

The Science of Mindfulness-based Stress Reduction
By Timothy Miller

L-9 Competence: *“Can pose questions and use methods of formal inquiry to answer questions about Mindfulness-based Stress Reduction.”*

Chapter I: Introduction

My therapist first introduced me to mindfulness in 2013. I had moved to Chicago from Iowa a few months before, and she diagnosed me with having “adjustment anxiety”. It was appropriate. I was carrying around a lot of anger, fueled by the isolation I felt from a new city, Metropolitan no less. Since hearing her mention mindfulness as a treatment, I heard Michael Skelley refer to it during my Foundations class. Having been interested in Buddhism and spirituality, I found it compelling and have since taken his mindfulness externship and enjoyed it immensely. Maintaining a daily 20-minute sitting practice has helped ease some of my anxiety, and although I still have times where I feel very lonely, I am not as caught up in my melodrama and thus less apt to be consumed by it. (Reminding myself “there is loneliness” instead of “I am lonely”) Being less consumed by it helps rid myself of the feeling of hopelessness. In the height of my anxiety, my anger led me away from people so that social encounters felt even more foreign. Anxiety has a way of feeding into itself, and since mindfulness is something that has helped me climb out of the hole anxiety and loneliness put me in, I would like to see the benefits it can have on the lives of others, especially in these days of digitization, where people seem more taken in by their phones than each other.

In 1979 at the University of Massachusetts Medical Center, Dr. Jon Kabat-Zinn created a mindfulness-based stress reduction (MBSR) program that used meditation, body awareness, and yoga to help treat patients with a variety of symptoms. Since then, MBSR has been administered in a wide spectrum of studies to better understand the relationship between practicing mindfulness and health. This strays from the traditional view of mental health treatment, which generally involves medication, therapy, or a

combination of each. MBSR relies on a health practitioner to first facilitate the practice, followed by routine exercises for participants to perform in an the 8-week treatment, in both a class and take home setting.

Since Kabat-Zinn founded the Center for Mindfulness, the treatment option has shown promise in the way patients deal with mental health symptoms. (Call, Miron, & Orcutt, 2014; Ramsey & Jones, 2015) From the way it helps patients cope with anxiety and depression (Desrosiers, Vine, Curtiss, & Klemanski, 2014) to how it helps promote general healthy social behavior (Ramsey & Jones, 2015) MBSR has proven to be a useful treatment option. In this research, I am observing the various studies that have been published on MBSR in how they could relate to the healthcare treatment of those suffering from anxiety or depression symptoms.

Limitations:

When studying MBSR, most researchers have to rely on self-reported data. While there have been many questionnaires and surveys to help measure data on mental health, stress, and mindfulness, there is still the possibility for participants to distort the data through their own perceptions, something commonly referred to as the *Hawthorne Effect*. There have been some studies that have confirmed the self-reported data through use of MRI scan results (Zeidan, Martucci, Kraft 2014). While this can be an effective means of clearly illustrating the effect that MBSR treatment has on the neural conditions of patients, it is unrealistic to assume that MRI scans can be used widespread in studies relating to MBSR.

In Creswell's study observing MBSR's role in reducing loneliness and pro-inflammatory gene expression in older adults, a blood test was examined along with self-

reported data. The blood samples were gathered to observe pro-inflammatory gene expression, which researchers were able to correlate with MBSR, supporting their original hypothesis. Any time when physical tests can be included within the context of MBSR, it will only help researchers understand more about the practice, whether or not their hypothesis is supported.

It has also been argued by Buddhist teachers and promoters of “traditional mindfulness” that “contemporary mindfulness” as practiced in MBSR is incomplete due to its omission of other Buddhist teachings. (Monteiro, Musten, Compson 2015) While MBSR is rooted in Buddhist teachings, and facilitators are often former Monks or spiritual teachers, the practice of MBSR is secular. This allows for a wider audience to participate in the practice and reap the rewards without fear of religious isolation.

Mindfulness and meditation are remedies to the Fourth Noble Truth of Buddhism or “How to relieve suffering”. When mindfulness is used to perform better at a job and ultimately collect more material wealth, it seems counterproductive to the original basis of the practice. Though it is hard to measure the fine differences between traditional and contemporary mindfulness and what are the active ingredients that make the practice effective, the positive impact MBSR has on the lives of those prone to anxiety and depression (Meadows, Shawyer, Enticott 2014) is enough to make the practice valuable.

Another limitation is in the “wait list” status of control groups. Adding participants to a “wait list” is meant to provide a neutral perspective ideal for a control group, but a wait list can have adverse effects on participants who could be discouraged for being on a waitlist. In Ramsey, & Jones (2015) study measuring the effects of MBSR in the prevention of ostracism, the control group was given a passage to type and was told

they were not being scrutinized for typing errors. This is an uncommon approach to control groups that could prove more suitable for neutrality.

Chapter II: Review of the Literature

Abstract:

Stress is a term that carries a unique meaning to each person who is affected by it. Commonly it is associated with a demanding lifestyle, though it can also occur for those whose lifestyles are not demanding enough. It can be the result of a strained relationship, abnormal sleeping habits, or a recent change in one's life. While each situation is different, they can lead to the same feelings characterized by stress: anxiety, anger, resentment, isolation, and sometimes depression. Mindfulness-based Stress Reduction (MBSR) seeks to alleviate those symptoms by allowing the patient to sit in non-judgmental awareness and identify those feelings as they pass through the mind and body while focusing on the breath. In so doing, the patient becomes more familiar with the way his or her mind works, and through that better understanding is able to cope with the challenges in daily life more effectively. This study will examine how MBSR treatment affects anxiety in adults using various methodologies.

Experimentation:

Generally participants are given two surveys a few weeks prior to treatment. The information they provide will help researchers determine whether each participant is qualified for the study. The data is recorded as baseline data it is given to both the treatment and control group. This data helps researchers understand the changes between each group and whether the treatment is in fact effective. MBSR is a 12-week treatment with exercises focusing on different aspects of mindfulness. Often, participants in each

group are given surveys after each session (Zeidan, Martucci, Kraft, McHaffie 2014) so that more data can be collected and compared. This helps researchers better understand how each treatment session affects those treatment participants compared to the control group.

Conclusion:

Based on the consistent evidence supporting the positive role MBSR has on the social behavior of participants, my original hypothesis that MBSR is an effective treatment to those with anxiety or depression is supported. In Reese 2015, mindfulness skills were correlated with emotional regulation. Possibly the strongest study examining MBSR as a treatment option was Meadows, Shawyer, Enticott (2014) which examined the long term effects of MBSR on those with recurring depression.

Significance:

The continued development and better understanding of MBSR through studies like these will be important. They have already begun to suggest a valid mental health treatment option, and unlike medication, MBSR attempts to address the root cause of depression and anxiety instead of remedying the symptoms. Between the positive change I have experienced in my life, and the various studies that have suggested the practice works, MBSR is an important step in helping health care professionals to treat a growing public concern.

