

Teacher Anxiety: Study of Effectiveness of Mindfulness Therapy (MT) Intervention for Anxiety
Reduction

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Dedication

For my father, without whose love and support I would have never made it this far.

To my wife, mother, and sisters for their continued love, support, and patience.

For Olive.

Acknowledgements

To Frances: for your support and belief in my abilities from the beginning of my academic journey through the end.

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ABSTRACT

TEACHER ANXIETY: STUDY OF EFFECTIVENESS OF MINDFULNESS THERAPY (MT) INTERVENTION FOR ANXIETY REDUCTION

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A teacher's inability to successfully manage stress can lead to low job satisfaction rates, burnout, poor interpersonal relationships, reduced feelings of self-efficacy, reduced immune function, and emotional distress (Cohen, Miller, & Rabin, 2001; Roeser et al., 2013; Travers & Cooper, 1993). Harry Stack Sullivan (1953) identifies these conditions as sources of anxiety. They also serve to detract from the academic and social experience of the students (Darr & Johns, 2008; Roeser, Skinner, Beers, & Jennings, 2012). Research based, cost-effective interventions, such as mindfulness therapy (MT) (e.g. Mindfulness Based Stress Reduction (MBSR), could serve to help teachers reduce their anxiety through the improvement of their anxiety management skills. This research proposes a comparative intervention study to determine whether a 4 week MBSR intervention presented "in-vivo" is more effective at helping teachers improve their anxiety management skills than a self-guided on-line presentation of the intervention. The research proposal seeks to determine if there is an inverse correlation between improved executive functioning as measured by the Berkley Deficits in Executive Functioning Scale (BDEFS) and anxiety as measured by the Burns Anxiety Inventory (BAI). This dissertation is comprised of three parts: Review of the Literature, Research Proposal, and the Website Developed for the intervention.

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I. Preface

Merriam-Webster defines dissertation as “an extended usually written treatment of a subject; *specifically*: one submitted for a doctorate” (<http://www.merriam-webster.com/dictionary/dissertation>). The term often carries a connotation of something terminal: such as the final paper or the doctoral degree awarded after its completion. It signifies the achievement of the highest level of study in a particular field. However, the dissertation also represents the learning process: the ability to transform an idea into something greater and contribute to the greater understanding of a subject. Many dissertations are only the beginning of this attempt to transform that idea or answer a question. This preface seeks to briefly address the latter two concepts as they apply to the dissertation that follows.

This dissertation is rooted in clinical practice. Working in schools, I observed teachers struggling to manage their stress in the classroom and expecting their students’ behavior to change instead attempting to regulate their emotions. The conflict was negatively impacting both the students and the teachers. My intervention is intended to provide teachers with training in Mindfulness Based Stress Reduction to improve their ability to manage their own stress more effectively. They are in a much better position to learn the skills necessary to regulate their emotions than students. The process of transforming that observation into a fully portable intervention study provided me opportunities to develop my skills as a research practitioner.

These opportunities are integral to the process of learning, but are often hard to incorporate or quantify in a written form. The value of many things is often more than the sum

of their parts. This concept applies to this, and all dissertations. The writing is the result of numerous individual tasks. While the composition of this document serves to fulfill the requirements of my degree, it is also a demonstration of two and a half years of self-discipline, research, collaboration, the development clinical skills, and a deeper understanding of the research process. The following dissertation consists of an IRB approved research proposal, (Protocol# 821984), as well as a website designed for the intervention outlined in the proposal (<https://immense-island-1173.herokuapp.com/>). The website does not follow the traditional written format for dissertations; however its development demonstrates the same concept. The building of the website took time and collaboration with a systems engineer and an expansion of my understanding of website development, online data collection, and internet based interventions.

Failure is an inherent part of the learning process. En route to the polished product below, I experienced my share of failures and redirection. I submitted my proposal for a Spencer Foundation grant and was rejected. However, I successfully completed the application, and identified areas that I will improve when writing grants in the future. I failed to recruit any participants for the first scheduled trial of the study. I was repeatedly submitting changes to the IRB. Ultimately, I timed myself out of running the intervention in my original timeframe. I did not give up. I simply polished the product and began to identify new strategies for recruiting. Currently I am collaborating with both of my dissertation mentors and mentor programs at several area universities across the Philadelphia Metropolitan Area to expand recruitment for the intervention in future trials. In addition to the written document, the dissertation is a

representation of years of process, overcoming personal failure and countless intangibles that cannot be put into words, but are still written into every page that follows.

II. Introduction/Research Question

A research comparison of the effectiveness of an “in-vivo” versus “on-line” 4 week Mindfulness Based Stress Reduction (MBSR) intervention in reducing anxiety when mediated by Executive Functioning (EF) of the brain will contribute to the growing field of research on Mindfulness Therapies (MT) as well as the areas of teacher training. As the research in this area is still growing, I would like to expand on the models already presented in an effort to build more empirical support for the use of MT interventions. If proven effective these interventions could be beneficial to schools and other organizations because the interventions are short in duration and low in cost; these are two factors that are important in selecting an intervention at the personal or agency level. Finally, this research is low-risk to the participants, and the potential outcome--in favor of either intervention--would still provide meaningful data for practice and continuing research.

Research questions:

Does participation in an “in-vivo” 4 week structured MBSR intervention reduce anxiety and improve EF more than participation in an “on-line” 4 week MBSR group? Are changes in anxiety or EF present in either group at 6 week post-test assessment?

Will participants in a truncated, 4 week MBSR intervention show any reduction in anxiety when mediated by EF?

III. Review of the Literature

The research on the negative impact that the school environment and its demands have on children's emotional state and associated behaviors is well established (Arthur, 1998; Daniels & Klewitt, 1978; Duchesne, Vitaro, Larose & Tremblay, 2008; Okajima, Kanai, Fukuhara & Okajima, 2011; Rose, Miller & Martinez, 2009; Sarason, Davidson, Lighthall, Waite & Ruebush, 1960; Walter, Denzler & Sarason, 1964). Comparatively, research focusing on the effects of this stress on teachers and staff is still mounting (Mind and Life Education Research Network [MLERN], 2012; Montgomery & Rupp, 2005). A teacher's inability to successfully manage stress can lead to low job satisfaction rates, burnout, poor interpersonal relationships, reduced feelings of self-efficacy, reduced immune function, and emotional distress (Cohen, Miller, & Rabin, 2001; Roeser et al., 2013; Travers & Cooper 1993). Harry Stack Sullivan (1953) identifies these conditions as sources of anxiety. They also serve to detract from the academic and social experience of the students (Darr & Johns, 2008, Roeser, Skinner, Beers, & Jennings, 2012). Research based, cost-effective mindfulness therapy (MT) interventions (e.g. Mindfulness Based Stress Reduction (MBSR) & Mindfulness Based Cognitive Therapy (MBCT)) may serve to help teachers reduce their anxiety in the classroom. To this end, this paper will explore the potential benefits of incorporating MT interventions into teacher training and development.

III.1 Mindfulness, Interpersonal Psychology and Neurobiology/Neuroplasticity

Harry Stack Sullivan's theory of Interpersonal Psychology differs primarily from the Freudian drive/structure based theories in his placement of the self and anxiety into the

interpersonal field and not the intra-psychic field. This shift, while psychoanalytically oriented, has many parallels to current neuroplasticity and neurobiological models. Sullivan's shift in focus from the inner world to the social realm orients the treatment around a two-person rather than one-person psychology (Berzoff, 2011). In addition to relocating the source of anxiety and the self to the interpersonal, Sullivan also identified a process of development that correlates to current neurobiological models. These models identify the role of behavior and response in the development of the brain and the process of synaptogenesis, the development of neuronal networks that underlie our experience of stimuli and behavioral responses (Applegate & Shapiro, 2005; Jensen, 2015). Sullivan based his stages of development on the evolving dynamics of the relationship of the infant to the caregiver and the environment (Berzoff, 2011; Cushman, 1995; Sullivan, 1953). Cushman summarizes this concept well-

It is the child's learned response to the anxiety of others, the ability to attend to behavioral cues, anticipate reactions, and then act to prevent, assuage, or avoid the other's anxiety that causes most problematic behavior in adults. The primary tool of the child's strategies of prevention, amelioration, and avoidance is 'the self-system, 'the subconscious emotional and behavior patterns of attunement and anticipation that each individual develops in order to adapt to the particular interpersonal environment into which they were 'thrown.' (Cushman, 1995, p. 177)

Within this dynamic, the developing infant begins to manage anxiety within interactions using strategies to diffuse or avoid it. Some of the strategies identified by Sullivan include: "selective inattention", dissociation, and "parataxic distortion" (Cushman, 1995 & Sullivan, 1953). These strategies are oriented around helping individuals maintain an emotional homeostasis with their environment and depend on the reciprocal interactions of individuals and their environments.

Sullivan's stages are paralleled in "sensitive periods" of development in the brain in the neurobiological model. This suggests that the development of certain responses (physical,

emotional, behavioral) is contingent upon exposure to the appropriate external and internal stimuli that coincide with the physiological development of the brain and the infant (Pally, 2000 as cited in Applegate & Shapiro, 2005). The process of synaptogenesis occurs in response to all stimuli, internal and external. When the neurons of the brain or nervous system are stimulated, a chain reaction occurs exciting or inhibiting other neurons and creating a response. This response can include an individual's experience of a sensation such as an emotion or a tactile sensation (Applegate & Shapiro, 2005; Jensen, 2015). The responses learned to cope with stress and anxiety as well as other emotions during this time can persist into adulthood as they often serve to establish emotional and behavioral "baselines" for the individual (Applegate & Shapiro, 2005). Many of these "baseline" behaviors and responses are learned through the repetition of a particular experience exciting the same neuronal response pattern. While the patterns are often well established in the brain, new research is demonstrating that the human brain can generate new neurons throughout all stages of life (Pally, 2000 as cited in Applegate & Shapiro, 2005; Hölzel et. al., 2010; Jensen, 2015; Schwartz & Begely, 2002).

The major stages of development in Interpersonal Psychology are: Infancy (birth-1year.), Childhood (1-5years), Juvenile (6-8years), Preadolescent (9-12years), Early Adolescent (13-17years), Late Adolescence (17-23years), and Adulthood (23years on). Sullivan posits that as individuals pass through these stages they will negotiate social interactions in an effort to learn an effective pattern of behaviors to reduce their experience of anxiety through the attainment of certain proficiencies such as: delaying gratification, peer approval, intimacy, and the development of an identity (Berzoff, 2011). These stages further parallel the neurodevelopmental model in that they look to improve the understanding of the individual's outward manifestation of emotions including anxiety. The neurobiological model supports the

interpersonal idea that behaviors learned in early stages of development will persist and the neuroplasticity theory model identifies that these patterns of behavior can be changed through establishing new neuronal pathways through relearning responses. In both, the skills acquired or not acquired influence the individuals' progression through the following stage (Berzoff, 2011; Cayoun, 2005; Cushman, 1995; Erikson, 1980; Jensen, 2015; Sullivan 1953).

As this research is directly focused on intervening with adults, this paper will focus on theories as applied to adults who experienced a typical developmental trajectory. Overarching Sullivan's developmental stages are three modes of awareness or levels of cognition that describe individual perceptions of events and stimuli in the environment. They are the Prototaxic, Parataxic, and Syntactic modes. The Prototaxic mode is associated with infancy and is characterized by the infant's perception of itself as an undifferentiated part of its environment, unable to correlate experience to emotion. The Parataxic mode is associated with the time from late infancy to the development of speech and is characterized by the maturing infant's initial awareness of its differentiation from the environment and the pre-linguistic attempts at organizing these experiences. During this time, the maturing child perceives events and experiences as fragmented states of being that occur without reflection or comparison. Finally, the Syntactic mode begins with the acquisition of language and is the usual mode in which the individual operates. This mode is characterized by the ability of the individual to experience their world using consensual validation from others and can identify as an entity separate from its environment. While these modes are associated with different stages of development, individuals take in experiences through all of these modes throughout their lives. They also have memories from these times, which cannot always be translated from one mode to another and which can contribute to the experience of anxiety. (Sullivan, 1953)

These modes of experience can be interpreted as an attempt to explain the process of myelination in the human brain (Blakemore & Choudhury, 2006; Jensen, 2015). The brain is the least differentiated organ at birth (Blakemore & Choudhury, 2006; Jensen, 2015; Siegel, 1999), it develops as it is exposed to new experiences and stimuli which induce synaptogenesis. At birth there is a higher ratio of gray to white matter in the brain. Gray matter is responsible for information storage, while white matter allows the different regions of the brain to communicate more effectively (Blakemore & Choudhury, 2006; Gur et al., 1999; Jensen, 2015). As the brain becomes more differentiated through development, particularly during adolescence, neuronal pruning occurs. This pruning of the brain reduces gray matter and increases white matter. During this time, the responses to anxiety and stress also become more robust as the brain is establishing more long term networks for self-regulation (Jensen, 2015). The myelination of the brain during adolescence and into early adulthood “hard sets” the brain according to the “use it or lose it” principle, in which neuronal networks are established hierarchically according to use (Applegate & Shapiro, 2005; Jensen, 2015). This is directly in line with Sullivan’s Prototaxic, Parataxic, and Syntactic modes of experience. As the infant develops more neuronal networks to govern processing and response to stimuli governed by the “use it or lose it” principle they develop more routine and advanced cognitive mechanisms for negotiating these experiences. These hardwired behavioral and emotional responses can persist into adulthood, regardless of their effectiveness.

