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Yoga As A Complimentary And Alternative Medicine Approach For Teacher Psychological Distress And Burnout: The Impact Of Online Yoga

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YOGA AS A COMPLEMENTARY AND ALTERNATIVE MEDICINE APPROACH FOR TEACHER PSYCHOLOGICAL DISTRESS AND BURNOUT: THE IMPACT OF ONLINE YOGA

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CHAPTER 1: INTRODUCTION

Teacher Distress and Burnout: Impact on Classroom Functioning and Student Development

High rates of teacher distress and burnout have been consistently documented (Kokkinos, 2007; Montgomery & Rupp, 2005; Ingersoll, 2001; Kyriacou, 2001). The impact of distress and burnout is so great that within five years of starting in the profession, more than 41% of educators leave the field (Ingersoll et al., 2014). This drop-out rate is likely due to the many challenges that educators face.

One example of a major challenge in education is balancing complex student and environmental needs that change rapidly from moment to moment, all within the context of an overstimulating, high demand environment that requires immediate responses in real-time. Beyond assessing every student's mastery of the course content, teachers must first be able to identify and recognize their students' emotional and cognitive needs and cultivate meaningful relationships. Without the skills to meet these student needs, student content mastery can be nearly unobtainable (Kennedy, 2016; Lampert, et al, 2013; McDonald, Bowman, & Brayko, 2013; Gholami & Husu, 2010; Hiebert et al., 2007; Korthagen & Vasalos, 2005; Berliner, 2001). This balancing act can result in a cognitive overload for teachers, especially those new to the field (Moos & Pitton, 2013; Feldon, 2007).

Another point of difficulty that educators face is the discrepancy between training, education, and pedagogy done before taking on the responsibility for a classroom, in contrast to actual classroom experience (Korthagen, 2010; Larrivee, 2000). Expectations of what and how a class should function and look, in contrast to what teaching a classroom successfully actually demands, can leave educators frustrated, in high distress, and with negative mood states (Dugas, 2016; Brown, 2006; Friedman, 2006). Burnout can be conceptualized as the deterioration of coping

efficacy over time (Maslach, Jackson, & Leiter, 1997). Sources of teacher stress leading to burnout have been found to include scrutiny, pressure over standardized tests, class size, compensation, time demands, workload, student behavioral problems, and administrative support (Boyle et al., 1995; Farber, 1991; Blasé, 1986). These factors contribute to the significant attrition rates within the teaching profession (Lindqvist, Nordänger, & Carlsson, 2014; Ingersoll, 2001).

Although the consequences of educators' mental health for attrition among K-12 teachers is staggering, there is also an impact on many contextual factors within the classroom. Heightened levels of stress in teachers affect responsiveness and effectiveness in the classroom, as well as lower interpersonal effectiveness with students (LaParo, Pianta, & Stuhlman, 2004). These factors in turn influence how youth function in the classroom. A 2004 study by LaParo, Pianta, & Stuhlman identified several educator factors that were indicated to improve their student's emotional, social, and academic outcomes. These educator factors included supportiveness, responsiveness to the different needs of each student, respectful communication, low classroom conflict, and smooth transitions. Additional contributing educator factors encompassed teacher modeling of appropriate emotional expressions, problem solving, and effective responses to disruptive behaviors. When teachers do not have the ability to produce this type of classroom environment, students' on-task behavior and academic achievement decline significantly (Marzano, Marzano, & Pickering, 2003). Once the environment in the classroom begins to wane, teachers become further emotionally exhausted trying to address the behavioral and academic decline and this cycle puts teachers at risk for burnout, which can lead to teachers responding reactively to classroom difficulties in ways that contribute to increasing classroom disruption (Osher et al., 2007).

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Coping Self-Efficacy

With educators experiencing heightened distress, an important contextual factor to consider is coping self-efficacy. Coping is classically defined as efforts put forth, either cognitive or behavioral, to manage responses to conditions evaluated as stressful (Lazarus & Folkman, 1984). Coping can be either adaptive or maladaptive. When a coping strategy used results in fewer psychological symptoms than were present previous to the use of the coping strategy, it is considered adaptive (Park, Folkman, & Bostrom, 2001). Conversely, when coping strategies used fail to regulate distress, it is considered maladaptive (Vitaliano, DeWolfe, Maiuro, Russo, & Katon, 1990). The perception of one's self-efficacy, or the belief one holds about their capacity to perform a specific action, is an essential component in acquiring knowledge to perform a given skill, such as coping (Bandura, 1997).

Traditional Interventions for Teacher Distress and Burnout

Currently there are no interventions consistently utilized by school districts to reduce teacher distress or burnout (Richardson & Rothstein, 2008; Hanover Research 2015). Most interventions in K-12 settings focus on the students, rather than the educators responsible for cultivating the classroom environments. Research looking at educators and their distress often features intervention methods such as cognitive behavioral therapy or a closely related variant. Although these interventions are effective in treating the symptoms of depression and anxiety, which educators often manifest, they may not be feasible regarding cost, time, and stigma associated with receiving a mental health treatment. In addition, these efforts have largely focused on reducing or controlling negative symptoms, rather than accepting them and increasing the focus on positive psychological experiences such as feelings of fulfillment and self-efficacy (Wenzlaff & Wagner, 2000; Hayes, 2004).

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Mindfulness

Mindfulness has been defined as the bringing of attention to an individual's moment-to-moment experience without judgement (Kabat-Zinn, 1990). There appear to be three main processes involved in the practice of mindfulness: *forming intention*, *paying attention*, and *adjusting your attitude* (Jennings, 2015; Shapiro et al., 2006). Mindfulness is not meant as a tool to become numb to or push away experiences that are uncomfortable, rather it is to set the intention to become receptive to the present moment experience (Cullen & Brito, 2014; Bishop et al., 2004). Research supports that when individuals do the opposite, and attempt to suppress unwanted emotional experiences, they intensify the very emotions they are trying to avoid (Orsillo & Roemer, 2011; Weiss, 2011; Roemer & Orsillo, 2009; Hayes, Follette, & Linehan, 2004).

Studies looking at mindfulness among educators have found various benefits, including reduction of physiological stress responses (Emerson et al., 2017; Harris et al., 2016), psychological distress (Brown, Ryan, & Creswell, 2007; Jennings et al., 2013; Keng, Smoski, & Robins, 2011; Smeets et al., 2014; Virgili, 2015), burnout (Emerson et al., 2017), and emotional reactivity (Keng, Smoski, & Robins, 2011; Sharp & Jennings, 2016; Schussler et al., 2016; Solhaug et al, 2016), as well as increased quality of life (Davis & Hayes, 2011), self-awareness (Schussler et al., 2016), and ability to resolve conflicts (Sharp & Jennings, 2016). Improving teacher mindfulness has also been related to increased insight into student needs, both academically and emotionally (Jennings, 2015; Garcia & Lewis, 2014; Srinivasan, 2014; Albrecht, Albrecht, & Cohen, 2012; Jennings & Greenberg, 2009; Macdonald & Shirley, 2009).

Mindfulness with the goal of stress reduction has been examined as a potential intervention for the significant psychological distress felt by a majority of educators (Bishop et al., 2004). Jennings (2015) found that mindfulness significantly increases self-awareness, well-being,

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reflective abilities, and motivation. Other studies show a variety of benefits of mindfulness practice, including decreased teacher burnout and distress, as well as increased emotion regulation, self-compassion, classroom organization, self-efficacy, and professional wellbeing (Emerson et al., 2017; Schussler et al., 2016; Sharp & Jennings, 2016; Taylor et al., 2016; Frank et al., 2015; Roeser et al., 2013; Flook et al., 2013; Benn et al., 2012; Meiklejohn et al., 2012; Napoli, 2004; Anderson et al., 1999). These outcomes (e.g. self-efficacy, organization, self-compassion, and burnout) play a role in determining a teacher's ability to engage with students, and avoid emotional exhaustion and psychological distress (Klassen, Perry, & Frenzel, 2012). Studies looking at dispositional mindfulness, or naturally occurring mindfulness without training, indicate that individuals vary in the degree to which they are naturally mindful. However, with consistent exposure to and practice of mindfulness, its benefits become more readily available and more of a trait than a state characteristic (Jennings, 2015; Brown & Ryan, 2003).

Although these results suggest that mindfulness-based interventions are promising, there is a need for research that looks at their feasibility, cost, time needed, possible stigma to receiving an intervention, accessibility of treatment, as well as acceptability of treatment. Even with mindfulness-based stress reduction shown to be an effective intervention for reducing teacher stress and burnout, some critical questions require further investigation. These include: how would teachers afford this treatment, how likely would educators be to commit to a consistent practice, and how would the stigma of getting a mental health treatment impact teacher's willingness to access mental health resources?

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Yoga: History and Intervention Implications

Historical Roots of Yoga[*]

Another avenue that is beginning to be assessed as an approach to reducing teacher distress and burnout is cultivating mindfulness through yoga. There is a significant history to yoga beyond that of most interventions typically used in educational settings. Given the common Western conceptualization of yoga, it is important to understand what yoga means in the culturally traditional sense. Generally, the eastern philosophical tradition is the one from which yoga, mindfulness, and meditation were born. More specifically, Vedic philosophy is the branch of eastern philosophy that the core concept of yoga, as a way to integrate oneself and find a balanced life, is found. The main texts of this philosophy are the Vedas. The Vedas are the oldest Hindu scripture and are the crux of the Hindu religion. Yoga is conceptualized as the practice of the knowledge provided in the Vedas. The earliest discussion of yoga in these scriptures are in the Rig Veda which has been dated to pre 4000 B.C. (Rig Veda 1.18.7; 10.114.9; and 1.30.7). Yoga in these original portions is literally translated as "yoking," or harmonizing the self with the spiritual (Lasater, 1997; Raub, 2002). The Upanishads are among the best-known portions of the Vedas and address in more detail the practice of yoga.

Yoga embodies a feasible application of mindfulness, as it is a practice of primarily breath work and intention setting, with the actual postures only accounting for an eighth of the theoretical practice (Patañjali, 400CE). Overall, yoga is comprised of eight pieces, or limbs. These include integrity, self-discipline, yoga postures (or asanas), breath work, sensory transcendence, concentration, meditation, and peace. The philosophical works underlying yoga continued to develop through works such as The Bhagavad Gita (author unknown; 200-500 B.C.E.

[*] *Information from this section is synthesized from the main religious and classical texts indicated (Vedas, Rig Veda, Upanishads, Bhagavad Gita, and The Yoga Sūtras of Patañjali).*

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approximately), which embodies the philosophical struggle between self-control and fulfillment, and The Yoga Sūtras of Patañjali (Patañjali, 400CE), which are a collection of dictums regarding theory of yoga. The emergence of yoga in western cultures does not necessarily have one point of origination, though Swami Vivekananda (life: 1863- 1902) is often credited with introducing yoga to Western cultures at the Parliament of the World's Religions in the early 1890's. Of note, he is also recognized as the individual who popularized The Yoga Sūtras.

Though the traditional practice of yoga was founded in the Vedic philosophy, which is integrated with the Hindu faith, modern application (especially Westernization) of yoga has moved away from the religious affiliation and has replaced it with a concept of connectivity with others and nature (in a non-religious affiliate context) (Collins, 1998; Maehle, 2006). The most popular form of yoga in westernized cultures is Hatha yoga (slower paced for relaxation) closely followed by Vinyasa yoga (rapid paced to build body heat) (Collins, 1998). The effects of yoga have been a topic of recent research. For example, after just one yoga class, participants show improved cognitive functioning in working memory and focus, along with lower stress levels (Gothe et al., 2012). Furthermore, the practice of yoga has therapeutic effects and increases quality of life (Woodyard, 2011). Due to the benefits of yoga that research has found, it is classified as a form of Complementary and Alternative Medicine (CAM) by the National Institutes of Health (NIH) (Williams, Steinberg, & Petronis, 2003).

Yoga as a Mindfulness Intervention for Teachers

Research on yoga in educational settings has traditionally focused on students. Several investigators have applied yoga and mindfulness strategies with students to help improve their in-class behavior, focus, and coping. The results of these studies indicate that mindfulness practice incorporating yoga improved emotional well-being, academic performance, self-compassion, and

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sleep, while decreasing negative affect and emotional reactivity (Singh et al., 2011; Sibinga et al., 2011; Broderick & Metz, 2009) for K-12 youth. Mindfulness training for youth targets clinically related symptoms, such as those associated with anxiety, impulsivity, and depression. Such symptoms can have a negative impact on academic and social performance. Mindfulness can reduce the negative impact of these symptoms on student academic and social outcomes (Britton et al, 2014; Zenner, Herrnleben-Kurz, & Littlefield, 2014; Sibinga et al., 2011; Singh et al., 2011; Shapiro, Brown, & Astin, 2008). Although student focused interventions are a worthwhile avenue to pursue in attempting to improve the academic performance and general mental health of youth, the context and educational environment created by teachers are also important considerations.

If mindfulness is to become a sustainable practice for students within an educational setting, the teachers leading classes should be able to model this practice. Feasible programs with mindfulness in the forefront are essential in order to give teachers tools to assess affectively challenging situations, as well as noticing and recognizing their student's emotional needs. Harris et al. (2016) looked at yoga with educators in the context of a community-based mindfulness program. Those teachers participating in the intervention showed improved positive affect, classroom management, blood pressure, and mindfulness. Also, a pilot study by Ancona and Mendelson (2014) found that yoga practice aided in reducing stress and burnout. These are initial projects that hint at positive effects more broadly. However, more study is needed to explore the impact of yoga on educators, in this fairly new area of inquiry.

Importance of Acceptability and Feasibility of Intervention

The World Health Organization (2011) has emphasized the need for modified models of health care interventions for physical and mental health problems that are "feasible, low cost, and appropriate to implement within the constraints of a local health system." Acceptability and

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feasibility are identified as vital aspects of evaluating psychological interventions according to the Consolidated Standards of Reporting Trials Statement (Moher, Schulz, & Altman, 2001).

Available evidenced-based treatments have been argued to be non-satisfactory regarding treatment of common mental health problems, including depression and anxiety, due to not creating clinically significant changes for most of the clients receiving treatment (Cuijpers, van Straten, Andersson, & van Oppen, 2008). Contributing factors to the lack of improvement for most clients using evidence-based treatments are high rates of dropouts (Fernandez, Salem, Swift, & Ramtahal, 2015; Hans & Hiller, 2013) and residual symptoms after treatment (Paykel, 2008), particularly for depression. For these reasons, treatment acceptability and feasibility are important avenues for researchers to focus on. Kazdin (2000) defines treatment acceptability as the extent to "which treatment techniques seem reasonable and appropriate for the clinical problems to which they are applied." Investigating acceptability in research aids in identifying interventions that have high client satisfaction and are likely to be successful when implemented in real-world settings (Lennox & Miltenberger, 1990). Interventions that have higher client acceptability have been found to result in higher adherence (Kazdin, 1996; Reimers, Wacker, Cooper, & DeRaad, 1992), which is an important factor considering that early discontinuation is a major hurdle to treatment success (Cahill et al., 2003). Indicators of client acceptability of treatment are client satisfaction and adherence (Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010). Being mindful in research of the acceptability and feasibility of psychological interventions can provide meaningful, practical information on their utility and applicability, which is an area that needs more attention in research on educator interventions.

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Adherence as a Problem

Difficulties of adherence to intervention of any kind is common. Despite the positive findings and the improvements for educators in the study by Ancona and Mendelson (2014), listed above, adherence of educators and feasibility of the program were notable challenges. Yoga4Classrooms's CEO Lisa Flynn has also noted, in a 2017 interview, that there is resistance and reluctance of educators to commit and adhere to a yoga program, even when it is provided by their school district (Will, 2017). Adherence and feasibility struggles may be due to a variety of factors, including schedule constraints, workload, and/or resistance attending a group session with coworkers. More research is needed regarding adherence, to see if programs being proposed for reducing teacher stress and burnout, including mindfulness-based stress reduction and cognitive behavioral therapy, are feasible options for educators. It is essential that intervention researchers inspect the practical and applicable aspects of their proposed interventions to ensure their usefulness for teachers.

Online Intervention

Online intervention goes by various terms including: Internet-delivered, e-therapy, telehealth, web-based, and technology-mediated. Accessibility and efficacy are advantages offered from online intervention compared to other modalities for delivery of an intervention, such as in-person (Andersson, 2016). As access to technology and the internet have increased, so has research assessing psychological interventions provided through an online modality. The growing interest of incorporating online intervention is largely supported by research, including reviews of research and meta-analyses (Suh, Sohn, Kim, & Lee, 2019). Online interventions are effective in treating stress-related health problems (Amstadter, Broman-Fulks, Zinzow, Ruggiero, & Cercone, 2009), health problems (Cuijpers, van Straten, Andersson, & van Oppen, 2008), youth health conditions

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(Stinson, Wilson, Gill, Yamada, & Holt, 2009), anxiety (Spek et al., 2007), and depression (Andersson & Cuijpers, 2009; Richards & Richardson, 2012). In addition, online interventions display comparable results to traditional, in-person intervention (Andersson, 2016). Given the comparable results to in-person intervention, coupled with the heightened accessibility and privacy online modalities offer, online intervention has promising clinical outcomes for groups that may traditionally have difficulty with adherence and access, such as public educators. Online intervention may also serve as a familiar platform for educators given that continuing education and training opportunities are often offered in online format.

Yoga as an Online Intervention

Currently, delivery of yoga as an intervention for educators via platforms other than in-person has yet to be done. Yoga provided online, accessible at any time, and anonymous to co-workers, may help to improve the feasibility of yoga participation by educators. Furthermore, online yoga can be found on several sites, with top instructors, all accessible at a fiscally reasonable subscription fee. If online yoga were found to be as effective as in-person yoga, the on-line platform may be more financially feasible and sustainable for school districts compared to paying for in-person yoga instructors several times a month or week. It may also be more feasible and affordable for individual educators to use when their school or district does not provide funding for such interventions. In addition, online yoga offers the possibility of privacy, which is not a characteristic of a live, in-person intervention conducted in schools.

