Bryant University

HONORS THESIS

The Emotional Effects of Mindfulness, Meditation, and Worldview

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ABSTRACT

Much research on mindfulness and meditation investigates the relationship between mindfulness practices and health in physiological, psychological, and neurological contexts and organizations have implemented mindfulness training programs, possibly after learning of the apparent benefits. Researchers should use caution when assessing the practice's benefits and consider extraneous variables such as the possibility that meditators tend towards spirituality; theologians argue that underlying beliefs might contribute to mindfulness practitioners' reactions to the physical and psychological changes that result from mindfulness practices. This study investigates if and how religious beliefs modify mindfulness's emotional outcomes for Bryant University students. The findings suggest that mindfulness and negative emotions correlate positively, though the effect of students' beliefs remains unclear. The difficulty in assessing students' beliefs seemingly contributed to the inconclusive results on this front.

INTRODUCTION

Organizations such as the Harvard Business School, Google, McKinsey, and Proctor and Gamble offer its employees mindfulness training. Although much of Western culture calls for the separation of religious and work life, the mindfulness training these companies offer their employees descends from religions such as Christianity, Hinduism, Taoism, and Buddhism. Despite this, by studying mindfulness practices under a more technical, skilled lens, as opposed to a religious or philosophical lens, researchers have found cognitive benefits that may encourage organizations, such as those above, to offer training in these practices. Mindfulness practice may have only recently come under this scientific and industrial spotlight, but a wealth of studies from meditation retreats, brain scans, experimentation, and therapy sessions provide data that suggest positive short-term and long-term effects of mindfulness (Braboszcz et al., 2010; Emavardhana, Tori, 1997; Sun et al., 2015; Williams-Orlando, 2013). Organizations may intend to help their employees learn these practices so they can become happier, more productive, and more engaged. However, traditionalists question if people can enjoy the benefits of mindfulness practices in the context of a Western culture without Eastern theological or philosophical teachings.

Neurologists

Developments in neurology allow scientists to examine mindfulness phenomenon under a Western lens. Through studies, experimentation, and brain scans, researchers also found that mindfulness practices increase awareness and broaden the executive function of the brain, giving meditators a more involved role in their decision making (Braboszcz et al., 2010; Emavardhana & Tori, 1997; Sun, 2015). One three-month meditation retreat resulted in decreased variability in attentional processing, suggesting participants could stay more consistently focused for longer. Researchers also found that increased neural activity occurs in brain regions closely related to "cognitive control, memory processing, conflict monitoring and reward processing," such as the dorsolateral prefrontal cortex, parietal cortex, hippocampus, para-hippocampus, temporal lobe, striatum, and anterior cingulate cortex (Sun et al. 2015, p. 2). Clinicians have recognized this improvement in cognitive control and used mindfulness to help patients cope with addiction (Sun et al., 2015).

Researchers Kiken and Shook (2014) found that a 10-minute instruction in a mindful breathing meditation reduced negative thoughts by disrupting automatic operations (Sun et al., 2015). This study also recorded mindfulness practitioners' lower susceptibility to biases such as the sunk cost bias because of their heightened awareness of their decision-making process. In fact, according to a related study in which researchers observed neural activity, they deduced that meditators use "a different network of brain regions…to untangle negative emotional reactions" (Sun et al., 2015, p. 6). Similar studies suggest decreased reaction time and reduced emotional interference from unpleasant images, indicating less interference from participants' automatic defense mechanisms (Sun et al., 2015).

Using process signal analysis, Braboszcs et al. (2010) found that prolonged mindfulness meditation tends to increase neuroplasticity, which refers to the brain's ability to reorganize itself (Braboszcz et al., 2010). The researchers also examined meditators after an eight-week meditation course. They found that a "decreased coupling between the insular cortex, which is involved in the perception of pain and internal body responses, and the medial prefrontal cortex (mPFC), which is involved in high-level cognition," explain the meditators' feeling that they had become "less rooted in one's sense of body and more oriented toward an impersonal beingness" (Braboszcz et al. 2010, p. 1913). Here, data from neuroimaging studies support meditators' subjective claims of detachment from the body.

