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The Effects of Mindful Meditation on Body Image in Female Collegiate Athletes During the Late Luteal and Early Follicular Phases of the Menstrual Cycle

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By

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THE EFFECTS OF MINDFUL MEDITATION ON BODY IMAGE IN FEMALE COLLEGIATE ATHLETES DURING THE LATE LUTEAL AND EARLY FOLLICULAR PHASES OF THE MENSTRUAL CYCLE

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ABSTRACT

Body image has been studied in previous research but there is a gap in research with the consideration of body image changes during the phases of the menstrual cycle. The purpose of this study was to examine the effects of a mindful meditation intervention on body image during the late luteal and early follicular phases of the menstrual cycle in collegiate female athletes. Eight female collegiate athletes (age: 20.5 ± 1.8 years, height: 1.7 ± 0.1 m, weight: 62.4 ± 8.9 kg, body fat: 26.4 ± 6.9%) participated in both the control and mindful meditation intervention with each taking three weeks to complete. Body image was measured by using 3 surveys, the Self-Compassion Scale, Rosenberg Self-Esteem Scale and the Body Appreciation Scale to compare the control to the intervention. These surveys were taken prior to each of the three weeks and at the end of the three weeks. Participants made no change to their lifestyle during the control period. During the mindful meditation intervention, participants completed the intervention with each session lasting approximately 20 minutes for five days a week for the three weeks of the intervention protocol. Each week of the control was compared to the corresponding week during the intervention for all of the surveys. There were no significant differences found in any of the surveys between the control and the intervention. Although no significant difference found, there was a trend of body image improving with the addition of mindful meditation. The results of this study along with future research in body image may help to clarify the influence of the menstrual cycle on the body image of females.

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INTRODUCTION

In previously published research, men and women are typically compared as equals to each other in physiological and psychological research even with research to show gender differences when it comes to mental and physical states and any changes that present themselves (4, 12). Physically, men and women can be shown to have hormonal differences, especially with the hormonal changes that occur during the menstrual cycle in women. In addition to hormone differences, women can have different mental states and the changes from the menstrual cycle and its phases can create different responses to the same stimuli. Since women can significantly change physically and mentally depending on which phase of their menstrual cycle they are currently in, research tends to either not include women or it does not address the differences that occur during the menstrual phases. This means that research that primarily focuses on men ends up offering medical and lifestyle advice to women without acknowledging gender and hormonal differences.

Previous research completed on men and women collectively, that discussed the perception of self-image determined that men and women exhibit significant differences in body image and self-esteem (12). Notable differences have been established within women and the effects of the menstrual cycle are lacking and not well advertised with interventions for a woman to consider during each menstrual phase. Studies comparing

mood states through a woman's cycle have indicated differences between phases of the menstrual cycle and have made inferences between mood state and body image. Those inferences have been made but the studies have not continued research to support or deny the theories and research that have been done identifying body image during the menstrual cycle is minimal (17). Along with the inferences of body image changing during the menstrual cycle, prevention methods need to be identified as suitable ways to improve body image, like mindful meditation and exercise, for women to utilize in their day-to-day lives (3, 11, 16, 22).

Purpose

The purpose of this study was to examine the effects of a mindful meditation intervention on body image during the late luteal and early follicular phases of the menstrual cycle in collegiate female athletes.

Justification

To the author's knowledge, research examining the effects of a potentially positive intervention on body image during the specific phases of the menstrual cycle is very limited. The examination of the influence of a mindful meditation intervention could provide an opportunity to improve negative body image and self-perception in women based on where they are in their menstrual cycle. The knowledge gained from this investigation can provide a foundation for future research and help bridge this knowledge gap in the current body of literature.

REVIEW OF LITERATURE

Menstrual Cycle

During the menstrual cycle, specific hormones that help to distinguish changes during the menstrual cycle in the body are primarily progesterone, estrogen, follicular stimulating hormone (FSH) and luteinizing hormone (LH). FSH helps to encourage follicular growth in the ovaries and higher levels occur just before ovulation to encourage the uterine lining of the uterus to thicken to prepare for ovulation. Around the same time, LH rises and causes ovulation. The key hormones that are measured and tracked during the menstrual cycle, especially in research, are progesterone and estrogen, which can be tracked in another form known as estradiol. Estrogen is a collection of different hormones, with estradiol being one of the strongest to aid in the maturation and maintenance of the female reproductive system and due to it being the most abundant and strongest hormone in estrogen it is typically the one tracked for estrogen. Estradiol specifically helps to release the egg during the menstrual cycle along with helping to thicken the uterine lining to prepare for a possible fertilized egg implanted in the uterus. Since estrogen helps in the preparation of the menstrual cycle for a potential pregnancy, progesterone continues to help the thickening of the uterine lining so that a fertilized egg is more likely to be accepted for conception. During the menstrual cycle, three distinct phases can be identified as the low hormone phase or follicular phase, ovulation and the high hormone