Study Goals

This study compared in-person yoga and online yoga outcomes for K-8 educators. Outcomes examined were psychological distress, burnout, coping self-efficacy, and mindfulness. Those participants completing yoga, whether online or in-person, were also compared to a control

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group who received no treatment for the given outcome variables. Feasibility, acceptability, and adherence were assessed, reported on, and compared for all groups. It was hypothesized that yoga, whether in-person or online, would produce reduced burnout and stress, along with improved mindfulness and coping self-efficacy, compared to the control group. It was also hypothesized that online yoga would have greater adherence and higher reported feasibility, compared to the in-person group.

Study Aims

Aim 1: Investigate the impact of yoga on psychological distress and burnout in K-12 educators.

Aim 2: Investigate the impact of yoga on mindfulness and coping efficacy in K-12 educators.

Aim 3: Establish the feasibility and acceptability of online compared to in-person yoga sessions for K-12 educators.

CHAPTER 2: METHOD

Participants

Participants were recruited from Dearborn Public Schools through flyers distributed electronically through the district and word-of mouth. See example flyers in Appendix C. Study inclusion criteria required all participants to a) be currently employed as a classroom educator or student teacher in any grade K-8, b) have access to a computer/smart device and a reliable internet connection, and c) have reliable transportation. Exclusion criteria included a) women in the third trimester of pregnancy, due to increased physical risk, and b) those currently attending at least one online or in-person yoga class each week. All inclusion and exclusion criteria were assessed via a demographic form that potential participants completed at their first information session. Given the exploratory nature of this study, the sample size target was 45 participants, which is in line

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with other exploratory studies similar in nature (Flook et al., 2013; Frank et al., 2015; Ancona & Mendelson, 2014).

The information for this study was distributed to K-8 educators in the Dearborn Public School district. Seventy-one educators reached out with interest. Of those individuals, 34 indicated that they would be interested in participating in the future if there was a continuation of the project the following year due to either a) not wanting to add another commitment to their current schedule or b) being unwilling to be randomly assigned to a group. From the remaining 37 participants, four were unable to participate due to the exclusionary criteria. Thus, there were 33 participants total in the current study. Most participants fell within the age of 31 to 50 years (60.6%). The sample was 100% female in gender, and ethnicity was dominantly white (87.9%). A majority of the sample had 20 or more years of teaching experience (42.4%), with one to five years of experience being the 2nd largest representation of the sample (27.3%). Grades K-4 educators represented a majority in the sample (66.7%), with the dominant subjects taught being all inclusive (36.3%), music/art (18.2%), and special education/speech/social work (15.1%). Seventy-eight percent of the sample reported previous experience in yoga, with 45.5% having done less than or equal to 10 yoga session previous to enrollment in the study.

Of note, both the recruitment and study itself occurred during the last two months of the school year. This presented a unique stress context for the educators due to factors that occurred during this time period including: significant religious and cultural holiday (all faculty were impacted either by personal participation, student participation, or both), state testing (NWEA, M-STEP, MI-Access), end of year classroom assessments for students, end of year teacher evaluations, field trips, and field days. Participants were randomly assigned to either the control (waitlist), yoga (in-person), or yoga (online) group, upon completing their intake and signing the

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consent form. No participants dropped out from the study. See Tables 3 and 4 in Appendix A for a demographic breakdown of participants, both overall and per group.

Measures

Feasibility and demographic questionnaires can be found in Appendix B. All open source measures can be found in Appendix C. Table 1 displays open source measures with item examples.

Demographic information was collected from each participant during the first meeting. Participants completed a questionnaire asking their age, gender, race/ethnicity, number of years teaching, grade they currently teach, what subject they teach, type of school they teach at (public, private, or charter), average number of students in their classroom, and whether they have had any previous yoga experience. The background data were used for descriptive purposes and to test for covariates.

Psychological Distress was assessed at each time point using the Brief Symptom Inventory-18 (BSI-18; Derogatis, 2001). There are three subscales: Somatization, Depression, and Anxiety. Participants are asked to rate the 18 symptom statements on a 5-point Likert scale based on their experience over the last two weeks. Items include "feeling blue," "feeling tense," and "pain in chest." The Global Severity Index (GSI) score identifies overall symptom severity and intensity. For the purpose of this study, the GSI was used as an indicator of overall psychological distress. The BSI-18 is a shortened version of the Brief Symptom Inventory (BSI), which has been used in previous research looking at psychological distress and teachers (Frank et al., 2015). The BSI-18, Global Severity Index has shown reliability (Cronbach's *alpha* = .93; Franke et al., 2017) for use in the general adult population. Reliability was run for the BSI-18 Global Severity Index across all time points in the current study (α = .84 to .92) and demonstrated consistent, good reliability.

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Burnout was measured at each time point using the Maslach Burnout Inventory-Educators Survey (MBI-ES; Maslach, Jackson, & Leiter, 1997), a 22-item assessment created specifically for educators. Participants are to read each item and rate the frequency, on a 7-point Likert scale, of how often they feel the way each item describes them, regarding their job, ranging from "Never" to "Every day." Example items include "I feel emotionally drained from my work," "I have accomplished many worthwhile things in this job," and "I don't really care what happens to some students." There are three subscales that the measure is comprised of, each with established reliability: Emotional Exhaustion (α = 0.90), Depersonalization (α = 0.76), and Personal Accomplishment (α = 0.76; Iwanicki & Schwab, 1981). The greater the score on each subscale, the more the individual is experiencing that aspect of burnout. The Emotional Exhaustion subscale is often used in research to represent the larger construct of burnout (Maslach, Leiter, & Schaufeli, 2008); thus, the emotional exhaustion aspect of burnout was examined for the current study. Reliability was run for the MBI-ES, Emotional Exhaustion subscale across all time points (α = .72- .88) and demonstrated consistent good reliability.

Mindfulness was assessed at each time point using the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Feldman et al., 2007). This 12-question self-report assesses a broad range of mindfulness and is non-specific to any mindfulness approach or meditation training. Example items include "I can accept things I cannot change," and "I try to notice my thoughts without judging them." Participants rate each of the 12 items on a 5-point Likert scale. All items are summed with three items being reverse scored to create an overall composite. Higher overall scores reflect a greater degree of mindfulness. This measure has been used previously with a sample of educators and was found to be a reliable measure of mindfulness for this population (Cronbach's *alpha* = .85; Becker, Gallagher, Whitaker, 2017). Reliability of

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the CAMS-R was run for the current sample (α = .70 to .79) and was found to be reliable at all timepoints.

Stress Coping Efficacy was assessed at each time point using the Coping Self-Efficacy (CSE; Chesney et al., 2006) scale. This 26-item, 11-point Likert scale measures an individual's perceived ability to cope effectively with life challenges. Participants are asked to rate each statement according to how confident they are that they would react in a certain way when things aren't going well. Example items include "Talk positively to yourself," "Develop new hobbies or recreations," and "Look for something good in a negative situation." All item scores are added together to create an overall score, with higher overall ratings indicating a greater degree of coping self-efficacy. This measure has not yet been used with K-12 educators as the primary sample. Reliability (Cronbach's *alpha* = .95; Chesney et al., 2006) has been established with adults facing a range of stressors and challenges related to medical conditions. For the current sample, reliability was run for the SCE (α= .95 to .96); the SCE demonstrated good reliability across all timepoints.

Feasibility was measured at each time point using a questionnaire created specifically for this study to get the opinion of participants. The survey consists of 6 questions, using a 5-pont Likert scale, relating to topics such as likelihood of attending yoga classes offered by their school district in different formats (in-person versus online) and the impact they believe yoga can have on them personally as well as their classroom interactions. An example item is: "If offered online yoga classes that you could do anytime, how likely would you be to do at least 1, 60-minute session per week?"

Adherence/Compliance was measured at each time point using attendance sheets for those assigned to the in-person yoga group, and via online written attendance confirmations for the

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online yoga group. Online participants complete the written attendance confirmations by sending the statement "I have completed this week's yoga session" to the research email address.

Acceptability was measured though a follow-up survey and a measure of the working alliance with the instructor. Acceptability in the current study was considered to be the participant acceptance and approval of the intervention experience. The survey consisted of two questions that were added to the feasibility questionnaire at the follow-up time point. These two questions used a 5-pont Likert scale (Strongly Disagree to Strongly Agree) and asked participants to rate their satisfaction with their yoga group experience as well as their plans to continue their yoga practice. Participant perceived alliance with the instructor was assessed using the Working Alliance Inventory-Short Revised (WAI-SR), which was modified for the current study. This 12-item, 5-point Likert scale measures an individual's perception of the therapeutic alliance. Therapeutic alliance is broken into three aspects for this measure: agreement on the tasks of therapy; agreement on the goals of therapy; development of an affective bond. Participants were asked to rate each statement according to their experience in session. For the purpose of the current study, the measure was modified to state "yoga" instead of "therapy" and "yoga instructor" in place of "therapist." To measure participant acceptability of the yoga experience, the task subdomain was used. Example items include "I believe the way we are working on my stress is correct" and "What I am doing in yoga gives me new ways of looking at my problem." The mean was calculated for all item scores for the task subdomain, with higher overall ratings indicating a greater degree of self-reported alignment with the intervention methods/activities. This measure has not yet been used with K-12 educators as the primary sample. Reliability (Cronbach's *alpha* = .91 overall and 0.81to 0.90 for the subdomains; Paap & Dijkstra, 2017) has been established with adults receiving

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outpatient therapy. For the current sample, reliability was run for the task subdomain of the WAI-SR administered at follow-up ($\alpha = 0.87$); the WAI-SR demonstrated good reliability.

Table 1. *Measures Completed with Examples*

Measure	Example Item(s)	Construct
Brief Symptom Inventory-18 (BSI-18)	"Feeling blue" "Feeling tense" "Pain in chest"	Psychological Distress
Maslach Burnout Inventory-Educators Survey (MBI-ES)	"I feel emotionally drained from my work" "I have accomplished many worthwhile things in this job" "I don't really care what happens to some students"	Burnout
Coping Self-Efficacy (CSE)	"Talk positively to yourself" "Develop new hobbies or recreations" "Look for something good in a negative situation"	Stress Coping Efficacy
Cognitive and Affective Mindfulness Scale-Revised (CAMS-R)	"I can accept things I cannot change" "I try to notice my thoughts without judging them" "I am able to focus on the present moment"	Mindfulness
Working Alliance Inventory- Short Revised (WAI-SR)	"I believe the way we are working on my stress is correct" "What I am doing in yoga gives me new ways of looking at my problem"	Acceptability/ Alliance
Feasibility Measure (designed for current study)	"If offered online yoga classes that you could do anytime, how likely would you be to do at least 1, 60-minute session per week?"	Feasibility

Hypotheses

Intervention Specific Hypotheses (Active Conditions vs Waitlist Control):

Hypothesis 1: The online yoga group will show greater reduction of psychological distress and burnout from pre-study to completion of the project compared to the control group.

Hypothesis 2: The online yoga group will show greater increase in mindfulness and stress coping efficacy from pre-study to completion of the project compared to the control group.

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Hypothesis 3: The in-person yoga group will show greater reduction of psychological distress and burnout from pre-study to completion of the project compared to the control group.

Hypothesis 4: The in-person yoga group will show greater increase in mindfulness and stress coping efficacy from pre-study to completion of the project compared to the control group.

Intervention Specific Hypotheses (Online vs In-person):

Hypothesis 5: The online yoga group will show greater reduction of psychological distress and burnout from pre-study to completion of the project compared to the in-person group.

Hypothesis 6: The online yoga group will show greater increase in mindfulness and stress coping efficacy from pre-study to completion of the project compared to the in-person group.

Feasibility-Specific Hypotheses:

Hypothesis 7: The online yoga group will have significantly greater adherence to yoga session attendance, compared to the in-person yoga group.

Hypothesis 8: Teachers will report greater likelihood and feasibility of attending online yoga compared to in-person yoga.

Hypothesis 9: Teacher reported interest in yoga will increase after the intervention (in-person and online) compared to pre-study.

Hypothesis 10: Teacher's perceived impact of yoga on their life and classroom will increase after the intervention (in-person and online) compared to pre-study.

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Acceptability Assessment (Exploratory Aim):

Acceptability of the yoga intervention experience is also assessed in the current study, as it contributes to intervention feasibility and adherence.

Design

There were three groups (online, in-person, and waitlist control) to which participants were randomly assigned. The online and in-person groups were active conditions which were provided an intervention of four yoga sessions, once per week. The waitlist control condition received no intervention during the data collection, but were provided access to the online intervention once data collection was completed. Data was collected over an eight-week period at four time-points (intake, yoga session two, yoga session four, and follow-up).

Procedure

Procedures by group and session can be found in Table 2.

During the initial session, interested individuals completed the consent documents approved by the Wayne State University Internal Review Board (IRB) and the first set of forms and questionnaires. At the end of the intake, all participants received a yoga mat and block to keep for use in the study. All participants were randomly assigned to the control, yoga in-person, or yoga online group. Though positive results have been found after only a single yoga class (Gothe et al., 2012), participants in the active conditions had access to 1 yoga class each week for four weeks, to assess change in outcomes over time. The waitlist control condition received no yoga classes. They completed all measures at the initial session, as well as during the weeks of session three and session five through an emailed Google form link sent from the research email address. Waitlist control participants used their initials as identification on the Google form and completing

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all measures took about 20 minutes at each time point. The online yoga videos were made available for the control condition once the follow-up session was completed. Those assigned to the in-person yoga group met once a week for a 60-minute yoga session, where attendance was taken each week though a sign-in sheet using initials only. Two in-person session time slots were made available for participants to select to attend each week, with them only being allowed to attend one. These slots were: 7am Thursday or 6:30am Friday each week. Participants were not addressed by name at any point by the researcher. After Session 3 and Session 5 participants were given all measures to complete in-person, which took approximately 20 minutes. Those assigned to the online group had access to one 60-minute yoga class each week. All online participants were sent a link each week, from the research email address, to view the corresponding yoga class. No personal, identifying information was required to access the content. Once online participants completed the yoga class each week, they sent a message to the research email stating, "I have completed this yoga session." During the weeks of yoga class two (session three) and four (session five), participants of the online yoga group also received a link for a Google form sent from the research email address, where they completed all measures for the second and third time. Online participants used their initials as identification on the Google form. Completing all measures for the online group took about 20 minutes. Participant responses to the Google form items were only viewable to the primary investigator and were timestamped upon completion. The yoga class provided for each online session paralleled the session being provided in-person each week. Two weeks following session five, follow-up measures were sent to all groups (online, in-person, and waitlist control) though a Google form link sent through the research email address. Similar to previous weeks, participants entered their initials for identification.

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Participating in this study was of no cost to participants. Beyond the yoga mat and block provided for participation in the study, participants were given a $5 Starbucks gift card for each week that they participated in the study, including the follow-up week. At the conclusion of the study (post follow-up) all participants were entered into a raffle to win a 5-class pass to a yoga studio with multiple locations in the Detroit-Metro area. All participants were also provided with a list of low-cost and no cost options for online and in-person yoga, once the study was completed.

Table 2. *Procedures by Group and Session**

Session Number	**In-Person**	**Online**
Session 1: Information session.	Individuals who reached out indicating interest in the study were scheduled for a one-hour initial information session. The researcher went over the consent form with the individual. After consent was obtained, participants completed all measures the first time.	Individuals who reached out indicating interest in the study were scheduled for a one-hour initial information session. The researcher went over the consent form with the individual. After consent was obtained, participants completed all measures for the first time.
Session 2: First Yoga Class	Participants met in-person, in a group setting for a 60-minute yoga session at one of the school district's gymnasiums. This included breathing exercises, meditation, intention setting, and gentle body postures and transitions (See Appendix E for details). Attendance was taken at the onset of the yoga session.	Participants received an email containing the link to the first yoga class video. Participants had access to this class 24-hours, every day, until the following Sunday at 4:59pm, when the video access was removed. Upon completing the first yoga class, participants sent a message to the research email address stating "I have completed the week one yoga session."

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Session 3: Second Yoga Class	Participants met in person, in a group setting for a 60-minute yoga session at one of the school district's gymnasiums. This included breathing exercises, meditation, intention setting, and gentle body postures and transitions (See Appendix E for details). Attendance was taken at the onset of the yoga session. After the yoga class was complete, participants completed all measures for the second time.	Participants received an email containing both, the link to the second yoga class video and a link to a Google form survey. Participants had access to this class 24-hours, every day, until the following Sunday at 4:59pm, when the video access was removed. Upon completing the second yoga class, participants sent a message to the research email address stating "I have completed the week two yoga session." After the yoga class was completed, participants followed the survey link in the email and complete all measures for the second time via Google forms. Completion and submission of these measures were timestamped.
Session 4: Third Yoga Class	Participants met in-person, in a group setting for a 60-minute yoga session at one of the school district's gymnasiums. This included breathing exercises, meditation, intention setting, and gentle body postures and transitions (See Appendix E for details). Attendance was taken at the onset of the yoga session.	Participants received an email containing the link to the third yoga class video. Participants had access to this class 24-hours, every day, until the following Sunday at 4:59pm, when the video access was removed. Upon completing the third yoga class, participants sent a message to the research email address stating "I have completed the week three yoga session."