Psychologists

Psychologists such as Mark Epstein view the changes resulting from mindfulness meditation as changes in the ego's structures and functions. He describes the ego as a "sophisticated matrix of structures, functions, and representations," which operate on itself during mindfulness meditation (Epstein, 1988, p. 62). The ego's representational mechanism answers, "What am I?" and "What is this?" and forms ideas of reality through mental images, mental constructs, or representations. Mindfulness teachers often instruct their students to observe their thoughts, feelings, impulses, and behaviors, effectively separating the experiencer from the phenomenon they experience. In this way, observing the ego's representational structures and operations disrupts and changes them, causing the ego to "split" into "both subject and object, observer and observed" (Epstein, 1988, p. 66). In other words, observing the ego's arrangement of thoughts, perspectives, and

beliefs divides the observing "I" from the components of its arrangement, separating out the passive observer (Epstein, 1988).

Psychologists have also identified changes in consciousness that follow mindfulness practices, namely, state and trait changes. State changes refer to short-term changes in consciousness experienced during and shortly after mindfulness practice. Trait changes refer to long-term changes in practitioners' baseline consciousness (Braboszcz et al., 2010). New practitioners may experience state changes and slip into these new modes of consciousness during mindfulness practice. Trait changes may also surprise practitioners who lack information on the subject.

Theologists

Buddhism regards detachment from one's body, thoughts, impulses, and feelings as a necessary step on the path to a stress-free, tranquil life. In fact, the First Noble Truth identifies changing thoughts, feelings, impulses, and behaviors as components of the five aggregates, which assemble to create an *illusory* self. Buddhists warn that identification with this illusory self causes suffering that followers should avoid by detaching from these aggregates (Lee, 2017). Hinduism encourages identification with the Atman, sometimes called the Eternal Witness, or true "Self," which Swami Tyagananda, in his book, *Knowing the Knower: A Manual of Jñāna Yoga*, describes as the observing entity, present across all of one's experiences. Tyagananda also asserts that people can achieve identification with the Atman through deliberately questioning the self, which coincides with psychologists' finding that changes in the representational function come about through observing the ego (Tyagananda, 2017; Epstein, 1988). Tyagananda's description of the Eternal Witness and Buddhism's encouragement to identify as an entity detached from the aggregates parallel Mark Epstein's "passive observer," that results from the way mindfulness practices split the ego.

Lee describes mindfulness as a tool to "train and refine the mind to build the foundation to practice the Buddhist teachings." (Lee, 2017, p. 3). Buddhists may practice mindfulness and find that they help to cultivate a more fulfilling life. Researchers such as Braboszcs et al. might associate neuroplasticity with the Buddhists' use of mindfulness to train and refine the mind because neuroplasticity relates to the brain's ability to reorganize itself. Lee also maintains that mindfulness practice will "recognize a totally different form of consciousness," which Buddhists

use to disrupt automatic processes, reshape them in Buddhist fashion, and guide followers to lead more fulfilling lives (Lee, 2017, p. 3). As mentioned above, psychologists identified state and trait changes resulting from mindfulness, coinciding with the Eastern recognition of different kinds of consciousness implicit in the mindfulness practices.

Emotional Research

The above studies have described the cognitive benefits of mindfulness practices but have not characterized the emotional experience of those undergoing mindfulness practices. Inexperienced meditators entering the unfamiliar state of mindful consciousness have visited hospitals in search of help after they believe to have caused self-induced psychoses such as depersonalization, derealization, or dissociation (Sharma et al, 2019). This is so common in meditation-rich cultures that psychologists have entered a culture-specific syndrome called Qi-Gong Psychotic Reaction, characterized by confusion, pananxiety, mood swings, and paranoia, into the Diagnostic and Statistical Manual of Mental Disorders (DSM). In his research, Sharma (2019) includes patients with and without psychiatric histories who underwent treatment for psychoses induced by mindfulness practices. Researchers found that, in less meditation-rich cultures, some mindfulness practitioners became less functional when compared to those who experienced the same psychoses in more meditation-rich cultures (Sharma et al, 2019). Possibly, with less people around them who can understand and offer advice about mindfulness phenomenon, new practitioners in less meditation-rich cultures faced understanding the phenomenon on their own, which may have caused their fear, confusion, and other associated Qi-Gong Psychotic Reaction symptoms. Although Hindus and Buddhists encourage mindfulness practices, detachment from the illusory self, and insist that practitioners should use them to achieve stress-free lives, in Sharma's (2019) research, mindfulness practices have instead caused additional stress (Sharma, 2019).