Chapter III: Research Methodologies

My research investigates the effect of mindfulness based stress reduction (MBSR) treatment has on patients with anxiety and depression. While there are several of conducting research and gathering data, the most common approach involves

administering questionnaires before and after the experimental treatment. When patients fill out a questionnaire at the onset of the study it provides a baseline of which to compare data throughout the experimental treatment. The first questionnaire is generally administered through the mail a few weeks before treatment begins. The information gathered helps researchers better know their subjects and while having the added benefit of qualifying those who are applicable to the study.

The questionnaires used in any given study vary by what they measure. Considering “mindfulness” itself is usually a variable within an experimental study, a questionnaire on a participant’s perceived “mindfulness” is usually given. A popular questionnaire measuring mindfulness is the Five Facet Mindfulness Questionnaire. (FFMQ) FFMQ is a 39-question survey that measures on the following five “facets of mindfulness”: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. With one questionnaire to measure mindfulness, there is usually another questionnaire to measure some other variable that is being observed in relation to mindfulness, like the anxiety one perceives in his or her life pre and post MBSR treatment. Tying in both questionnaire results help researchers to grasp how effectively MBSR treatment caused subjects to be mindful, and the difference in how each subject approached other variables like stress or anxiety.

Questionnaires also provide researchers another valuable tool: the ability to translate human experience into quantitative data that can in turn be compared to other results. Most of the data collected in other MBSR-related studies has been quantitative because it has been taken from questionnaires (questionnaires designed to give each answer a value so that values can be compared) and compared between pre and post

treatment results. This is effective in helping researchers identify trends and correlations in data. Where it falls short is in its over-categorization that fails to address the complexities of human emotion. It relies on self-reporting within questionnaires to provide the data that is then analyzed. While qualitative data would have a more descriptive role (thus being more accurate) qualitative data is much harder to analyze and compare in groups of different data. That is where the quantitative approach triumphs.

The strongest area for quantitative data in MBSR-related research is when it is used for MRI scan results. MRI results are simple to measure because they are a physical result that does not rely on human perception and are usually numeric. They accompany questionnaire results, and serve to better solidify human reporting data.

A threat when working with human subjects and relying on self-reporting is the *Hawthorne Effect*, or the tendency of those who know they are being studied to alter their results in that awareness. This is especially tricky when considering the nature of self-awareness that encompasses MBSR. Someone who generally is not very observant might rate his or herself highly when first being surveyed for observational skills. It's not always a deliberate action it can be the result of exaggerated self-assessment. It is like when going to the doctor and the doctor asks how many drinks the patient has per week, the patient might downplay his or her consumption to please the doctor, when there are other physical ways of knowing the truth. Unfortunately with MBSR-related research, the ways of testing the integrity of answers is limited or not possible. Once again, using physical quantitative data can solidify the results subjects provide the survey by showing a positive correlation, suggesting the self-reported data was indeed factual.

In my own research I will rely on mixed data, being both quantitative and qualitative. I have mentioned the case for both in working on MBSR-related research, and presenting each will help leverage the strengths of each to better understand correlation and complexity.

Ethical Considerations in my Research

Observing and practicing ethical behavior when conducting research is not only important to consider, it's the law. The Belmont Report has established guidelines for working with human subjects that range from the respect for persons, through maintaining autonomy of research subjects or protection for those with reduced autonomy. It's important to treat subjects with beneficence, which requires more than simple obligatory safety from harm, but maximizing the positive benefits of any given study while minimizing the risk. It's important for researchers to maintain the notion that the "subjects" they are working with are human being, each with unique perspectives, backgrounds, and lives to consider. It's not as simple as discarding these subjects at the end of any given study, as some studies can shape a person for life. That's why it is so important to practice ethical behavior and do more than simply not cause harm.

As far as MBSR-related research is concerned, subjects often have medical conditions that are being experimented on using MBSR treatment. Because MBSR is a form of stress reduction, subjects often suffer from stress-related mental illnesses like anxiety, depression, anger, etc. Considering the fragile nature of mental health, it is important for those who are administering MBSR related treatments or experiments to be inclusive. There will always be a control group that does not participate in the experiment but still suffers from mental health issues. To only offer the experimental

group treatment is cruel in its negligence. Researchers should wait until after the data is collected and then offer all subjects the treatment.

In addressing the concerns that arise when mental health, tenderness is key and the approach I plan to use in my pursuit to better understand MBSR. Having practiced it myself, and knowing the fragile state I was in before helps me better understand and practice compassion and patience with those who are kind enough to offer themselves to be researched. Offering incentive elsewhere, for example giving college credit to students who participate in the research, is another effective approach in maintaining good graces with those being researched. Mental health is a measureable item highly subject to fluctuation due to the fleeting nature of thoughts. That is why treating research subjects with ethics and respect will prove rewarding in the integrity of the evidence collected, because researchers will not be limiting the morale of those being researched. Due to the low risk of MBSR-related experimentation, if I were to submit my review for publication I would submit it as “exempt from review”.

A Statement on Personal Bias

As stated in my personal relevance statement, I have been practicing mindfulness meditation on a daily basis for the past several months. I have felt the positive impact of sitting on a daily basis, relieved stress, spaciousness of thoughts, and feeling less consumed by strong emotions. Acknowledging my own bias toward MBSR treatment will be important in not only presenting research affirming the positive effects of MBSR treatment, but not dismissing research suggesting otherwise. The tendency of affirmative bias is to over sensationalize the positive outcomes as MBSR as a “cure all”. Observing this can cause peers to quickly dismiss any honest attempts of presenting evidence. The

inability of a researcher to see beyond his or her own bias can actually weaken their evidence, even in light of overwhelming evidence affirming their hypothesis.

When discussing MBSR with others who do not share my enthusiasm, I have noticed my tendency to be defensive. This could translate to the way studies that contradict my hypothesis are treated. I may shy away from those studies that marginalize the role MBSR experimentation plays on a subject's wellbeing. Awareness of a bias does not make me immune from acting upon bias as it can manifest simply itself simply through the studies I choose to analyze. There are many subtle ways that bias can make itself known, that is the importance of peer review from objective sources. Having multiple sources review material can in sanitizing the material for subjectivity.

Studies that contradict my own hypothesis will be given the same treatment as those in affirmation. Not only reading and analyzing them but also citing them within my review will create stronger material, because any shortcomings of the treatment can be addressed.

Chapter IV: Results and Discussion

Many of these studies have suggested that MBSR has contributed toward stress relief. It has done so using methods that rely on the development of the subject's skills, rather than an exterior source like medication or therapy. (Though they can complement MBSR treatment) Having experienced many of these symptoms and treatments, reading on the evidence suggesting MBSR as an effective treatment makes me excited.

While stress, anxiety, and depression plague the lives of many people, it will be important to see what other directions researchers are able to steer this treatment option.