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Session 5: Fourth Yoga Class	Participants met in-person, in a group setting for a 60-minute yoga session at one of the school district's gymnasiums. This included breathing exercises, meditation, intention setting, and gentle body postures and transitions (See Appendix E for details). Attendance was taken at the onset of the yoga session. After the yoga class was complete, participants completed all measures for the third time.	Participants received an email containing both, the link to the fourth yoga class video and a link to a Google form survey. Participants had access to this class 24-hours, every day, until the following Sunday at 4:59, when the video access was removed. Upon completing the fourth yoga class, participants sent a message to the research email address stating "I have completed the week four yoga session." After the yoga class was completed, participants followed the survey link in the email to complete all measures for the third time via Google forms. Completion and submission of these measures was timestamped.
Two Week Follow-up	During the second week after the yoga classes had completed, participants were emailed a link to a Google form survey that remained active for one week. After completing the follow-up survey and the measures (for the fourth time), participants sent a message to the research email address stating "I have completed the follow-up survey." Completion and submission of these measures was timestamped.	During the second week after the yoga classes had completed, participants were emailed a link to a Google form survey that remained active for one week. After completing the follow-up survey and the measures (for the fourth time), participants sent a message to the research email address stating "I have completed the follow-up survey." Completion and submission of these measures was timestamped.

*The waitlist control condition received no yoga classes and completed all measures at the information session and through an emailed Google form link during the week of Session 3 and Session 5, as well as at follow-up.

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CHAPTER 3: RESULTS

Preliminary Analyses

There were no missing data among participants that participated at each time point. Beyond the intake, however, each session resulted in several missing participants. With 33 participants and four time points, there was potential for 132 observations, or data points. Accounting for missing data, the final number of data points available for analyses were 119. The SPSS 25 program was used for all statistical calculations. All intervention specific hypotheses were analyzed using linear mixed modeling to account for the missing time points for various participants. Using linear mixed modeling, as opposed to repeated measures ANOVA or other similar methods, allows greater retention and use of more of the data. With a repeated-measures ANOVA the missing data is handled via listwise deletion whereas with linear mixed modeling all data points are used for each time point to create a mean, and the means across time points are then compared. Thus, the linear mixed modeling approach allows for a greater use of the collected data for each participant. Although the low sample size is a limitation in the current study, it is important to keep in mind that the current study is focused on feasibility and preliminary results of yoga as an intervention for educators and that the longitudinal nature of the study offers greater observation points.

Scaled scores were calculated for each measure. The four outcome variables (Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE), and Working Alliance Inventory- Short Revised (WAI-SR) were screened and found to meet all necessary assumptions. For all variables at all time points, their range, means, and standard deviations were within possible limits (Appendix A, Tables 5a-8b). The coefficient of variation for each variable was found to be greater than .01. Analysis of variable *Z*-scores shows

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that there were no outliers within any variable datasets, where the Z-score exceeded +/-3.29 (α = .001). Mahalanobis Distance was calculated (using df = 4) to assess for any multivariate outliers. As none of the outlier statistics fell above the X^2 critical value of 18.467 (α = .001), no multivariate outliers were found.

Covariates: Nine variables were considered for potential inclusion in the linear mixed models analyses as covariates. These variables consisted of measures of age, years teaching, gender, ethnicity, current grade teaching, subject taught, number of students in classroom, previous yoga experience, number of yoga classes previously attended. A bivariate correlation was run for each timepoint to determine which of these variables, if any, were related to the mindfulness, burnout, psychological distress, stress-coping/self-efficacy, and/or working alliance measures. Results indicated that there were significant correlations between 'subject teaching' and the CAMS-R and MBI-ES-EE outcome variables at time point one (Appendix A, Table 9). Correlations run using data from the fourth time point resulted in a significant relationship between the MBI-ES-EE outcome variable and the 'previous yoga experience' and 'number of previous yoga classes' demographic variables as well as the BSI-18 outcome variable and "subject teaching" (Appendix A, Table 12). Thus, 'subject teaching,' 'previous yoga experience,' and 'number of previous yoga classes' were included in the linear mixed models analyses as covariates.

Analytical Approach

Analysis of the first six hypotheses included 33 individuals (100% of the sample) across the four time points. Given missing data points among participants, a linear mixed model approach was used to analyze the data as a complete set without loss of valuable time-point data. For each intervention hypothesis, time was nested within person for each model assessing outcome difference between group assignments. The independent variable of interest was the group

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assignment as a categorical variable (in-person, online, or waitlist control). All potential covariates as identified by Pearson product-moment correlation were entered into the model simultaneously (i.e. subject taught, previous yoga experience, and how many yoga classes the participant had previously participated in). One-tailed tests* were used with $p < .05$ representing significance. Given no evidence that yoga produces iatrogenic effects along with the study's primary interest being in outcome improvement, a one-tailed test is appropriate.

Given statistical significance's (*P*) dependence on sample size and effect size (Sullivan & Feinn, 2012), the occasions where the current analyses have resulted in a meaningful effect size but not statistical significance ($p < .05$) are likely due to the lower number of participants in the current study. As effect size is independent of sample size, it is important to focus on this measure of meaningfulness for interpretation of the results of the current study. Attention to effect sizes also allows for understanding of the magnitude to which the treatment impacted the sample, rather than only on whether or not it did affect them. Effect size interpretation in the current study is done using Cohen's classified effect sizes of small (d= .2), medium (d=.5), and large ($d \geq .8$) (Cohen, 1988). Both *P*-values and effect sizes are reported.

Psychological Distress & Burnout (Hypotheses 1, 2, & 3)

For the hypotheses that the online yoga group and in-person yoga group would show greater reduction of psychological distress and burnout from pre-study to completion of the project compared to the control group, no statistically significant findings were present. A meaningful effect was, however, found when comparing active conditions to the waitlist control regarding psychological distress. Neither active condition performed significantly or meaningfully better than the other regarding psychological distress and burnout reduction. The dependent variables of

* p-values from two-tailed test were manually divided by two in order to produce one-tailed results

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interest for these analyses were psychological distress (Brief Symptom Inventory-18 (BSI-18)) and burnout (Maslach Burnout Inventory-Educators Survey (MBI-ES)). See Appendix A, Table 13.

Psychological Distress. The results indicate that the online group did not perform significantly better than the waitlist control, $F(1, 20.97) = 2.27$, $p = .074$, nor did the in-person group, $F(1, 17.97) = 2.42$, $p = .069$. However, an examination of effect sizes indicates that both groups (online, $d = .20$; in-person, $d = .20$) showed a small meaningful effect reducing psychological distress compared to the waitlist control. Among the two active groups, neither performed significantly or meaningfully better in impacting psychological distress than the other, $F(1, 24.12) = .036$, $p = .43$, $d = .026$. See figures 1a/b. Concerning covariates, subject taught was found to account for significant variance for both the online group, $F(1, 13.87) = 3.70$, $p = .038$, $d = .17$, and in-person group, $F(1, 14.83) = 6.47$, $p = .012$, $d = .23$, compared to waitlist control, regarding the psychological distress outcome. Thus, the subject that the educator taught was significantly related to their psychological distress outcome for both active groups.

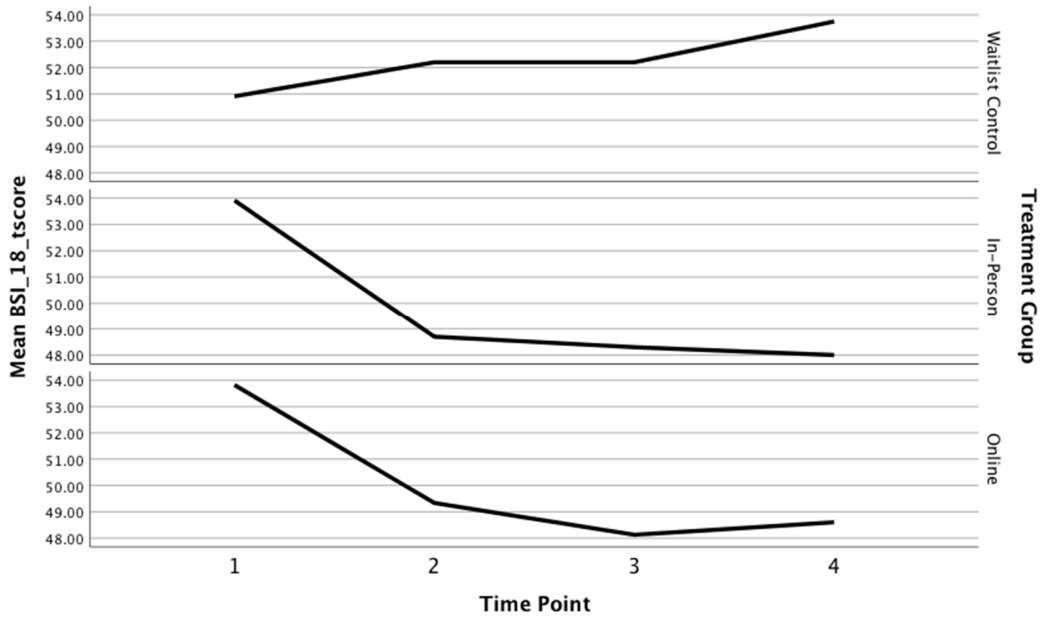

Figure 1a. Psychological Distress Ratings Over Time per Group

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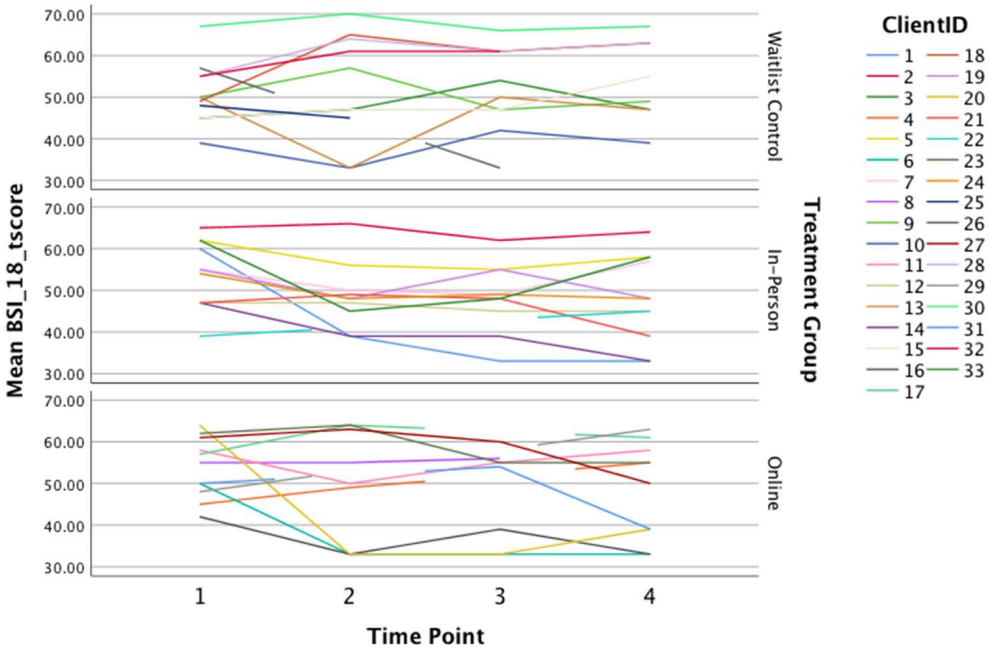

Figure 1b. Psychological Distress Ratings Over Time per Group: Subject View

Burnout. The results indicate that neither active group (online nor in-person) performed significantly or meaningfully better than the waitlist control, $F(1, 19.30) = .029$, $p = .43$, $d = .024$ (online), $F(1, 74) = 1.55$, $p = .19$, $d = .18$ (in-person). Among the two active groups, neither performed significantly or meaningfully better in impacting burnout than the other, $F(1, 17.94) = .51$, $p = .24$, $d = .089$. See figures 2a/b None of the entered covariates were found to account for significant variance in the burnout outcome.

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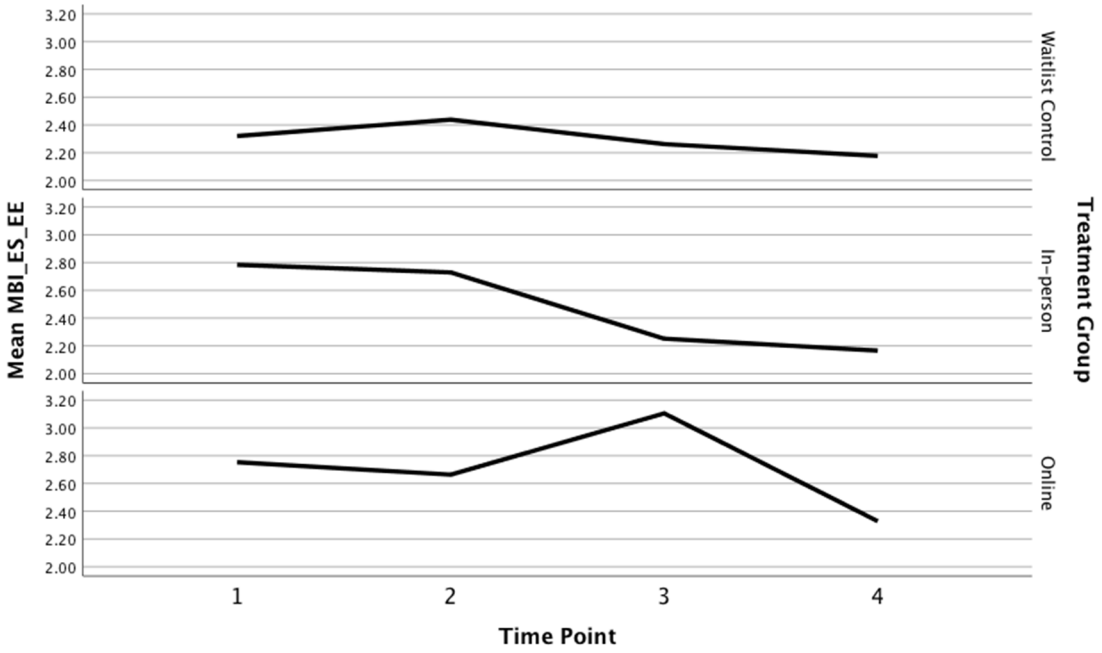

Figure 2a. Burnout Ratings Over Time per Group

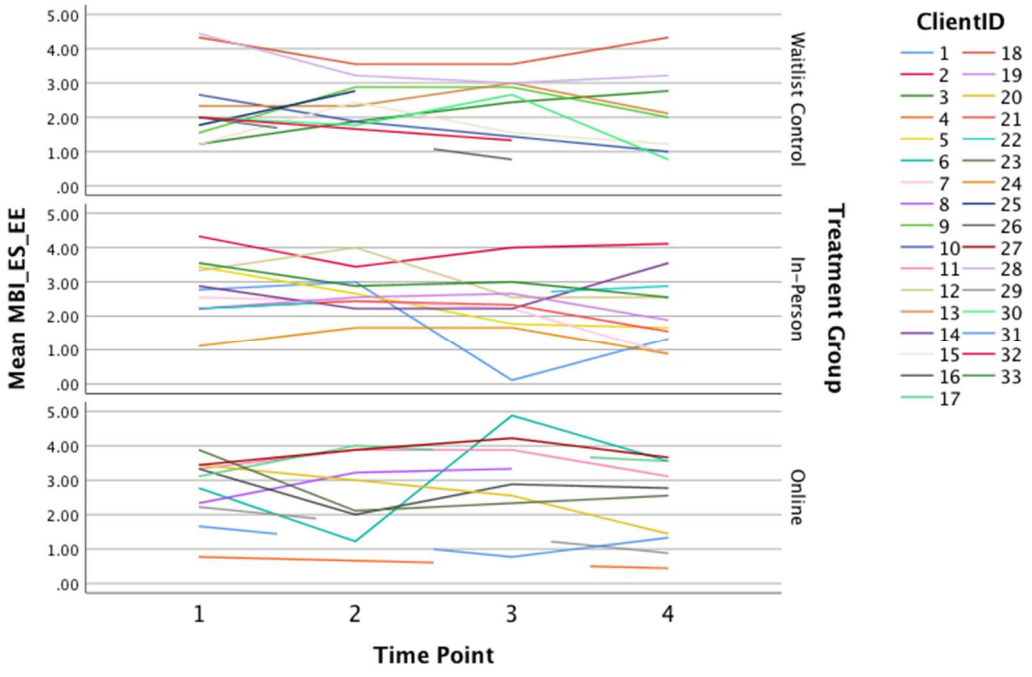

Figure 2b. Burnout Ratings Over Time per Group: Subject View

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Mindfulness & Stress Coping (Hypotheses 4, 5, & 6)

The online yoga group and in-person yoga group were expected to show greater increase in mindfulness and stress coping efficacy from pre-study to completion of the project compared to the control group. Significant and meaningful findings were present depending on the condition. The online group performed consistently better than the control, while the in-person group performed better than the control regarding stress-coping efficacy, but not mindfulness. Neither active condition, however, performed significantly better than the other regarding mindfulness and stress coping efficacy. However, the online condition was found to produce more meaningful results compared to the in-person group in regard to mindfulness. The dependent variables of interest for these analyses were mindfulness (Cognitive and Affective Mindfulness Scale-Revised (CAMS-R)) and stress coping (Coping Self-Efficacy (SCE)). See Appendix A, Table 13.

Mindfulness. The results indicated that the online group performed significantly and meaningfully better than the waitlist control, $F(1, 20.42) = 3.42$, $p = .040$, $d = .23$. The in-person group, however, did not perform significantly or meaningfully better than the waitlist control regarding mindfulness, $F(1, 25.27) = 1.88$, $p = .091$, $d = .15$. Among the two active groups, neither performed significantly better in impacting mindfulness than the other, $F(1, 36.01) = 1.70$, $p = .10$, though examination of the effect sizes indicates that the online group showed a small meaningful effect ($d = .20$) in mindfulness increase compared to the in-person group. See figures 3a/b. Concerning covariates, subject taught was found to account for significant and meaningful variance for both the online, $F(1, 15.81) = 5.35$, $p = .017$, $d = .21$, and in-person, $F(1, 16.35) = 7.17$, $p = .008$, $d = .23$, conditions compared to waitlist control, regarding mindfulness outcomes. Meanwhile, previous yoga experience, $F(1, 15.54) = 3.68$, $p = .037$, $d = .90$, and number of previous classes, $F(1, 17.04) = 7.72$, $p = .007$, $d = .32$, accounted for significant and meaningful

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variance regarding the mindfulness outcome when comparing the online condition to the in-person condition.

