become less stressed? (1 being not at all, 10 definitely)

1          2          3          4          5          6          7          8          9          10

7. How did you feel immediately after each of the mindfulness activities?

- ☐ Way more stressed
- ☐ a little more stressed
- ☐ the same as before the activity
- ☐ a little less stressed

Please explain your response below

8. What could our school do better in order to help you manage stress?

9. Did you find value in the mindfulness sessions? (1=yes, 5 somewhat, 10 no) Explain your response.

1          2          3          4          5          6          7          8          9          10

10. Will you use the guided breathing techniques from our warmups in the future?

- ☐ yes
- ☐ no

## **APPENDIX D “Mindfulness” Session Description**

Mindfulness sessions occurred daily during English class over a three-week period. Students took the first few minutes of each English class to organize their thoughts and emotions by participating in breathing exercises which are proven to regulate one’s heart rate. The software used to guide these sessions is called HeartMath and is provided by the researcher’s county for classroom use. HeartMath consists of guided breathing activities adapted for specific ages to perform mindfulness sessions that promote relaxation and refocusing on the brain. Before the first session, students in the treatment group watched the introductory video which explained what it means to be mindful and coherent. They also learned about the health benefits of mindful and coherent breathing strategies. Then, students began each session with The Coherence Coach which is an interactive experience that teaches HeartMath’s Quick Coherence® technique for relieving stress and increasing performance by teaching students to breathe at guided intervals which lowers their heart rates and leads to more focused minds. After participating in the guided breathing sessions, students began the daily English warmup which is implemented every day.

## **APPENDIX E Guidance Sessions**

In coordination with the school's guidance department, students in the two classes receiving the treatment participated in three informative sessions in which they were able to talk about post-secondary planning, stress management strategies, and mindfulness practices. In these sessions, they received resources that were intended to help them become planners of their future and to participate in their own stress management activities. Below is a list of topics covered in each of the sessions presented by the school's guidance counselor/ crisis counselor.

### **Session 1 Agenda:**

1. Introduction of Guidance Counselors & School Psychologist with contact information
2. Informative session regarding GPA and Graduation Requirements
3. Information about reporting students for drug/alcohol abuse and suicide hotline information

### **Session 2 Agenda:**

1. Tips for stress management at home and at school (Muscle Relaxation & Guided Imagery)
2. Tracking senior year progress
3. Support systems for senior year

### **Session 3 Agenda:**

1. Free college applications to the local community college
2. Application process for Bright Futures (College Scholarship for Florida Residents)
4. FAFSA information and FAFSA calculation for students to take home to their parents