Can it improve the lives of veterans returning from battle with PTSD? How does it affect the behavior of children born into dangerous, chemically-induced home lives?

If future studies do not show the same hopeful suggestion they have shown in the past, what will be the next steps for Dr. Kabat-Zinn? Will it require modifying the practice, and how much modification can occur before the MBSR loses its identity? These are all important questions that researchers should consider to consider while they continue with their research.

Appendices

Informed Consent Document

You are invited to participate in a research on mindfulness-based stress reduction. Please return this form with your survey and questionnaire so that we will be able to include your comments in the study.

1. Your participation is completely voluntary and you may withdraw from participating at any time.
2. This information will be kept confidential and no names will be used.
3. There are no known risks to participants of this research project.
4. Benefits of participating in this study may include:
 - Increased opportunity to reflect on one's state of mind and thought processes, the nature of one's reactive traits.
 - Increased opportunity to improve or change one's ability to cope with stress and anxiety.

Data Collection Instrument

When conducting research related to the use of Mindfulness-based Stress Reduction (MBSR) experimentation, it's important to maintain consistent questioning between both control and experimental groups before and after the treatment. Consistency is important in maintaining accurate measurement. The questionnaires administered during an MBSR study rely on participants to provide measurements of aspects of their condition. The ability to provide a numeric value to each answer allows standardization between participants of varying backgrounds and physical compositions. Some of the questions would be framed in the following way:

General Health

In General, would you say your health is:

- Excellent
- Very good
- Good
- Fair
- Poor

How would you compare your health now to a year ago?

- Much better than a year ago
- Somewhat better than a year ago
- About the same as a year ago
- Somewhat worse than a year ago

Much worse than a year ago

Emotional Health

During the past four weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

Cut down the amount of time you spent on work or other activities

Yes No

Accomplished less than you would like

Yes No

Didn't do work or other activities as carefully as usual

Yes No

Social Activities

Emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

Not at all Slightly Moderately Severe Very severe

Source: The SF-36 Questionnaire

This data is then quantified and compared, those who meet a specific criteria are then qualified to participate in the study. These questionnaires can be administered throughout treatment to measure any progress being made. How participants answer the demographics question can help researchers categorize data between different social types, generally by age, gender, and race.

Annotative Bibliography

Desrosiers, A., Vine, V., Curtiss, J., & Klemanski, D. H. (2014). Observing nonreactively: A conditional process model linking mindfulness facets, cognitive emotion regulation strategies, and depression and anxiety symptoms. *Journal of Affective Disorders, 165*, 31–37. doi:10.1016/j.jad.2014.04.024

1. What is the researchers purpose for conducting this research?

This study sought to better understand the correlation of observing (as it relates to “the witness” in mindfulness meditation) and how it relates to the mechanisms underlying anxiety and depression. Anxiety symptoms have been associated with the tendency to observe, so the idea of mindfulness being a treatment for anxiety, while emphasizing observation, seems counterintuitive. Considering the contradictory knowledge surrounding the positive psychological benefits of observing, these researchers hoped to find under what circumstances and conditions does observing help alleviate anxiety. Depression symptoms have not correlated with observing, though mindfulness has been a treatment for those with depression, so that will be observed as well. The researchers propose that symptoms rely not only on the tendency to observe, but to do so free of judgment.

2. What is/are the research question(s)?

The current investigation aimed to address gaps in existing knowledge about the relationship between observing and depression and anxiety symptoms by examining a novel conditional process model in a clinical sample of adults.

3. What research methods were used? Are they experimental, quantitative, or qualitative?

The researchers administered many surveys to the participants, relying on self-reporting of qualitative data.

4. Describe the subjects of the research and what happened to them? Were they subjected to experimental treatment, or where they observed, surveyed or trained and tested, etc?

Participants were presented for treatment at a mood and anxiety disorders clinic. The participants were being treated for generalized anxiety disorder, major depressive disorder, and social phobia. They were surveyed using a number of related questionnaires including the five facet mindfulness questionnaire (FFMQ), The penn state worry questionnaire (PSWQ), Emotion regulation questionnaire (ERQ), the mood and anxiety symptom questionnaire (MASQ). The Ruminative response scale (RRS) was also administered to measure participants tendency to react and dwell on negative emotions.

5. What were the findings? What evidence is presented?

The scope of participants was wide. Those of various ages, genders and races were surveyed. The researchers found no significant variation among ages, genders, or races in their results.

The researchers used a point system, taken from the survey results in measuring effects of anxiety and depression, along with rumination, worry and reappraisal. The researchers found that concerning anxiety and depression, results were moderated by the ability of participants to observe their moods non-reactively, supporting the researchers original proposal. They found that those who are prone to emotional reactivity, the tendency to observe non-reactively reduced the severity of depressive symptoms.

6. Is there any mention of ethical issues and/or researcher bias?

According to the study, "Study procedures were approved by an Institutional Review Board and complied with the ethical principles delineated by the American Psychological Association. Participants provided informed consent prior to inclusion in the study ... The authors confirm that we have no conflicts of interest that could be interpreted as influencing the current research."

7. Is there anything remarkable about the study?

The fact that the researchers took a critical look at the role of non-judgment and non-reactiveness to mindfulness meditation is important. Its dissection helps researchers develop a better understanding as to what aspects of mindfulness-based interventions and treatment account for better symptoms.

8. How does this article contribute to your understanding of your research topic?

It emphasizes the importance of nonjudgmental awareness. It not only contributes to the knowledge I have of my research topic, but also the effectiveness the practice has on my life and my behavior. On days when I sit and my mind is more prone to thoughts and emotions, being able to sit with them nonjudgmentally is just as important as simply noting them. Noting them with judgment can possibly do more harm, illustrated by the study's mention of the relationship between anxiety and simple awareness. When introducing others to the practice, I emphasize the importance of noting with nonjudgment, because otherwise symptoms can be exacerbated by realizing how often one thinks about certain things, and it only causes further detriment. The spirit of the practice captures human nature accurately reiterating that it's important not to judge oneself for thinking or the content of thoughts, because they happen to everyone.

9. Any specific direct quotations that might be useful? (Remember to enclose them in quotes and note page number)

1. Introduction

Anxiety symptoms and general psychological distress have been associated with higher levels of the tendency to observe (Baer et al., 2006, Baer et al., 2008 and Desrosiers et al., 2013a), whereas depression symptoms have been uncorrelated with observing (Barnhofer et al., 2011 and Cash and Whittingham, 2010) or positively correlated with it (Christopher et al., 2012). Given the inconsistency of these relationships, it is important to better understand under what conditions, and through which mechanisms, observing is beneficial. Addressing this gap will have implications for clinicians utilizing mindfulness-based interventions for depression and anxiety because the process of observing present moment experience may not be universally helpful for all patients with these symptoms.