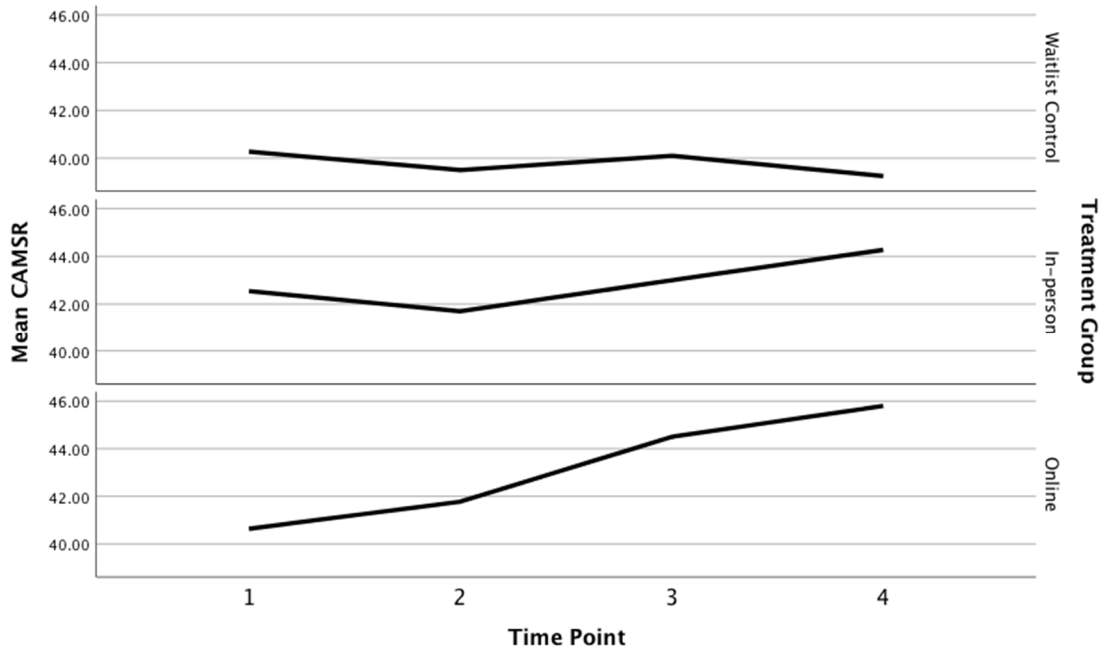

Figure 3a. Mindfulness Ratings Over Time per Group

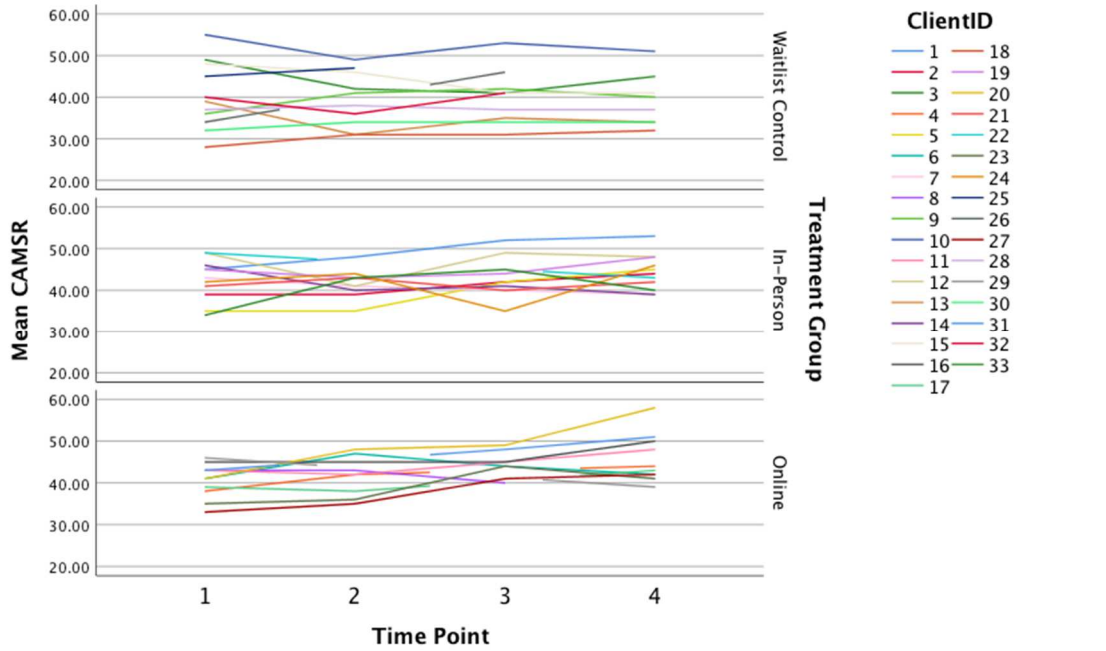

Figure 3b. Mindfulness Ratings Over Time per Group: Subject View

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Stress Coping Efficacy. The results indicate that both active groups (in-person and online) performed significantly and meaningfully better than the waitlist control, $F(1, 29.06) = 3.31$, $p = .040$, $d = .24$ (online), $F(1, 74) = 6.99$, $p = .005$, $d = .27$ (in-person). Between the two active groups, however, neither performed significantly or meaningfully better in impacting stress coping efficacy than the other, $F(1, 73) = .059$, $p = .40$, $d = .032$. See figures 4a/b. None of the entered covariates were found to account for significant variance in the stress coping efficacy outcome.

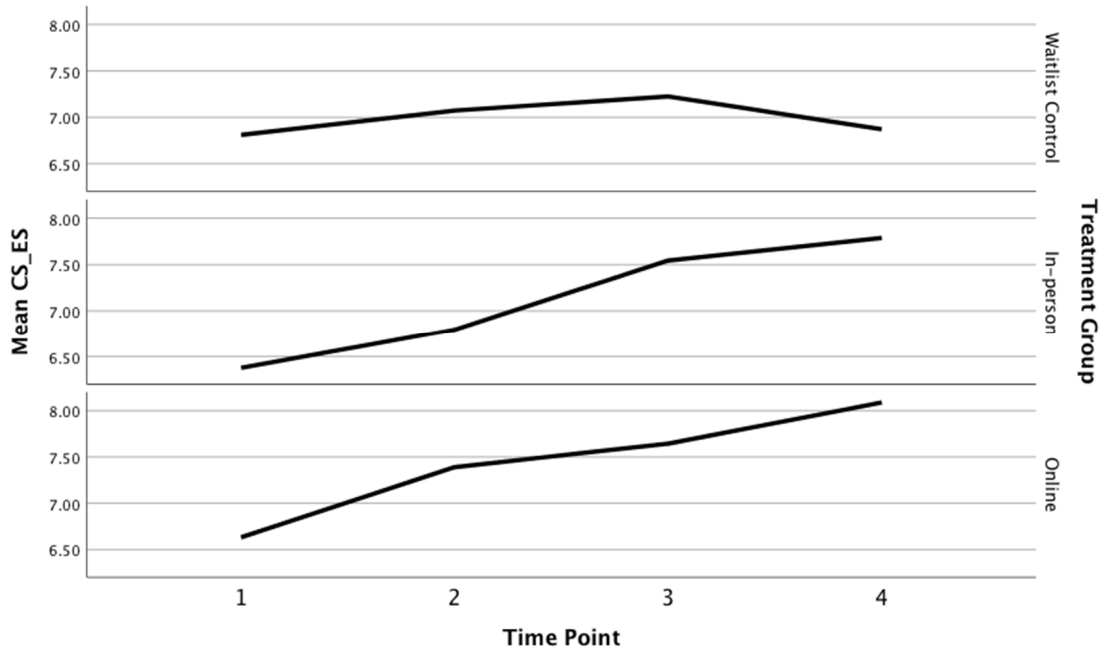

Figure 4a. Stress Coping Efficacy Ratings Over Time per Group

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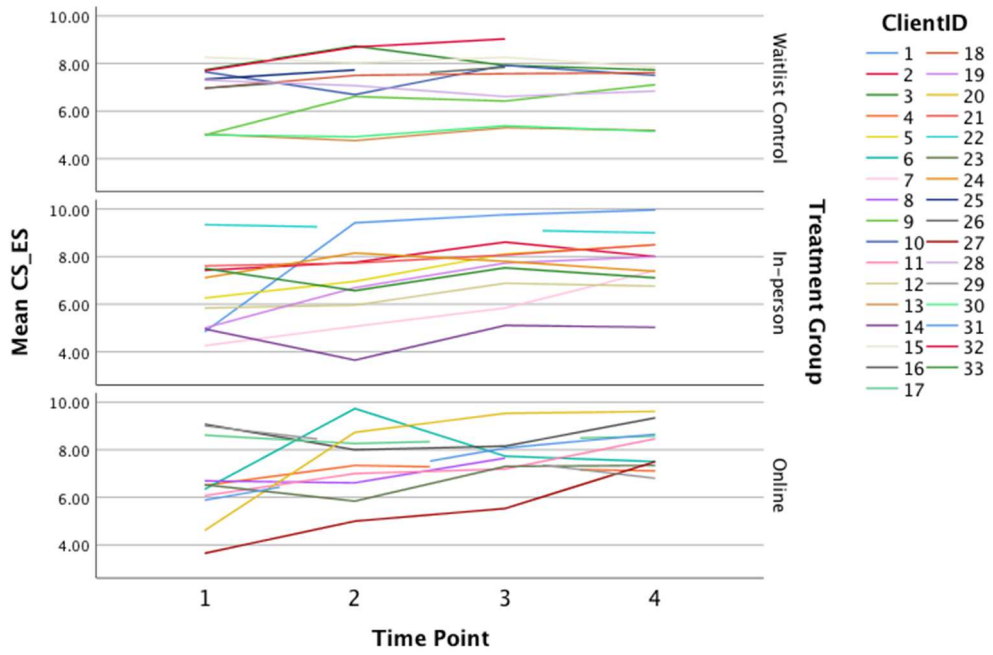

Figure 4b. Stress Coping Efficacy Ratings Over Time per group: Subject View

Online Yoga compared to In-Person Yoga: Adherence (Hypothesis 7)

Adherence was assessed by participant attendance during the four active intervention weeks. Average attendance from the in-person group (93.18%) was higher than the average attendance from the online group (72.7%). Further, for each yoga session the in-person group showed better attendance than the online group (see Appendix A, Table 14).

Self-Reported Feasibility of Online versus In-Person Yoga (Hypothesis 8)

The yoga perceptions questionnaire (see Appendix B) asked all participants two questions on a 5-point Likert rating scale regarding likelihood of their participation in yoga. Specifically, the questions asked: "If offered in-person yoga classes directly before/after school, how likely would you be to do at least one, 60-minute session?" and "If offered online yoga classes that you could do at any time, how likely would you be to do at least one, 60-minute session?" A paired-samples *t*-test was used to determine whether there was a statistically significant mean difference between participants self-identified feasibility among online yoga classes and in-person yoga classes. Given

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the lack of normal distribution in the response patterns for the yoga perceptions questionnaire, the data were transformed to produce a normal distribution. A paired *t*-test was run both on the transformed and non-transformed data, both resulting in non-significant findings. Given that the transformation of the data did not have a significant impact on the analysis performed, the findings presented are that of the non-transformed data in an effort to better maintain interpretability. Participants did not identify online yoga (M = 4.27, SD = 0.98) as a significantly more feasible option compared to in-person yoga (M = 4.21, SD = 0.96), t(32) = 0.23, p = .82, d = .040. Descriptive analyses of the data show that a majority of participants rated the feasibility questions as "Likely" or "Very Likely," for both online (78.7% of participants) and in-person (69.7% of participants). Participants were also asked at baseline whether they would be more likely to participate in yoga if it were offered in person or online. A descriptive analysis was run on this dichotomy and results indicated that a slight majority (63.6%) of participants reported that they would be more likely to participate in yoga if done in person, as opposed to online. See Appendix A, Table 15.

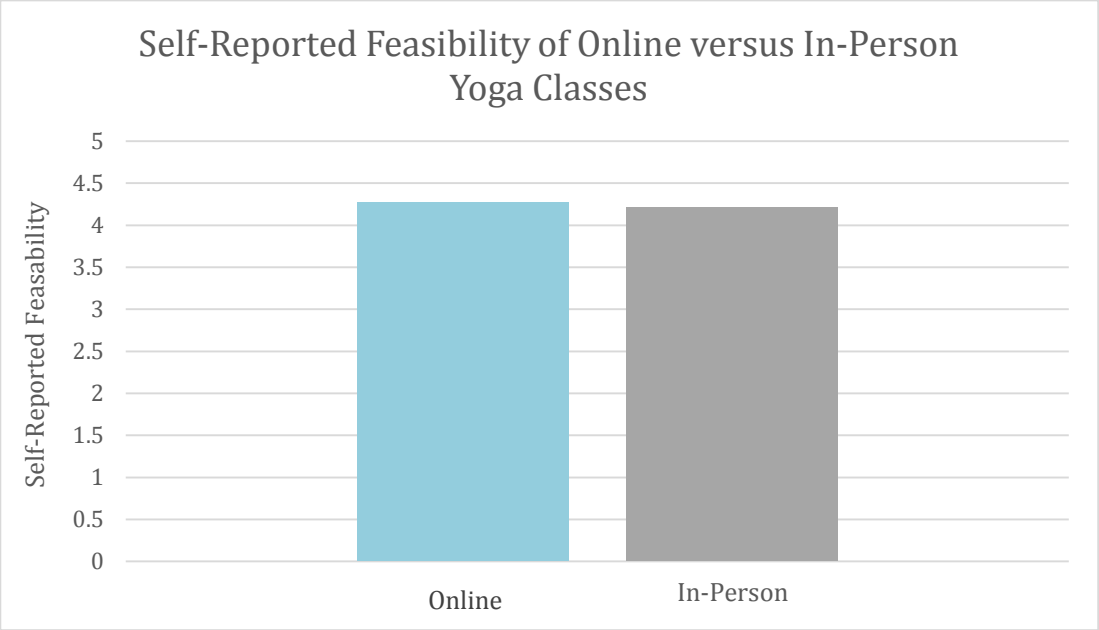

Figure 5. Self-reported Feasibility of Online versus In-person Yoga Classes.

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Reported Interest in Yoga: Pre- to Post-Study (Hypothesis 9)

Due to missing follow-up (timepoint four) data, one case was excluded for analyses related to the ninth hypothesis. Given significant negative skew for the "interest in yoga" item at both pre- and post-intervention, a reflection and log10 transformation was performed on the data from both time points. A paired *t*-test was run both on the transformed and non-transformed data, both resulting in non-significant findings. Given that the transformation of the data did not have a significant impact on the analysis performed, the findings presented are that of the non-transformed data in an effort to better maintain interpretability. Participants did not indicate significantly greater interest in participating in yoga from pre-intervention (M=4.66, SD=0.66) as compared to post-intervention (M = 4.57, SD = 1.03), t(20) = 0.53, p = .61, d = .11. Of note, descriptive analyses of the data show that a large majority of participants rated their interest in yoga as "Likely" or "Very Likely," both pre-intervention (90.5% of participants) and post-intervention (85.8% of participants). See Appendix A, Table 16.

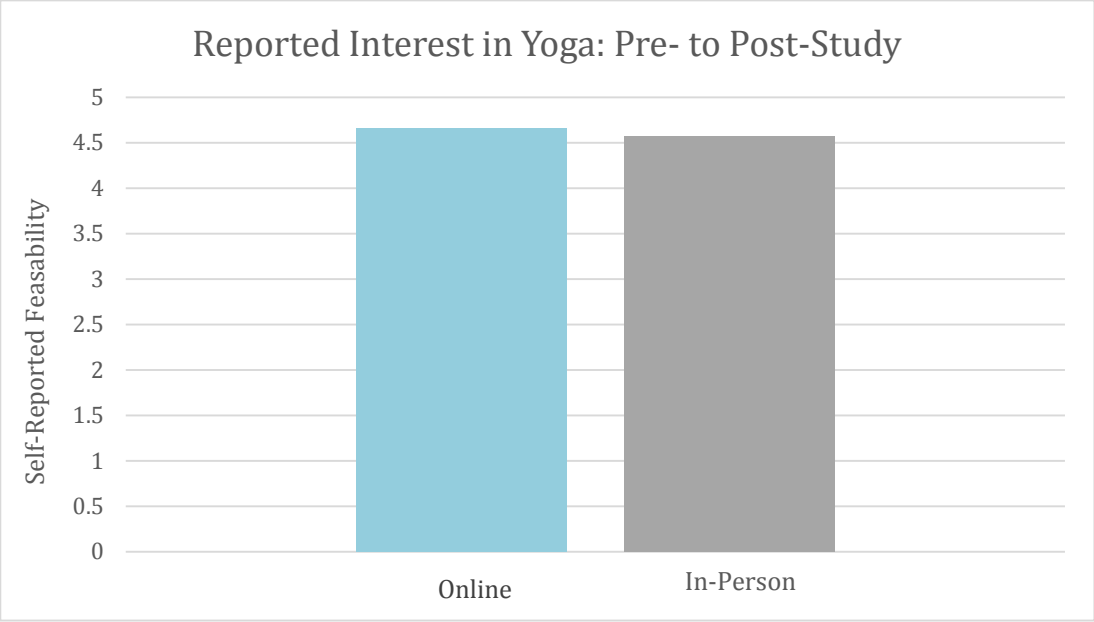

Figure 6. Self-reported Interest in Yoga: Pre- to Post-Study.