We continue to experience stimuli from all three levels as neuronal networks are established—these networks ultimately govern our response patterns. Responses to external stimuli, in particular anxiety, often occur at the unconscious or Prototaxic level. These responses include but are not limited to heart rate change, hormonal changes, and the triggering of “fight or

flight” (Applegate & Shapiro, 2005). Parataxic and Syntactic responses can be compared to the points in response to anxiety in which the brain uses more reactive and memory-based networks to determine response (Cayoun, 2005; Goddard & Pavlakis, 2013; Jensen, 2015). This reliance on memory and reactivity is an integral part of the “fight or flight” response that becomes habituated over time in anxiety-inducing situations (Cayourn, 2005; Jensen, 2015). As individuals pass through the developmental stages to adulthood, the brain becomes more myelinated through synaptogenesis and the development of more established neurological connections in the pre-frontal cortex (Jensen, 2015). These experiences both trigger and reinforce the development of neuronal pathways and memories which establish a “baseline” from which the individual will negotiate future experiences such as anxiety.

Sullivan uses the psychoanalytically-inspired concepts of Good Mother and Bad Mother as guiding forces in early differentiation. The Good Mother is defined as the mother that reduces or alleviates the infant’s anxiety; the Bad Mother is the mother that increases it. In the early differentiation phase, the infant still incorporates the mother into its anxiety regulation system. Sullivan identifies the Good Mother and The Bad Mother personifications as an integral part of this process. Disassociation from anxiety-inducing experiences like the Bad Mother is one of the earliest presentations of a defense by the infant. Selective inattention is one way that this is achieved and a defense that is used throughout life. These early personifications and defenses, serve as both the basis for creating future perceptions of the caregiver and also of themselves (Sullivan, 1953).

Cayoun (2005) presents a more behavioral model that outlines a more classic learned response that incorporates the physiological, cognitive, and behavioral responses of a stimulus into a Co-emergence Model of Reinforcement. His model consists of 5 elements: Stimulus

(internal/external), Sensory Perception, Evaluation (incorporating memories, personality, context, expectation, etc. into the processing of the experience), Interoception (bodily sensations triggered by evaluation), and Reaction (response). In this model, stimuli (internal/external) trigger sensory perceptions, which in turn are interpreted through the processes of evaluation and interoception that generate a reaction. In the ideal model, the four states following the stimulus maintain equilibrium using patterns of learned response. The system shifts to reaction when the stimulus reaches a specific intensity. This process can happen while awareness of physiological sensations remains below the awareness threshold (Cayoun, 2005).

Cayoun's (2005) model also describes mental illness and maladaptive responses as an over use of the evaluation and reaction elements of the model. The use of evaluation directs the individual to focus on the rational experience and react. He gives an example of an individual that struggles to identify subtler physiological experiences, such as the weight of feel of the hands or feet upon a surface, to describe this phenomenon. Operation from this state of disequilibrium can lead to negative physiological and cognitive effects related to the prolonged release of stress hormones adrenaline and cortisol (Applegate & Shapiro, 2005; Cayoun, 2005; Jensen, 2015). This dependence on the evaluation phase, which includes memory and other habituated responses, is in line with Sullivan's notion of unconscious processes affecting our current responses. Sullivan identifies that this process serves to help the infant differentiate from their environment and develop a self-system to negotiate anxiety inducing interactions as entities separate from a mother.

The self-system is derived wholly from the interpersonal aspects of the necessary environment of the human being; it is organized because of the extremely unpalatable, extremely uncomfortable experience of anxiety; and it is organized in such a way as to avoid or minimize existent or foreseen anxiety. (Sullivan, p.190, 1953)

The self-system is preceded by the development of the entities of which it is comprised. Early in the differentiation process, the infant begins to identify a concept of “*me*” separate from but born of the relationship to the caregiver in three personifications: *good-me*, *bad-me*, and *not-me*. The *good-me* identifies with and organizes positive experiences in the environment; the *bad-me* identifies with and organizes anxiety inducing experiences from the environment; and the *not-me* is the manifestation of negative or potentially traumatic experiences that elicited “uncanny feelings”, which are feelings so intensely and suddenly jarring they are unsettling to the point of potential disassociation. The not-me is often comprised of these types of experiences which occurred during the pre-linguistic (Prototaxic or Parataxic) time and are therefore intensely unsettling and difficult to interpret because they exist in a symbolic rather than linguistic form (Sullivan, 1953). These elements are similarly represented in the Co-emergent Model and MT as mindlessness and “experiential avoidance”, in that all are techniques which serve to minimize the experience of unpleasant stimuli through some form of disassociation or denial (Cayoun, 2005).

Sullivan’s definition of dynamic interaction and Cayoun’s inclusion of internal and external both allow for a greater range of potential sources of anxiety. However, they simultaneously create a greater range of potential points of intervention among individuals and their environments (Cayoun, 2005; Cushman, 1995). Sullivan also shifts the loci of interventions to the interpersonal dynamic. This is relevant to the research as the intervention will seek to reduce anxiety in the interpersonal dynamic between the student and teacher through the use of an MT intervention. In the classroom, the teacher brings their own experience to their interactions with the students. Using Sullivan’s or the neurobiological definition of the interpretation and response to anxiety interventions that aim to increase the individuals awareness of anxiety with a focus on minimizing the intensity of the anxiety would serve to

improve the quality of the teachers interaction with the environment. Both Interpersonal Psychological and MT interventions attempt to orient the individual back to the present moment through the redirection of attention back to their thoughts, feelings, and physiological sensations during stressful or anxiety inducing situations (Berzoff, 2011; Cayoun, 2005; Kabat-Zinn, 1994; Sullivan, 1953). Cayoun (2005) posits that this maladaptive pattern is learned and can be altered through using MT interventions to help individuals relearn new response patterns to stress and anxiety inducing stimuli by redirecting attention back to the interoceptive phase of his model in an effort to restore equilibrium to the system.

Sullivan's framework overlaps well with the neurobiological development of the brain, its experience of the dynamic nature of the individual and the environment, and the development of anxiety and other emotions and the responses employed to cope with them. This developmental framework combined with current knowledge of the levels of cognition provides a lens to identify points of anxiety creation as well as points of intervention. Cayoun and Sullivan's interventions parallel MT interventions in several ways. Both use interventions that try to improve an individual's non-judgmental acceptance of reality and a focus on the present as important for improving one's ability to improve their tolerance of anxiety and other negative affects and reduce denial (Berzoff, 2011 & Kabat-Zinn, 1994).

III.2 Co-Emergence Model of Reinforcement, EF, & Mindfulness Interventions

The teacher student interaction, from which each participant experiences anxiety, is central to the school social dynamic. Based on Sullivan's theory, the experience of stress in this teacher/student dynamic, by either party, would positively correlate to the anxiety of the other (Cushman, 1995 & Sullivan 1953). The Co-emergent Model would suggest that the teacher's habituated anxiety response in the classroom would affect their responses to the anxiety inducing stimuli in a balanced or unbalanced manner. The Co-emergent model is oriented around the use of MT interventions in order to help maintain equilibrium through increasing awareness of physiological and emotional sensations. MT interventions have been growing in popularity as the research around their effectiveness across domains continues to grow. Medicine, business, and education are a few of the notable domains Mindfulness Therapy (MT) interventions have been used effectively (Roeser et al., 2013) This research will focus on the potential benefits of MT application within the educational domain as a means to reduce teacher stress and improve student teacher relationships.

Roeser et al. (2013), identified teaching as one of the most stressful professions for reasons including, the socio-emotional demands of managing up to 30 or more students, and the need for consistent attention to numerous personal and academic interactions coupled with the simultaneous demand for creativity and flexibility in response to them, as factors contributing to this elevated stress level. Teachers, themselves, report that some of the significant sources of their stress include workload, lack of support from colleagues and administrators, and management of students (Kyriacou, 2001). Central to the negotiation of these triggers is the

teacher's personal ability to manage stress. As indicated above, many of the adverse effects of stress management detract from the academic and social experience of the students (Briner & Dewberry, 2007; Jennings & Greenberg, 2009; Darr & Johns, 2008; Roeser et al., 2012). Research based, cost effective interventions for teachers could serve to improve their management of these issues and in turn improve the quality of the interactions with their students.

MT has been demonstrated to be an effective, accessible, and cost effective intervention across various domains (Meiklejohn et al. 2012). MT has also been shown to improve Executive Functioning (EF) in the brain, anxiety/stress management, and feelings of self-efficacy as demonstrated by both self-report and neurophysiological studies (Meiklejohn et al., 2012; Moynihan et al., 2013; Roeser et al. 2013). EF is a blanket term that describes activities associated with the pre-frontal cortex in the brain. Some of the activities included under EF are: planning, working memory, attention, problem solving, verbal reasoning, inhibition, mental flexibility, multi-tasking, and the initiation and monitoring of actions (Chan et al., 2008). MT seeks to meet these ends through the redirection of attention back to the self and the present moment, nonjudgmentally (Kabat-Zinn, 1994). The Co-emergent model posits that attention is a key factor in restoring equilibrium to the stimulus response process (Cayoun, 2005). Through the redirection of attention back to one's self and the associated physiological experience of stress or anxiety MT interventions serve to reduce the individual's reactivity to non-life threatening stimuli (Cayoun, 2005; Ekman, 2003; Gunnar & Quevedo, 2007). Within the context of the classroom the nonjudgmental element becomes important as teacher's judgmental perceptions of themselves and their students negatively affect their learning of new coping

mechanisms to cope with stress, through the induction of stress or anxiety into the system (Cayoun, 2005).

MT's success is often correlated to its impact on EF (Meiklejohn et al., 2012; Moynihan, 2012; Roeser et al., 2013). EF is a blanket term that describes activities associated with the pre-frontal cortex in the brain. Attention is one key component of EF, as well as: planning, working memory, problem solving, verbal reasoning, inhibition, mental flexibility, multi-tasking, and the initiation and monitoring of actions (Chan et al., 2008). Successful interventions use MT techniques to strengthen specific areas of one's EF in order to improve stress/anxiety management. Some of the techniques employed in MT to improve EF include meditation, body scan (to improve physiological awareness), Progressive Muscle Relaxation (PMR), and self-reflection (Kabatt-Zinn, 1994). The use of MT interventions has also been shown to lead to changes the neuronal structures of the brain in areas such as the pre-frontal cortex and the amygdala (Cayoun, 2005; Hölzel et. al., 2010; Jensen, 2015). This is significant in that EF is believed to be based in the prefrontal cortex and the amygdala is a crucial structure in the induction of fight or flight based responses (Cayoun, 2005; Hölzel et. al., 2010; Jensen, 2015; Meiklejohn et al., 2012; Moynihan et al., 2012; Roeser et al., 2013).

If a change in EF can be demonstrated over time, it would lend support to the growing research on the neuroplasticity of the adult brain and the development of more effective techniques to improve individual anxiety management, through the demonstration of a new adaptive response pattern in the individual, which suggests that a new or altered neuronal network would underlie the adaptation. Other recent studies have used scales to measure change in EF and anxiety and depression states as well as collecting physiological data corresponding to changes in heart rate and hormone levels after implementation of a MT intervention (Meiklejohn

et al., 2012). These studies have shown promising results in providing participants with reduced levels of anxiety and stress as well as improving conflict resolution skills.

In order to control for the attention that will be given to the MT group in a comparison intervention study design will be used. The comparison group will participate in the same intervention, without direct instruction, in an online format. Numerous theories including Freud, Klein, Sullivan, and Rogers correlate the negotiation of social relationships to emotional state and subsequent behavior. This notion applies directly to the teacher student relationship. The often competing demands on the student and the teacher create a dynamic that can create numerous conflicts and increase the experience of stress and anxiety for both individuals (Boekaerts, 1993; Meiklejohn et al., 2012; Roeser et al., 2013). A research comparison of an online versus “in-vivo” presentation of an MT intervention on reducing anxiety could be beneficial to schools and other organizations because the interventions can be short in duration and low in cost, two factors that are important for anyone seeking relief from anxiety or when seeking an intervention to use in an agency.

Sullivan’s broader approach to intervention and inclusion of extraneous factors such as the environment, its inhabitants, and its constructs, in particular social justice align well with the practice of social work (Cushman, 1995; www.socialworkers.org/practice/default.asp). According to the National Association of Social Workers (NASW) the practice of social work includes the provision of services to help improve the social conditions of individuals and communities (<http://www.socialworkers.org/practice/default.asp>). The purpose of this research is to improve the social conditions within the school community through improving teachers’ ability to manage anxiety within themselves and, in turn, the school environment. From a social justice perspective, this research seeks to improve the quality of the educational experience for

students through improving teacher's ability to manage personal anxiety and stress more effectively. Schools are integral to the communities and students that they serve, as well as the rest of society by preparing students to become educated citizens. Research that seeks to improve the quality of the educational experience for students also seeks to strengthen the fabric of society, our future citizens.

III.2.1 On-line Intervention

A comparison of an on-line versus an "in-vivo" presentation will help to determine if on-line interventions, such as the MBSR intervention proposed in this study, can be an effective resource for teacher support. On-line interventions have been in use for over ten years, Barak, Hen, Boniel-Nissim, & Shapira, (2008), performed a meta-analysis of 69 articles inclusive of 92 total on-line interventions and found that on-line interventions to have a similar Effect Size (ES) to in-vivo, face-to-face therapies and interventions. This meta-analysis also provided a thorough breakdown of the issues treated (e.g. PTSD, anxiety, depression), theoretical orientation of the interventions (e.g. CBT, Client Centered) the different types of online interventions (e.g.: E-therapy, website & individual, group), type of interface used for the on-line interventions (e.g. static, interactive), and outcome measures. The on-line portion of the intervention will include the relevant criteria that Barak et. al., (2008), identified in the studies selected for the meta-analysis.