Emavardhana and Tori (1997) conducted a study on participants of a seven-day mindfulness meditation retreat. Statistically significant results indicated that the participating subjects' overall self-esteem had improved, and that unconscious defense mechanisms of displacement, projection, and regression had improved as well (decreased). The researchers quantified their results using the Tennessee Self-Concept Scale and a lifestyle index based in psychoevolutionary

theory. Participants also became less prone to automatic responses to sexual impulses and external stimuli, supporting results from Sun et al.'s (2015) research suggesting an increased capacity for emotional regulation.

In this study, researchers investigated not only the effects that meditation has on ego defense mechanisms, but also the effects of the entire retreat experience on ego defense mechanisms. The retreat included morning and evening prayers, chanting, and Dharma lectures, which were designed to support and guide participants through the retreat. The guidance may have primed participants to reflect on certain insights or feel more comfortable with changes in consciousness. Because the facilitators of the retreat coupled mindfulness practices with theological teachings, it remains unclear whether meditation alone resulted in the described benefits. Thus, this study will explore the moderating effects of perspectives on the relationship between mindfulness and negative emotions.

Lee points to the idea that, without guidance, practitioners may fail to fully reap the benefits of mindfulness (Lee, 2017). Researchers have not conclusively established the relationship between practitioners' familiarity/identification with Eastern teachings/beliefs and the effectiveness of mindfulness meditation outcomes. This work will seek to provide this information. Specifically, I will explore the relationship between mindfulness practices, the orientation of practitioners' beliefs and three negative emotional states: depression, anxiety, and stress. I posit that engaging in mindfulness will increase negative emotions and that students with theological and philosophical beliefs who engage in mindfulness will experience fewer negative emotions.

Theoretical Framework

In 1972, Duval and Wicklund proposed a theory that may help to predict the relationship between mindfulness practices, negative emotions, and worldview. Objective Self-Awareness Theory (OSA) describes the psychological effects of turning one's attention toward the self (Silvia, P. J., & Duval, T. S.). OSA directly relates to mindfulness, as mindfulness practices involve cultivating awareness with respect to one's behaviors, thoughts, feelings, impulses, and general activity. The theory proposes that by directing attention towards the self, people automatically compare themselves to their ideals, whether they do so consciously or unconsciously. When people find congruency between themselves and their ideals, they

experience positive emotions and the behaviors that created the congruence are rewarded. Alternatively, people who find discrepancies between their ideals and their behaviors experience negative emotions and can pursue two possible paths (Phillips, A. G., & Silvia, P. J.). First, a person may ignore the discrepancy, refraining from paying attention when the discrepancy becomes evident. Secondly, a person may reduce or resolve the discrepancy by modifying behaviors to align with their ideals (Silvia, P. J., & Duval, T. S.).

For both routes, the comparison of oneself to their ideals is a direct result of self-awareness, a quantifiable result of mindfulness and meditation (Braboszcz et al., 2010; Emavardhana & Tori, 1997; Sun, 2015). Therefore, OSA becomes relevant when investigating the effects of mindfulness. Phillips and Silvia (2005) found that the higher levels of self-awareness that people report, the more negative emotions they experience; they find that the negative emotion results from the discrepancies they perceive (Phillips, A. G., & Silvia, P. J.). It would follow that the self-awareness resulting from mindfulness is no exception. This is the basis for the following hypotheses:

Hypothesis 1(a): High levels of mindfulness is associated with high levels of depression.

Hypothesis 1(b): High levels of mindfulness is associated with high levels of anxiety.

Hypothesis 1(c): High levels of mindfulness is associated with high levels of stress.