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Perceived Impact of Yoga on Well-Being & Classroom: Pre- to Post-Study (Hypothesis 10)

Due to missing follow-up (timepoint four) data, one case was excluded for analyses related to the tenth hypothesis. Given the lack of normal distribution in the response patterns for the yoga perceptions questionnaire items used in the analyses, reflection and log10 transformation was performed to produce a normal distribution of the data. A paired *t*-test was run both on the transformed and non-transformed data, both resulting in non-significant findings. Given that the transformation of the data did not have a significant impact on the analysis performed, the findings presented are that of the non-transformed data in an effort to better maintain interpretability. Regarding perceived positive impact of yoga on their personal well-being, participants did not indicate a significant change from pre-intervention (M = 4.52, SD = 0.81) as compared to post-intervention (M = 4.71, SD = 0.64), t(20) = -1.073, p = .30, d = .23. Of note, descriptive analyses of the data show that a large majority of participants rated their perceived impact of yoga on their personal well-being as "Agree" or "Strongly Agree," both pre-intervention (80.9% of participants) and post-intervention (90.5% of participants). Further, no participants rated their perceived impact of yoga on their personal well-being as "Disagree" or "Strongly Disagree."

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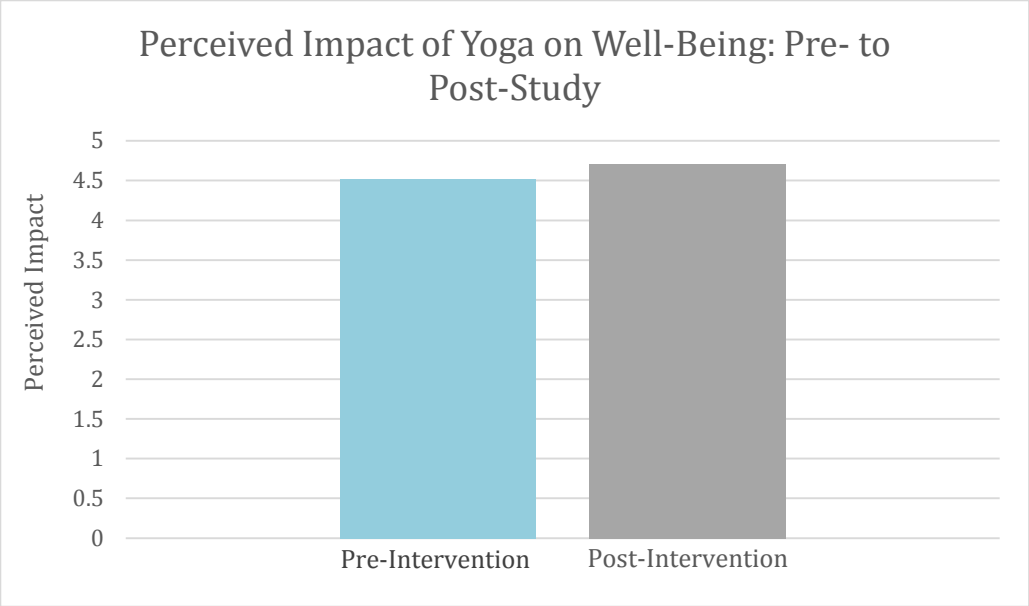

Figure 7a. Perceived Impact of Yoga on Well-being: Pre-to-Post-Study.

Concerning perceived positive impact of yoga on their classroom, results indicate that after intervention participation participants perceived yoga as having a greater impact on their classroom dynamics and students (M = 4.76, SD = 0.54) when compared to pre-intervention (M = 4.05, SD = 0.97), t(20) = -3.42, p = .003, d = .75. Descriptive analyses of the data show that a slight majority of participants rated their perceived impact of yoga on their classroom dynamics and students as "Agree" or "Strongly Agree" at pre-intervention (66.7% of participants), whereas a large majority rated in this fashion post-intervention (95.3% of participants). See Appendix A, Table 17.

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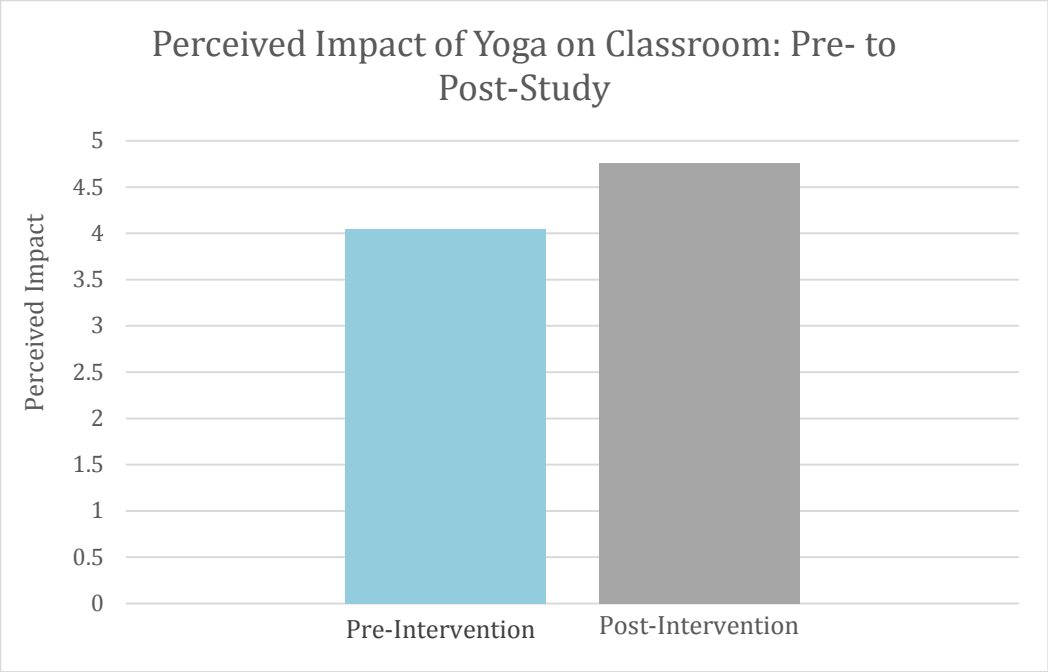

Figure 7b. Perceived Impact of Yoga on Classroom Dynamics and Student Interactions.

Acceptability

Acceptability was measured with participants in the active groups (in-person and online) through a follow-up survey and a measure of working alliance with the instructor also given at follow-up. Of the 22 participants in the two active groups, 21 completed the follow-up measures. Thus, one participant was excluded from the acceptability analyses performed due to missing data. Given the lack of normal distribution in the response patterns for the yoga acceptance questions and the WAI-SR, the data were transformed to produce a normal distribution. Independent *t*-tests were run both on the transformed and non-transformed data, both variations resulting in non-significant findings. Given that the transformation of the data did not have a significant impact on the analyses performed, the findings presented are that of the non-transformed data in an effort to better maintain interpretability.

When participants were asked to rate the statement "I am satisfied with my yoga group experience" on a 5-point Likert scale (1= Strongly Disagree to 5= Strongly Agree), 85.7% selected

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"Agree" or "Strongly Agree." Additionally, 100% of participants rated this statement as "Somewhat" or above, meaning that 0% rated this item as "Disagree" or "Strongly Disagree." Results overall indicated high satisfaction with the yoga group experience (M = 4.62, SD = 0.74). Participants in the online yoga group (M = 4.40, SD = 0.84) did not report significantly different levels of satisfaction compared to the in-person yoga group (M = 4.82, SD = 0.60), t(19) = 1.31, p = .20, d = .57 (Appendix A, Table 18).

Participants were asked to rate the statement "I plan to continue my yoga practice" on a 5-point Likert scale (1= Strongly Disagree to 5= Strongly Agree); 76.2% selected "Agree" or "Strongly Agree." Furthermore, 19% of participants rated this statement as "Somewhat," whereas only one individual (4.8%) rated this statement as "Strongly Disagree." No individuals rated this item as "Disagree." Overall, participants reported that they were likely to continue their yoga practice (M = 4.14, SD = 1.06). Participants in the online yoga group (M = 4.30, SD = 0.82) did not report significantly different levels of likelihood to continue their yoga practice compared to the in-person yoga group (M = 4.00, SD = 1.26), t(19) = -0.64, p = .53, d = .28 (Appendix A, Table 18).

Self-reported agreement on tasks, part of the WAI-SR, was used as an additional measure of acceptability. Participants were asked to rate several statements related to agreement on tasks, such as "I believe the way we are working with my stress is correct," using a 5-point Likert scale (1= Seldom to 5= Always). The agreement on tasks score was calculated by obtaining the mean of the four items that create that domain. Overall, participant responses indicated high levels of agreement on tasks (M = 4.29, SD = .65). The outcome scores, when compared to the original rating scale titles (Seldom to Always), suggest that 85.6% of participants rated that there was overall agreement on tasks "Often" or "Always." Of additional note, no participant responses

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resulted in agreement on task scores that fell below 2.75 (out of 5). There was not a significant difference between the online (M = 4.20, SD = 0.76) and in-person (M = 4.36, SD = 0.56) group regarding self-reported views on agreement of tasks, t(19) = 0.56, p = .58, d = .24 (Appendix A, Table 18).

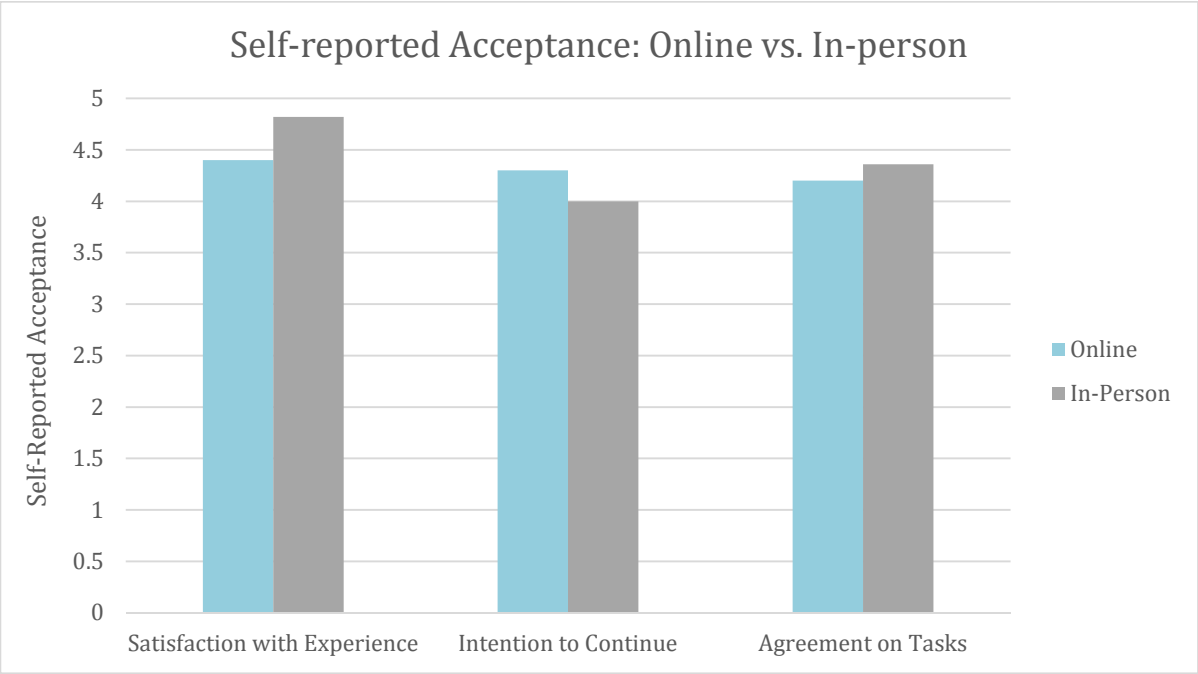

Figure 8. Self-reported Acceptance (Satisfaction with Experience, Intention to Continue, and Agreement on Tasks): Online vs. In-person.

CHAPTER 4: DISCUSSION

Pertaining to the intervention specific hypotheses, the results patterns were interesting among the various outcomes measured. For burnout and psychological distress, the four-week yoga intervention appeared not to have a statistically significant impact on reducing these experiences for either the online or in-person group. It is possible that neither active group had significant reduction in their burnout and/or distress scores due to their baseline scores not being significantly elevated (MBI-ES Emotional Exhaustion score average at baseline: 2.62 out of 6; BSI-18 t-score average at baseline: 52.88). While not statistically significant, both active

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conditions (in-person and online) had a small effect on reducing psychological distress. This indicates a clinically meaningful impact in which the active conditions were superior to the control condition. Reflecting on the statistically non-significant findings, is possible that those educators who were willing to participate in the study had lower elevations of burnout and psychological distress compared to the larger set of teachers from which they volunteered, specifically the educators that explained their lack of participation due to high stress. Where mindfulness and stress-coping efficacy are concerned, the online group consistently outperformed the waitlist control, whereas the in-person group only improved on stress-coping efficacy compared to the waitlist control. A small effect was found for both active groups compared to the control condition for mindfulness and stress coping efficacy. Further, the online group showed a small effect on increasing mindfulness compared to the in-person condition. These result patterns indicate that if a yoga program for educators is implemented, an online version may have greater breadth through targeting both mindfulness and stress-coping efficacy, rather than only stress-coping efficacy, and may outperform in-person groups when targeting mindfulness. Furthermore, access to online intervention allows participants the option of privacy in their practice that an "in-person only" modality could not offer.

When an intervention for a group of individuals is being planned, feasibility and adherence to the intervention is an important consideration. Interest in yoga did not significantly increase for active participants (online and in-person groups) from pre-to post-study, though this was likely due to their having high interest, as seen in their ratings at baseline (average baseline score of 4.66 out of 5 points; 5 points indicating higher interest in yoga participation). Participants in this study had no significant difference in preference for online vs. in-person yoga classes if they were offered once per week, as they rated both as desirable. Despite their self-reports of similar desirability of

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either method of doing the intervention, the in-person group consistently demonstrated better attendance rates during the intervention, with the average in-person attendance rate being 93.18% compared to 72.7% for the online group. These data are important to understand in the context of the intervention outcome data. Improved adherence to the in-person group may simply be due to the social pressure and expectation of other group members, rather than in-person group members attending yoga out of internal motivation to participate. If this was the case, it may be related to why the intervention group with greater adherence (in-person) did not produce the strongest impact on measured outcomes. Overall, results showed that the online group may outperform the waitlist control in more areas than in-person participants, despite the lower attendance rates. This may indicate that the online condition requires a lower "dose" of yoga if the internal motivation is greater, making motivation a great variable for future investigation. Further, it may be the case that a greater number of individuals would participate in yoga, though not consistently, if offered the more flexible schedule that an online modality can provide without any social expectation of attendance or perceived pressure to not miss a class.

Of practical importance, educators participating in the active group perceived their yoga participation to have a significant, positive impact on their students as well as on their classroom dynamics. No significant change was found from pre-to post-intervention for active participants on their belief that yoga participation had a positive impact on their personal well-being. It is essential to understand this lack of significance in the context of responses, given that participant's baseline positive beliefs about yoga were fairly high (average of 4.52 out of 5 points, with 5 indicating greater positive impact), representing that they entered the intervention holding the idea that participating in yoga would positively impact their well-being. This belief was maintained

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throughout the intervention as seen in their ratings at the last time point (average of 4.71 out of 5 points, with 5 indicating greater positive impact).

Another important aspect related to feasibility is how accepting participants were to the intervention provided, as this may be an important feature impacting adherence and continuation. Acceptability was measured through self-reported satisfaction, plans to continue their yoga practice, and their perceived agreement between themselves and the instructor on tasks completed during the intervention. Participants in the active groups, overall, showed high acceptability of the intervention presented across all three components assessed. Regarding the impact of intervention presentation (online vs in-person), there was no significant difference between groups. The overall high acceptance rates combined with the feasibility ratings between groups and pre-to post-study may offer support for previous work that has been done looking at principles of change (e.g. work by Norcross, Lambert, Beutler, and Castonguay). Principles of change work identifies various factors that contribute to client outcome in intervention including participant belief that the approach will work, agreement on goals, agreement on tasks, and alliance. Participants entered into the current study believing the intervention would be helpful to them, agreed on the tasks throughout, and left maintaining these beliefs as well as largely indicating intention to continue.

CHAPTER 5: LIMITATIONS & FUTURE DIRECTIONS

Sample Size

Collecting data from educators in the community during the school year is a critical component in assessing intervention feasibility, adherence, and outcomes for this population. Obtaining data from multiple time points is also an important element to understand patterns overtime. The high-stress characteristic of the target population, however, makes recruitment an obstacle. Before finding the participating school district for the current study, three districts denied

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the request to send the study information out to their educators. High stress and too many program initiatives in place were listed as the top reasons by the districts for not wanting to aid in recruitment. For the district that did participate, over 1500 K-8 educators received information on the current study, which was sent out multiple times over the course of four weeks. Only 71 teachers responded with interest and nearly half (47.8%) of those that reached out indicated being too stressed and/or busy to add another commitment to their current schedule and that they would really like to join in the future if possible. The small sample size within the current study is a testament to the feasibility challenges of research with an educator population who face full schedules and high stress levels. The time of year that the current study took place likely exacerbated the recruitment difficulties, as the educators had state assessments, school testing, field trips, and field days during the intervention. The study period also included Ramadan, a religious holiday covering several days, which involved many teachers and students. Though this time period likely added to recruitment difficulty, it is more likely a real depiction of the multiple factors that educators balance during the school year, as testing occurs throughout the school year as do several holidays and other various events (e.g. parent-teacher conferences, teaching reviews, assemblies, and school functions, etc.).

