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RESEARCH ABSTRACTS

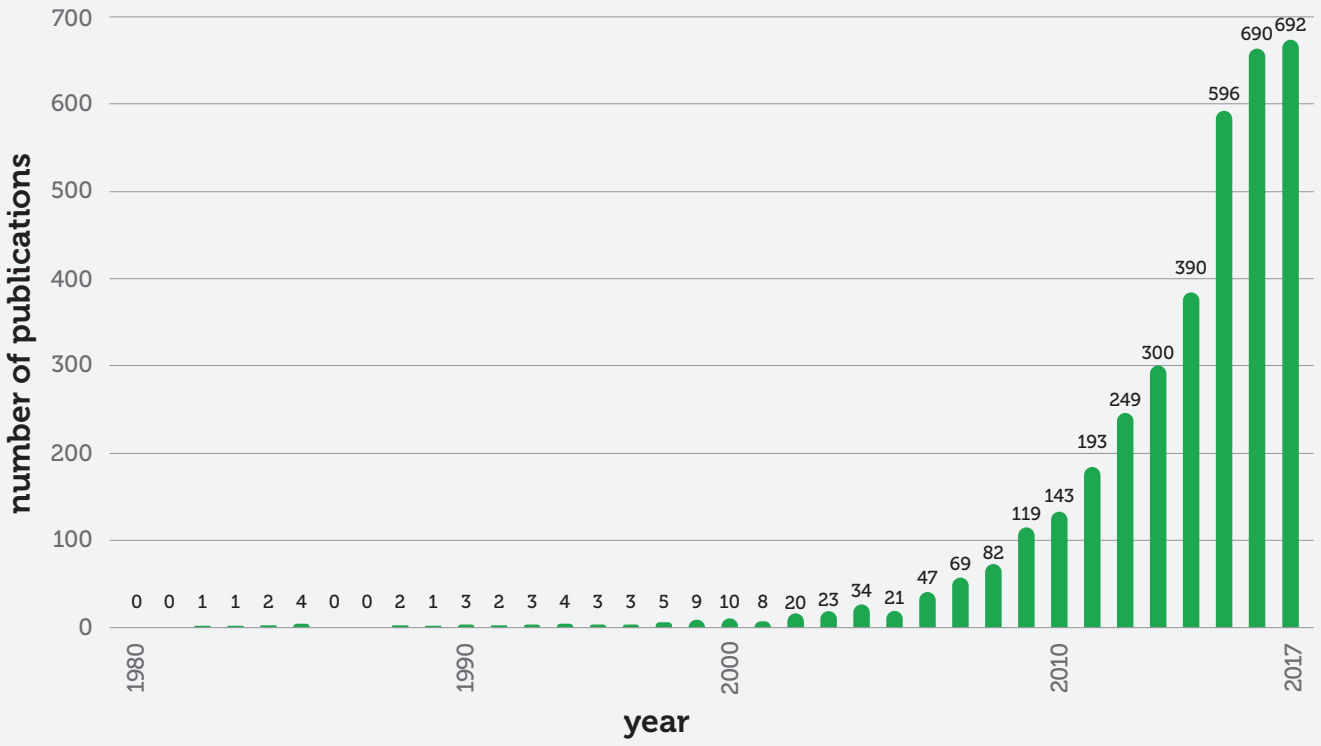
January 2019

MINDFUL AWARENESS RESEARCH ABSTRACTS

The practices associated with mindful awareness have been scientifically studied for 37 years.

Below is an example of the growth in mindfulness research literature from 1980 – 2017:

MINDFULNESS JOURNAL PUBLICATIONS BY YEAR, 1980-2017



American Mindfulness Research Association, 2018
www.goAMRA.org

Notes. Data obtained from a search for "mindful awareness" in the ISI Web of Science database. Search limited to research-related articles; book-related material excluded

RESEARCH ABSTRACT SUMMARY: JANUARY 2019

ACADEMIC IMPACT:

Reading and Science grades up 4.8 and 6.6 points respectively with 60% fewer discipline events.

Bakosh, L., Houlihan, J., Tobias, J., (2016). **Audio-guided mindfulness training in schools and its salutary effect on school attainment: Contributing to theory, practice, and policy.**

New insights on the link between mindfulness and school achievement were generated by reporting significant increases in grade performance among students participating in a randomized controlled trial mindfulness training intervention. The intervention design was innovative and practical because its pre-recorded audio guided format minimized disruption to teaching resource and curriculum operations. Students from minority and disadvantaged backgrounds seemed to benefit in particular from the intervention, which may suggest viable ways to help ease these students' pressure of growing up with chronic socioeconomic stressors.