phase or luteal phase. During the low hormone phase, progesterone and estrogen are at their lowest and this phase begins with the start of menses, also known as the period (i.e., bleeding week). Ovulation is the middle phase lasting only a couple days and during this time and the end of the follicular phase, progesterone and estrogen levels rise as the uterus prepares for a possible child. From the follicular and luteal phases, the phases can be broken down more, depending on 1) how specific the research needs to be and 2) how people want to identify in the sub-phases (5).

Tracking of the Menstrual Cycle

Hormonal Tracking: To aid in validity and reliability of tracking the menstrual cycle to correctly identify the phases, tracking hormone levels has been seen to be a more accurate methodology compared to the calendar method or through urine ovulation tests. This method primarily would include drawing blood and is typically done in a clinical setting and relies on the changing hormones. Progesterone and estradiol levels are the commonly measured hormones due to the rise in levels during the luteal phase and ovulation (8, 19, 20). Progesterone is the most common and has been seen to show a significant rise in levels during the luteal phase compared to the follicular phase but no significant difference in estradiol appears to exist between the phases (19). Levels of progesterone in two studies have identified the bottom line as 4 ng/mL of blood and a concentration of 6.96 ± 0.62 ng/mL of blood to confirm the luteal phase (8, 20).

Calendar Tracking: As an easier tracking method, calendar tracking does not require invasive procedures and allows for women to count the days around the beginning and end of menses. Although tracking by calendar days is not as accurate as hormone tracking, previous research has been able to find average lengths of each phase in the accepted 28-day menstrual cycle or 3-to-4-week cycle timeline (8, 15). Two studies utilized similar approaches to each other and counted the days of the cycle after the beginning of menses that averaged 14 to 16 days to identify the onset of ovulation to indicate the beginning of the luteal phase (8, 17). These researchers also used a confirmation test for ovulation through urine tests that could be performed by the participants themselves. In addition to identifying the follicular and luteal phase, an average of 5 days prior to the onset of menses was used to locate the late luteal phase (7, 15, 19).

Urine Hormone Tracking: Although hormonal tracking by blood draw was previously stated to be the primary mode to track the menstrual cycle, another option is for women to use an ovulation urine test. Hormones can be found in the urine, but rather than tracking multiple hormones these tests primarily focus on LH levels in urine (6, 9). These tests are also easily accessible to everyday women that wish to track their menstrual cycle. Considering these tests only look for rises in LH to indicate ovulation, they normally are not the sole method used to track the different phases of the menstrual cycle. Women would need to consider other methods like the calendar method based on the

beginning of their period, but even just using urine tests can help to identify when a woman is more likely to becoming pregnant. Since urine tests typically identify LH levels, two studies have confirmed that levels above 30 IU/I are the indicator of the ovulation window in multiple types of at home urine tests (6, 18). The urine tests were also confirmed by using a blood test to ensure that women using them can trust the results (6).

Changes Throughout the Menstrual Cycle

Hormonal Changes: Hormone testing is typically completed in clinical settings due to the invasive procedure and the specific equipment needed to gather hormone levels. In research, finding hormone levels can differ between studies but the key to separating the phases is to find the follicular phase and the luteal phase or the low and high hormone phases respectively. High and low levels of progesterone is the hormone specifically found to identify the two key phases of the menstrual cycle (19). In a similar study, the follicular and luteal phase were identified by progesterone but also by estradiol levels and calendar tracking (8). This study identified the surge in progesterone and estradiol to specifically identify the mid-luteal phase. As a more in-depth hormone measurement and cycle breakdown, Sanders et al (20), separated follicular and luteal phases into an early, mid, and late phase for both. Locating hormone levels can allow for more accurate identification of menstrual cycle phases rather than solely counting days between the

phases, which can be subjective between individual women and can vary a day or two between each cycle.

Physical Changes: In addition to hormonal changes during the menstrual cycle, there are other changes that occur in women throughout their cycle that can be monitored through non-invasive procedures. Sanders et al (20), measured physical changes that are commonly seen in women throughout the menstrual cycle including swelling/bloating and breast tenderness throughout six identified phases of the cycle and scaled it based on no physical indications to severe change with a scale of 0-3. Based on the findings in this study, noticeable rises in physical changes occurred in the late luteal and early follicular phase which would correlate to the days leading up to menstruation. With similar findings in the late luteal and early follicular phase, researchers from another study found increased breast tenderness, more headaches, and increased muscle and joint pain (2). One notable change in a study showed significantly higher systolic blood pressure in the luteal phase but no change in diastolic blood pressure (19). Other physical changes can include more exercise and fitness related measurements, such as oxygen consumption during maximal testing; however, two studies have conflicting conclusions regarding whether there is a decrease in the beginning of menstruation to ovulation (8, 17).