IV. Methodology:

This pilot research will employ a comparative effectiveness study of 4 week MBSR intervention presented in two formats: “in-vivo” and “on-line”. The study will seek to identify whether the “in-vivo” is more effective at reducing anxiety when mediated by improvement in EF scores in participants when compared to those receiving the intervention in a purely “on-line” format. The research will utilize an experimental randomized control trial design. The research will also seek to identify the effectiveness of condensing the 8 week intervention into 4 weeks by identifying if the shorter presentation will yield any decrease in anxiety when mediated by Executive Functioning (EF). Anxiety will be measured using the Burns Anxiety Inventory (BAI) and EF will be measured using the Barkley Deficits in Executive Functioning Scale-Short Form (BDEFS-SF).

IV.1 Recruitment and Randomization Procedures

Subjects will be recruited through the Philadelphia Teacher Mentor Network and the Teacher Education Program at the Graduate School of Education (GSE). Enrollment will begin up to two months prior to the start of the first intervention to allow adequate time to collect enough participants to randomize them into one of the two conditions. Enrollment will continue throughout the first two months of the intervention and end on the first day of the last week of the second month of the intervention. The teachers who participate will be split into the two conditions using GraphPad online randomization software (<http://www.graphpad.com/quickcalcs/index.cfm>).

This software generates a list that correlates a number representing the participants to a letter representing the conditions. In this study, each participant will be assigned a number from

1 to the total n. Each condition will be assigned a letter; the "in-vivo" MBSR group will be the A condition, and the Online group will be the B condition. A demographic analysis inclusive of age, gender, and whether or not the participant is retired or employed will be done to ensure that the groups are statistically similar. Another randomization using the above procedure will be conducted until demographic analysis demonstrates that the process will provide statistically similar intervention conditions.

Surveys will be taken online by the participants in their own time outside of the intervention. Both the "in-vivo" MBSR and online MBSR group will be asked to complete the scales 3 times: pre-intervention, participants will be asked to complete the scales when they set up their user access for the website, post intervention, participants will be asked to complete the scales upon completion of the fourth week of the intervention, and 6 weeks post intervention. The BDEFS-SF is reported to take 4-5 minutes to complete. The BAI is also a short self-report form which takes 4-5 minutes to complete. It will take each participant approximately ten minutes to complete both surveys, over the course of three separate administrations it participants will spend about thirty minutes total completing the surveys. Additionally, participants will be asked to log their meditation times using the online system, the user will be able to determine how they choose to input the data (daily or weekly), this should take an estimated 2-5 minutes per day or 5-10 minutes if done weekly.

IV.2 Setting:

This research will take place in the Graduate School of Education (GSE) at the University of Pennsylvania in Philadelphia, PA. The interventions will be carried out as a pilot study using

a voluntary sample of teachers who participate in the Philadelphia-Area Teacher Network and the Penn GSE Teacher Network. The Philadelphia-Area Teacher Network

aims to support, encourage and inspire new teachers working in the Philadelphia Area. Since 2008, the Network has connected teachers around the city and provided school-based mentoring, regular support gatherings, workshops, and a Summer Institute. The network works in conjunction with our website to provide on-line and real-world resources for new and veteran teachers (<http://www.pennteachernetwork.com/about-the-philadelphia-teacher-network.html>).

The Penn GSE Teacher Network is “an online hub created and maintained by alumni and current students of the Teacher Education Program at Penn GSE”

(<http://www.pennteachernetwork.com/about-the-philadelphia-teacher-network.html>).

Interventions will take place in rooms within GSE buildings equipped with the requisite audio and visual equipment, writing materials, and space necessary to provide the interventions. These rooms may include auditoriums, classrooms, conference rooms, or other similar space.

The 4 week interventions will be offered “in-vivo”, 2 times per month over a 3 month span at the GSE. Each month 40 spots will also be open to teachers in the “in-vivo” condition. The interventions will be offered to two separate groups of up to 20 participants monthly over the course of the 3 months, in an effort to increase participation and sample size. This study seeks to reach an n of up to 240 participants, however as participation will be voluntary, and the expected n of 240 may not be reached, this study will analyze the data of all participants collected after the final round of data collection 6 weeks after the conclusion of the final month of the intervention. Participation will be open up until the first day of the first week of the third month of the project or until an n of 120 is reached. Participants will be asked to separately participate in the data collection after providing informed consent about confidentiality, intent of

data analysis, scope of research, and a guarantee that their participation will bear no consequence.

IV.3 Sample:

Ideally this pilot study sample will include at least 240 teachers after accounting for all confounding variables such as schedule conflicts, attrition, etc. As this is a pilot study, with this population, a post-intervention power analysis of the data will be performed to determine if the intervention yielded a statistically significant effect. Similar studies have used smaller sample sizes and reported positive outcomes in their use of MT interventions (Franco, Mañas, Cangas, Moreno, & Gallego, 2010, Meiklejohn et al. 2012, Singh, Lancioni, Winton, Karazsia, & Singh, 2013).

As participation in the intervention will be voluntary, the attrition and refusal rate for the intervention conditions are expected to be minimal. Refusal and attrition rate for participation in the research is also expected to be low, as the selected scales are brief and will be able to be completed online in the participants own time. All data on refusers and dropouts will be recorded and reported in the final analysis. Multiple tracking procedures will be in place for both conditions. Sign-in sheets will be collected from each “in-vivo” group session to track attendance and participation. All participants in both groups will receive a unique log in to the website. This will allow for the tracking of participants in the on-line condition, as well as provide access to logs for tracking all participants’ meditation and total number of times the web-based information is accessed by participants in both conditions. The participants will also complete their informed consent and the outcome measures (BDEFS-SF and BAI) through the website. The meditation logs will serve as measures to track adherence to the MBSR

intervention. To further ensure participation, reminder emails will be sent to participants to inform them when logs are due and surveys need to be completed.

Inclusion Criteria (no exclusion criteria):

- Teachers must be classroom teachers
- Currently or formerly employed
- Voluntarily participation in the study

IV.4 Intervention:

This research is going to compare the effectiveness of an 4 week “in-vivo” MBSR and 4 week on-line program on anxiety reduction when mediated by EF. There will be two group conditions: the in-vivo group and the on-line group. Both groups will complete EF and Anxiety scales pre/post-test and 6 weeks after the intervention. Participants will be provided with notebooks and all worksheets or materials necessary for the interventions.

Participants in each group will be provided the opportunity to participate in a pre-intervention meeting wherein the procedures for the assigned conditions and expectations of participation will be explained. Participants will be given the opportunity to ask questions during this time.

MBSR Intervention:

Both groups will participate in a 4 week structured MBSR training. The curriculum for both classes is an 8 week internet-based MBSR program, developed by David Potter, LPC. His permission was given to use his online course. The original outline for this training can be found at http://palousemindfulness.com/selfguidedMBSR_gettingstarted.html. The intervention will condense the eight week intervention into 4 weeks. Each of the 4 in-vivo sessions will cover 2 weeks of the curriculum in a 90-minute training. The on-line participants will only access the

intervention and its materials through the website. The website that is going to be used for this research will be described in further detail in the following section. Each participant will be asked to complete homework from the website associated with each lesson. This homework will include reading articles and keeping practice logs. All participants will be asked to meditate daily, outside of the weekly trainings, and log their practice through the website designed for this research. As participation is voluntary daily meditation cannot be guaranteed. The logs will be analyzed to determine if there is a positive correlation between the number of days meditated and EF. This data will also guide future interventions if a positive correlation can be established.

An online course was chosen to control for potential absences by participants in the MBSR group. Participants in the “in-vivo” condition will be able to access the intervention materials through the website as necessary to complete the intervention tasks and homework. In weeks 2 and 4, the video content will be longer than the given timeframe. In these weeks the video portion of the training will be cut short to allow for direct instruction of a new concept to the group by the “Trainer”. The unwatched segments of the video will be assigned as homework in these weeks. The sessions will be as structured as follows:

Week 1: Body Scan

- 20 minutes-Participants will watch the selected videos as a group.
- 10 minutes-Group discussion of videos
- 15 minutes-Trainers teach participants use of “Formal” and “Informal” practice forms.
- 5 minutes-Break

Mindfulness/Attention

- 20 minutes-Participants will watch the selected videos as a group.
- 20 minutes-Group discussion of videos and homework.
- 5 minutes-Trainers assignment of homework.

Week 2: Yoga

- 20 minutes-Participants will watch the selected videos as a group.
- 20 minutes-Trainers teach participants yoga poses, assignment of homework.
- 3 minutes-Break

Overcoming Chronic Stress

- 22 minutes-Participants will watch the selected videos as a group.
- 25 minutes- guided discussion on benefits of practice, assignment of homework.

Week 3: Compassion

- 45 minute video of Dalai Lama lecturing on compassion, assignment of homework.
- 5 minutes-Break

Non-Violent Communication

- 10 minutes- Group discussion of week Compassion video.
- 30 minutes-Video, assignment of homework.

Week 4: PAIN/ RAIN

- 20 minutes-Participants will watch the selected videos as a group.
- 25 minutes-Trainers will provide direct instruction of the PAIN & RAIN practice logs and the 5 Step Model of Mindfulness forms, assignment of homework.

Conclusion

- 15 minutes-Participants will watch the selected videos as a group.
- 5 minutes-Group Meditation
- 15 minutes-Discussion of future practice of strategies learned over the 8 week course.

See http://palousemindfulness.com/selfguidedMBSR_gettingstarted.html for a more detailed description of the specific weekly readings and videos which comprise the entirety of the course content material.

IV.5 Website

The website being used in this research is being developed as a stand-alone entity that incorporates functionality from two other sources, REDCap and Self-Paced Lessons from the Mindfulness website (<http://palousemindfulness.com/index.html>). The website will act as a central hub for all of the participants who are taking part in the research and will serve as the only interface for the participants in the online portion of the study. The website will provide this researcher with the resources necessary for ensuring anonymity, data/metrics collection, and online learning materials.

The Intervention website is an integration effort to provide access to functionality offered by other websites and services. The only thing that the Intervention website will control is the registration and login capabilities for study users. A user database will be instantiated to allow for participants to create and retain login credentials for repeated use during the time that they are involved with the study. The ability to remove their account will also be available to the users so that they can delete their account once they have completed their necessary tasks. This will help to minimize vulnerabilities by keeping only current user accounts in the database. The Intervention website will consist of a homepage for each user that will provide links to: (1) Self-Guided Meditation Lessons and a (2) Survey Section. The Self-Guided Meditation Lessons section of the MBSR website will be hyperlinks to the existing lessons on the Mindfulness website. With the approved consent of the IRB and the website owner the intent is to leverage pre-existing material to minimize on the time needed to design the website.

IV.6 Data Capture/Storage:

The data capture section will be a combination of meditation logs and surveys, all of which will be built on and reside within REDCap (<http://www.med.upenn.edu/scrcm/redcap.html>), and then be offered through the website. All data that is captured in the logs and surveys will go through REDCap, this will ensure that all the information being stored is on a HIPAA approved system. Anyone who register for the website will be required to agree to a consent form for release of their data, this will be built in REDCap and allow for retention of the agreement past the deletion of the user account on the MBSR Website database. This will also provide the agreements for future use, if needed, to have the study data published in publications and articles. The BAI and BDEFS surveys and the users responses will be stored on the REDCap server so that the data from these surveys can then be exported for analysis in other software programs. In order to ensure that users meditation logs are also kept confidential they will also be built in REDCap.

IV.7 Measures:

Executive Functioning:

As defined above, EF is a blanket term that describes activities associated with the pre-frontal cortex in the brain. Some of the activities included under EF are: planning, working memory, attention, problem solving, verbal reasoning, inhibition, mental flexibility, multi-tasking, and the initiation and monitoring of actions (Chan et al. 2008).

BDEFS

The BDEFS was authored by Russell Barkley and Published by Guilford in 2011. This instrument was reviewed in the test is designed to assess deficits in Executive Functioning (EF) in adults aged 18 to 81. The test measures EF across 5 domains: self-organization, self-restraint, self-motivation, self-regulation of emotion, and self-management to time. The normative sample for the test was 1249 adults aged 18 to 96. The normative sample was comparable to 2000 Census data in terms of its demographic distribution. There are three versions of the instrument, a self-report and other-report, both with long and short forms, which use a Likert-type rating scale and an interview version for clinicians to use with individuals who are unable to complete the forms. Only the self-report short form will be used in this intervention (BDEFS-SF). The internal consistency for the instrument was measured using Cronbach's alpha and Pearson's product-moment correlation (r). The BDEFS-SF had an alpha of .92. " Pearson's r correlations across subscales ranged from .55 to .80, and correlations between versions, long and short forms, were also found to be high" (Allee-Smith, Winters, Drake, & Josilin, 2013, p.82)

The author of the test, Barkley, only details the construct and criterion validity of the BDEFS not the content validity in the manual and uses the prototype version of the BDEFS, P-BDEFS, for comparison. This was an intentional as the instrument was specifically designed not to be compared to existing measures of EF (Flagg, 2014). In a recent review of the instrument Allee-Smith, Winters, Drake, & Josilin (2013) indicate that while the instrument has satisfactory validity, replication of the analyses is still needed. Their review of the instrument provides a thorough description of the construct and criterion analysis. Their descriptions are quoted below.

Construct validity:

Construct validity of the BDEFS was based on Barkley's unique definition

of EF and established using the P-BDEFS. As such, there are challenges in determining evidence for convergent validity. Regardless, subscales of the P-BDEFS were correlated to various EF tests, such as the Conners CPT and the Stroop ColorWord Test. The correlations ranged from .04 to .41 and .01 to .31, with the direction of all correlations being theoretically appropriate. Although some correlations were statistically significant, these were in the moderate to weak range. To establish discriminate validity, Barkley examined the ability of the P-BDEFS to differentiate between subjects with and without ADHD. Analyses found that those with ADHD were more likely to score in the clinically significant range than those in the control group. Barkley also examined the overlap of the P-BDEFS with IQ and academic achievement. Only one subscale, Self-Organization/Problem-Solving, was significantly related to IQ ($r = .15$, $p = .007$). Weak statistically significant correlations were found with academic achievement. Thus, Barkley determined that the P-BDEFS is not mistakenly measuring alternate constructs.