Theologians such as Lee (2017) make claims that support OSA and these researchers' finding; Followers of Eastern philosophy have historically used mindfulness practices to prime a person's mental state for the implementation of religious teachings. Mindfulness practitioners reap the benefits by aligning practitioners' behaviors with the religious ideals, not by practicing mindfulness alone (Lee, 2017). This relates to OSA when individuals pursue either the path of aversion or the path of resolution. Followers use teachings to reduce the discrepancies between themselves and the ideals of the religious tradition. Possibly, theologically oriented individuals will attempt to resolve their incongruence with their ideals because of guidance from theological practices. If this is the case, one may expect that theologically oriented people experience lower levels of negative emotions than non-theologically oriented people when directing attention toward themselves in mindfulness practices. This is the basis for the following hypotheses:

Hypothesis 2(a,b,c): Theological orientation will moderate the relationships between mindfulness and (a) depression, (b) anxiety, and (c) stress, such that the positive relationship is weakened when theological orientation is high.

Hypothesis 3(a,b,c): Scientific orientation will moderate the relationships between mindfulness and (a) depression, (b) anxiety, and (c) stress, such that the positive relationship is stronger when scientific orientation is high.

OSA states that self-awareness leads to negative emotions from the discovery of discrepancies between the self and the ideal. Alignment with the self and ideal rewards the actions that resolve these discrepancies with positive emotions. Lee (2017) asserts that, traditionally, Buddhists use mindfulness (resulting in self-awareness) to set the stage for the embodiment of the religious teachings. In the frame of OSA, more theologically oriented individuals may experience more positive emotions and less negative emotions because of a tendency to resolve discrepancies.

Thesis Scope

Researchers have observed quantifiable cognitive benefits of mindfulness practices. Research has yet to conclude whether the mindful state alone results in emotional benefits. Some other factor, such as the participants' beliefs, may influence practitioners' emotional experiences. This study uses similar statistical methods to the above studies to examine how mindfulness practitioners' beliefs contribute to mindfulness's influence in levels of stress, anxiety, and depression. Hypothetically, familiarity with theological teachings should have a buffering, moderating effect on these relationships.

METHODOLOGY

Research Plan

I developed a quantitative Likert-based survey based on my completed literature review. After obtaining IRB approval, I administered the survey electronically, via Qualtrics to college students at Bryant University in Smithfield, Rhode Island. In this survey, participants anonymously answered questions pertaining to their mindfulness practices, the approach to which they engage in mindfulness (using a scale I developed), and their levels of depression, anxiety, and stress, as well as pertinent demographic information. I collected primary, self-reported data, which is most appropriate for capturing these internal, perception-based variables. I used validated scales for this research (excluding the scale I created, as researchers have not explored this construct in a quantitative, survey-based approach) and followed recommendations to reduce common method bias and increase both the reliability and validity of my findings. I obtained 142 survey responses to generate sufficient statistical power.

Participants ranged between 18 and 35 years of age, for an average of 21. Of the 142, 59.2 percent of respondents identified as male, and the other 40.8 percent identified as female. Most participants identified as White (73.9%), a small number identified as Hispanic (9.9%), Asian (5.6%), and African American (4.2%).

Measures

Scientific and Theological Orientation. I developed this scale based on my literature review. I used this measure to characterize individuals as scientifically minded or theologically minded. I framed the questions in the Scientific and Theological Orientation section to investigate the degree to which participants view their worlds through a scientific lens and a theological lens. The Cronbach's alpha for the Science scale was 0.796. A sample item includes "I read scientific books and texts related to meditation." The Cronbach's alpha for the Theology scale was 0.808. A sample item includes "I identify with Buddhist, Hindu, or Taoist teachings."

Toronto Mindfulness Scale. I used this 13-item scale to record the frequency and intensity of mindfulness practice. The sum of the decentering score and the curiosity score describes the

degree to which participants enter the mindful state (intensity) through meditation. The Cronbach's alpha for the Toronto Mindfulness Scale was 0.92. A sample item includes "I experienced my thoughts more as events in my mind than as a necessarily accurate reflection of the way things 'really' are."

Depression, Anxiety, and Stress. This 21-item scale (DASS-21) measures an individual's level of depression, anxiety, and stress. Each of the negative affective states is measured with seven items each. The Cronbach's alpha for the Depression scale was 0.909. A sample item includes "Felt life was meaningless." The Cronbach's alpha for the Anxiety scale was 0.847. A sample item includes "Was aware of the action of my heart." The Cronbach's alpha for the Stress scale was 0.908. A sample item includes "Found myself agitated."