Jacobs, Bruce (01/01/2003). "The Impact of a Brief Mindfulness-Based Stress Reduction Program on Perceived Quality of Life". *International journal of self help & self care* (1091-2851), 2 (2), p. 155.

1. What is the researchers purpose for conducting this research?

The researchers acknowledge the World Health Organization's (WHO) definition of health as having to do with more than just the simple presence or absence of disease, but social, mental, and emotional well-being. This study seeks to address the health benefits of MBSR treatment within the context of perceived quality of life per WHOQOL. Unlike past studies, where MBSR treatment lasted 6 to 10 weeks, this study evaluated whether a 5-week program would show similar benefits, which could provide to be more efficient and applicable to certain populations.

2. What is/are the research question(s)?

Can a five-week Mindfulness-Based Stress Reduction (MBSR) program, that incorporates mindfulness meditation and yoga, positively influence perceived quality of life as defined and described by the World Health Organization (WHO)?

3. What research methods were used? Are they experimental, quantitative, or qualitative?

Each participant was given the WHOQOL-100 survey which asks participants to rate their quality of life within certain categories, the survey lists profiles for each participant with a score, so the researchers can see examine quantitative data with what type of participant was being surveyed and how each answered. Within the WHOQOL-100 survey, each question collected qualitative information about five domains, including questions about physical (energy), psychological (bodily image, self-esteem), social relations (personal relationships, social support, sexual

activity), spirituality/religion/beliefs, and overall quality of life and general health. All of the information within these domains contains qualitative data. The data became quantitative when Cronbach's alpha was applied to measure internal consistency among the set of results.

4. Describe the subjects of the research and what happened to them? Were they subjected to experimental treatment, or where they observed, surveyed or trained and tested, etc?

The subjects were all surveyed before the MBSR treatment using the WHOQOL-100 survey, they were all asked about their quality of life based on the five domains mentioned previously. The treatment group was given the MBSR program, facilitated by the university's wellness program clinical staff that had undergone formal training. The MBSR program included four, three-hour weekly sessions held once a week for four weeks, with a one-day retreat held on the fifth week of the program. An average session consisted of a body scan, sitting meditation, health/connectedness lecture, walking meditation, yoga, and some introduction to stress reactivity. The participants were surveyed two weeks before the start of the treatment, and three weeks after the last day of the MBSR program. Those results were then compared.

5. What were the findings? What evidence is presented?

The findings were that there was no difference in pre and post intervention levels for the control group, but there was a difference for the MBSR group. The 1-4 domains were different to varying degrees (physical, psychological, social, and spiritual), suggesting that MBSR may have played a role. Research suggested that MBSR played no effect on health (5th domain).

6. Is there any mention of ethical issues and/or researcher bias?

Any researcher bias was much harder to see within this study, leading me to conclude that any bias was too insignificant to be considered in the distortion of data or conclusion. No real ethical issues either. One weak point that the researchers mentioned is the possibility of the Hawthorne Effect in its skewing of data, but that would come from the participants and is often a threat when relying heavily on self-reporting.

7. Is there anything remarkable about this study?

This study helps support the positive effects that MBSR has on self-perception. Though it's not as strong as a study as others. Psychologists should at least consider this study when treating patients with depression or anxiety. It has shown to positively affect participants' quality of life to varying degrees.

8. How does this article contribute to your understanding of your research topic?

It has suggested a positive change to the way people perceive their social life to be, and therefore possibly a remedy to loneliness.

9. Any specific direct quotations that might be useful? (Remember to enclose them in quotes and note page number)

Implications for practice, pg. 166

“So how does quality of life and the mBSR program relate and contribute to health promotion? Health, well-being, quality of life, and health promotion are all intertwined. Quality of life measures both subjective and objective well-being, encompassing physical, psychological, social, and spiritual dimensions. A program that enhances perceived quality of life enhances well-being and is, therefore, important in the field of health promotion.”

Ramsey, A. T., & Jones, E. E. (2015). Minding the interpersonal gap: Mindfulness-based interventions in the prevention of ostracism. *Consciousness and Cognition, 31*, 24–34. doi:10.1016/j.concog.2014.10.003

1. What is the researchers' purpose for conducting this research?

In their abstract, the researchers describe ostracism as “harmful behavior” with “detrimentally impacting personal outcomes”. The emphasis that mindfulness has on awareness of one’s surroundings makes it seem like an obvious choice for a sociological study that requires participants consider the feelings of others.

2. What is/are the research question(s)?

Whether mindfulness-based interventions could reduce the propensity of potential instigators to ostracize others.

3. What research methods were used? Are they experimental, quantitative or qualitative?

The research study itself was experimental, seeing if the presence of mindfulness practice changes the perception that participants have toward the way they ostracize others. The scale they used was a 7-point Likert-type response scale of 1 (never) to 7 (always), so that data would be quantitative. Participants were also given a take home packet where they responded to questions regarding the number of exercises they read through and participated in, along with their demographic information, all of which is quantitative data.

4. Describe the subjects of the research and what happened to them. Were they subjected to experimental treatment, or were observed, or trained and tested etc?

A train health educator with experience in stress management interventions administered the experimental treatment. It began with a broad discussion of workplace experiences, such as work-related demands, environmental stressors, and interpersonal relationships. The discussion began more focused on issues of bullying, ostracism, and other conflicts among coworkers. The health trainer then asked the participants to recall a certain situation previously discussed before leading the group through a series of MBSR exercises. Participants were also asked to reflect on a time they had not fully taken in an experience at work, but instead acted automatically. The trainer then lead participants through another MBSR exercise encouraging participants to be aware of those situations and the surrounding environment. The control group was not administered the MBSR treatment. While the MBSR treatment was delivered, the control group was given a passage to read and transcribe. It served as filler material that would not affect self-awareness. The participants were told they would not be scrutinized for errors and that researchers were merely interested in how many words per minute could be typed.

After both the mindfulness and non-mindfulness interventions, each participant was assigned “team captain” a computer scenario where they were to choose team members for what they believed was an interactive virtual ball tossing scenario (“CyberBall”) with students from other universities, but it was all computer generated. They were told that researchers were interested in players’ actions, but truthfully the interest was with players’ behaviors. Once they were given the experimental treatment, their actions were observed.

Each computerized person within the CyberBall game had stats on how often other teammates passed the ball to him or her and how often they were chosen to be in teams, which were provided to each human “team captain” when choosing teammates. The other computer players would reinforce stats by passing the ball to “more popular” members, leaving it up to the human player to make the decision whether to pass the ball to the less popular computer players (who each member believed was human).

5. What were the findings? What evidence is presented?

Compared to the control groups, ostracism was reduced in the MBSR experimental groups. Evidence presented included participants behavior during the exclusion exercise, which showed an increased capacity for mindfulness. They used a 7-point Likert scale to measure instigated ostracism, and the level among the control group was substantially higher than the experimental MBSR group.