Bakosh, L., Snow, R., Houlihan, J., Tobias, J., Barbosa-Leiker, C. (2015). **Maximizing mindful learning: An innovative mindful awareness intervention improves elementary students' quarterly grades.** *Journal of Mindfulness*, DOI 10.1007/s12671-015-0387-6.

This controlled research study was conducted in eight 3rd grade classrooms to measure the effect of a 10-minute per day audio mindful-based social emotional learning (MBSEL) intervention on academic and behavior measures as well as on teaching operations. The results showed a statistically positive effect in reading grades, +4.8 points, and science grades, +6.6 points. Additionally, students had 60% fewer dicipline events as measured by principle office referrals, with no charge to curriculum since the program was run during normal transition times.

TEST-TAKING:

Bellinger, D.B., Decara, M.S. (2015). **Mindfulness, anxiety, and high-stakes mathematics performance in the laboratory and classroom.**

Research demonstrates mindfulness' positive impact on both cognitive performance and emotional regulation. Since anxious thoughts disrupt cognitive control, a mindfulness practice may be beneficial for situations where anxiety interferes with positive performance, such as test taking. In Study 1, the authors determined that mindfulness indirectly benefited math performance through reduced state anxiety, particularly problems that required greater working memory. In Study 2, similar findings were found among undergraduate engineering majors and increased " performance on high-stakes quizzes and exams by reducing their cognitive test anxiety." Findings show how mindfulness benefits academic performance and suggest a positive influence on lowering test anxiety.

RESEARCH ABSTRACT SUMMARY: JANUARY 2019

COGNITIVE/DEVELOPMENT IMPACT:

Mindfulness improves executive functioning in 7-9 year olds.

Black, D., Fernando, R. (2013). **Mindfulness Training and Classroom Behavior Among Lower-Income and Ethnic Minority Elementary School Children.**

This study examined the effect of teacher reported changes in classroom behavior as a result of a 5-week school-based, mindfulness program. 409 kindergarten through sixth grade students were evaluated at pre, post, and 7 week post-intervention with regard to classroom behavior. Of the 409 students, 83% were enrolled in a California free lunch program and 95.7 % were of ethnic minority. The components of classroom behavior included: paying attention, participation, self-control and caring/respect for others. Teachers reported significant results for improved classroom behavior. These results held at the 7 week post-intervention evaluation. Additional mindfulness training was shown to continue gains in students' ability to pay attention. While this study had some limitations due to lack of a true control group, the results remain promising.

Diamond, Adele & Lee, Kathleen (2011). **Interventions shown to aid executive function: Development in children 4 to 12 years old.** *Science*, 333, 959-964.

This review looks at 6 activities used to improve executive functions (EF). It states that all successful programs involve repeated practice. In the mindful awareness group, with 7 to 9 year olds they found a significant improvement with self regulation and emotional control skills in children who had initially poorer EFs than those with initially better EFs compared with controls.

Flook, L. et al. (2010). **The effects of mindful awareness practices on executive function in elementary school children,** *Journal of Applied School Psychology,* 26: 1, 70-95.

These two pilot studies demonstrated that mindful awareness practices improve executive function in elementary school children. Specifically, there was improvement in self-regulatory abilities among preschool and elementary school students who participated in an 8-week modified Mindfulness Based Stress Reduction (MBSR) training program, taught in two 30-minute sessions per week. Children who were initially less well-regulated showed the strongest improvements subsequent to training, as compared to children in the control group who did not receive the training.

RESEARCH ABSTRACT SUMMARY: JANUARY 2019

IMPLEMENTATION WITH FIDELITY:

Key factors include: Daily, ten minute mindfulness practices via digital delivery

Mrazek AJ, Mrazek MD, Cherolini CM, Cloughesy JN,Cynman DJ, Gougis LJ, Landry AP,Reese JV, Schooler JW. (2018). **The Future of Mindfulness Training Is Digital, and The Future is Now, Current Opinion in Psychology.**

The article, supported by a U.S. Department of Education's Institute of Educations Sciences grant, points to multiple advantages of a digital approach to mindfulness training, including: accessibility, standardization, personalized learning, and efficacy. Digital delivery can reduce geographical, logistical and financial barriers and ensures a standardized high-quality instruction. Research "suggests that well-designed digital training can elicit equal or even greater outcomes". For example, in a study by Adele Krusche and University of South Hampton, an online course based in Mindfulness-Based Stress Reduction (MBSR) had comparable outcomes with face-to-face mindfulness training and showed significantly decreased measures of perceived stress, anxiety and depression. Further, the article finds existing research demonstrates that digital mindfulness-based instruction can "improve individual's attention and well-being."