Data Analysis

After assessing my measures for reliability, I used hierarchical linear regression in SPSS to conduct my hypothesis testing. The results of my hypothesis testing are reported below.

Results

In Hypothesis 1(a) (H1(a)), I hypothesized that high levels of mindfulness would correlate positively with increased levels of depression. The data supported this hypothesis in the direction hypothesized ($B = 0.11$, $p < 0.10$), indicating that individuals who are more mindful tend to self-report depression more than less mindful individuals. Likewise, in Hypothesis 1(b) (H1(b)), I theorized that mindfulness would lead to increased levels of anxiety. The data also supported H1(b) in the direction hypothesized ($B = 0.17$, $p < 0.05$). Lastly, I hypothesized in H1(c) that mindfulness would lead to increased levels of stress. As with the prior two hypotheses, the data supported the hypothesis in the direction hypothesized ($B = 0.19$, $p < 0.05$). In totality, this indicates that when individuals are more mindful – or more aware of themselves, their thoughts, and their behaviors – they are more likely to report high levels of depression, anxiety, and stress. However, none of the moderating hypotheses (H2 and H3) proved statistically significant. Lower levels of mindfulness practice in my sample ($M = 2.49$) could explain this lack of significance. Consequently, I conducted supplemental analyses using OLS regression to see if my measures of theological and scientific orientation directly influenced my dependent variables. While theological orientation did not significantly predict any of the outcome variables, scientific

orientation significantly influenced all three outcomes in the direction hypothesized. In other words, individuals with scientific worldviews tended to report higher levels of these negative mental health outcomes.

DISCUSSION

I intended for this research to investigate what effect having a theological or scientific outlook had on the emotional effects of mindfulness. For this specific purpose, the data proved inconclusive. Theology did not appear to have a significant modifying effect on mindfulness for depression, anxiety, or stress outcomes. Therefore, it remains unclear whether belief systems affect the correlation between mindfulness and negative emotions; The data did not support Hypotheses 2(a), 2(b), and 2(c).

Theologians such as Lee (2018) stress that mindfulness alone may not lead to the freedom from suffering that Buddhists and Hindus believe possible. Many studies on mindfulness and meditation reported favorable cognitive benefits, but few reported the emotional experiences that accompany the change. In meditation-rich countries, researchers characterize a specific mental illness called the Qi-Gong Psychotic Reaction by symptoms that result from mindfulness meditation (Sharma et al, 2019). Mindfulness scores significantly predicted depression, anxiety, and stress scores. The data supported the hypotheses that predicted mindfulness's effect on depression, anxiety, and stress. It remains unclear whether the variables correlated as a direct result of participants' incongruence with their ideals. However, the correlation between mindfulness and negative emotions still reflects what one would expect from objective self-awareness theory. Mindfulness causes higher levels of awareness, which cause more comparison between oneself and one's ideals. This allows for the possibility of discovering discrepancies between the two, which produces negative emotions.

Implications

The study ties mindfulness into objective self-awareness theory. In OSA, increased awareness allows for more realized discrepancies, and, as a result, more negative emotion. Possibly, the data show higher levels of mindfulness correlating with higher levels of negative emotion because more mindful people may painfully realize how they differ from their ideals. Research

has shown an increase in meditators' brains' executive function, indicating an increased level of awareness. Alternatively, people experiencing high levels of negative emotions gravitate towards mindfulness practices in hopes that they can use them as a coping tool for their negative experiences. Whether practitioners' suffering arises from the practice itself, or they gravitate towards mindfulness training to help with their suffering, companies or schools seeking to implement mindfulness programs for employees or students should be aware that those exploring mindfulness tend to feel depressed, anxious, and stressed. Therefore, implementors should have resources available to support the suffering people that attend these training programs.

Future Directions

Research has yet to quantify the effects of excluding mindfulness practices' related theological teachings. With respect to mindfulness outcomes, the role played by belief systems remains undocumented. Researchers still have room to quantify the power of belief on well-being. They should conduct future research with improved measures for characterizing practitioners' beliefs.