Criterion validity:

Correlations from the normative sample and pilot studies were used to examine how scores on the BDEFS and P-BDEFS relate to concurrent outcomes, such as ADHD severity, arrests, and psychopathology. For example, the BDEFS was correlated to ADHD severity using an adult ADHD rating scale, which found statistically significant correlations at $p .001$. The results of these and additional outcomes measured indicate that scores on the P-BDEFS and BDEFS are related to many concurrent outcomes. (Allee-Smith, Winters, Drake, & Josilin, 2013, pp. 82-83)

This instrument has been selected for its ease of administration, its ability to document change in EF over time and in everyday life circumstances, and its use in similar research (Flagg, 2014).

This instrument will be administered to participants in both groups three times: pre-intervention to establish a baseline measure of EF for each participant, post-intervention to determine amount of change over the course of the intervention, and at 6 weeks after the intervention to determine if there was any lasting benefit of the intervention over time in anxiety reduction and EF.

Anxiety:

For the purposes of this research, anxiety will be defined as an experience that can be unpleasant, fragmenting, paralyzing, and contagious (Sullivan, 1953). Additionally, anxiety in this research is based in the social system and interpreted through the “consensual validations” of others (Cushman, 1995 & Sullivan, 1953). This means that the individual experience of anxiety is either supported or not supported by the other people in their environment. The Burns Anxiety Inventory (BAI) will be used to measure the participants’ anxiety at the same intervals as the BDEFS-SF is administered. This scale was chosen as it measures the experience of anxiety across three domains: anxious feelings, anxious thoughts, and physical symptoms. This division of anxiety into these domains allows the measurement of the areas that this research is seeking to demonstrate improvement. The BAI is also a commonly used instrument with good validity demonstrated across populations (Piotrowski, 1999).

An Analysis of Covariance (ANCOVA) will be performed on the data collected from the BDEFS-SF and BAI to see if there is a positive correlation between anxiety reduction and improvement in EF and to what extent each condition demonstrated change.

IV.8 Analysis:

This comparative intervention study seeks to demonstrate that a 4 week “in-vivo” MBSR intervention is more effective than a self-guided online presentation of the intervention in

reducing teachers' anxiety, when mediated by EF. The principle investigator will use an *intent to treat* analytical approach in which all the data collected will be analyzed including any partially collected data sets from individuals who are unable to complete the measures in the appropriate timeframe for any reason.

In order to demonstrate that anxiety has been reduced in the individuals and that it can be correlated to an improvement in EF, the individuals will have to demonstrate both reduced scores on the BAI and improved scores on the BDEFS. After this correlation is established for both conditions, an analysis will be performed to compare the mean BAI scores for each group to the mean BDEFS score for each group to identify if the “in-vivo” MBSR condition was more effective at reducing anxiety when mediated by EF than the online condition. This will be demonstrated if the mean BAI score is lower and the mean BDEFS score is higher for the MBSR group. Further analysis will be done to identify if there are correlations between effectiveness reduction of BAI scores and demographics and specific subscales of EF as measured in the BDEFS.

A power analysis will be performed prior to the first round of participant registration to determine the sample size needed for the interventions to have a statistically significant effect on the separate intervention groups.

IV.9 Administrative Arrangements:

This researcher, James K. Joseph, LCSW, M.S.Ed., has collaborated with the Teacher Education Program at the University of Pennsylvania as a guest lecturer since the Spring 2014 semester. It is through this collaboration with the Teacher Education Program that the researcher

was introduced to the Philadelphia Teacher Mentor Network. Both the Teacher Education Program and Philadelphia Teacher Mentor Network have granted their permission to this researcher to recruit participants through their programs. They have also granted separate permission for the collection of data on the intervention. Additionally, they have agreed to allow the use of all the necessary facilities and any necessary supplemental materials needed. (See Appendix B for Letter of Agreement)

IV.10 Human Subjects:

The consent will be explained to all teachers during the pre-intervention meeting where both conditions are presented. At this time the consent form will be reviewed with all the teachers by the principle investigator. It will be explained to them at that time that they are consenting to complete the internet-based survey three times, pre and post-test, and at a 6 week follow up interval. The teachers will be asked to sign the consent form electronically prior to beginning the survey. An email containing all of the information presented at the meetings will also be sent to participants who are unable to attend the meetings. The email will contain a link to the Intervention website which will allow them to set up their user account for the intervention and provide their consent electronically. The survey will be designed to prohibit answering the questions until consent is attained.

The principle investigator will also explain that the data collected is confidential. The data will be stored in a password protected internet-based program which eliminates much of the need for paper data to be protected. Finally, the Philadelphia Mentor Network and the Teacher Education Program will not have access to any individual data, only aggregate data and results as needed for evaluation of program success and future program development.

While the risks of the intervention conditions are minimal, the teachers will be informed that the discussion of anxiety-inducing events and the act of finding solutions can lead to some emotional distress and conflict in group discussions. The teachers will be informed that there participation in the interventions is voluntary, and their inability to complete any of the outside homework in the MBSR condition or perform all of the exercises would bear no consequence. They would be informed that there is no negative consequence for opting out during the course of the study, and that they are not required to perform any act that they find to be uncomfortable or choose not to do. They will also be ensured that there participation or non-participation will have no effect on payment, benefits, or job security in any way. The data collection is opt-in. If individuals do not complete the survey, there will be no negative consequences.

The benefits to full participation in the intervention outweigh the risks. Both intervention conditions provide teachers with opportunities to learn strategies to reduce their anxiety and improve their interpersonal relationships. Even if individuals only participate partially, they will be exposed to positive methods of anxiety reduction and conflict resolution. Should the research demonstrate that MBSR is effective in reducing teacher anxiety and improving EF, it can guide the development of MT interventions in schools by improving the teachers' experiences at school through reducing anxiety.

V. Conclusion: Limitations/ Implications

V.1 Limitations:

This research proposal is limited by its application of the theories used with a “typical” population. Outcomes of the research and data analysis may not be generalizable to individuals

or groups that do not identify as having a “typical” development. This research also is based on the assumptions of the theories presented, and has been developed in line with specific theoretical approaches to defining and treating anxiety. Other theoretical orientations or approaches may not correlate to the research proposal presented.

V.2 Implications:

This research seeks to contribute to the growing body of evidence supporting MT interventions. Sona Dimidjian and Zindel V. Segal (2015) provide 7 guidelines researchers can follow to improve the quality of the research that is currently being undertaken to support the growing academic interest in Mindfulness Based Interventions:

Recommendation 1.	Attend to the Basics: Specify Intervention Targets and Populations
Recommendation 2.	Do Not Conflate Promise With Efficacy
Recommendation 3.	Engage the Thorny Question of Clinician Training
Recommendation 4.	It’s Time to Get Specific About the Specific Effects of MBI
Recommendation 5.	Consider Skipping to but Not Over Stage III
Recommendation 6.	Efficacy Is Necessary but Not Sufficient for Effectiveness
Recommendation 7.	Beware of Developing Orphan Innovations, Falling Off the Implementation Cliff, and Getting Caught in “Implementation Limbo”

(Dimidjian & Segal, 2015, pp. 604-608)

They incorporate the recently introduced National Institutes of Health (NIH) stage of research for clinical psychologies as a basis for their guidelines. They are attempting to create consistency and improve the quality of the emerging empirical research base for Mindfulness

Based Interventions. This research attempts to follow these guidelines to optimize the relevance of this research to the field (Dimidjian & Segal, 2015).

This study is seeking to adhere as closely as possible to these guidelines in the following ways. This research lays out a clear population, teachers, and a clear target, anxiety reduction through increased EF. The research is also seeking to identify a specific correlation between these two variables, this also aligns with guideline four in its attempt to identify a specific outcome, change in EF, of an MBI. Future incarnations of this research will seek to address the issue of clinician training further, through expanding the number of clinicians running the intervention and formalizing a Mindfulness based training for these clinicians. Additionally, future research will seek to compare the effectiveness of this intervention to other interventions for anxiety.

The practice of social work includes the provision of services to help improve the social conditions of individuals and communities in an effort to improve social justice (<http://www.socialworkers.org/practice/default.asp>). To this end this research proposal seeks to improve the quality of the school and academic community at large through intervention at the level of the teacher. Any intervention that seeks to improve the quality of the social institutions and in turn the citizens they serve, is seeking to improve social justice. The development of effective, low-cost, easily accessible interventions to help individuals in these locations could improve delivery of services like education and health care. If this intervention proves to be effective, the intervention could be applied to other social institutions with similar high-anxiety environments such as hospitals and prisons.

In addition to the impact on the teacher, future research could seek to identify a correlation between the teacher's use of MT interventions and the level of anxiety in their students. Future research could also explore the change of EF in participants by age. Analysis of the data through this lens could serve to further support the research on neuroplasticity of the brain throughout the entire developmental cycle. This research is projected to begin in early 2016 with recruits from The Graduate School of Education at the University of Pennsylvania. Prior to the beginning of the research, opportunities to increase recruitment through collaboration with other researchers or academic programs, grants, and the potential addition of training instructors to run the intervention will be explored.

VI. References

- Allee-Smith, P., Winters, R., Drake, A., & Joslin, A. (2012). Test Review: Barkley deficits in executive functioning scale (BDEFS). *Journal of Psychoeducational Assessment*, 31(1), 80-83.
- Applegate, J.S. & Shapiro J.R. (2005). The brain: an introductory tutorial; the neurobiology of memory and affect: toward a neurological integration: In *Neurobiology for clinical social work: Theory and practice*. (pp.1-39). New York: Norton.
- Arthur, N. (1998). The effects of stress, depression, and anxiety on postsecondary students' coping strategies. *Journal of College Student Development*.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for the Beck Depression Inventory-II*. San Antonio, TX: Psychological Corporation.
- Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review*, 8, 77–100. doi:10.1016/0272-7358(88)90050-5
- Boekaerts, M. (1993). Being concerned with well-being and with learning. *Educational Psychologist*, 28, 149–167. doi:10.1207/s15326985ep2802_4
- Blakemore, S.-J. and Choudhury, S. (2006), Development of the adolescent brain: implications for executive function and social cognition. *Journal of Child Psychology and Psychiatry*,

47: 296–312. doi: 10.1111/j.1469-7610.2006.01611.x

Briner, R., & Dewberry, C. (2007). Staff wellbeing is key to school success. Retrieved from <http://www.scribd.com/doc/34205400/Staff-wellbeing-is-key-to-school-success-Full-Report>

Bruce, C. D., & Ross, J. A. (2008). A model for increasing reform implementation and teacher efficacy: Teacher peer coaching in grades 3 and 6 mathematics. *Canadian Journal of Education/Revue canadienne de l'éducation*, 346-370.

Cayoun, B. (2005). From co-emergence dynamics to human perceptual evolution: the role of neuroplasticity during mindfulness training.
<http://mindfulness.net.au/pdf/keynote%20address.pdf>

Chan, R. C. K., Shum, D., Touloupoulou, T., & Chen, E. Y. H. (2008). “Assessment of executive functions: Review of instruments and identification of critical issues”. *Archives of Clinical Neuropsychology*, 23(2), 201–216. doi:10.1016/j.acn.2007.08.010
DOI:dx.doi.org

Cohen, S., Miller, G. E., & Rabin, B. S. (2001). Psychological stress and antibody response to immunization: a critical review of the human literature. *Psychosomatic medicine*, 63(1), 7-18.

Cushman, P. (1995). *Constructing the self, constructing America: A cultural history of psychotherapy*. DA CAPO Press.

- Daniels, B., & Hewitt, J. (1978). Anxiety and classroom examination performance. *Journal of clinical psychology*, 34(2), 340-345.
- Darr, W., & Johns, G. (2008). Work strain, health and absenteeism: A meta-analysis. *Journal of Occupational Health Psychology*, 13, 293–318. doi:10.1037/a0012639
- Dimidjian, S. & Segal, Zindel V. (2015). Prospects for a clinical science of mindfulness-based intervention. *American Psychologist*. 70(7), 593-620.
<http://proxy.library.upenn.edu:2100/10.1037/a0039589>
- Duchesne, S., Vitaro, F., Larose, S., & Tremblay, R. E. (2008). Trajectories of anxiety during elementary-school years and the prediction of high school noncompletion. *Journal of Youth and Adolescence*, 37(9), 1134-1146. doi:http://dx.doi.org/10.1007/s10964-007-224-0
- Ekman, P. (2003). *Emotions revealed*. New York, NY: Holt.
- Franco, C., Mañas, I., Cangas, A. J., Moreno, E., & Gallego, J. (2010). Reducing teachers' psychological distress through a mindfulness training program. *The Spanish Journal of Psychology*, 13(2), 655-666. doi:http://dx.doi.org/10.1017/S1138741600002328
- Gioia, G. A., Isquith, P. K., Guy, S. C., & Kenworthy, L. (2000). TEST REVIEW Behavior Rating Inventory of Executive Function. *Child Neuropsychology*, 6(3), 235-238.
- Goddard, T., & Pavlakis, F. Mindfulness training-a clinical intervention for anxiety.
<http://housemartinart.com/openground/OG-SITE-ARTICLES-2013/MBSRAnxiety%20TG=FP%2007.pdf>

<http://www.merriam-webster.com/dictionary/dissertation>

Gunnar, M., & Quevedo, K. (2007). The neurobiology of stress and development. *Annual Review of Psychology*, 58, 145–173. doi:10.1146/annurev.psych.58.110405.085605

Gur, R. C., Turetsky, B. I., Matsui, M., Yan, M., Bilker, W., Hughett, P., & Gur, R. E. (1999). Sex differences in brain gray and white matter in healthy young adults: correlations with cognitive performance. *The Journal of Neuroscience*, 19(10), 4065-4072.