Another sample size factor for consideration could be the low rate of compensation compared to the time commitment for the current study. Higher compensation such as a greater monetary incentive would likely result in higher recruitment levels. However, it is important to note that increasing the compensation will decrease the degree to which a paid sample population represents the true population, who would likely be receiving no compensation for attending offered yoga sessions, and in many instances would be paying for their yoga classes. Sample size for the current study is certainly a limitation as it led to reduced analytical power. It would be of

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benefit for future studies to reassess these variable relationships with a more robust community sample to see if the current study's findings hold.

Participant Factors

Generalizability is vital in successful creation of an effective intervention for educator distress. Thus, sampling bias may be a limitation of the current study. It is possible that those educators who opted to participate in the current study may have had less baseline distress than the general target population of teachers. The recruitment patterns described under sample size limitations support this being a factor. Future studies may benefit from working with a district that incorporates yoga sessions as a district wide initiative. This may look like promotion of involvement via replacing a usual after school duty with time for yoga sessions for those who participate. This added support from a district could increase involvement from those who may otherwise feel too overwhelmed to participate.

Including high school educators would be another beneficial next step for future research, as the K-8 sample was a limitation of the current study. Furthermore, it would also be valuable in the future to conduct research separately at different school levels. This would allow for further assessment of possible differences between educators in terms of the age of students whom they teach.

Online Participation

The online treatment modality included in this study offers a unique contribution to the current literature on the impact of yoga with educators. Using online methodology, however, presents limitations. Specifically, knowing whether online participants actually participated in the yoga sequence is a challenge and the current design relies on participant honesty in self-report. Furthermore, during weeks that participants were to complete measures it is impossible to know,

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with the current design, if participants actually completed their measures directly after their completion of the yoga session at home. This is an important consideration, as any difference in the time between session participation and measure completion may impact the between-group outcome comparisons. A platform in which video access is timestamped may help alleviate this problem. Adding in such steps would allow for researcher confirmation that the yoga sequence was completed by the participant as well as timestamp comparison between yoga session completion and the questionnaire completion.

Online participants also did not have the same ease of access to ask questions regarding poses during the sequence. Although all participants were told that they could reach out through the research email with questions regarding poses at any time, the extra effort to email the researcher may have dissuaded online participants from asking yoga sequence and pose questions as they arose. Unanswered concern over postures and flow during the yoga class, in turn, may have impacted their experience of the yoga session and have led to increased difficulties with mindfulness and staying in the present moment. Ease of access for communication will be an important factor for future research on this topic to consider. A research designated cell phone that allows for participants to text or call may be a step toward a solution of this problem in future studies.

Treatment Consistency

The manualized yoga sessions are of great value to aid in consistency across groups and allow replicability in future studies, however, more could be done to ensure group-to-group treatment consistency. Video recording in-person sessions and comparing those to online sessions may help in identifying consistency. This method could include multiple raters assessing consistency and discrepancy.

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Outcome Measurement

The impact that educator psychological health has on the children in their classrooms is a driving factor for the current intervention research. Although improved outcomes of the educators themselves are extremely valuable, youth outcome improvement is an additional target of educator intervention. As such, a limitation of the current study is that youth outcomes were not assessed. Having outcome measurements for youth in classrooms with participating educators would allow researchers to better assess moderating effects of yoga with educators on the relationship between educator distress and student outcomes. Student outcomes could be measured with observational approaches such as non-affiliated classroom observers trained to assess the quality of social interactions in the classroom or more objective approaches including measures such as questionnaires or classroom grades.

CHAPTER 6: SUMMARY & IMPLICATIONS

While there is still a lot of work to be done in understanding the mechanisms that can most effectively treat educator distress and burnout while improving positive psychological skills, the current study makes some unique contributions in this effort. With students learning through modeling of their adult role models, the current study find support for online and in-person yoga in improving stress-coping skills as well as mindfulness in educators. Online yoga may additionally be able to offer a meaningful reduction in psychological distress that educators experience. With both modalities being highly accepted and feasible implementations for educators, school districts may want to consider providing online yoga access to educators. Online yoga provides a greater breadth of benefits and is a more financially feasible option for school districts, compared to offering consistent in-person yoga class access throughout the school year.

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APPENDIX A

Table 3. *Participant Demographics: Overall*

	All Participants
Age (Years)	
21-30	18.2%
31-40	30.3%
41-50	30.3%
51-60	15.1%
61-70	6.1%
Gender	
Female	100.0%
Male	0.0%
Ethnicity	
White	87.9%
Middle Eastern	3.0%
African American	3.0%
Hispanic	6.1%
Years Teaching	
1-5	27.3%
6-10	12.1%
11-15	9.1%
16-20	9.1%
20+	42.4%
Grade Level Currently Teaching	
K-4	66.7%
K-6	6.1%
K-8	18.2%
5-6	3.0%
7-8	3.0%
5-8	3.0%
Subject Currently Teaching	
Music/ Art	18.2%
Literacy Specialist	9.1%
Special Education/Speech/ Social Work	15.1%
Media (Library)	6.1%
All	36.3%
English	6.1%
Physical Education	6.1%
Science	3.0%
Average Number of Students per Class	
1-10	6.1%
11-20	24.2%
21-30	63.7%
31-40	3.0%
40+	3.0%
Participated in Yoga Previously	
Yes	78.8%
No	21.2%

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Table 3. *Participant Demographics: Overall - Continued*

How Many Previous Yoga Sessions	
≤ 10	45.5%
11-30	21.2%
31-50	18.1%
>50	15.2%
School Type	
Public	100.0%
Private	0.0%
Other	0.0%

Table 4. *Participant Demographics: By Group*

	Intervention Group		
Personal Characteristics	**Online**	**In-Person**	**Waitlist Control**
Age (Years)			
21-30	18.1%	27.23%	9.1%
31-40	36.4%	27.23%	27.23%
41-50	36.4%	27.23%	27.23%
51-60	9.1%	9.1%	27.23%
61-70	0.0%	9.1%	9.1%
Gender			
Female	100.0%	100.0%	100.0%
Male	0.0%	0.0%	0.0%
Ethnicity			
White	90.9%	81.8%	90.9%
Middle Eastern	9.1%	0.0%	0.0%
African American	0.0%	9.1%	0.0%
Hispanic	0.0%	9.1%	9.1%
Years Teaching			
1-5	36.4%	27.3%	18.2%
6-10	18.2%	9.1%	9.1%
11-15	0.0%	18.1%	9.1%
16-20	18.1%	9.1%	0.0%
20+	27.3%	36.4%	63.6%
Grade Level Currently Teaching			
K-4	54.5%	72.7%	72.7%
K-6	9.1%	0.0%	9.1%
K-8	27.3%	27.3%	0.0%
5-6	0.0%	0.0%	9.1%
7-8	0.0%	0.0%	9.1%
5-8	9.1%	0.0%	0.0%
Subject Currently Teaching			
Music/ Art	27.3%	9.1%	18.1%
Literacy Specialist	18.1%	0.0%	9.1%
Special Education/Speech/ Social Work	27.3%	18.1%	0.0%
Media (Library)	0.0%	9.1%	9.1%
All	27.3%	45.5%	36.4%
English	0.0%	9.1%	9.1%
Physical Education	0.0%	9.1%	9.1%
Science	0.0%	0.0%	9.1%

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Table 4. *Participant Demographics: By Group- Continued*

Average Number of Students per Class			
1-10	9.1%	9.1%	0.0%
11-20	27.3%	27.3%	18.2%
21-30	54.5%	54.5%	81.8%
31-40	0.0%	9.1%	0.0%
40+	9.1%	0.0%	0.0%
Participated in Yoga Previously			
Yes	81.8%	81.8%	72.7%
No	18.2%	18.2%	27.3%
How Many Previous Yoga Sessions			
≤ 10	45.5%	45.5%	45.5%
11-30	18.13%	27.3%	18.13%
31-50	18.13%	18.1%	18.13%
>50	18.13%	9.1%	18.13%
School Type			
Public	100.0%	100.0%	100.0%
Private	0.0%	0.0%	0.0%
Other	0.0%	0.0%	0.0%

Table 5a. *Descriptive Statistics Time Point 1: All Participants*

Descriptive Statistics				
Measures	Mean	Standard Deviation	Skew	Kurtosis
CAMS-R	41.15	5.90	-.023	-0.10
MBI-ES-EE	2.62	0.97	0.10	-0.65
BSI 18	52.88	7.52	0.029	-0.82
CSE	6.61	1.47	-0.056	-0.72

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

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Table 5b. *Descriptive Statistics Time Point 1 by Treatment Group*

Descriptive Statistics				
	Mean	Standard Deviation	Skew	Kurtosis
Online				
CAMS-R	40.64	4.06	-0.677	-0.27
MBI-ES-EE	2.75	0.93	-1.05	0.62
BSI 18	53.82	7.29	-0.18	-1.22
CSE	6.63	1.72	0.003	-0.40
In-person				
CAMS-R	42.54	5.027	-0.48	-0.60
MBI-ES-EE	2.78	0.87	-0.12	0.52
BSI 18	53.91	8.12	-0.38	-0.73
CSE	6.38	1.56	0.39	-0.55
Waitlist Control				
CAMS-R	40.27	8.14	3.72	-0.581
MBI-ES-EE	2.32	1.11	1.29	0.70
BSI 18	50.91	7.45	0.71	1.29
CSE	6.81	1.21	-0.83	-0.96

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

Table 6a. *Descriptive Statistics Time Point 2: All Participants*

Descriptive Statistics				
	Mean	Standard Deviation	Skew	Kurtosis
CAMS-R	41.00	5.00	-0.35	-0.58
MBI-ES-EE	2.61	0.85	-0.13	-0.33
BSI 18	50.10	11.41	-0.02	-1.03
CSE	7.08	1.46	-0.40	-0.17

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

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Table 6b. *Descriptive Statistics Time Point 2 by Treatment Group*

Descriptive Statistics				
	Mean	Standard Deviation	Skew	Kurtosis
Online				
CAMS-R	41.78	4.63	-0.23	-1.20
MBI-ES-EE	2.66	1.23	-0.46	-1.20
BSI 18	49.33	13.46	-0.27	-1.78
CSE	7.40	1.47	-0.091	-0.40
In-person				
CAMS-R	41.70	3.43	-0.20	1.45
MBI-ES-EE	2.72	0.65	0.52	0.81
BSI 18	48.70	7.89	1.04	1.88
CSE	6.80	1.64	-0.46	0.49
Waitlist Control				
CAMS-R	39.50	6.55	0.065	-1.42
MBI-ES-EE	2.44	0.65	0.43	-1.09
BSI 18	52.20	13.18	-0.28	-1.24
CSE	7.07	1.38	-0.66	-0.44

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

Table 7a. *Descriptive Statistics Time Point 3: All Participants*

Descriptive Statistics				
	Mean	Standard Deviation	Skew	Kurtosis
CAMS-R	42.39	5.20	-0.04	0.11
MBI-ES-EE	2.50	1.09	-0.06	0.11
BSI 18	49.64	9.70	-0.38	-0.76
CSE	7.46	1.21	-0.38	-0.17

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

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Table 7b. *Descriptive Statistics Time Point 3 by Treatment Group*

Descriptive Statistics				
	Mean	Standard Deviation	Skew	Kurtosis
Online				
CAMS-R	44.5	3.07	0	-0.58
MBI-ES-EE	3.11	1.28	-0.54	0.48
BSI 18	48.13	11.17	-0.64	-1.79
CSE	7.64	1.12	-0.36	2.22
In-person				
CAMS-R	43.00	4.83	0.47	0.53
MBI-ES-EE	2.25	1.00	-0.59	2.33
BSI 18	48.30	8.23	-0.31	0.49
CSE	7.54	1.33	-0.42	0.44
Waitlist Control				
CAMS-R	40.10	6.35	0.66	0.75
MBI-ES-EE	2.26	0.92	-0.32	-1.30
BSI 18	52.20	10.32	-0.48	-0.44
CSE	7.23	1.24	-0.45	-0.85

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

Table 8a. *Descriptive Statistics Time Point 4: All Participants*

Descriptive Statistics				
	Mean	Standard Deviation	Skew	Kurtosis
CAMS-R	43.41	5.94	0.31	0.19
MBI-ES-EE	2.22	1.12	0.19	-1.14
BSI 18	49.79	10.60	-0.18	-1.15
CSE	7.63	1.20	-0.41	0.48

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

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Table 8b. *Descriptive Statistics Time Point 4 by Treatment Group*

Descriptive Statistics				
	Mean	Standard Deviation	Skew	Kurtosis
Online				
CAMS-R	45.80	5.84	1.03	0.59
MBI-ES-EE	2.33	1.20	-0.39	-1.57
BSI 18	48.60	11.57	-0.28	-1.74
CSE	8.09	0.97	0.30	-1.31
In-person				
CAMS-R	44.27	4.34	0.58	0.029
MBI-ES-EE	2.17	1.06	0.54	-0.61
BSI 18	48.00	10.42	-0.076	-1.06
CSE	7.79	1.29	-0.55	1.35
Waitlist Control				
CAMS-R	39.25	6.41	0.82	0.074
MBI-ES-EE	2.18	1.22	0.63	-0.32
BSI 18	53.75	9.85	-0.004	-1.35
CSE	6.87	1.10	-1.10	-0.53

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

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Covariates

Table 9. *Potential Covariate Correlations with Study Variables: Time Point 1*

	CAMS-R	MBI-ES-EE	BSI 18	CSE
Age	*r*=0.31 *p*=0.08	*r*=-0.29 *p*=0.10	*r*=-0.18 *p*=0.33	*r*=-0.14 *p*=0.45
Ethnicity	*r*=-0.15 *p*=0.39	*r*=0.034 *p*=0.85	*r*=0.006 *p*=0.98	*r*=-0.31 *p*=0.08
Years Teaching	*r*=.21 *p*=0.24	*r*=-0.19 *p*=0.30	*r*=-0.17 *p*=0.33	*r*=-0.16 *p*=0.36
Grade Teaching	*r*=0.17 *p*=0.36	*r*=-.078 *p*=0.67	*r*=0.038 *p*=0.83	*r*=0.011 *p*=0.95
Subject Teaching	*r*=0.41* *p*=0.017	*r*=-0.39* *p*=0.024	*r*=-0.28 *p*=0.11	*r*=0.006 *p*=0.97
Average Number of Students	*r*=0.09 *p*=0.60	*r*=-0.074 *p*=0.68	*r*=0.24 *p*=0.18	*r*=-0.35 *p*=0.06
Previous Yoga Experience	*r*=0.20 *p*=0.26	*r*=-0.29 *p*=0.11	*r*=-0.052 *p*=0.78	*r*=-0.048 *p*=0.79
Number of Previous Yoga Classes	*r*=-0.16 *p*=0.36	*r*=-0.25 *p*=0.17	*r*=-0.15 *p*=0.39	*r*=-0.047 *p*=0.80

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

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Table 10. *Potential Covariate Correlations with Study Variables: Time Point 2*

	CAMS-R	MBI-ES-EE	BSI 18	CSE
Age	*r*=0.10 *p*=0.60	*r*=-0.048 *p*=0.80	*r*=-0.042 *p*=0.83	*r*=0.18 *p*=0.55
Ethnicity	*r*=0.13 *p*=0.52	*r*=0.015 *p*=0.94	*r*=-0.18 *p*=0.37	*r*=-0.025 *p*=0.08
Years Teaching	*r*=-.073 *p*=0.71	*r*=-0.12 *p*=0.55	*r*=-0.038 *p*=0.85	*r*=-0.18 *p*=0.93
Grade Teaching	*r*=0.15 *p*=0.44	*r*=-.008 *p*=0.97	*r*=-0.015 *p*=0.94	*r*=0.24 *p*=0.22
Subject Teaching	*r*=0.36 *p*=0.058	*r*=-0.23 *p*=0.23	*r*=-0.31 *p*=0.11	*r*=-0.13 *p*=0.51
Average Number of Students	*r*=-0.011 *p*=0.95	*r*=-0.16 *p*=0.40	*r*=0.11 *p*=0.58	*r*=-0.088 *p*=0.65
Previous Yoga Experience	*r*=0.28 *p*=0.14	*r*=-0.35 *p*=0.06	*r*=-0.11 *p*=0.59	*r*=-0.018 *p*=0.93
Number of Previous Yoga Classes	*r*=-0.25 *p*=0.19	*r*=0.092 *p*=0.64	*r*=0.31 *p*=0.10	*r*=-0.11 *p*=0.57

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

*

Table 11. *Potential Covariate Correlations with Study Variables: Time Point 3*

	CAMS-R	MBI-ES-EE	BSI 18	CSE
Age	*r*=0.20 *p*=0.31	*r*=-0.056 *p*=0.78	*r*=0.062 *p*=0.75	*r*=-0.40 *p*=0.84
Ethnicity	*r*=0.19 *p*=0.34	*r*=-0.14 *p*=0.48	*r*=-0.31 *p*=0.11	*r*=0.078 *p*=0.69
Years Teaching	*r*=.051 *p*=0.80	*r*=0.19 *p*=0.33	*r*=0.20 *p*=0.32	*r*=-0.14 *p*=0.47
Grade Teaching	*r*=0.31 *p*=0.10	*r*=-.30 *p*=0.12	*r*=-0.12 *p*=0.54	*r*=0.25 *p*=0.21
Subject Teaching	*r*=0.17 *p*=0.39	*r*=-0.25 *p*=0.20	*r*=-0.17 *p*=0.38	*r*=-0.040 *p*=0.84
Average Number of Students	*r*=0.11 *p*=0.57	*r*=-0.03 *p*=0.88	*r*=0.31 *p*=0.11	*r*=-0.005 *p*=0.98
Previous Yoga Experience	*r*=-0.16 *p*=0.42	*r*=0.019 *p*=0.92	*r*=-0.048 *p*=0.81	*r*=-0.113 *p*=0.57
Number of Previous Yoga Classes	*r*=-0.23 *p* = 0.24	*r*=0.17 *p*=0.40	*r*=0.093 *p*=0.64	*r*=-0.211 *p*=0.28

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

*

Table 12. *Potential Covariate Correlations with Study Variables: Time Point 4*

	CAMS-R	MBI-ES-EE	BSI 18	CSE
Age	*r*=0.10 *p*=0.60	*r*=-0.11 *p*=0.59	*r*=-0.047 *p*=0.81	*r*=0.034 *p*=0.86
Ethnicity	*r*=-0.04 *p*=0.84	*r*=0.13 *p*=0.49	*r*=-0.009 *p*=0.96	*r*=-0.13 *p*=0.52
Years Teaching	*r*=-0.031 *p*=0.87	*r*=-0.05 *p*=0.80	*r*=-0.004 *p*=0.98	*r*=-0.16 *p*=0.41
Grade Teaching	*r*=0.35 *p*=0.06	*r*=-0.15 *p*=0.43	*r*=-0.039 *p*=0.84	*r*=0.254 *p*=0.18
Subject Teaching	*r*=0.11 *p*=0.58	*r*=-0.23 *p*=0.24	*r*=-0.31* *p*=0.05	*r*=-0.22 *p*=0.25
Average Number of Students	*r*=0.24 *p*=0.20	*r*=-0.028 *p*=0.89	*r*=0.086 *p*=0.66	*r*=-0.096 *p*=0.62
Previous Yoga Experience	*r*=-0.11 *p*=0.57	*r*=-0.39* *p*=0.04	*r*=-0.002 *p*=0.99	*r*=-0.22 *p*=0.25
Number of Previous Yoga Classes	*r*=-0.35 *p*=0.06	*r*=0.42* *p*=0.02	*r*=-0.31 *p*=0.10	*r*=-0.14 *p*=0.48

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).