Berghoff, C., Wheeless, L., Ritzert, T., Wooley, C., Forsyth, J. (2017). **Mindfulness Meditation Adherence in a College Sample: Comparison of a 10-Min versus 20-Min 2-Week Daily Practice.**

118 undergraduate students participated in the study which was designed to compare the amount of time spent practicing mindfulness and outcomes of adherence, stress, and self-compassion. Adherence rates were similar for both groups. The study found that daily mindfulness practices of either 10 minutes or 20 minutes offered a significant pre to post increase in mindfulness as well as a reduction in stress, "suggesting that sustaining practice of brief mindfulness exercises over time confers positive benefits." Further, self-compassion also increased with both mindfulness practice lengths.

Kuyken, W., et al. (2013). **Effectiveness of the Mindfulness in Schools Programme: Non-randomised controlled feasibility study.** ***British Journal of Psychiatry.***

Research positively correlates mindfulness practice with greater well-being for adults. This study aimed to evaluate the efficacy of a mindfulness intervention to enhance emotional and mental well-being. The study involved 522 students, ages 12-16, in 12 secondary schools. In the six schools that received the mindfulness program, students experienced significantly lower rates of depression immediately following the program and at post follow-up.. After three months, students reported lower stress and greater well-being. Those in the mindfulness intervention that practiced more frequently saw even more benefit in terms of increased well-being and lower stress. This study highlights the benefits of mindfulness practice in a school setting for improved well-being in adolescents.

RESEARCH ABSTRACT SUMMARY: JANUARY 2019

MENTAL HEALTH/WELL-BEING:

Mindfulness positively correlated to improved mental and emotional well-being among children.

Costello, Elizabeth; Lawler, Margaret. (2014) **An Exploratory Study of the Effects of Mindfulness on Perceived Levels of Stress among School-Children from Lower Socioeconomic Backgrounds.** International Journal of Emotional Education, v6 n2 p21-39 Nov 2014.

Research clearly links stress to decreased health and well-being as well as negative outcomes for student success. A lower socioeconomic background increases the risk for student stress, behavioral problems, social-emotional challenges and poor academic performance. These combined increase the risk of a student dropping out of school altogether. While many studies focus on teacher reported change and/or quantitative outcomes, this study focuses on children's experiences of mindfulness as it relates to stress. 63 primary school children who were " at risk of social exclusion" participated in a 5-week school-based, mindfulness program. Interviews with 16 children and 2 teachers identified five areas: conceptualization of stress, awareness, self-regulation, classroom regulation, and future stress. Quantitative analysis of children's perceived stress levels pre-and post intervention demonstrated significant reductions in stress levels. The authors' conclude, "These findings offer support for the incorporation of mindfulness interventions into the school curriculum, as a means of empowering children to address stress in their lives and improving full participation in the education system."

Lawlor, M. S., Schonert-Reichl, K. A., Gadermann, A. M., & Zumbo, B. D. (2012). **A Validation Study of the Mindful Attention Awareness Scale Adapted for Children.** *Mindfulness,* 1-12.

A total of 286 fourth to seventh grade children completed the Mindful Attention Awareness Scale—Children (MAAS-C), a modified version of a measure designed to assess mindfulness in adults. Results indicated that mindfulness, as assessed via the MAAS-C, was related in expected directions to indicators of well-being across the domains of traits and attributes, emotional disturbance, emotional well-being, and eudaimonic well-being. These findings were in accord with those of previous research with the MAAS in adult populations.

Raes, F., Griffith, J. W., Van der Gucht, K., & Williams, J. M. G. (2014). **School-based prevention and reduction of depression in adolescents: A cluster-randomized controlled trial of a mindfulness group program.** *Mindfulness*, 5(5), 477-486.
408 students, ages 13-20 from 24 classrooms in five schools participated in the study. Those students that received the mindfulness intervention had significantly reduced levels of depression than those who did not practice mindfulness. The authors concluded that mindfulness is an effective means of reducing depression among adolescents in schools.