Hölzel, B.K., Carmody, J., Evans K.C., Hoge, E.A., Dusek, J.A., Morgan, L., Pitman R.K., Lazar, S.W. Stress reduction correlates with structural changes in the amygdala. *Soc Cogn Affect Neurosci* (2010) 5 (1): 11-17. first published online September 23, 2009doi:10.1093/scan/nsp034

http://palousemindfulness.com/selfguidedMBSR_gettingstarted.html.

<http://www4.parinc.com/Products/Product.aspx?ProductID=BRIEF-A>

<http://www.socialworkers.org/practice/default.asp>

<http://www.surveymonkey.com>

Jennings, P. A., & Greenberg, M. (2009). The prosocial classroom: Teacher social and emotional competence in relation to child and classroom outcomes. *Review of Educational Research*, 79, 491–525. doi:10.3102/0034654308325693

Jensen, F. E. (2015). *The teenage brain*. London: HarperCollins Publishers.

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life*. New York, NY: Hyperion.

Kendall, P. C., Finch, A. J., Auerbach, S. M., Hooke, J. F., & Mikulka, P. J. (1976). The State–Trait Anxiety Inventory: A systematic evaluation. *Journal of Consulting and Clinical Psychology*, 44, 406–412. doi:10.1037/0022-006X.44.3.406

Kokkinos, C. M., Charalambous, K., & Davazoglou, A. (2010). Primary school teacher interpersonal behavior through the lens of students' eysenckian personality traits. *Social Psychology of Education*, 13(3), 331-349. doi:http://dx.doi.org/10.1007/s11218-009-111-5

Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review*, 53, 27-35. doi:10.1080/00131910120033628

Mind and Life Education Research Network. (2012). Contemplative practices and mental training: Prospects for American education. *Child Development Perspectives*, 6, 146–153. doi:10.1111/j.1750-8606.2012.00240.x

Montgomery, C., & Rupp, A. A. (2005). A meta-analysis for exploring the diverse causes and effects of stress in teachers. *Canadian Journal of Education*, 28, 458–486. doi:10.2307/4126479

Moynihan, J. A., Chapman, B. P., Klorman, R., Krasner, M. S., Duberstein, P. R., Brown, K. W., & Talbot, N. L. (2013). Mindfulness-based stress reduction for older adults: Effects on executive function, frontal alpha asymmetry and immune function. *Neuropsychobiology*, 68(1), 34-43.

- Meiklejohn, J., Phillips, C., Freedman, M. L., Griffin, M. L., Biegel, G., Roach, A., Saltzman, A. (2012). Integrating mindfulness training into K-12 education: Fostering the resilience of teachers and students. *Mindfulness*, 3(4), 291-307.
- Okajima, I., Kanai, Y., Fukuhara, Y., & Okajima, J. (2011). Cognitive behavioral model of social anxiety disorder and subtype classification in elementary and junior high school children. *Japanese Journal of Counseling Science*, 44(1), 19-27. Retrieved from <http://search.proquest.com/docview/888878452?accountid=14707>
- Piotrowski, C (1999). "The status of the Beck Anxiety Inventory in contemporary research". *Psychol Rep* 85 (1): 261–2. doi:10.2466/PRO.85.5.261-262. PMID 10575991.
- Roeser, R. W., Schonert-Reichl, K. A., Jha, A., Cullen, M., Wallace, L., Wilensky, R Harrison, J. (2013). Mindfulness training and reductions in teacher stress and burnout: Results from two randomized, waitlist-control field trials. *Journal of Educational Psychology*, 105(3), 787-804. doi:10.1037/a0032093
- Roeser, R. W., Skinner, E., Beers, J., & Jennings, P. A. (2012). Mindfulness training and teachers' professional development: An emerging area of research and practice. *Child Development Perspectives*, 6, 167–173. doi:10.1111/j.1750-8606.2012.00238.x
- Rose, H., Miller, L., & Martinez, Y. (2009). FRIENDS for life: The results of a resilience-building, anxiety-prevention program in a Canadian elementary school. *Professional School Counseling*, 12(6), 400-407. doi:http://dx.doi.org/10.5330/PSC.n.2010-12.400
- Schwartz JM, Begley S. (2002). The mind and the brain: neuroplasticity and the power of mental force. Harper Collins; New York.

- Salsman, J. M., Butt, Z., Pilkonis, P. A., Cyranowski, J. M., Zill, N., Hendrie, H. C., ... & Cella, D. (2013). Emotion assessment using the NIH Toolbox. *Neurology*, 80(11 Supplement 3), S76-S86.
- Sarason, S. B., Davidson, K. S., Lighthall, F. F., Waite, R. R., & Ruebush, B. K. (1960). *Anxiety in elementary school children: A report of research* John Wiley & Sons Inc, Hoboken, NJ. Retrieved from <http://search.proquest.com/docview/1428017096?accountid=14707>
- Siegel, D.J. (1999). *The developing mind*, New York: The Guildford Press
- Singh, N. N., Lancioni, G. E., Winton, A. S. W., Karazsia, B. T., & Singh, J. (2013). Mindfulness training for teachers changes the behavior of their preschool students. *Research in Human Development*, 10(3), 211-233.
doi:<http://dx.doi.org/10.1080/15427609.2013.818484>
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: Norton.
- Toward a theory of neuroplasticity. (2001). Psychology Press, New York, NY, New York, NY, US
- Travers, C. J. (2001). Stress in teaching: Past, present, and future. In J. Dunham (Ed.), *Stress in the workplace: Past, present, and future* (pp. 130–163). Philadelphia, PA: Whurr.
- Walter, D., Denzler, L. S., & Sarason, I. G. (1964). Anxiety and the intellectual performance of high school students. *Child Development*, 35(3), 917-926. Retrieved from <http://search.proquest.com/docview/615439955?accountid=14707>

VII. Appendices:

VII.1 Appendix A: Informed Consent Form

The following form will be converted to a digital form in the final project and the signature option will be converted into a digital signature.

Title of the Research Study: Teacher Anxiety: Study of effectiveness of Mindfulness Based Stress Reduction (MBSR) Intervention for Anxiety Reduction.

Protocol Number:

Principal Investigator: Andrea Doyle, PhD, LCSW, 3701 Locust Walk, Caster Building, Philadelphia, PA 19104-6214, doylea@sp2.upenn.edu

Other Investigator: James K. Joseph, LCSW, M.S.Ed., 3701 Locust Walk, Caster Building 267.970-0767, jameskjoephlcsw@gmail.com

Emergency Contact: James K. Joseph, LCSW, M.S.Ed., 3701 Locust Walk, Caster Building 267.970-0767, jameskjoephlcsw@gmail.com

You are being asked to take part in a research study. This is not a form of treatment or therapy. It is not supposed to detect a disease or find something wrong. Your participation is voluntary which means you can choose whether or not to participate. If you decide to participate or not to participate there will be no loss of benefits to which you are otherwise entitled. Before you make a decision you will need to know the purpose of the study, the possible risks and benefits of being in the study and what you will have to do if decide to participate. The research team is going to talk with you about the study and give you this consent document to read. You do not have to make a decision now; you can take the consent document home and share it with friends, family doctor and family.

If you do not understand what you are reading, do not sign it. Please ask the researcher to explain anything you do not understand, including any language contained in this form. If you decide to participate, you will be asked to sign this form and a copy will be given to you. Keep this form, in it you will find contact information and answers to questions about the study. You may ask to have this form read to you.

What is the purpose of the study?

The purpose of the study is to learn more about effective ways for teachers to manage anxiety.

This comparative intervention study seeks to demonstrate that an “in-vivo” or in person participation in a 4 week Mindfulness Based Stress Reduction intervention is more effective than receiving the intervention over 4 weeks in an online format.

Why was I asked to participate in the study?

You have been asked to participate because you are a teacher, the specific profession this study is investigating. Your participation will help to identify if the interventions are effective for teachers.

How long will I be in the study?

The study will take place over a period of 4 weeks with a 6 week follow up for final data collection. If you are in the “in-vivo” group, you will be asked to attend a 90 minute MBSR intervention once a week for 1 month. During this month you will be asked to complete homework including practicing and logging meditation and practicing strategies learned during the intervention.

Where will the study take place?

The “in-vivo” interventions will take place in University of Pennsylvania, Graduate School of Education (GSE) buildings. If you are in the on-line group you can complete the MBSR program in your home or anywhere you feel comfortable.

What will I be asked to do?

You will be asked to fill out an internet survey three times throughout the course of your staff development in which you will be participation in one of two groups:

If you are placed in the “in-vivo” MBSR group, during the 90 minute meetings you will: watch videos, participating in group discussion, meditate, keep logs, read articles and practice some low impact yoga. All activities outside of the intervention are strongly encouraged; however, there is no risk of punishment or negative consequences for failure to complete any tasks.

If you are in the on-line group you will be asked to participate in the same activities listed above in your own time over the course of one month.

What are the risks?

This is a low risk study. As the interventions are seeking to identify effective interventions for stress reduction, participants may become emotionally distressed while exploring or discussing difficult events. Individuals will not be asked to proceed with any elements of the interventions that they do not feel comfortable with and full participation is voluntary.

How will I benefit from the study?

There is no guaranteed benefit to you. However, your participation could potentially help you reduce your experience of anxiety and learn new ways to manage it. Additionally your participation help us better understand which interventions are more effective in helping teachers reduce their anxiety. In the future, this may help schools provide more effective support to their teachers.

What other choices do I have?

Your alternative to being in the study is to not be in the study.

Not being in the study will mean that you do not participate in the data collection portion of the interventions.

What happens if I do not choose to join the research study?

You may choose to join the study or you may choose not to join the study. Your participation is voluntary.

There is no penalty if you choose not to join the research study. You will lose no benefits or advantages that are now coming to you, or would come to you in the future. If you are currently receiving services and you choose not to volunteer in the research study, your services will continue.

Your participation in the research is totally voluntary, there will be no negative consequences if you refuse to participate and it will bear no negative consequences.

When is the study over? Can I leave the study before it ends?

The study is expected to end after all participants have completed all visits and all the information has been collected. The study may be stopped without your consent for the following reasons:

The PI feels it is best for your safety and/or health-you will be informed of the reasons why.

You have not followed the study instructions.

The PI, the sponsor or the Office of Regulatory Affairs at the University of Pennsylvania can stop the study anytime.

You have the right to drop out of the research study at any time during your participation. There is no penalty or loss of benefits to which you are otherwise entitled if you decide to do so. Withdrawal will not interfere with your future care.

This is an opt-in data collection model, if you choose not to complete the computer survey at the given time, there will be no consequence to you.

How will confidentiality be maintained and my privacy be protected?

We will do our best to make sure that the personal information obtained during the course of this research study will be kept private. However, we cannot guarantee total privacy. Your personal information may be given out if required by law. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used.

Every effort will be made to keep all data confidential. As the data and consents will be collected using a secure computer system that will have password protected access, there will be limited paper materials. All paper material will be kept within a locked cabinet, within the PI's locked office. None of the individual data collected on the participants will be released, only aggregate data as needed. Only the PI and the University of Pennsylvania IRB will have access to the data collected.

Electronic Medical Records and Research Results

What is an Electronic Medical Record?

An Electronic Medical Record (EMR) is an electronic version of the record of your care within a health system. An EMR is simply a computerized version of a paper medical record.

If you are receiving care or have received care within the University of Pennsylvania Health System (UPHS) (outpatient or inpatient) and are participating in a University of Pennsylvania research study, results of research-related procedures (i.e. laboratory tests, imaging studies and clinical procedures) may be placed in your existing EMR maintained by UPHS.

If you have never received care within UPHS and are participating in a University of Pennsylvania research study that uses UPHS services, an EMR will be created for you for the purpose of maintaining any results of procedures performed as part of this research study. The creation of this EMR is required for your participation in this study. In order to create your EMR, the study team will need to obtain basic information about you that would be similar to the information you would provide the first time you visit a hospital or medical facility (i.e. your name, the name of your primary doctor, the type of insurance you have). Results of research procedures performed as part of your participation in the study (i.e. laboratory tests, imaging studies and clinical procedures) may be placed in this EMR.

Once placed in your EMR, these results are accessible to appropriate UPHS workforce members that are not part of the research team. Information within your EMR may also be shared with others who are determined by UPHS to be appropriate to have access to your EMR (e.g. health insurance company, disability provider, etc.).

What happens if I am injured from being in the study?

We will offer you the care needed to treat injuries directly resulting from taking part in this research. We may bill your insurance company or other third parties, if appropriate, for the costs of the care you get for the injury, but you may also be responsible for some of them.

There are no plans for the University of Pennsylvania to pay you or give you other compensation for the injury. You do not give up your legal rights by signing this form.

If you think you have been injured as a result of taking part in this research study, tell the person in charge of the research study as soon as possible. The researcher's name and phone number are listed in the consent form.

Will I have to pay for anything?

All necessary materials will be provided to you.

Will I be paid for being in this study?

There is no compensation for your participation in this study.

Who can I call with questions, complaints or if I'm concerned about my rights as a research subject?

If you have questions, concerns or complaints regarding your participation in this research study or if you have any questions about your rights as a research subject, you should speak with the Principal Investigator listed on page one of this form. If a member of the research team cannot be reached or you want to talk to someone other than those working on the study, you may contact the Office of Regulatory Affairs with any question, concerns or complaints at the University of Pennsylvania by calling (215) 898-2614.