*

Hypotheses 1-6

Table 13. *Linear Mixed-Model Analyses for Outcome Variables*

Measure	Comparison Made	F Value	Effect Size
CAMS-R			
	Online vs Waitlist Control	F=3.42 p=0.040*	d=0.23*
	In-person vs Waitlist Control	F=1.88 p=0.091	d=0.15
	Online vs In-person	F=1.70 p=0.10	d=0.20*
MBI-ES-EE			
	Online vs Waitlist Control	F=0.029 p=0.43	d=0.024
	In-person vs Waitlist Control	F=1.55 p=0.19	d=0.18
	Online vs In-person	F=0.51 p=0.24	d=0.089
BSI-18			
	Online vs Waitlist Control	F=2.27 p=0.074	d=0.20*
	In-person vs Waitlist Control	F=2.42 p=0.069	d=0.20*
	Online vs In-person	F=.036 p=0.43	d=0.026
CSE			
	Online vs Waitlist Control	F=3.31 p=0.040*	d=0.24*
	In-person vs Waitlist Control	F=6.99 p=0.005*	d=0.27*
	Online vs In-person	F=0.059 p=0.40	d=0.032

Note. Cognitive and Affective Mindfulness Scale- Revised (CAMS-R), Maslach Burnout Inventory-Educator Survey, Emotional Exhaustion (MBI-ES-EE), Brief Symptom Inventory- 18 (BSI-18), Coping Self-Efficacy (SCE).
* indicates small effect size

*

Adherence (Hypothesis 7)

Table 14. *Adherence as Measured by Attendance: In-Person vs Online*

	Time Point One	Time Point Two	Time Point Three	Time Point Four
In-Person	100%	90.9%	90.9%	90.9%
Online	81.8%	81.8%	54.5%	72.7%

Hypothesis 8

Table 15. *Self-Reported Feasibility of Online versus In-Person Yoga Classes*

	Online	In-person	*t*-test	Effect Size
Self-Reported Feasibility	M=4.27 SD=0.98	M=4.21 SD=0.96	*t*=-0.23 *p*=0.82	*d*=0.040

Hypothesis 9

Table 16. *Reported Interest in Yoga: Pre- to Post-Study*

	Pre-Intervention	Post-Intervention	*t*-test	Effect Size
Reported Interest in Yoga	M=4.66 SD=0.66	M=4.57 SD=1.03	*t*=0.53 *p*=0.61	*d*=0.11

Hypothesis 10

Table 17. *Perceived Impact of Yoga on Well-Being and Classroom: Pre- to Post-Study*

	Pre-Intervention	Post-Intervention	*t*-test	Effect Size
Perceived Impact on Well-Being	M=4.52 SD=0.81	M=4.71 SD=0.64	*t*=-1.073 *p*=0.30	*d*=-0.23
Perceived Impact on Classroom	M=4.05 SD=0.97	M=4.76 SD=0.54	*t*=-3.42 *p*=0.003*	*d*=-0.75

Acceptance Analyses

Table 18. *Self-reported Acceptance: Online vs. In-person*

	Online	In-Person	*t*-test	Effect Size
Satisfaction with Yoga Group Experience	M=4.40 SD=0.84	M=4.82 SD=0.60	t=1.31 *p*=0.20	*d*=0.57
Intention to Continue Yoga Practice	M=4.30 SD=0.82	M=4.00 SD=1.26	*t*=-0.64 *p*=0.53	*d*=-0.28
Agreement on Tasks	M=4.20 SD=0.76	M=4.36 SD=0.56	*t*=0.56 *p*=0.58	*d*=0.24

*

APPENDIX B

Questionnaires and Surveys

BACKGROUND QUESTIONNAIRE

Please Complete the Following Questions:

Age: _____

Gender: _____

Race/ Ethnicity:_____

Years Teaching (or write student teacher if applicable): _____

Grade Level You Currently Teach (circle one)? PK K-4th 5th-6th 7th-8th 9th-12th

Subject (if applicable): _____

Type of School (circle one): Public Private Charter

Average Number of Students in Class (circle one): 1-10 11-20 21-30 31-40 Over 40

Have you done yoga previously (circle one)? Yes No

If so, how many times (circle one) <10 11-30 31-50 >50

Are you currently doing one or more yoga class per week (circle one)? Yes No

*

Yoga Survey: Session 1, Session 3, Session5

The following questions pertain to your thoughts on yoga and how it relates to your life. Please rate each question from 1 to 5, unless otherwise noted.

1) If offered in-person yoga classes directly after school hours, how likely would you be to do at least 1, 60-minute session per week?

1	2	3	4	5
Not at All		Somewhat		Very Likely

2) If offered online yoga classes that you could do anytime, how likely would you be to do at least 1, 60-minute session per week?

1	2	3	4	5
Not at All		Somewhat		Very Likely

3) Would you be more likely to do yoga if it were offered in person, or online (circle one)?

In Person Online

4) Please rate the following sentence: I am interested in doing in yoga.

1	2	3	4	5
Strongly Disagree		Somewhat		Strongly Agree

5) Please rate the following sentence: I think doing yoga can have a positive impact on my personal well-being.

1	2	3	4	5
Strongly Disagree		Somewhat		Strongly Agree

6) Please rate the following sentence: I believe my doing yoga can have a positive impact on my classroom dynamics and student interactions.

1	2	3	4	5
Strongly Disagree		Somewhat		Strongly Agree

7) Please rate the following sentence: I feel uncomfortable doing yoga with others around me.

*

1	2	3	4	5
Strongly Disagree		Somewhat		Strongly Agree

8) What are your perceptions of yoga and those who do yoga?

_____

_____

_____

_____

_____

_____

*

Yoga Survey: Follow-Up

The following questions pertain to your thoughts on yoga and how it relates to your life. Please rate each question from 1 to 5, unless otherwise noted.

1) If offered in-person yoga classes directly after school hours, how likely would you be to do at least 1, 60-minute sessions per week?

1	2	3	4	5
Not at All		Somewhat		Very Likely

2) If offered online yoga classes that you could do anytime, how likely would you be to do at least 1, 60-minute sessions per week?

1	2	3	4	5
Not at All		Somewhat		Very Likely

3) Would you be more likely to do yoga if it were offered in person, or online (circle one)?

In Person Online

4) Please rate the following sentence: I am interested in doing in yoga.

1	2	3	4	5
Strongly Disagree		Somewhat		Strongly Agree

5) Please rate the following sentence: I think doing yoga can have a positive impact on my personal well-being.

1	2	3	4	5
Strongly Disagree		Somewhat		Strongly Agree

6) Please rate the following sentence: I believe my doing yoga can have a positive impact on my classroom dynamics and student interactions.

*

1	2	3	4	5
Strongly Disagree		Somewhat		Strongly Agree

7) Please rate the following sentence: I feel uncomfortable doing yoga with others around me.

1	2	3	4	5
Strongly Disagree		Somewhat		Strongly Agree

8) What are your perceptions of yoga and those who do yoga?

_____

_____

_____

_____

_____

_____

9) Would you have preferred in-person or online yoga (circle one)? In-person Online

10) What do you feel worked well, regarding your experience in this group?

_____

_____

_____

11) What do you feel did not work well, regarding your experience in this group?

*

_____

_____

_____

12) Please rate the following sentence: I am satisfied with my yoga group experience.

1	2	3	4	5
Strongly Disagree		Somewhat		Strongly Agree

13) Please rate the following sentence: I plan to continue my yoga practice.

1	2	3	4	5
Strongly Disagree		Somewhat		Strongly Agree

*

APPENDIX C

Open Source Measures

The Cognitive and Affective Mindfulness Scale – Revised (CAMS-R)

The CAMS-R is a 12-item measure designed to capture a broad conceptualization of mindfulness with language that is not specific to any particular type of meditation training.

Feldman, G., Hayes, A., Kumar, S. et al. Journal of Psychopathology & Behavior Assessment (2007) 29: 177. doi:10.1007/s10862-006-9035-8

Instructions: People have a variety of ways of relating to their thoughts and feelings. For each of the items below, rate how much each of these ways applies to *yo*u.

_____1. It is easy for me to concentrate on what I am doing.
_____2. I am preoccupied by the future.
_____3. I can tolerate emotional pain.
_____4. I can accept things I cannot change.
_____5. I can usually describe how I feel at the moment in considerable detail.
_____6. I am easily distracted.
_____7. I am preoccupied by the past.
_____8. It's easy for me to keep track of my thoughts and feelings.
_____9. I try to notice my thoughts without judging them.
_____10. I am able to accept the thoughts and feelings I have.
_____11. I am able to focus on the present moment.
_____12. I am able to pay close attention to one thing for a long period of time.

Scoring: Items 2, 6, and 7 are reverse-scored. After appropriate reversals, sum values for items 1- 12. Higher values reflect greater mindful qualities.

*

Coping Self-Efficacy Scale

When things aren't going well for you, or when you're having problems, how confident or certain are you that you can do the following:

Cannot do at all					Moderately certain can do					Certain can do
0	1	2	3	4	5	6	7	8	9	10

For each of the following items, write a number from 0 - 10, using the scale above

When things aren't going well for you, how confident are you that you can:

1. Keep from getting down in the dumps. _____ 99
2. Talk positively to yourself. _____ 99
3. Sort out what can be changed, and what cannot be changed. _____ 99
4. Get emotional support from friends and family. _____ 99
5. Find solutions to your most difficult problems. _____ 99

---

6. Break an upsetting problem down into smaller parts. _____ 99
7. Leave options open when things get stressful. _____ 99
8. Make a plan of action and follow it when confronted with a problem. _____ 99
9. Develop new hobbies or recreations. _____ 99
10. Take your mind off unpleasant thoughts. _____ 99

---

11. Look for something good in a negative situation. _____ 99
12. Keep from feeling sad. _____ 99
13. See things from the other person's point of view during a heated argument. _____ 99
14. Try other solutions to your problems if your first solutions don’t work. _____ 99
15. Stop yourself from being upset by unpleasant thoughts. _____ 99

*

Cannot do at all					Moderately certain can do					Certain can do
0	1	2	3	4	5	6	7	8	9	10

When things aren't going well for you, how confident are you that you can:

16. Make new friends. _____ 99

17. Get friends to help you with the things you need. _____ 99

18. Do something positive for yourself when you are feeling discouraged. _____ 99

19. Make unpleasant thoughts go away. _____ 99

20. Think about one part of the problem at a time. _____ 99

---

21. Visualize a pleasant activity or place. _____ 99

22. Keep yourself from feeling lonely. _____ 99

23. Pray or meditate. _____ 99

24. Get emotional support from community organizations or resources. _____ 99

25. Stand your ground and fight for what you want. _____ 99

26. Resist the impulse to act hastily when under pressure. _____ 99

*

Working Alliance Inventory – Short Revised (WAI-SR)

Instructions: Below is a list of statements and questions about experiences people might have with their yoga instructor. Some items refer directly to your yoga instructor with an underlined space -- as you read the sentences, mentally insert the name of your yoga instructor in place of _____ in the text. Think about your experience in yoga, and decide which category best describes your own experience.

IMPORTANT!!! Please take your time to consider each question carefully.

1. As a result of these sessions I am clearer as to how I might be able to change.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

2. What I am doing in yoga gives me new ways of looking at my problem.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

3. I believe___likes me.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

4. ___and I collaborate on setting goals for my yoga sessions.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

5. ___and I respect each other.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

6. ___and I are working towards mutually agreed upon goals.

⑤	④	③	②	①
Always	Very Often	Fairly Often	Sometimes	Seldom

7. I feel that___appreciates me.

①	②	③	④	⑤
Seldom	Sometimes	Fairly Often	Very Often	Always

8. _____ and I agree on what is important for me to work on.

⑤	④	③	②	①

Always Very Often Fairly Often Sometimes Seldom

9. I feel _____ cares about me even when I do things that he/she does not approve of.

① ② ③ ④ ⑤
Seldom Sometimes Fairly Often Very Often Always

10. I feel that the things I do in yoga will help me to accomplish the changes that I want.

⑤ ④ ③ ② ①
Always Very Often Fairly Often Sometimes Seldom

11. _____ and I have established a good understanding of the kind of changes that would be good for me.

⑤ ④ ③ ② ①
Always Very Often Fairly Often Sometimes Seldom

12. I believe the way we are working with my stress is correct.

① ② ③ ④ ⑤
Seldom Sometimes Fairly Often Very Often Always

 Goal Items: 4, 6, 8, 11; Task Items: 1, 2, 10, 12; Bond Items: 3, 5, 7, 9

*

APPENDIX D

Consent and Recruitment Documents

Behavioral Research Informed Consent

Title of Study: Yoga as a Complimentary and Alternative Medicine for Teacher Psychological Distress and Burnout: The Impact of Online Yoga

Principal Investigator (PI): Amber Sepsey, MA, TLLP
5057 Woodward Ave, 7th Floor
Department of Psychology, Wayne State University
Detroit, MI 48202
313-577-2840

Funding Source: Department of Psychology and The Graduate School, Wayne State University

Purpose

You are being asked to be in a research study about the impact of yoga on stress because you are a are a K-12 education teacher. This study is being conducted at Wayne State University. The estimated number of study participants to be enrolled at Wayne State is about 45. **Please read this form and ask any questions you may have before agreeing to be in the study.**

In this research study, we are looking at K-12 educators and student teachers to assess workplace distress. Further, we are looking at the impact that yoga may have on reducing stress and improving quality of life. Specifically, we are looking at participation in yoga and how it relates to mindfulness, stress coping, distress, and burnout. We are also looking at the feasibility of participation in yoga through different media, such as in person and online.

Study Procedures

If you agree to take part in this research study, you will be asked to participate in a series of 4 yoga sessions. You will be randomly assigned to either attend 4, 1-hour sessions in person at Wayne State University, 4 online sessions, or placed on a waitlist. All those placed on the waitlist will receive 4 online sessions following study completion. All participants will be asked to complete several forms and questionnaires before starting the yoga program (completed in the

*

same session as the consent), after the second yoga session, and after completion of the fourth yoga session. Each yoga session will be 60 minutes in length. The forms and questionnaires after the second and fourth session take approximately 30 minutes to complete. Questionnaires include questions on participant mindfulness, psychological distress, burnout, and coping with stress. Several questions will also ask participants to rate perceptions of yoga as well as their thoughts on attending yoga. It is required that you complete all study tasks if you agree to participate. On all documentation, you will be identified in the research records by a code name or number to protect your identity.

Benefits

The possible benefits to you for taking part in this research study are reduced distress, heightened mindfulness capacity, and improved coping skills for difficult situations as they arise. Additionally, information from this study may benefit other people now or in the future.

Risks

By taking part in this study, you may experience the following risks: Physical risks, such as muscle aches from the physical aspect yoga may occur. The likelihood of a physical risk, or harm occurring for the yoga that will take place is low. The physical risk is similar to the risk associated with stretching, or taking a brisk walk.

There may also be risks involved from taking part in this study that are not known to researchers at this time.

Alternatives

The only alternative is to **not** to participate in the study.

Study Costs

Participation in this study will be of no cost to you.

Compensation

You will not be paid for taking part in this study.

Research Related Injuries

In the event that this research related activity results in an injury, treatment will be made available including first aid, emergency treatment, and follow-up care as needed. Care for such will be billed in the ordinary manner to you or your insurance company. No reimbursement,

*

compensation, or free medical care is offered by Wayne State University. If you think that you have suffered a research related injury, contact the PI right away at 313-577-4667.

Confidentiality

All information collected about you during the course of this study will be kept confidential to the extent permitted by law. You will be identified in the research records by a code name or number. Information that identifies you personally will not be released without your written permission. However, the study sponsor, the Institutional Review Board (IRB) at Wayne State University, or federal agencies with appropriate regulatory oversight [e.g., Food and Drug Administration (FDA), Office for Human Research Protections (OHRP), Office of Civil Rights (OCR), etc.) may review your records.

When the results of this research are published, or discussed in conferences, no information will be included that would reveal your identity.