Limitations

The survey intended to gauge whether people had a scientific or theological outlook was flawed. Because a low portion of the sample meditated, and much of the survey did not apply to non-meditators, the remaining questions gauged only whether they were interested in learning about their personal psychology, had taken classes on psychology, had worked with mental health professionals, or read self-help literature. The study could have had more significant results if the scale that characterized mindfulness practitioners' beliefs did so more accurately. Another limitation was the sample of students. Having a sample that is predominantly young, white, and male does not properly reflect the population of mindful meditators and limits the generalizability of my findings. If more students responded, perhaps meditators would have made up a larger portion of the group and the diversity of the sample could have improved. Additionally, the fact that the survey was self-reported means people reported what they thought of themselves. Possibly, more mindful people reported higher levels of depression, anxiety, and stress merely because they were more aware of what they were feeling from moment to moment. Lastly, the survey was cross-sectional and conducted at one point in time. This could lead to issues of common method variance, which could bias my findings (Podsakoff et al., 2003).

Conclusion

While the moderating hypotheses were not supported, this research highlighted that mindfulness, often touted as a benefit, positively correlates with levels of reported depression, anxiety, and stress. This finding is important, as knowing how the practices in which we encourage our students and employees to partake affects them allows us to warn them ahead of time as well as prepare resources for any unfavorable outcomes. Additionally, those offering the training programs can better support their employees and students if they know the emotional experiences of those attending such programs. Institutions should prepare for potential disturbing effects that mindfulness practices can have on certain people, especially if those people feel different from their ideals. The mindfulness literature still does not conclusively characterize the effect that beliefs have on mindfulness outcomes. Knowing the details of this relationship can make practicing mindfulness safer by knowing who may benefit and who may be hurt by the practice.

APPENDICES

APPENDIX A – SURVEY

Scientific and Theological Orientation Scale

I have developed the following survey questions to classify the degree to which meditators identify with scientific or theological teachings. The Theology and Science subsections are both scored out of 40.

How well do the following statements describe you? (1-5)

Does Not Describe Me Accurately Describes Me

12345

Theology

1. I recite prayers or mantras
2. I want to explore my spirituality
3. I attend religious services consistently
4. I identify with Buddhist, Hindu, or Taoist teachings
5. I read religious books and texts related to meditation
6. I started meditating to bring me closer the divine
7. I meditate for my religion
8. I meditate to connect with nature

Science

1. I have taken classes on psychology
2. I want to understand my psychology
3. I have worked with professionals on mental health
4. I read scientific books and texts related to meditation

5. I read non-religious self-help books
6. I meditate to benefit my career
7. I started meditating for the cognitive benefits
8. I meditate with the intention of reducing stress

Frequency of Practice

1. How often do you meditate?

A—Once a month

B—Once a week

C—A few times a week

D—Every day

E—Never

2. Which of these durations describes a typical meditation session for you?

A—Over an hour

B—30 minutes to an hour

C—10 minutes to 30 minutes

D—Under 10 minutes

E—I do not meditate

The Toronto Mindfulness Scale

We are interested in what you have experienced in the past week. Below is a list of things that people sometimes experience. Please read each statement. Please indicate the extent to which

you agree with each statement. In other words, how well does the statement describe what you experienced in the past week?

1. I experienced myself as separate from my changing thoughts and feelings.
2. I was more concerned with being open to my experiences than controlling or changing them.
3. I was curious about what I might learn about myself my taking notice of how I react to certain thoughts feelings or sensations.
4. I experienced my thoughts more as events in my mind than as a necessarily accurate reflection of the way things 'really' are.
5. I was curious to see what my mind was up to from moment to moment.
6. I was curious about each of the thoughts and feelings that I was having.
7. I was receptive to observing unpleasant thought and feelings without interfering with them.
8. I was more invested in just watching my experiences as they arose, than in figuring out what they could mean.
9. I approached each experience by trying to accept, it no matter whether it was pleasant or unpleasant.
10. I remained curious about the nature of each experience as it arose.
11. I was aware of my thoughts and feelings without overidentifying with them.
12. I was curious about my reactions to things.
13. I was curious about what I might learn about myself by just taking notice of what my attention gets drawn to.

Curiosity Score: The following items are summed: 3, 5, 6, 10, 12, 13

Decentering Score: The following items are summed: 1, 2, 4, 7, 8, 9, 11

DASS-21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

To which degree do these statements apply to you over the past week?