When you sign this document, you are agreeing to take part in this research study. If you have any questions or there is something you do not understand, please ask. You will receive a copy of this consent document.

Signature of Subject

Print Name of Subject

Date

VII.2 Appendix B: Letters of Consent



DAVE POTTER, M.Ed.
814 S. Washington
Moscow, Idaho 83843

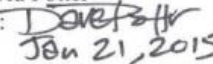
Licensed Counselor LCPC-3724
potter1009@gmail.com
(208) 883-0619
fax (208) 882-4774

January 21, 2015

James K. Joseph, LCSW, M.S.Ed.
3419 Crawford Street
Philadelphia PA, 19129

Letter Agreement

Upon review of the research proposal presented, I, David Potter, LCPC, give James K. Joseph, LCSW, M.S.Ed. my permission to use the online Mindfulness Based Stress Reduction website, (<http://palousemindfulness.com/selfguidedMBSR.html>) that I created in his research project titled, "Teacher Anxiety: Study of effectiveness of Mindfulness Therapy (MT) Intervention for Anxiety Reduction". He also has my permission to alter the presentation of the information in the intervention at his discretion for the purposes of the research.

Print: David Potter
Signature: 
Date: Jan 21, 2015


Print: James K. Joseph, LCSW, M.S.Ed.
Signature: 
Date: 01 / 28 / 2015

Figure 1: David Potter LPCP Consent Letter



Teaching, Learning, and Leadership
3700 Walnut Street
Philadelphia, PA 19104-6216

James K. Joseph, LCSW, M.S.Ed.
3419 Crawford Street
Philadelphia PA, 19129

Letter Agreement

Upon review of the research proposal presented, The Philadelphia-Area Teacher Network is happy to collaborate with James K. Joseph, LCSW, M.S.Ed. in his research project titled, "Teacher Anxiety: Study of effectiveness of Mindfulness Therapy (MT) Intervention for Anxiety Reduction". The Philadelphia-Area Teacher Network will provide Mr. Joseph with access to the necessary materials and facilities outlined in the research proposal to complete the intervention. The Philadelphia-Area Teacher Network understands that in the interest of confidentiality the participants' individual data will not be accessible to staff or administration. The only data that The Philadelphia-Area Teacher Network will receive is the aggregate data in the final analysis.

Print: **Frances Rust, Director, Teacher Education Program, University of Pennsylvania, GSE**

Signature: *Frances O.C. Rust*
Date: January 26, 2015

Print: James K. Joseph, LCSW, M.S.Ed.
Signature: *[Signature]* LCSW
Date: 01 / 28 / 2015

Figure 2: Frances Rust Ed.D. Consent Letter

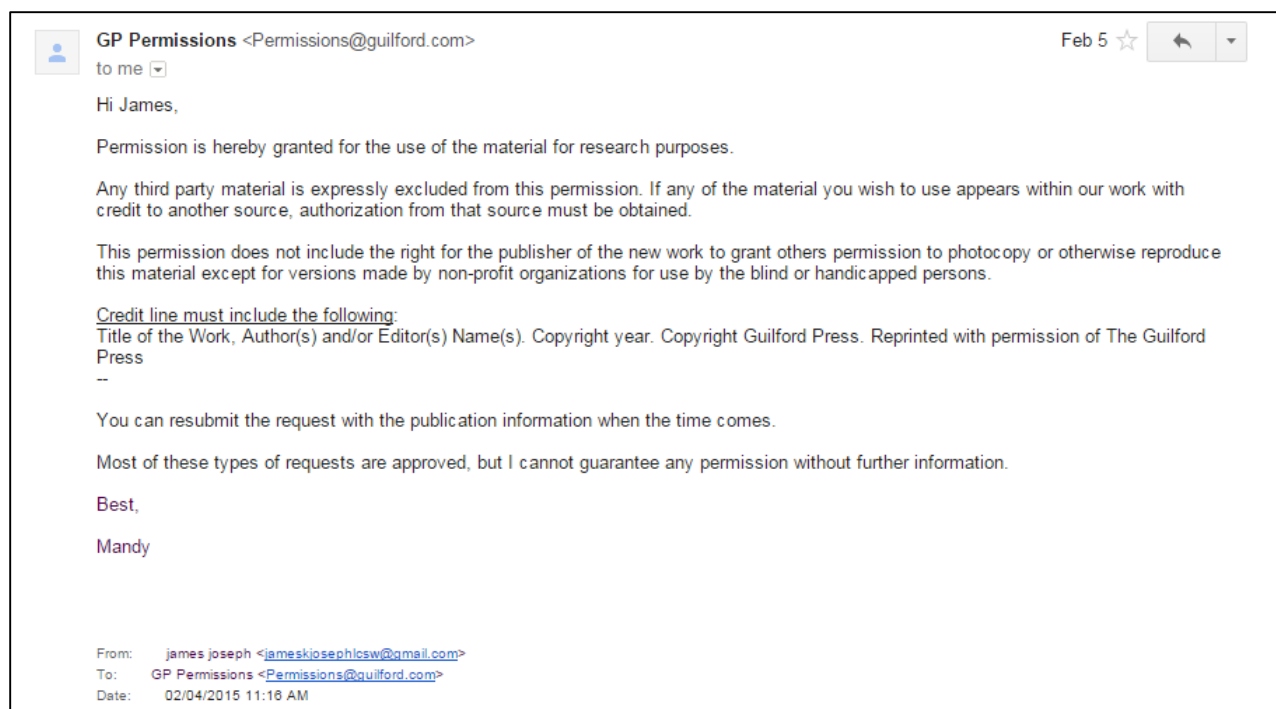


Figure 3: Email permission from Guilford Press for use of BDEFS for Research

VII.3 Appendix C: Recruitment Forms

Subject: Research Participation Invitation: MBSR for Teachers

This email message is an approved request for participation in research that has been approved or declared exempt by the University of Pennsylvania Institutional Review Board (IRB).

Are you feeling anxious or stressed? Are you interested in learning Mindfulness Based Stress Reduction Techniques (MBSR) to help you manage it?

Participants are invited to partake in a Mindfulness Based Stress Reduction (MBSR) course. The only participation requirement is that you are currently or have been a classroom teacher and have access to a computer with internet.

“Mindfulness Based Stress Reduction (MBSR) is a mindfulness-based program designed initially to assist people with pain and a range of conditions and life issues...which uses a combination of mindfulness meditation, body awareness, and yoga to help people become more mindful. In recent years, meditation has been the subject of controlled clinical research. This suggests it may have beneficial effects, including stress reduction, relaxation, and improvements to quality of life, but that it does not help prevent or cure disease. While MBSR has its roots in spiritual teachings, the program itself is secular.” (Wikipedia.org)

This project [IRB Reference Number: 821984] was approved by the University of Pennsylvania IRB on [IRB approval date 5/21/1015]. Pertinent questions or concerns about the research, research participants' rights, and/or research-related injuries to participants should be directed to Human Research Protections, at the University of Pennsylvania IRB.

Please Contact: James K. Joseph, LCSW, M.S.Ed., p.267.244.9537, e. jamjo@sp2.upenn.edu for more information and to sign up

Figure 4: Sample Recruitment Request for Newsletter or Internet Posting

Are you:
A classroom teacher?
&
Stressed or Anxious?

**If you answered “yes” to both questions and are interested in
participating in a 4 week research study to learn
Mindfulness Based Stress Reduction (MBSR)**

“a mindfulness-based program designed initially to assist people with pain and a range of conditions and life issues...which uses a combination of mindfulness meditation, body awareness, and yoga to help people become more mindful. In recent years, meditation has been the subject of controlled clinical research. This suggests it may have beneficial effects, including stress reduction, relaxation, and improvements to quality of life, but that it does not help prevent or cure disease. ” (Wikipedia.org)

**Please contact, James K. Joseph, LCSW
@
jamjo@sp2.upenn.edu
For more information**

Figure 5: Recruitment Poster

Are you: A classroom teacher? & Stressed or Anxious?

If you answered “yes” to both questions and are interested in participating in a research study to learn **Mindfulness Based Stress Reduction (MBSR)**

Please contact, James K. Joseph, LCSW

@

jamjo@sp2.upenn.edu

For more information

Figure 6: Recruitment Poster

Subject: Research Participation Invitation: MBSR for Teachers

This email message is an approved request for participation in research that has been approved or declared exempt by the University of Pennsylvania Institutional Review Board (IRB).

Participants are invited to partake in a Mindfulness Based Stress Reduction (MBSR) course. The only participation requirement is that you are currently or have been a classroom teacher and have access to a computer with internet.

“Mindfulness Based Stress Reduction (MBSR) is a mindfulness-based program designed initially to assist people with pain and a range of conditions and life issues that were difficult to treat in a hospital setting developed by Jon Kabat-Zinn at the University of Massachusetts Medical Center, which uses a combination of mindfulness meditation, body awareness, and yoga to help people become more mindful. In recent years, meditation has been the subject of controlled clinical research. This suggests it may have beneficial effects, including stress reduction, relaxation, and improvements to quality of life, but that it does not help prevent or cure disease. While MBSR has its roots in spiritual teachings, the program itself is secular.”

(Wikipedia.org)

This research is seeking to identify if a 4-week MBSR course is effective at helping teachers reduce their anxiety, and if a live or “in-vivo” course is more effective than a self-guided on-line presentation of the MBSR information.

Participants will randomly be assigned to receive the course “in-vivo” (in a classroom) or on-line (Participants will complete the course at their own discretion over the 4 week intervention time), after enrolling in the study.

If you are selected into the “in-vivo” group your participation will include:

- Attendance at 4, 90 minute MBSR intervention trainings
- Completion of measures of Executive functioning, (BDEFS-A), and Anxiety, (BAI), 3 times (Pre/Post intervention & 4 week follow up)
- Completion of out of classroom assignments, including meditation logs, outside of the 90 minute trainings

If you are selected into the on-line group, your participation will include:

- Completion of the On-line MBSR intervention training at your own discretion, within the allotted 4-week intervention timeframe.
- Completion of measures of Executive functioning, (BDEFS-A), and Anxiety, (BAI), 3 times (Pre/Post intervention & 4 week follow up)
- Completion of out of classroom assignments, including meditation logs, outside of the 90 minute trainings.

This research is seeking to help teachers improve their anxiety/stress management skills, and to identify if an “in-vivo” presentation of the MBSR intervention is more effective than an on-line presentation in helping teachers reduce their anxiety and improve their executive functioning.

This research could serve to identify effective techniques that can be incorporated into staff development and other teacher support services.

This project [IRB Reference Number: 821984] was approved by the University of Pennsylvania IRB on [IRB approval date 5/21/2015]. Pertinent questions or concerns about the research, research participants' rights, and/or research-related injuries to participants should be directed to

Human Research Protections, at the University of Pennsylvania IRB.
Questions about this research should be addressed to:
James K. Joseph, LCSW, M.S.Ed., p.267.244.9537, e. jamjo@sp2.upenn.edu

Figure 7: Sample Recruitment Email

VII.4 Appendix D: Website (Screenshots)

This appendix shows the layout of the website. The screenshots will be laid out in the order in which a new user would interact with the site. All pictures will be accompanied by a brief caption that describes what is being shown.

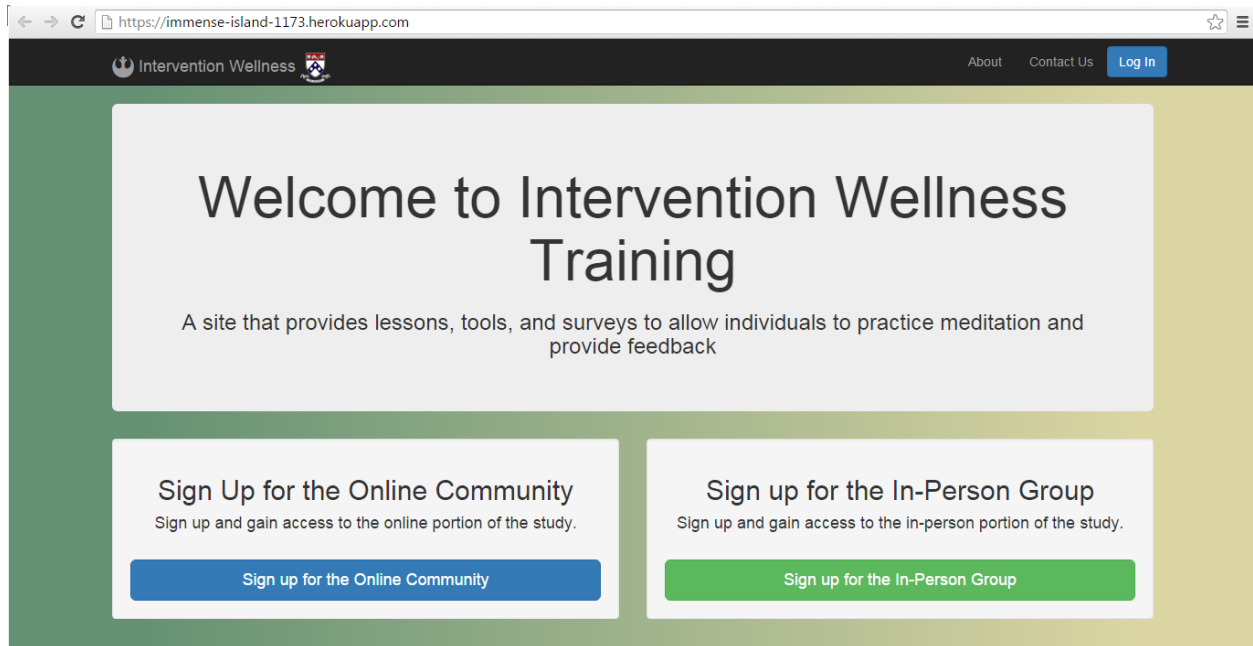


Figure 8: Create User Page

Intervention Wellness

[About](#)[Contact Us](#)[Log In](#)

In-Person Account

Sign up for your free account today

Sign up

Email

Password (8 characters minimum)

Password confirmation

You are being asked to take part in a research study. This is not a form of treatment or therapy. It is not supposed to detect a disease or find something wrong. Your participation is voluntary which means you can choose whether or not to participate. If you decide to participate or not to participate there will be no loss of benefits to which you are otherwise entitled. Before you make a decision you will need to know the purpose of the study, the possible risks and benefits of being in the study and what you will have to do if decide to participate. The research team is going to talk with you about the study and give you this consent document to read. You do not have to make a decision now; you can take the consent document home and share it with friends, family doctor and family.