RESEARCH ABSTRACT SUMMARY: JANUARY 2019

Sanger KL, Thierry G., Dorjee D. (2018) **Effects of school-based mindfulness training on emotion processing and well-being in adolescents: evidence from event-related potentials.**

The study investigated the efficacy of mindfulness-based curriculum in a nonrandomized controlled study of students 16-18 years old. The study resulted in significant increases in self-reported well-being. Those who received the 8 weeks of mindfulness training had fewer doctor visits for mental health support. The authors concluded, "in-school mindfulness training for adolescents has scope for increasing awareness of relevant emotional stimuli, irrespective of valence, and thus may decrease vulnerability to depression."

Sibinga, E. MD, MHS, Webb, L. MS, Ghazarian, S. PhD. (2015) **School Based Mindfulness Instruction An RCT**.

Study focused on 300 fifth to eighth grade students from two Baltimore City Public Schools to explore the impact of mindfulness on urban youth who often experience significant and pervasive negative stressors including but not limited to: multigenerational poverty, community violence, trauma, and health risks. Participants were divided into an adapted MBSR group and a health education program (Healthy Topics). Post program, the MBSR students had "significantly lower levels of somatization, depression, negative affect, negative coping, rumination, self-hostility, and posttraumatic symptom severity. The authors concluded that the "MBSR program is effective primary prevention for the negative effects of toxic stress and trauma, and ultimately beneficial for urban youth.

SOCIAL/EMOTIONAL IMPACT:

Self-regulation, empathy and compassion cultivated through contemplative practices.

Davidson, R. J. et al. (2012). **Contemplative practices and mental training: prospects for American education.** *Child Development Perspectives,* , 6(2) 146-153.

The authors put forth that it is possible to cultivate positive qualities, to highlight a set of mental skills and socioemotional dispositions that are central to the aims of education in the 21st century. These include self-regulations skills associated with emotion and attention and prosocial dispositions such as empathy and compassion. They believe this can be accomplished through systematic contemplative practice, which changes brain structure and function to support academic success.

RESEARCH ABSTRACT SUMMARY: JANUARY 2019

Flook, L., Goldberg, S. B., Pinger, L., & Davidson, R. J. (2014). **Promoting prosocial behavior and self-regulatory skills in preschool children through a mindfulness-based kindness curriculum.** *Developmental Psychology.*

68 ethnically diverse preschool students participated in a mindfulness based program in a public school setting to measure impact on prosocial behavior, executive function, and self-regulation. The mindfulness intervention group showed greater improvements in social competence and received higher grades from teachers in the following areas: learning, health, and social emotional development. Those students who were initially lower in social competence and executive functioning showed the greatest improvements as compared to the control group. The control group displayed more selfish behavior over time.

Schonert-Reichl, K. A., Oberle, E., Lawlor, M. S., Abbott, D., Thomson, K., Oberlander, T. F., & Diamond, A. (2015). **Enhancing cognitive and social–emotional development through a simple-to-administer mindfulness-based school program for elementary school children: A randomized controlled trial.** *Developmental Psychology.*

This study was initiated to determine the effectiveness of a SEL program when combined with mindful awareness to positively impact stress levels, pro-sociality, cognitive function and overall well-being -- all linked to positive school outcomes. Two groups of combined 4th and 5th graders participated in this study with one group assigned to the SEL/Mindfulness program and the other a social responsibility program. Those students in the SEL/Mindfulness program saw greater improvements in cognitive control, stress reduction, empathy, emotional control and optimism. They also experienced self-reported decreases in depression and peer aggression. They were rated by peers as more prosocial and gained in peer acceptance. The results underscore the potential of SEL intervention with mindfulness programs.

STRESS IMPACT:

Mindfulness programs in schools reduce stress and increase focus.

Hozel, B.K, et al (2011). **Mindfulness practice leads to increases in regional brain gray matter density.** *Psychiatry Res. 191,* (1), 36-43.

The authors analyzed the neural mechanisms associated with mindful awareness practice. Using MR images they compared pre and post brain scan to measure regional gray matter density. They found that those who practiced mindful awareness, compared to controls, had increases in grey matter concentration in the left hippocampus, the posterior cingulate cortex, the temporo-parietal junction and the cerebellum. This suggests that mindful awareness practices can increase brain size in regions involved in learning, memory processing, emotion regulation, self-referential processing, and perspective taking.

RESEARCH ABSTRACT SUMMARY: JANUARY 2019

Immordino-Yang, M. H., Christodoulou, J. A., & Singh, V. (2012). **Rest is not idleness: Implications of the brain's default mode for human development and education.** *Perspectives on Psychological Sciences.* , 7, 352-364.