6. Is there any mention of ethical issues and/or researcher bias?

The researchers expected the MBSR experimental group to throw the ball to ostracized players more often; this was mentioned in the research. There was a

bias that the treatment would make participants more mindful of excluded teammates.

7. Is there anything remarkable about this study?

This study was the first known attempt of using a personal resource to decrease ostracism. This study also contained an intervention that sought to decrease the frequency and depth at which we ostracize others, something that little research has observed before. The nature of what this study addresses, and using mindfulness as an intervention technique makes this study remarkable, along with the evidence supporting the researchers' original hypothesis.

8. How does this article contribute to your understanding of your research topic?

It reveals to me that mindfulness has been sought as a remedy to anti-social behavior. If it decreases people's willingness to ostracize others, perhaps it can do more to be in a role of ostracism or isolation.

9. Any specific direct quotations that might be useful? (Remember to enclose them in quotes, and note page number)

4.2 Future Directions

“Future research should also consider examining other constructs representative of mindfulness, such as empathy, compassion, and pro-social behavior. These factors are foundational to the Loving-Kindness Meditation (LKM), which is often included as a component in [mindfulness](#)-based interventions ([Hutcherson et al., 2008](#)). LKM has been shown to activate regions of the brain linked to social connectedness, pro-social behavior, and positive feelings toward others.”

Monteiro, L. M., Musten, R. F., & Compson, J. (2015). Traditional and Contemporary Mindfulness: Finding the Middle Path in the Tangle of Concerns. *Mindfulness*, 6(1), 1–13. doi:10.1007/s12671-014-0301-7

1. What is the researchers purpose for conducting this research?

To examine claims that modern mindfulness practice is incomplete as to its Buddhist origins and therefore invalid.

2. What is/are the research question(s)?

The primary focus of the article is to explore the validity of criticisms that contemporary mindfulness is incomplete in its conceptualization of mindfulness compared to traditional definitions.

3. What research methods were used? Are they experimental, quantitative, or qualitative?

This article uses qualitative data to compare the practice of contemporary mindfulness to traditional mindfulness. It is a literature review, relying on the findings of others to make a comparison and reach a conclusion.

4. Describe the subjects of the research and what happened to them? Were they subjected to experimental treatment, or where they observed, surveyed or trained and tested, etc?

This is based on two different schools of thought toward mindfulness meditation. Those who practice traditional mindfulness include the Buddha's teachings. Traditional mindfulness originates from the fourth Noble Truth of Buddhism, on how to relieve suffering. Buddhist views around mindfulness involve mental and spiritual development, along with engagement with the world. Mindfulness is a method in which to cultivate the awareness that allows one to be a better Bodhisattva, or enlightened one who promotes Buddhist teachings.

Contemporary mindfulness differs in that it is a secular approach that focuses more on method and wellness and less on the spiritual teachings surrounding the practice. The three main focuses of contemporary mindfulness involve "centering" our mind, understanding the flows of thoughts and feelings, and embracing the negative thoughts instead of actively avoiding them.

Both types of mindfulness can be provided in different settings, but MBSR is based on contemporary mindfulness and most of what one will find in the medical field revolves around contemporary mindfulness. It allows for a wider audience of participants across various faiths. In my own experience, I was first introduced to contemporary mindfulness taught in a secular setting, but eventually embraced many of the Buddha's teachings and have since gone on a regular basis to spiritual services with traditional meditation.

5. What were the findings? What evidence is presented?

The criticism toward mindfulness-based interventions by Buddhists is that the lack of spiritual context that comes with traditional mindfulness will confuse newer students of meditation, and that the technique and language used in newer applications of mindfulness will take away from the teachings as a whole and thereby making them weaker.

What the researchers found was that although each community (traditional and contemporary) had unique differences, differences that made each side difficult for the other to understand, both address concerns to humanity as a whole. Some of the claims of detrimental effects of contemporary mindfulness are unsubstantiated and require more study. For instance, although contemporary

mindfulness seems pale in comparison to the devotion showed by those in the traditional community, there is no way to suggest how individuals will approach a contemporary practice. In my own experience, I was meditating on a daily basis for a few months before I started attending a Buddhist service, and even then the guided meditations I do every day are of the contemporary variety.

6. Is there any mention of ethical issues and/or researcher bias?

The only ethical issues that are mentioned are those that relate to the facilitation of mindfulness, nothing in terms of the way participants are treated. Considering this has taken the works of others, it has left the ethical work up to the studies themselves while using many studies to illustrate a difference in opinion.

7. Is there anything remarkable about this study?

It's one of the few that addresses the difference in opinion to how mindfulness is approached, as opposed to many articles out there that study the effects of an intervention treatment. It was interesting to me personally, because I have seen both types of mindfulness facilitated, I understand the knowledge gap that needs to be overcome when explaining the benefits of MBSR to a secular audience, and I often speculate as to which is the best approach.

8. How does this article contribute to your understanding of your research topic?

It helps me better understand the validity in criticizing each approach. Just because MBSR may be a frequently used invention method of conducting research does not mean that it is impervious to scrutiny. I also learned about some of the other mindfulness-based treatments that have been used, including Mindfulness-Based Relapse Prevention (MBRP), Mindfulness-Based Eating Awareness Training (MB-EAT)

9. Any specific direct quotations that might be useful? (Remember to enclose them in quotes and note page number)

Page 3

Buddhist roots of contemporary mindfulness

Robert Scharf (2013) addresses the development of contemporary understanding of mindfulness as it occurred over recent years. With the rise of "Buddhist modernism," he claims that practice became less about the transformative power of experiencing suffering or dukkha and more about using meditation and mindfulness practices as a therapeutic means to enrich one's emotional life.

Zeidan, F., Martucci, K. T., Kraft, R. A., McHaffie, J. G., & Coghill, R. C. (2014). Neural correlates of mindfulness meditation-related anxiety relief. *Social Cognitive and Affective Neuroscience*, 9(6), 751–759. doi:10.1093/scan/nst041

1. What is the researchers purpose for conducting this research?

To compare how the brain responds to distraction to how it responds to MBSR treatment using MRI results.

2. What is/are the research question(s)?

The goal of this study was to identify the brain mechanisms supporting mindfulness meditation-related anxiety relief

3. What research methods were used? Were the quantitative, qualitative, or experimental?

Participants had no history of meditation and were given meditation training followed by MRI scanning. Participants were given assessments before the treatment and after the MRI, one assessment was used to measure levels of mindfulness (FRI) while the other measured state anxiety (SAI). The data observed came from MRI results and were quantitative in nature. Considering the participants underwent MBSR treatment, the research was experimental as well.

4. Describe the subjects of the research and what happened to them? Were they subjected to experimental treatment, or where they observed, surveyed or trained and tested, etc?