If you do not understand what you are reading, do not sign it. Please ask the researcher to explain anything you do not understand, including any language contained in this form. If you decide to participate, you will be asked to sign this form and a copy will be given to you. Keep this form, in it you will find contact information and answers to questions about the study. You may ask to have this form read to you.

☐ I Agree to the Terms and Conditions Listed Above

Sign up

[Log In](#)

Figure 9: User Signup (with consent)

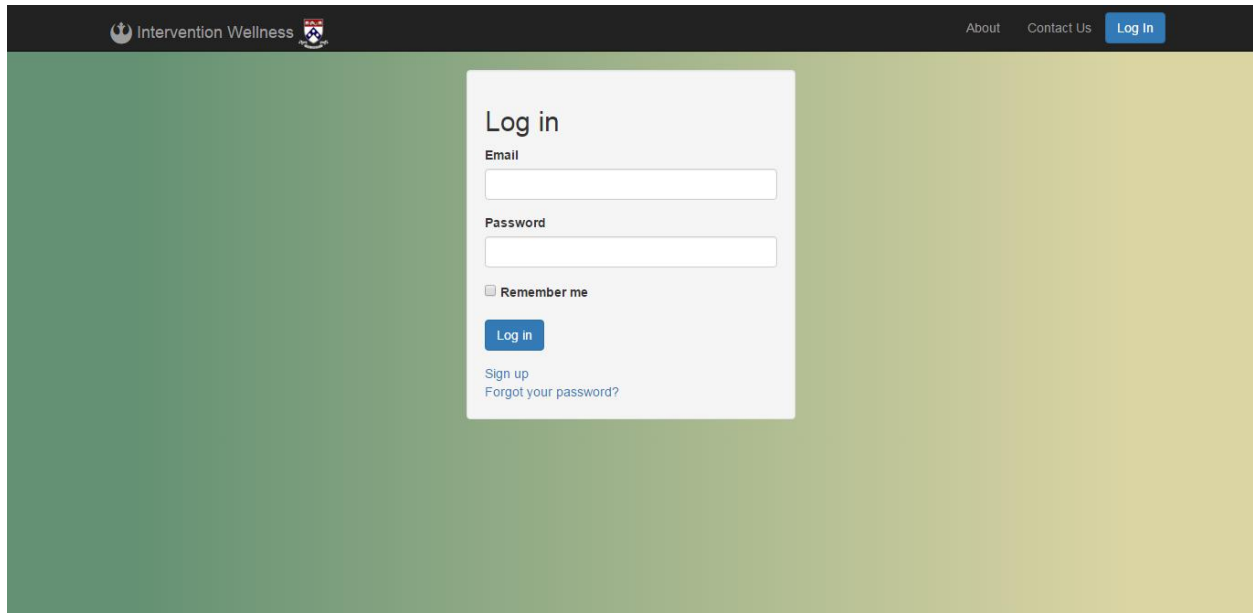


Figure 10: User Login (after user has created account)

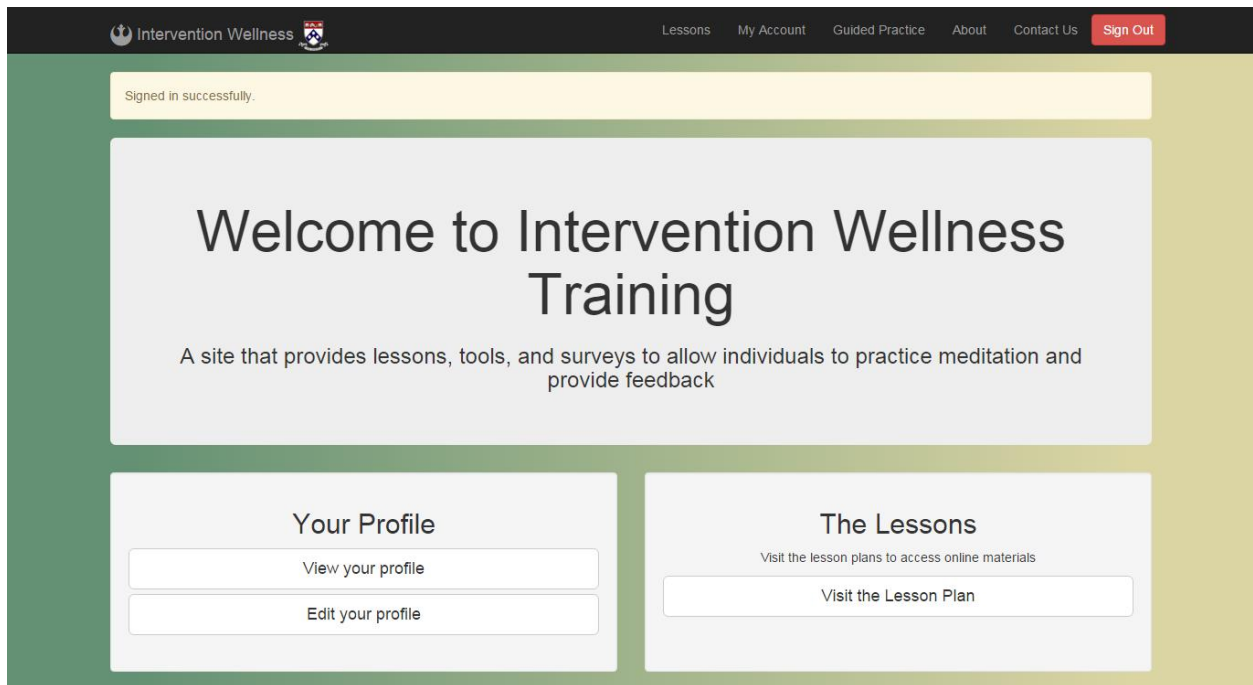


Figure 11: User Homepage (shown upon login)

Intervention Wellness

Lessons My Account Guided Practice About Contact Us Sign Out

Edit User

Email

Password (leave blank if you don't want to change it)

Password confirmation

Current password (we need your current password to confirm your changes)

Update

Cancel my account

Unhappy?

Cancel my account

Back

Figure 12: Edit User Profile/Delete Account Option

Intervention Wellness

Lessons My Account Guided Practice About Contact Us Sign Out

128

Doran Cavett

555 555 5555

dorancavett2@gmail.com

Description

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla sagittis volutpat felis. Donec posuere a nisi non facilisis. Proin nibh ligula, suscipit rhoncus massa ullamcorper, volutpat interdum ante. Aliquam id nisi vehicula, suscipit dolor in, mollis libero. In pellentesque ligula quis libero rutrum mattis. Nam tincidunt augue libero, vel efficitur augue consectetur eleifend. Nunc egestas nisi eget lorem sollicitudin feugiat. Morbi sed felis ac diam hendrerit aliquam quis ac ipsum. In consequat magna eu consectetur fringilla. Nunc suscipit ante ut felis sagittis, quis ullamcorper libero volutpat. Mauris et sem ac mauris vulputate porta. Maecenas vestibulum nibh quis nibh blandit vestibulum. Sed vulputate in lorem sit amet aliquet. Praesent laoreet elit vitae neque suscipit, varius semper augue aliquam. Integer dolor orci, interdum eu ultrices non, rutrum eu leo. Nam bibendum, tortor a venenatis placerat, diam leo interdum ante, ac convallis risus neque ac ipsum. Donec mollis tellus quis semper cursus. Nulla vulputate nisi nulla, non dignissim leo cursus vel. Proin a ullamcorper orci. Cras eget justo tellus. Sed ullamcorper quam sed sapien vehicula, eu faucibus neque commodo. Integer dui tellus, scelerisque id pharetra eu, pellentesque nec metus. Maecenas feugiat massa ac sapien luctus cursus. Ut tincidunt porta odio, eget egestas lectus faucibus vitae. Nulla euismod, elit nec pretium efficitur, erat neque porttitor augue, dictum porttitor metus nisi non magna. Donec luctus quis lacus a convallis. Sed cursus ac enim vel vestibulum. Sed pellentesque consequat sapien. Donec pellentesque vitae eros in gravida. Nulla et ante luctus nisl porttitor fermentum. Aliquam eu porttitor libero, id vehicula tellus. Proin vel dictum sem. Praesent non nisl eu tortor mollis placerat id dictum mi. Phasellus et viverra nisl. Aliquam eu lectus ut sem molestie egestas. Maecenas efficitur ante vel aliquam varius. Curabitur tellus nisl, euismod sit amet eleifend eu, semper eget diam. Mauris sed sapien semper, vestibulum nulla ut, egestas sapien. Quisque elementum fermentum enim. Aliquam suscipit venenatis ornare. Pellentesque rutrum nulla non est cursus, mollis tristique tortor convallis. In hac habitasse platea dictumst. Aliquam erat volutpat. Aliquam sed fermentum ipsum. Curabitur pharetra euismod eros, eget molestie nulla tempor a. Duis sed eros porta, venenatis nulla id, dapibus diam. Etiam sit amet ante a enim lacinia rhoncus. Nam quis posuere diam, at tincidunt justo. Sed in laculis ante, quis faucibus eros. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec sit amet varius metus. Etiam dui mi, gravida placerat porttitor at, eleifend nec ligula. Nulla imperdiet vitae magna in condimentum. Phasellus eu augue eu augue finibus lacinia. Nulla tincidunt luctus felis, vel tempus nisi mollis sit amet. Nunc eleifend nulla a faucibus accumsan. Phasellus ornare ac elit ac ornare. Donec maximus turpis viverra blandit ornare. Quisque gravida est justo, sed luctus erat tempus eget. Donec vitae venenatis lacus. Aenean posuere sapien sapien, at dignissim felis finibus a

Figure 13: View User Profile

Intervention Wellness
Lessons
My Account
Guided Practice
About
Contact Us
Sign Out

Intervention Wellness Resource Page

Please Take the Following Survey Before Starting

[Baseline Executive Functioning Survey](#)
[Baseline Anxiety Survey](#)

Introduction and Getting Started Materials

Week 1 Materials

[Session 1.1 Materials](#) - Simple Awareness and Introduction to the Body Scan

[Session 1.2 Materials](#) - Attention & the Brain, and Introduction to Sitting Meditation

Please enter logs for the days in which you meditated

[Sunday Log](#)
[Monday Log](#)
[Tuesday Log](#)
[Wednesday Log](#)
[Thursday Log](#)
[Friday Log](#)
[Saturday Log](#)

Week 2 Materials

[Session 2.1 Materials](#) - Dealing with Thoughts and Introduction to Yoga 1

[Session 2.2 Materials](#) - Stress: Responding vs Reacting, One-Minute Breathing Space, and Yoga 2

Please enter logs for the days in which you meditated

[Sunday Log](#)
[Monday Log](#)
[Tuesday Log](#)
[Wednesday Log](#)
[Thursday Log](#)
[Friday Log](#)
[Saturday Log](#)

Week 3 Materials

[Session 3.1 Materials](#) - Dealing with Difficult Emotions/Sensations and RAIN (Recognize/Accept/Investigate/Non-Identify)

[Session 3.2 Materials](#) - Mindfulness & Communication and Mountain & Lake Meditation

Please enter logs for the days in which you meditated

[Sunday Log](#)
[Monday Log](#)
[Tuesday Log](#)
[Wednesday Log](#)
[Thursday Log](#)
[Friday Log](#)
[Saturday Log](#)

Week 4 Materials

[Session 4.1 Materials](#) - Mindfulness & Compassion and Lovingkindness Meditation

[Session 4.2 Materials](#) - Conclusion and Developing a plan of your own

Please enter logs for the days in which you meditated

[Sunday Log](#)
[Monday Log](#)
[Tuesday Log](#)
[Wednesday Log](#)
[Thursday Log](#)
[Friday Log](#)
[Saturday Log](#)

Please Take the Following Survey For the Course Conclusion

[End Executive Functioning Survey](#)
[End Anxiety Survey](#)

Figure 14: Lesson Plan Home Page/Links to BDEFS & BAI

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Week 3 - Session 3.2 Material

Mindfulness and Communication

If you were to think over all the truly stressful situations in your life, you'd probably find that many if not most involve other people. This week, we focus on communication and what it means to be mindful as our interactions with others, whether it's family members, co-workers or neighbors. Our focus up until now has been on our internal world (thoughts, feelings and sensations), now we move from the area personal to the inter-personal, taking into account another's voice, and the place where their world and ours meet. This means recognizing that "the other" (person or persons) have their own perceptions, feelings and needs, which are almost certainly different than ours, especially in times of conflict.

Accommodate, Demand, Withdraw as ways to deal with conflict

Most of us have a favorite strategy to deal with conflict that was learned early in life, one that is habitual and embedded in our interactions with others. Some of us learned to **accommodate**. We're "go along to get along," "don't make waves." Others learned to **demand**. "Don't let anyone walk over me!" "Settle one way or number one!" "I'm way to the highway." Still others learned to **withdraw**. "It doesn't matter to me." "I don't care." "I'm not going to play this game." When a difficult conversation starts or escalates, as often does when we only have accommodate, demand or withdraw as strategies, we often resort to **compromise**, where everyone gives a little and everyone gets just part of what they wanted.