Neuroscience shows that the brain is highly active during periods of 'wakeful rest'. Neural processes in the 'default mode' (DM) increase, which is important for psychosocial functioning, mental health and cognitive abilities like reading comprehension and divergent thinking. The authors recommend mindful awareness training in schools as a way to balance the largely external attentional demands in our culture. They also suggest that some social and emotional skills are vulnerable to disruption by the overuse of technology and social media, which inhibit DM activity.

Jha, A. P., Stanley, E. A., Kiyonaga, A., Wong, L., & Gelfand, L. (2010). **Examining the protective effects of mindfulness training on working memory capacity and affective experience.** *Emotion*, 10(1), 54-64..

This study measured the effects of mindful awareness training on working memory capacity (WMC). WMC is used in managing cognitive demands and regulating emotions. Yet persistent stress may deplete WMC and lead to cognitive failures and emotional disturbances. The authors found that participants who had mindful awareness training improved WMC compared to a control group. They also found that practice time mediated the gains in WMC as well as gains in wellbeing and reductions in stress and anxiety.

Mendelson, T., Greenberg, M., Dariotis, J., Gould, L. F., Rhoaedes, B., & Leaf, P. (2010). **Feasibility and preliminary outcomes of a school-based mindfulness intervention for urban youth.** *Journal of Abnormal Child Psychology, 38*, (7), 985-994.

This paper reports finding from a pilot randomized controlled trial assessing the feasibility, acceptability, and preliminary outcomes of a school-based mindfulness and yoga intervention. The study was conducted with four urban public schools, 4th and 5th graders, for 12 weeks. The findings suggest that the intervention was attractive to students, teachers, and school administrators and that it had a positive impact on problematic responses to stress including rumination, intrusive thoughts, and emotional arousal.

Posner, M.I. & Rothbart, M.K. (2005). **Influencing brain networks: implications for education.** *Trends in Cognitive Science* 9, 99-103.

According to a model first proposed by university of Oregon neuroscientist Michael I. Posner, attention can be trained. This research shows, and others have replicated the results, that attention training results in higher scores on IQ tests and a marked gain in executive attention. The results have been so remarkable that Posner and others are calling on educators to consider teaching attention as early as preschool. He said, "We should think of this work not just as remediation, but as a normal part of education."

RESEARCH ABSTRACT SUMMARY: JANUARY 2019

Schonert-Reichl, K. & Lawlor, M. S.(2010). **The effects of mindful-based education program on pre-and early adolescents' well-being and social and emotional competence.** *Mindfulness*, 1, 137-151.

This study evaluated the effectiveness of the Mindful Education (ME) program using self-reporting measure by the students on optimism, general and school self-concept, and positive and negative affect and by teacher ratings of classroom social and emotional competence. The results showed that there was a significant increase in optimism by students in the ME program, and there was an effect for self-concept. Teacher rated classroom social competent behaviors were found favoring for the ME program and they reported that they were easily able to integrate the short mindful attention exercises within their classrooms.

Mindfulness and Administrator Stress:

Wells, C. **Principals Responding to Constant Pressure: Finding a Source of Stress Management.** (2013). NASSP Bulletin.

This article reviews the research regarding principals' stress levels over three decades. Occupational stress has been linked to numerous negative physiological and psychological effects, including but not restricted to high blood pressure, sleep difficulties, anxiety, and depression. The article draws parallels between the highly stressed medical profession and the educational profession, especially with regard to burnout. Daily practice of even 5-10 minutes per day can be enough to receive " the benefits of a restorative healing from mindfulness." The article sites research from numerous studies, including Davidson and Begley (2012) and states that, "mindfulness practice actually trains the brain to have new methods to experiences and thoughts, ones that can weaken existing overreactions to events and situations" and lead to a sense of calm and reduced anxiety.

Mindfulness and Teacher Stress:

Flook,L., Goldberg, S.B., Pinger, L., Bonus, K., & Davidson, R.J. **"Mindfulness for teachers: A pilot study to assess effects on stress, burnout, and teaching efficacy."** Corrigendum. (2013). *Mind, Brain and Education* 7(4), 256.

Results from a randomized controlled pilot trial of modified Mindfulness-Based Stress Reduction course adapted for teachers showed significant reductions in psychological symptoms and burnout. Teachers demonstrated increases in self-compassion, improved performance on computer task of affective attentional bias. Further, observer-related classroom organization improved.