Participants were given both assessments to measure mindfulness and anxiety, then were administered MRI scans, then they were given another scan while they were instructed to focus on the breath. Once that was finished they were given two more MRIs, and they were given a SAI. They were then given different mindfulness experience, each one emphasizing specific elements of the practice, preceded and followed by a SAI.

5. What were the findings? What evidence is presented?

Twenty minutes of mindfulness meditation greatly reduced state anxiety, as recorded by the MRI results. There were no significant changes across sessions, but within each session there was a significant change when comparing the pre and post data. The range at which state anxiety was reduced from the first MRI scan to the second was 15-22%.

Researchers compared the effects of mindfulness meditation to attending to the breath and found that meditation reduced anxiety by engaging cognitive functions relating to sensory evaluation (SSII) and controlling emotions.

6. Is there any mention of ethical issues and/or researcher bias?

There was no mention of researcher bias. The study mentioned that the mindfulness training was of a secular nature, the closest detail mentioned about ethical issues.

7. Is there anything remarkable about this study?

What is most remarkable about this study is the fact the researchers rely on MRI data as evidence supporting the positive psychological effects of mindfulness meditation. Many studies rely on self-reporting, which is prone to bias and the Hawthorne Effect, but this study helps strengthen the claims that other studies have made using self-reported evidence.

8. How does this article contribute to your understanding of your research topic?

It helps me to understand that the benefits of mindfulness meditation can account for more than a placebo effect. Holistic practices, especially involving mental health, can sometimes be vague, hard to measure and understand. Studies like these can help validate the practice for those who would otherwise be skeptical.

9. Any specific direct quotations that might be useful? (Remember to enclose them in quotes and note page number)

Pg. 757

“We postulate that if the benefits of mindfulness meditation can be realized after a brief training format, then patients may feel more inclined to continue to practice and clinicians may not feel as reluctant to recommend mindfulness meditation to their patients.”

Reese, Elizabeth D. (01/2015). "Facets of mindfulness mediate behavioral inhibition systems and emotion dysregulation". *Personality and individual differences* (0191-8869), 72, p. 41.

1. What is the researchers' purpose for conducting this research?

The researchers in this study sought to better understand the relationship between emotional regulation and mindfulness, an area that has only been explored to a limited degree. They chose to look emotional dysregulation and emotional motivation systems through three facets of mindfulness: increased awareness, non-judging, and non-reactivity.

2. What is/are the research question(s)?

The purpose of the current study was to investigate the mediatory role of

mindfulness facets on the relationship between behavioral motivation systems and emotion dysregulation.

3. What research methods were used? Were the quantitative, qualitative, or experimental?

Researchers relied on self-reported quantitative data taken in the form of questionnaires. The questionnaires used related to personality, levels of mindfulness, and emotional regulation. Each rating participants would give themselves would be quantified into some result.

4. Describe the subjects of the research and what happened to them? Were they subjected to experimental treatment, or where they observed, surveyed or trained and tested, etc?

The subjects of this research were surveyed; researchers then analyzed their survey results. They measured the results to determine which participants were more prone to avoiding negativity, and how anxiety, depression, anger, and guilt can manifest out of that aversive behavior combined with the negative effect itself. Researchers linked data between those who are more sensitive to behavioral inhibition system (BIS) and emotional dysregulation. The hypothesis being that those who did not utilize mindful skills effectively were more prone to emotional dysregulation.

5. What were the findings? What evidence is presented?

The findings support the researchers' hypothesis that emotional dysregulation, mindfulness skills, and sensitivity to BIS are correlated. Those facets of mindfulness that were surveyed upon (act with awareness, non-judging, non-reactivity) were associated with fewer problems to emotional regulation. The scale used within the surveys was used to compare scores and examine the relationship between different survey results. What the researchers observed in the survey results was that participants who showed mindful traits were able to better regulate their mood, and thus not succumb to emotional dysregulation.

6. Is there any mention of ethical issues and/or researcher bias?

There was no direct reference to researcher bias though their affirmative hypothesis suggests that researchers saw the association of mindfulness facets and emotional regulation. The effects of mindfulness are well-documented, and this study sought to specifically address the relationship of BIS sensitivity, emotional dysregulation, and mindfulness. There were no ethical issues; participants were rewarded college credit for participating in the study.

7. Is there anything remarkable about this study?

This was one of the more unremarkable studies I had read, as no actual experimentation was performed and researchers were relying upon self-reported data to examine and reach their own conclusions. It was a study with a predictable result, but provided new context with which to frame it.

8. How does this article contribute to your understanding of your research topic?

This was one of the more difficult studies to comprehend, there were many complex terms with a fine distinction between each that were referenced throughout most of the study. It provided minimal new understanding to my research topic, but provided a frail reinforcement of what was already known about the topic of mindfulness (and what could have been presumed given the evidence that has already been produced on this topic).

9. Any specific direct quotations that might be useful? (Remember to enclose them in quotes and note page number)

Conclusion

We found evidence of an indirect relationship between increased behavioral inhibition sensitivity and increased difficulties regulating emotion through specific mindfulness skills such as Acting with Awareness, Non-reactivity, and Non-judging. We additionally found a direct relationship between increased BAS Reward Responsiveness and decreased emotion regulation difficulties as well as a marginal relationship between increased BAS Drive and increased emotion dysregulation. These findings lay an important foundation for future research on the complex relations between behavioral motivation systems and affective regulation and implicate mindfulness as a useful skill in facilitating improved emotion regulation.

Creswell, J. David, et al. "Mindfulness-based stress reduction training reduces loneliness and pro-inflammatory gene expression in older adults: a small randomized controlled trial." *Brain, behavior, and immunity* 26.7 (2012): 1095-1101.

1. What was the purpose for conducting this research?

Lonely older people are more prone to detrimental health effects, so this study sought to observe the role that mindfulness has on loneliness for older people. Other studies that have attempted to look for ways to reduce loneliness for older people have had limited success.

2. What is/are the research question(s)?

The present study tested whether the 8-week *Mindfulness-Based Stress Reduction (MBSR)* program (compared to a *Wait-List* control group) reduces loneliness and downregulates loneliness-related pro-inflammatory gene expression in older adults.

3. What research methods were used? Were the quantitative, qualitative, or experimental?

The research was experimental, participants were given 8-week MBSR treatment, and the control test was put on a wait-list. Data collected was quantitative from self-reporting questionnaires that rated participants' mindfulness skills and loneliness. Blood samples were also collected pre and post treatment for gene expression profiling and pro-inflammatory protein analysis.

4. Describe the subjects of the research and what happened to them? Were they subjected to experimental treatment, or where they observed, surveyed or trained and tested, etc?