A fourth way -- Blend

There is a fourth way, one that involves investigating both our world and the other's world, that can sometimes yield a surprising and creative solution that honors both worlds. In the martial art, Aikido, this would be called **blend**, a move that harnesses neither party and turns conflict into more of a dance than a fight. Marshall Rosenberg, developer of Non-Violent Communication (NVC), has developed a way of interacting that brings this sense of blending into the world of inter-personal conflict.

Videos Preface (scroll down for videos)

This is the first video for this week. Tara Brach talks about **The Sacred Art of Listening**, and in the second, **Awakening Through Conflict**, she begins to answer the question of how one deals with conflicts in communication. In the third video, **Non-Violent Communication**, Marshall Rosenberg expounds on this idea and also gives you a series of the best learned Non-Violent Communication (NVC) by this introduction to NVC is intriguing, there is a much larger volume and a book by Marshall in the supplementary materials section.

Readings Preface

Conflict Management Styles is a nine-page description of the four ways of dealing with conflict and **The Heart of Nonviolent Communication** is one of the best descriptions of NVC I've ever seen. Pema Chodron, in **The Answer to Anger**, describes a way of dealing with anger that is a middle way, neither repressing nor exploding.

- Conflict Management Styles
- The Heart of Nonviolent Communication
- The Answer to Anger

Daily Practices

This week, we introduce the **Mountain Meditation** and the **Lake Meditation**, one of which we suggest you try at least once this week. In place of one of your regular 30 minute practices. These are both shorter practices (20 min), so in the day you do one of these meditations, you will have a shorter practice session if you'd like a 30 minutes, you can add 10 minutes of silent meditation on your own that day).

For an **internal practice** this week, we also ask at a point where you can freely choose between any of the three main practices you've experienced so far: Body Scan, Sitting meditation, Yoga and the Mountain Meditation or Lake Meditation at least one day). The **external practices** up until now have been focusing on the intra-personal (what's happening inside you) and now we begin paying attention to the inter-personal, using the **Communication Calendar**, noting what happens when we bring mindfulness into relationship.

- Formal Practice - Body Scan, Sitting, or Yoga (including a Mountain or Lake Mind)
- Informal Practice - Communication Calendar

Supplementary Materials

- Non-Violent Communication
- Non-Violent Communication As A Language Of Life
- It Must Be Easy to Write (and to Misread)
- Art, Poetry... The Anger Process

Videos

The Sacred Art of Listening

Sacred Art of Listening - Tara Brach

Awakening Through Conflict

Awakening Through Conflict - Tara Brach

Non-Violent Communication

Non Violent Communication - Marshall Rosenberg interview (21 min version)

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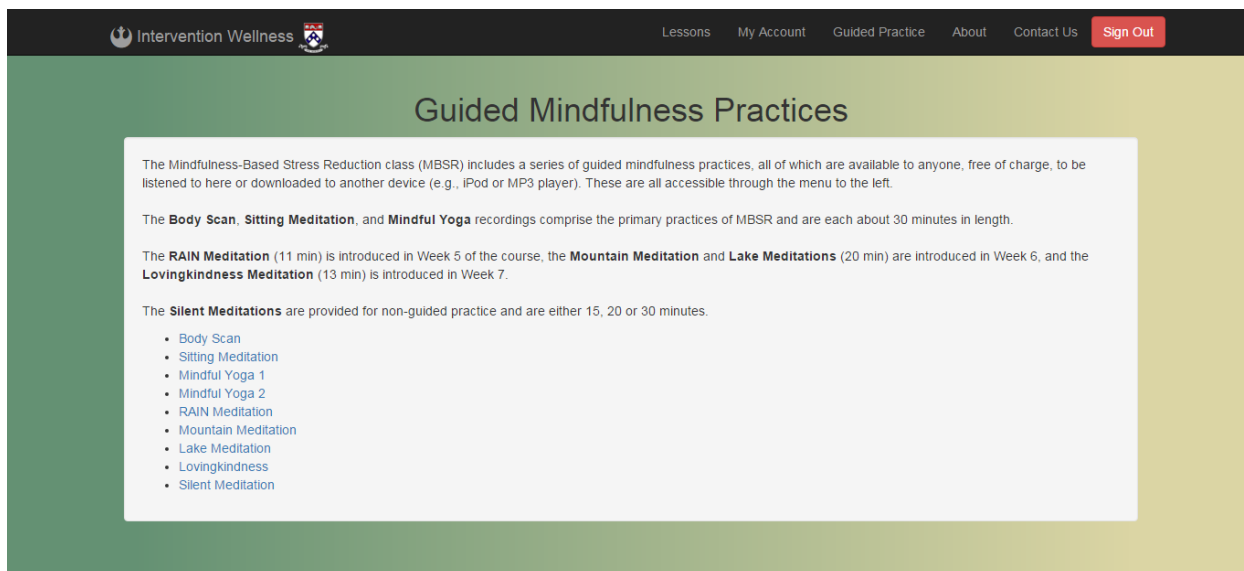


Figure 20: Guided Practice Page

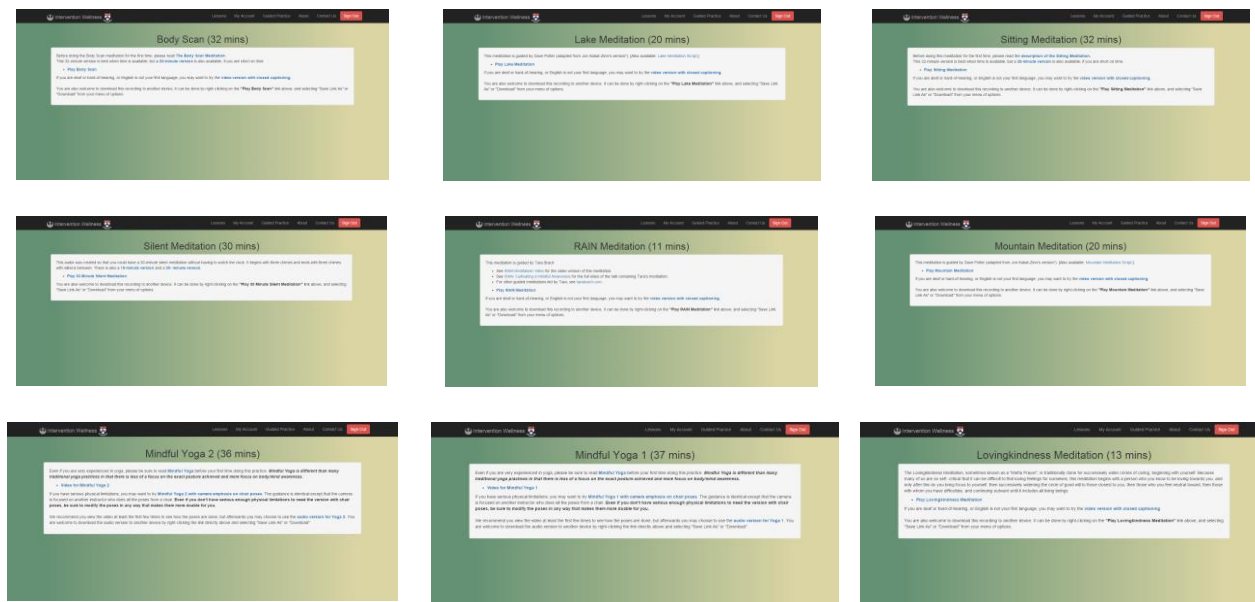


Figure 21: Pages with links to Guided Meditations

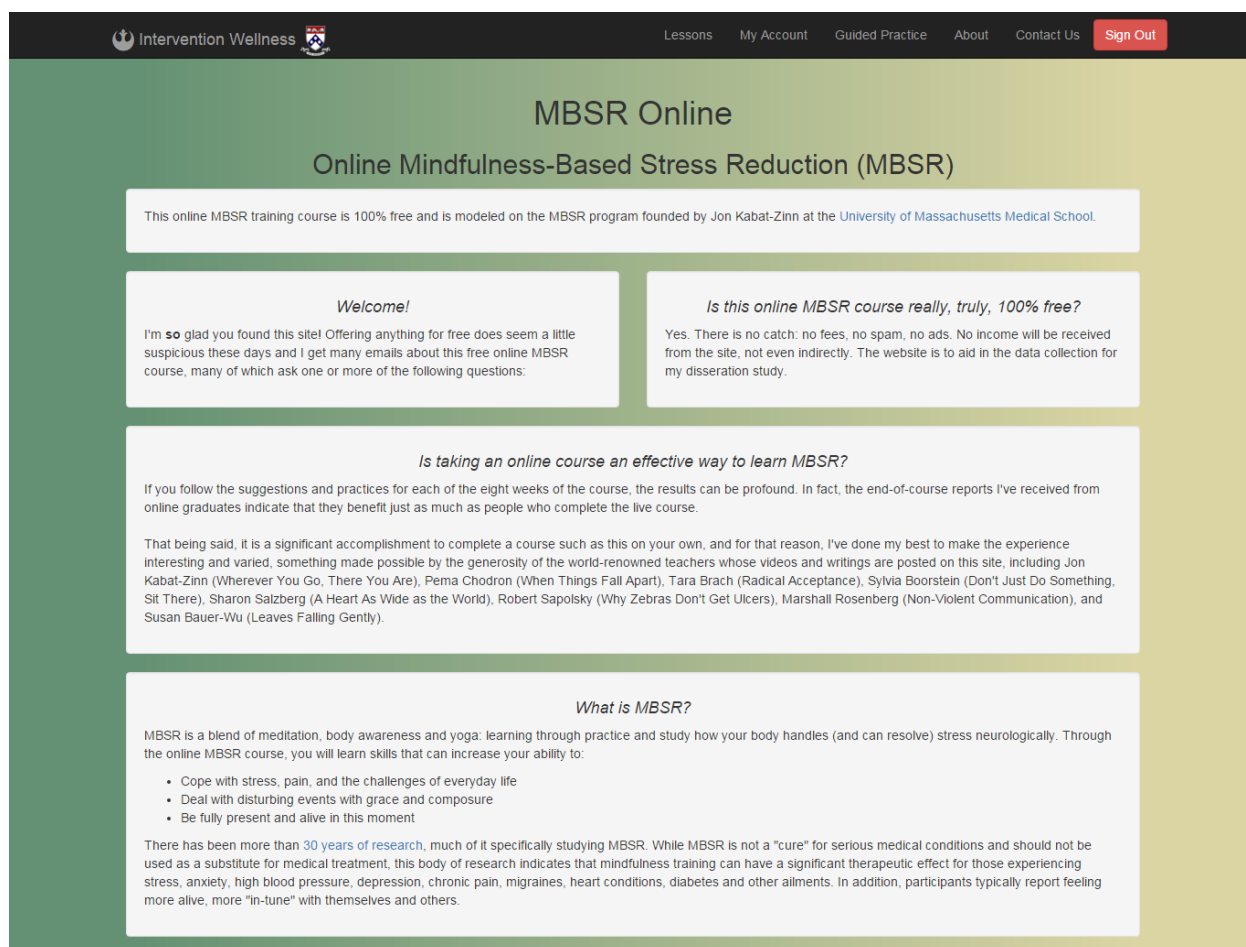


Figure 22: About Us Page

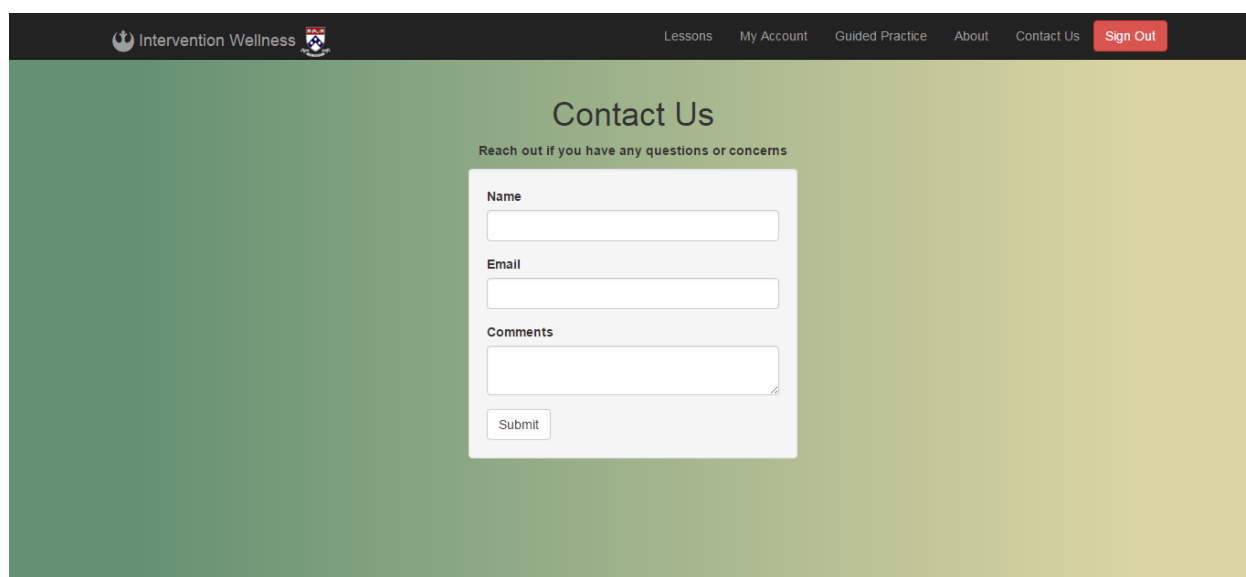


Figure 23: Contact/Help Page