1 = Did not apply to me at all

2 = Applied to me to some degree, or some of the time

3 = Applied to me to a considerable degree, or a good part of the time

4 = Applied to me very much, or most of the time

Depression

1. couldn't experience positive feeling
2. found it difficult to work up initiative
3. felt nothing to look forward to
4. felt down-hearted and blue
5. unable to become enthusiastic
6. felt I wasn't worth much
7. felt life was meaningless

Anxiety

1. aware of dryness of mouth
2. experienced breathing difficulty
3. experienced trembling
4. was worried about situations in which I might panic

5. felt close to panic
6. was aware of the action of my heart
7. felt scared

Stress

1. found it hard to wind down
2. tended to over-react
3. felt nervous
4. found myself agitated
5. found it difficult to relax
6. was intolerant of anything that kept me from getting on with what I was doing
7. felt that I was touchy

Demographic Questions

1. Please specify your age: _____
2. What gender do you identify as?
   A. Male
   B. Female
   C. Other (_____)
3. Which of the following best represents your racial or ethnic heritage?
   A. Non-Hispanic White or Euro-American
   B. Black, Afro-Caribbean, or African American

C. Latino or Hispanic American
D. East Asian or Asian American
E. South Asian or Indian American
F. Middle Eastern or Arab American
G. Native American, Alaskan Native
H. Other

APPENDIX B

Thesis Project Plan

Task/Deliverable	Description	Tentative Due Date
Thesis Proposal	Comprehensive overview of the need for the work and the methods that will be used to investigate the topic	November 16, 2020
Introduction & Literature Review	Introduction framing the project in present day conditions and findings leading up to this research	November 16, 2020
Methodology & Plan	Description of the steps and tools necessary for carrying out the study	November 16, 2020
Survey Development	Survey questions undergo review by the board and questions are redesigned	End Winter break 2020/2021
IRB Approval	Surveying people requires IRB approval to launch	End Winter break 2020/2021
Data Collection	150 responses received from students (Qualtrics).	February 2021
Data Analysis & Write-Up	Collected data is run through statistical software for organization and interpretation. Findings are reported.	March 2021
Tables & Figures Made	Data visualization is used to help report findings.	March 2021

REFERENCES

Braboszcz, C., Hahusseau, S., & Delorme, A. (2010). Meditation and neuroscience: from basic research to clinical practice. Integrative clinical psychology, psychiatry and behavioral medicine:Perspectives, practices and research, 1910-1929.

Emavardhana, T. and Christopher D. Tori. (1997). Changes in self-concept, ego defense mechanisms, and religiosity following seven-day Vipassana meditation retreats. *Journal for the Scientific Study of Religion* 36(2), 194-206. https://doi.org/10.2307/1387552

Epstein, M. (1998). The Deconstruction of the Self: "Ego and Egolessness" in Buddhist Insight Meditation. *The Journal of Transpersonal Psychology, 20*(1).

Lee, K. C. (G.). (2018). Demystifying Buddhist mindfulness: Foundational Buddhist knowledge for mindfulness-based interventions. *Spirituality in Clinical Practice, 5*(3), 218–224. https://doi.org/10.1037/scp0000133

McShane, S. L., & Young, V. G. (2018). Chapter 3: Perceiving ourselves and others in organizations. *Organizational behavior: Emerging knowledge, global reality, ninth edition* (pp. 90). New York, New York: McGraw-Hill Education.

Murphy, M., Donovan, S., & Taylor, E. (1997). *The physical and psychological effects of meditation: A review of contemporary research*. Institute of Noetic Sciences: Petaluma.

Phillips, A. G., & Silvia, P. J. (2005). Self-awareness and the emotional consequences of self-discrepancies. *Personality and Social Psychology Bulletin, 31*(5), 703-713.

Sun, S., Yao, Z., Wei, J., & Yu, R. (2015). Calm and smart? A selective review of meditation effects on decision making. *Frontiers in psychology* 6(1059) doi:10.3389/fpsyg.2015.01059

Silvia, P. J., & Duval, T. S. (2001). Objective self-awareness theory: Recent progress and enduring problems. *Personality and Social Psychology Review 5*(3), 230-241.

Tyagananda, Swami. (2017). *Knowing the Knower: A jñāna yoga manual*. Ramakrishna Mission Institute of Culture.