Participants who were eligible were given a question accessing mindfulness, loneliness, and a blood sample was taken. A computerized number generator randomized participants into groups, either the 8-week Mindfulness-Based Stress Reduction (MBSR) program or a Wait-List (WL) control condition. Those who participated in the MBSR program had eight weekly 120-min group sessions, a day-long retreat in the sixth or seventh week, and 30-min of daily home mindfulness practice. During each exercise participants underwent mindfulness meditation, mindful yoga, and stretching, along with group discussions on how to stay present. Participants were also instructed to practice mindfulness meditation at home for six days a week during the program. At the end of the treatment, participants were given the same questionnaires at the baseline and another blood sample was taken.

5. What were the findings? What evidence is presented?

The evidence researchers gathered supported their hypothesis that MBSR does reduce loneliness compared to the control test. MBSR participants had significant reductions in loneliness compared to the baseline. There were no significant discrepancies between both groups at baseline.

Research surrounding pro-inflammatory gene expression correlated loneliness with up-regulated expression, and found that they run in parallel. The research found that MBSR improves symptoms of loneliness thereby significantly down-regulating the expression of inflammation-related genes.

6. Is there any mention of ethical issues and/or researcher bias?

According to the study, all participants provided written informed consent at the study screening. All study procedures were approved by the UCLA and CMU

Institutional Review Boards. There was no mention of researcher bias beside the affirmative hypothesis that MBSR would account for reduced loneliness.

7. Is there anything remarkable about this study?

The fact that this study seeks to address a real social and mental health problem for older adults is what makes it remarkable. It lays out an aggressive treatment program and reinforces the self-reported data with quantitative physical test results, helping solidify the evidence.

8. How does this article contribute to your understanding of your research topic?

It is one of the few studies I have come across which directly addresses the problem of loneliness, a sociological problem rooted in mental health. The fact the evidence found supports the researchers' hypothesis has furthered validity of MBSR as a valid treatment option when addressing mental health.

9. Any specific direct quotations that might be useful? (Remember to enclose them in quotes and note page number)

Discussion

“Using a randomized controlled trial design, the present study identifies MBSR as a novel approach for reducing loneliness in older adults. Although previous studies suggest a role for mindfulness-based treatments in reducing distress (Brown et al., 2007) and in fostering improved relational well-being (Carson et al., 2004 and Brown et al., 2008), this is the first study to show that mindfulness meditation training reduces feelings of loneliness.”

Call, D., Miron, L., & Orcutt, H. (2014). Effectiveness of brief mindfulness techniques in reducing symptoms of anxiety and stress. *Mindfulness*, 5(6), 658-668.
doi:10.1007/s12671-013-0218-6

1. What was the purpose for conducting this research?

The purpose of this study was focus on specific elements of MBSR instead of MBSR as a whole, namely hatha yoga and body scan.

2. What is/are the research question(s)?

To determine the efficacy of two short-term mindfulness-based interventions (i.e., hatha yoga and body scan) by testing whether engagement in these activities leads to significant reductions in anxiety and stress; second, to test whether these brief, diluted interventions lead to increases in self-reported awareness and acceptance; and lastly, to compare the relative efficacy of particular MBSR-based treatment elements (i.e., hatha yoga or body scan) in reducing anxiety and stress symptoms.

3. What research methods were used? Were the quantitative, qualitative, or experimental?

Participants were given three questionnaires pre and post treatment, one measuring worry, another depression, and the third on mindfulness. They were also given a demographics questionnaire pre-treatment. The data collected was quantitative, as each questionnaire gave participants a numeric rating based on how they answered, that rating would be compared to how they answered after the treatment.

4. Describe the subjects of the research and what happened to them? Were they subjected to experimental treatment, or where they observed, surveyed or trained and tested, etc?

Participants were female psychology undergraduate students at a large Midwestern university. They were informed about the study through fliers that were posted at the university. Those who signed up were sent E-mail with a secure link, where they were able to fill out a pre-evaluation determining eligibility. Once eligibility was decided, participants were divided into categories, wait-list control groups, MBSR-based hatha yoga groups, and MBSR-based body scan groups. To allow a diluted form of MBSR treatment, which typically lasts from eight to ten weeks with home exercises every day, the treatment facilitated in this study included three weekly 45-min sessions in groups of three to eight students. Home practice was not required.

During the treatment, participants were given a pre-recorded exercise, narrated by Jon Kabatt-Zinn relating to their group category. The exercise included components of awareness and acceptance, but participants were given no further MBSR training or instruction. After three experimental sessions, and three weeks for the control group, participants were given the same questionnaires they were given prior to the treatment, this time for post-test data.

5. What were the findings? What evidence is presented?

They found that participants in the hatha yoga and body scan groups had significantly greater post-test reductions in anxiety and stress compared to those in control groups. There was no significant differences between experimental groups. There were no significant post-test differences between treatment and control groups on present-moment awareness and acceptance. The evidence presented was the difference in data between the pre and post-test assessment for the experimental and control groups. Researchers compared the results between all three.

6. Is there any mention of ethical issues and/or researcher bias?

Nothing was mentioned in terms of ethical issues or researcher bias.

7. Is there anything remarkable about this study?

One of the more compelling points this study makes is from the second portion of the researcher's hypothesis surrounding present-moment awareness and acceptance in how they relate to hatha yoga and body scan. Considering the little difference between experimental and control groups, the findings suggest that the two elements of MBSR that were experimented in this study do not foster mindfulness on their own, but perhaps influence the reduction of stress through a different mechanism. This study has allowed researchers to take a more micro-analytical view of the components of mindfulness and how they relate to effects of MBSR as a whole.

8. How does this article contribute to your understanding of your research topic?

While reinforcing notions that MBSR helps reduce anxiety as a whole, it has given me a better understanding of how components within MBSR relate to treatment, and how closely they can be integrated within non-mindfulness types of treatment. Granted there were limitations within this study. (like the fact the participants were all college females) This helps illustrate the underlying mechanisms of MBSR and how they relate to treatment.

9. Any specific direct quotations that might be useful? (Remember to enclose them in quotes and note page number)

Pg. 666

“Similarly, the full MBSR treatment protocol includes a substantial home practice component. It may be the case that practicing exercises and concepts learned during weekly MBSR sessions has a significant effect on participants' comprehension and retention of the material, potentially affecting treatment results, a finding observed in previous research (Carmody and Baer 2008). It is also possible that individuals who understand the tenets of mindfulness are better able to accurately rate their levels of present-moment awareness and acceptance. In addition, since the present study was exploratory in nature and used a diluted form of hatha yoga and body scan exercises (three sessions compared to the recommended eight-session length), future research should be conducted that would examine what the necessary “clinical dose” of these interventions might be in order to maximize treatment effects when delivered separately.”

Bergen-Cico, D., & Cheon, S. (2014). The Mediating Effects of Mindfulness and Self-Compassion on Trait Anxiety. *Mindfulness*, 5(5), 505–519. doi:10.1007/s12671-013-0205-y

1. What was the purpose for conducting this research?

The purpose of this research is to better understand the operant effects of meditation on mental health by studying the effects of mindfulness and self-compassion on trait anxiety.