If photographs, videos, or audiotape recordings of you will be used for research or educational purposes, your identity will be protected or disguised. All tapes will be encrypted and only accessible to members of the lab for research purposes. Subjects will not have access to recordings taken in session. Recordings will remain intact until the conclusion of this study, following which, all videos will be erased.

Voluntary Participation/Withdrawal

Taking part in this study is voluntary. You have the right to choose not to take part in this study. If you decide to take part in the study, you can later change your mind and withdraw from the study.] You are free to only answer questions that you want to answer. You are free to withdraw from participation in this study at any time. Your decisions will not change any present or future relationship with Wayne State University or its affiliates, or other services you are entitled to receive.

The PI may stop your participation in this study without your consent. The PI will make the decision and let you know if it is not possible for you to continue. The decision that is made is to protect your health and safety, or because you did not follow the instructions to take part in the study

The data that you provide on the online yoga platform may be collected and used by Edmodo as per its privacy agreement. Additionally, participation in this research is for residents of the United States over the age of 18; if you are not a resident of the United States and/or under the age of 18, please do not complete this survey.

Questions

*

If you have any questions about this study now or in the future, you may contact Amber Sepsey or one of her research team members at the following phone number: 313-577-4667. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call the Wayne State Research Subject Advocate at (313) 577-1628 to discuss problems, obtain information, or offer input.

*

Consent to Participate in a Research Study

To voluntarily agree to take part in this study, you must sign on the line below. If you choose to take part in this study, you may withdraw at any time. You are not giving up any of your legal rights by signing this form. Your signature below indicates that you have read, or had read to you, this entire consent form, including the risks and benefits, and have had all of your questions answered. You will be given a copy of this consent form.

_____	_____
Signature of participant	Date
_____	_____
Printed name of participant	Time
_____	_____
Signature of witness**	Date
_____	_____
Printed name of witness**	Time
_____	_____
Signature of person obtaining consent	Date
_____	_____
Printed name of person obtaining consent	Time

**Use when participant has had this consent form read to them (i.e., illiterate, legally blind, translated into foreign language).

_____	_____
Signature of translator	Date
_____	_____
Printed name of translator	Time

*

CALL FOR RESEARCH PARTICIPANTS

Are you currently a student teacher, or a K-12 educator? Do you have work related stress? Do you have access to a computer and internet? If yes, you may be eligible to be in this study! Wayne State University Clinical Psychology is doing a research study of the effects of yoga, in different settings, on work related stress for K-12 educators. Yoga may help reduce the impact of stress and improve your quality of life. <u>There is no cost to participate in this study.</u>

Please contact us to schedule an informational session:
Call: 313-577-4667 (Please leave a message) Email: yogaresearch1@gmail.com

Amber Sepsey
313-577-4667
yogaresearch1@gmail.com

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Amber Sepsey
313-577-4667
yogaresearch1@gmail.com

[Contact Info]

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APPENDIX E

Yoga Sessions Manual

Yoga Session Overview: Read to both active groups before starting their first yoga class.

General Note:

All classes have been created at a beginner level to make the material accessible to all participants. That being said, different individuals may have different bodily limitations. With that in mind, if at any point a position is not serving an individual taking the class or any pose is not currently available to a participant, a rest pose is always an option. Rest positions can include child's pose or a seated pose where the participant can continue mindful breathing until they are ready to rejoin the sequence. Modifications will be provided for several poses throughout each yoga sequence, to support alternative ways to approach different positions to obtain the full benefit of the pose in a safe manner.

*

YOGA SESSION ONE

Mindfulness Activity: Belly Breathing

- Sit in a comfortable position with one hand on your belly.
- With your mouth closed and your jaw relaxed, inhale through your nose. As you inhale, allow your belly to expand. Imagine the lower part of your lungs filling up first, then the rest of your lungs inflating.
- Exhale completely through your mouth, making a whoosh sound, the air emptying from your lungs, and allow the belly to flatten.
- Close your mouth and inhale quietly through your nose to a mental count of **four**.
- Hold your breath for a count of **seven**.
- Exhale completely through your mouth, making a whoosh sound to a count of **eight**.
- This is one breath. Now inhale again and repeat the cycle three more times for a total of four breaths.

Consider this breath as your anchor to help you ground, whether the waters are calm or if there is a storm. As you continue your deep belly breathing, begin to set an intention for your yoga class today. Your intention will be unique to you and is something in your life that you would like to cultivate- could be sending out positivity to a positive person or the reminder of "I am enough." Your intention will act as a reminder during class today when your mind wanders or becomes distracted.

Set an intention

Windshield wiper with knees (while on back)

Reclined figure four

Rock up → Butterfly

*

Tabletop → cat/cow

"Fire hydrant" leg lift → gate pose ***(Gate pose modification: block under grounded hand for additional height and spinal lengthening)***

Downward facing dog (stretch it out)

Sun sal A x3

Malasana → Forward fold

Crescent → goddess pose (breathing shoulder stretch)→ forward fold at front of the mat and sun sal A between (both sides)

Chair x3 (with block between legs)

Boat (with block between legs) (***modifications: feet on ground; feet lifted with shins parallel to ground; feet lifted and legs straight at a 45-degree angle from the ground***)

Rock up to standing → forward fold (***modification: if rocking is not an option, participants can slowly come to the front of their mat and take a forward fold***)

Tree (both sides with sun sal A between) (***modification: lifted foot at ankle, calf, or thigh; NOT at knee)***

Table Top → low crescent

Child's pose

Seated forward-fold (***modification: hold thighs, calves, ankles, or feet***)

½ lord of the fishes (***modification: seated twist***)

Shavasana (corpse pose)

"Feel your body melt into the ground, and the earth rise up to support you…….When you are ready to finish the exercise, allow your eyes to open slowly and try to **carry that mindfulness** with you as you go about your day"

*

YOGA SESSION TWO

Mindfulness Activity: Body Scan

Begin by bringing your attention into your body.

You can close your eyes if that's comfortable for you.

You can notice your body seated wherever you're seated, feeling the weight of your body on the chair, on the floor.

Take a few deep breaths.

And as you take a deep breath, bring in more oxygen enlivening the body. And as you exhale, have a sense of relaxing more deeply.

You can notice your feet on the floor, notice the sensations of your feet touching the floor. The weight and pressure, vibration, heat.

You can notice your legs against the chair, pressure, pulsing, heaviness, lightness.

Notice your back against the chair.

Bring your attention into your stomach area. If your stomach is tense or tight, let it soften. Take a breath.

Notice your hands. Are your hands tense or tight? See if you can allow them to soften.

Notice your arms. Feel any sensation in your arms. Let your shoulders be soft.

Notice your neck and throat. Let them be soft. Relax.

Soften your jaw. Let your face and facial muscles be soft.

Then notice your whole-body present. Take one more breath.

Be aware of your whole body as best you can. Take a breath. And then when you're ready, you can open your eyes.

*

Set an intention

Windshield wiper with knees (while on back)

Reclined figure four

Rock up → Butterfly

Table top → cat/cow

"Fire hydrant" leg lift → gate pose ***(Gate pose modification: block under grounded hand for additional height and spinal lengthening)***

Downward facing dog (stretch it out)

Sun sal A x2

Sun sal Bx1

Malasana → Forward fold

Crescent → goddess pose (breathing shoulder stretch)→ forward fold at front of the mat and sun sal A between (both sides)

Crescent→ Warrior II → Extended side angle (both sides) (***modification: if extended side angle is too intense for a participant at this point in time, they can continue to hold warrior II)***

Chair x1

Chair (lift up on toes)x1 (***modification: traditional chair)***

Boat (with block between legs) (***modifications: feet on ground; feet lifted with shins parallel to ground; feet lifted and legs straight at a 45-degree angle from the ground***)

Bicycle legs (elbow to opposite knee) x 5 (***modification: hold boat or take rest as needed***)

Rock up to standing → forward fold (***modification: if rocking is not an option, participants can slowly come to the front of their mat and take a forward fold***)

Tree (both sides with sun sal A between) (***modification: lifted foot at ankle, calf, or thigh; NOT***

*

at knee)

Table Top → low crescent

Child's pose

Seated forward-fold (***modification: hold thighs, calves, ankles, or feet***)

Head-to-knee forward bend (each leg) (***modification: hold thighs, calves, ankles, or feet***)

½ lord of the fishes (***modification: seated twist***)

Shavasana (corpse pose)

"Feel your body melt into the ground, and the earth rise up to support you…….When you are ready to finish the exercise, allow your eyes to open slowly and try to **carry that mindfulness** with you as you go about your day"

*

YOGA SESSION THREE

Mindfulness Activity: "five senses"

- Notice five things that you can **see**.

Look around you and bring your attention to five things that you can see. Pick something that you don't normally notice, like a shadow or a small crack in the concrete.

- Notice four things that you can **feel**.

Bring awareness to four things that you are currently feeling, like the texture of your pants, the feeling of the breeze on your skin, or the smooth surface of a table you are resting your hands on.

- Notice three things you can **hear**.

Take a moment to listen and note three things that you hear in the background. This can be the chirp of a bird, the hum of the refrigerator, or the faint sounds of traffic from a nearby road.

- Notice two things you can **smell**.

Bring your awareness to smells that you usually filter out, whether they're pleasant or unpleasant. Perhaps the breeze is carrying a whiff of pine trees if you're outside, or the smell of a fast food restaurant across the street.

- Notice one thing you can **taste**.

Focus on one thing that you can taste right now, in this moment- just notice the current taste in your mouth or open your mouth to search the air for a taste.

Set an intention

Windshield wiper with knees (while on back)

Reclined figure four

Rock up → Butterfly

Table top → cat/cow

*

"Fire hydrant" leg lift → gate pose ***(Gate pose modification: block under grounded hand for additional height and spinal lengthening)***

Downward facing dog (stretch it out)

Sun sal A x2

Sun sal Bx2

Malasana → Forward fold

Crescent → goddess pose (breathing shoulder stretch)→ forward fold at front of the mat and sun sal A between (both sides)

Crescent→ Warrior II → Extended side angle →Reverse Warrior (both sides) (***modification: if extended side angle or reverse warrior is too intense for a participant at this point in time, they can continue to hold warrior II)***

Chair x1

Chair (lift up on toes) x1 (***modification: traditional chair)***

Boat → Canoe x3 (with block between legs) (***Boat modifications: feet on ground; feet lifted with shins parallel to ground; feet lifted and legs straight at a 45-degree angle from the ground; Canoe modification: if this is too much for a given participant at this time, they can hold boat pose instead***)

Rock up to standing → forward fold (***modification: if rocking is not an option, participants can slowly come to the front of their mat and take a forward fold***)

Tree →Gentleman's pose (both sides with sun sal A between) (***tree modification: lifted foot at ankle, calf, or thigh- NOT at knee; Gentleman's pose modifications: if too much on body at current point in time, re-establish tree position)***

Table Top → low crescent (with cactus arms)

*

Child's pose

Seated forward-fold (***modification: hold thighs, calves, ankles, or feet***)

Head-to-knee forward bend (each leg) (***modification: hold thighs, calves, ankles, or feet***)

½ lord of the fishes (***modification: seated twist***)

Shavasana (corpse pose)

"Feel your body melt into the ground, and the earth rise up to support you…….When you are ready to finish the exercise, allow your eyes to open slowly and try to **carry that mindfulness** with you as you go about your day"

*

YOGA SESSION FOUR

Mindfulness Activity: Leaves on a stream

Sit in a comfortable position and either close your eyes or rest them gently on a fixed spot in the room.

Visualize yourself sitting beside a gently flowing stream with leaves floating along the surface of the water. *Pause 10 seconds.*

For the next few minutes, take each thought that enters your mind and place it on a leaf… let it float by. Do this with each thought – pleasurable, painful, or neutral. Even if you have joyous or enthusiastic thoughts, place them on a leaf and let them float by.

If your thoughts momentarily stop, continue to watch the stream. Sooner or later, your thoughts will start up again. *Pause 20 seconds.*

Allow the stream to flow at its own pace. Don't try to speed it up and rush your thoughts along. You're not trying to rush the leaves along or "get rid" of your thoughts. You are allowing them to come and go at their own pace.

If your mind says "This is dumb," "I'm bored," or "I'm not doing this right" place *those thoughts* on leaves, too, and let them pass. *Pause 20 seconds.*

If a leaf gets stuck, allow it to hang around until it's ready to float by. If the thought comes up again, watch it float by another time. *Pause 20 seconds.*

If a difficult or painful feeling arises, simply acknowledge it. Say to yourself, "I notice myself having a feeling of boredom/impatience/frustration." Place those thoughts on leaves and allow them float along.

*

From time to time, your thoughts may hook you and distract you from being fully present in this exercise. This is *normal.* As soon as you realize that you have become sidetracked, gently bring your attention back to the visualization exercise.

Set an intention

Windshield wiper with knees (while on back)

Reclined figure four

Rock up → Butterfly

Table top → cat/cow

"Fire hydrant" leg lift → gate pose ***(Gate pose modification: block under grounded hand for additional height and spinal lengthening)***

Downward facing dog (stretch it out)

Sun sal A x1

Sun Sal Bx2

Malasana → Forward fold

Crescent → goddess pose (breathing shoulder stretch)→ Skandasana → forward fold (both sides) ***(Skandasana modification: Participants can do a higher or lower skandasana depending on their comfort level and where their body currently is. If skandasana is currently not available to them, they can continue to do breathing exercises in goddess pose)***

Chair → Revolved chair (both sides)→ forward fold ***(Revolved chair modification: if the twist in revolved chair is currently not available to participants, they can maintain in chair pose)***

Chair (with block between legs)→ boat (with block between legs) (**Note**for this transition, participants will get lower and lower in their chair pose until their seat is able to reach the ground. At this point, participants will lift their arms and legs into boat pose) ***(Transition modification: If***

*

this transition is currently not available to a participant, after chair pose they can lower into a seated position in whatever way they find comfortable and lift into boat pose from there; Boat modifications: feet on ground; feet lifted with shins parallel to ground; feet lifted and legs straight at a 45-degree angle from the ground)

Bicycle on back (elbow to same side knee)x3 (***modification: hold boat or take rest as needed***)

Rock up to standing → forward fold (***modification: if rocking is not an option, participants can slowly come to the front of their mat and take a forward fold***)

Tree → Gentleman's pose(both sides with sun sal A between) (***tree modification: lifted foot at ankle, calf, or thigh- NOT at knee; Gentleman's pose modifications: if too much on body at current point in time, re-establish tree position)***

Table Top → low crescent (cactus arms)

Child's pose

Seated forward-fold (***modification: hold thighs, calves, ankles, or feet***)

Head-to-knee forward bend (each leg) (***modification: hold thighs, calves, ankles, or feet***)

½ lord of the fishes (***modification: seated twist***)

Shavasana (corpse pose)

"Feel your body melt into the ground, and the earth rise up to support you…….When you are ready to finish the exercise, allow your eyes to open slowly and try to **carry that mindfulness** with you as you go about your day"

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ABSTRACT

YOGA AS A COMPLIMENTARY AND ALTERNATIVE MEDICINE APPROACH FOR TEACHER PSYCHOLOGICAL DISTRESS AND BURNOUT: THE IMPACT OF ONLINE YOGA

by

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Major: Psychology (Clinical)

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Teacher psychological distress and burn out, especially in the first 5 years of employment, has been well documented (DeAngelis & Presley, 2011; Brackett et al., 2010; Kokkinos, 2007; Montgomery & Rupp, 2005; Kyriacou, 2001). Not only are teachers at high-risk for psychological distress, their mood and presentation have been shown to impact classroom functioning and child academic and emotional outcomes (Davis, 2003; Sutton & Wheatley, 2003). Given the robust impact of teacher mental health on their personal well-being as well as child outcomes, much work has been done to assess potential interventions aimed at reducing teacher distress and improving emotional health and coping. Yoga is one intervention that has been identified as effective. Despite the empirically shown improvement for those who participate in regular practice of yoga, teacher participation and retention has been a documented struggle. The current study assessed the impact of yoga as a complementary and alternative medicine (CAM) approach for symptoms of psychological distress, burnout, and coping efficacy in teachers, and to gauge mode of exposure for impact on adherence. Participants included 33 K-8 teachers who were randomly assigned to either the control (waitlist), yoga (in-person), or yoga (online) group. Results outlined factors for consideration in creating a yoga CAM intervention for educators as well as preliminary findings regarding psychological outcomes.

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AUTOBIOGRAPHICAL STATEMENT

A Michigan native, I graduated from Grand Valley State University in 2012 with a dual Bachelor of Science degree in psychology and philosophy. After graduating I was offered an opportunity to work with high-risk, urban youth in the life skills and in-school suspension setting at a middle school in Texas. During my first year in this position, I obtained my teaching license and earned a position as a 7th grade science teacher in an inclusion classroom. In my classroom, I worked with children receiving special education services, those considered to have severe emotional disturbance, and children in the giftedness program. This experience allowed me the opportunity to work with a variety of youth, with very different needs and backgrounds. Beyond the classroom, I engaged in, and founded, several afterschool activities for the students including student council, youth yoga, robotics, and environmental club. Given the unstable environmental factors many of my students dealt with, these afterschool opportunities offered the students a safe, structured, and reliable system for the evening hours. Witnessing the positive scholastic and interpersonal impact these activities had for my students, mixed with my previous work in the mental health field, kindled a passion in me for youth clinical intervention and research.

Recognizing my desire to work with similar populations of youth and families in a clinical setting, I decided to pursue my clinical psychology doctoral degree, specializing in development, at Wayne State University in 2015. My advisor, Dr. Rita Casey, and supervisors at Wayne State have inspired me to always strive for excellence in my clinical work, be it at the WSU clinic, in my research, or at external clinical sites such as Children's Hospital of Michigan and The Children's Center. My clinical training will continue during my pre-doctoral internship for the upcoming year, and I will continue to keep practical, clinical implications in the forefront of my research.

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