2. What is/are the research question(s)?

The primary purpose of this study was to examine the potential mediating effects and temporal ordering of mindfulness, self-compassion, and trait anxiety among meditation participants.

3. What research methods were used? Were they quantitative, qualitative, or experimental?

This research was experimental; participants underwent MBSR treatment, and were administered three questionnaires pre and post experimentation. The questionnaires measured trait anxiety, mindfulness, and self-compassion. The data collected from these questionnaires was quantitative.

4. Describe the subjects of the research and what happened to them? Were they subjected to experimental treatment, or were they observed, surveyed or trained and tested, etc?

Full-time and part-time students enrolled in elective courses on addictive behaviors at a private university were eligible to participate in this study. Students were assigned either experimental or control group based on the course in which they were enrolled. The experimental group consisted of students who were learning about mindfulness as part of their course. Both experimental and control groups met once per week for 2 ½ hours over the course of the 14-week semester. Both groups were taught by the same professor. Both groups were given Spielberger's State-Trait Anxiety Inventory (STAI-T), Kentucky Inventory of Mindfulness Skills (KIMS), and Neff's self-compassion scale. (SCS) The questionnaires were given in three waves: before the experimental group began MBSR treatment, around the mid-point of the treatment, and after the treatment had concluded. That data was then compared.

5. What were the findings? What evidence was presented?

Their study supported the researchers' hypothesis that practicing meditation accounts for changes in self-compassion and trait anxiety. The data from each questionnaire and phase was compared to determine the increase or decrease of mindfulness, self-compassion, and trait anxiety.

6. Is there any mention of ethical issues and/or researcher bias?

The researchers mention that they received approval to conduct the research from the human subjects institutional review board at the university, and informed consent as obtained from each participant prior to their involvement.

7. Is there anything remarkable about the study?

This study helps correlate decreased anxiety to the functions within mindfulness meditation. Meditators are able to cultivate better awareness over time, which accounts for less trait anxiety. Focus on thoughts and breathing, within that act of meditation are the active elements contributing for decreased anxiety.

8. How does this article contribute to your understanding of your research topic?

Since I began meditating on a regular basis last year, each practice has fluctuated greatly, from those where I am easily able to achieve a strong focus, to those times when my thoughts seem more active and compelling. The times when strong focus has been achieved have accounted for decreased anxiety (on a smaller scale) and has made it easier for me feel peaceful. Although the physical act of meditating itself might not account for decreased trait anxiety, I feel it sets into motion the mood. A Buddhist teacher once told me that at the very least meditation allows us to practice stillness for a few minutes a day, and that alone is a reward. I equate a sitting practice to going fishing, one is quiet and focused on the breath, which allows that person to be in the moment and eventually thoughts become more fleeting, it provides an appropriate setting for a stronger practice. Instead of granting one the positive effects that come with meditation, the physical act of sitting gives the student the resources to achieve mindfulness, instead of granting mindfulness directly. This study addresses how those effects are achieved.

9. Any specific direct quotations that might be useful? (Remember to enclose them in quotes and note page number)

Pg. 517

Our results illustrate that it is not imply the physical act of meditating that yields improvements, but the cultivation of mindfulness and awareness of one's own thought processes that yield reductions in trait anxiety and support the cultivation of self-compassion.

Meadows, G. N., Shawyer, F., Enticott, J. C., Graham, A. L., Judd, F., Martin, P. R., ... Segal, Z. (2014). Mindfulness-based cognitive therapy for recurrent depression: A translational research study with 2-year follow-up. *Australian and New Zealand Journal of Psychiatry*, 0004867414525841.

1. What was the purpose for conducting this research?

This study was conducted to observe some of the effects of Mindfulness-based cognitive therapy (MBCT) over an extended period of time. Researchers observed patients with recurrent depression to monitor how MBCT impacted the depression, along with what it did for the rate of relapse.

2. What is/are the research question(s)?

The aim of this study was to investigate within a pragmatic study design the effectiveness of MBCT on depressive relapse/recurrence over 2 years of follow-up.

3. What research methods were used? Were they quantitative, qualitative, or experimental?

This was experimental research, the experimental variable being the facilitation of MBCT. There was a control group that was not administered MBCT. Participants were given depression relapse active monitoring (DRAM), a self-reporting program that provides training on self-management of depression and monthly self-monitoring. The data was quantitative, as the methods used for measuring what qualified as “depression” or a relapse was standardized over various mental conditions. Each participant was given a rating based on the weight of the answers each provided.

4. Describe the subjects of the research and what happened to them? Were they subjected to experimental treatment, or where they observed, surveyed or trained and tested, etc?

All participants were administered DRAM for self-monitoring and reporting. Half were assigned to an experimental group and half to a control group. Those in the experimental group were given both DRAM and MBCT, those in the control group were just given DRAM.

The treatment was delivered in eight weekly two-hour sessions with up to 10 participants. Participants were assigned homework that included meditation and other mindfulness exercises. There were also optional “booster” sessions offered three times a month by an experienced MBCT practitioner for over a 5-hour period.

5. What were the findings? What evidence was presented?

After the 2-year follow-up, researchers found that those in the experimental group experienced on average 47 fewer days of major depressive episodes (MDE) than the control group. Researchers also found that those who relapsed after the one year mark in the experimental group accounted for 33%, compared to 47% in the

control group. These figures were based on DRAM results. Participants were examined prior to this study to see how much their pre-existing treatments accounted for a difference in the data returned, and that has all been taken into account under intention to treat (ITT) and per protocol (PP) analyses.

6. Is there any mention of ethical issues and/or researcher bias?

After the data was gathered from both groups, those in the control group were offered the MBCT treatment. Having the control group undergo DRAM was meant to decrease the chance of resentful bias caused by treatment as usual (TAU) being the condition for control groups in the past.

7. Is there anything remarkable about the study?

The two most remarkable things about this study are the fact that it is facilitated within the usual context of treatment for those experiencing genuine mental health disorders, and the fact that it covers a much longer period of time than most studies that just site the standard 8-week MBSR treatment. Depression relapse being a dependent variable also made this a useful study, important in the treatment of mental health.

8. How does this article contribute to your understanding of your research topic?

It provides a realistic scenario in which mindfulness can be used as a mental health treatment, and the evidence is somewhat encouraging as a supplemental treatment. (combined with other therapy/medication/treatment patients are already being given) The duration of time data was collected combined with depressive relapse being tested gives this study true relevance and hope for those battling mental health disorders.

In my own life I have fluctuated from several depressed, to mildly depressed, to not depressed at all, depending on many variables within my life. This seems to be a common predicament for those with history of mental health problems, and although one's current situation may be stabilized does not marginalize the severity or importance of those times when relapse does occur.

9. Any specific direct quotations that might be useful? (Remember to enclose them in quotes and note page number)

MBCT is most clearly demonstrated as effective for people receiving specialist care and seems to work well combined with antidepressants.