Mood Changes: Premenstrual syndrome or PMS has become an indicator of a woman on her period or about to menstruate. One key factor of PMS is mood changes that tend to be due to more negative mood states. There are different scales and tests to assess negative

mood states which include depression, anger, and irritability. Congruent with physical complaints of swelling and breast tenderness that occur in the late-luteal phase, positive mood states, like happiness, have been observed to be lowered in the premenstrual phase (20). Other mood state markers included fatigue and confusion which rise during the late-luteal phase and into the early follicular phase (2, 7, 19). It has also been demonstrated that more negative mood states and perception of body image can alter through the menstrual cycle (17).

Body Image Changes: Body image encapsulates how a person feels about themselves and their body, which also includes different aspects like self-esteem, body appreciation and self-compassion to make up body image. Previous research that has been completed disaggregates the menstrual cycle and primarily makes inferences about body image and body dissatisfaction based on previous research. Some researchers have inferred that low and negative mood states could be linked to greater body dissatisfaction than in other phases of a woman's menstrual cycle (17). A 2016 study implemented multiple body image and body satisfaction questionnaires during the premenstrual, menstrual, and intermenstrual cycle based on the beginning of menses (15). The results indicated that body dissatisfaction and negative body image matched with previous mood studies and were found to occur during the premenstrual phase and menstrual phase. Another study utilized 30 women without previous eating disorders and focused primarily on the idea of the body dissatisfaction and a desire to become smaller and collected data in the

premenstrual, intermenstrual, and menstrual phases (14). The results of this research indicated that all participants had body dissatisfaction throughout the protocol and the three phases (14). In addition to all subjects having dissatisfaction, there was a significant difference in results in the premenstrual and menstrual phases of the menstrual cycle. This is comparable to the previous study mentioned and compares to the other negative effects that occurs during the premenstrual and menstrual phase.

Body Image

Within the past couple of decades, interest in body image and body perception has increased (12). Social and cultural views impact how people see themselves physically and can change their mental views drastically based on where they are, who they are with and what they see in their day to day lives. Women in previous research have been seen to have lower body positivity than men and tend to have lower body satisfaction (22). Body image studies utilize multiple surveys and tests for specific aspects such as the Body Appreciation Scale, Rosenberg Self-Esteem Scale, and the Self-Compassion Scale (3, 13), Body appreciation scales and self-compassion scales have been seen to test the validity of the surveys for various studies, in which they were able to have comparable results to each other and other surveys like Body Dissatisfaction and Body Shame (3). The Rosenberg Self-Esteem Scale along with other scales has been identified with predicting overall body image in both men and women in multiple contexts like studies

based on participants weight and other habits such as binge eating that can indicate body image (10, 13).

Modes of Altering Body Image

Exercise: Based on previous research and educated theories, improvement of body image through exercise is a realistic option. Aerobic exercise including cycling for one hour while keeping with a moderate to high intensity heart rate was found to significantly improve body image before and after the protocol (23). This study also was able to identify that body image was significantly improved in those that had a goal of changing the physical appearance of their body prior to the beginning of the study. Exercise has been shown to improve body satisfaction, but the specific mode of exercise (aerobic versus strength training) has not provided conclusive results as to which could improve body image more (11, 16). Even though there is no definitive choice to which can cause the greatest improvement, the addition of exercise into daily life can show improvement of body image. These studies, like others, did include women but did not for the women's menstrual cycle when considering the physical and mental changes that occur in women.

Mindful Meditation: Mindful mediation has been described as brief intervention sessions where individuals listen to someone or an audio recording that utilizes words of affirmation and can include breathing exercises (3). This style of introspection is compassion focused and implements words of affirmation that emphasizes the good things a person's body can do at any state it might be in (3). In addition to exercise,

mindful meditation has been studied to examine the influence on body satisfaction and image and similar to exercise, previous research does not consider the influence of the different phases of the menstrual cycle. One study looked specifically at women and body image distress and how it is linked to negative body image and found that the self-compassion focused mindful meditation intervention group exhibited less body image distress than the control group (22). Rating of body image and mindfulness in people who consistently meditate in their day to day lives has been shown to be higher and these individuals have a greater positive self-image than those who do not participate in any form of mindful meditation (21). To find the effectiveness of mindful meditation and the time it might take, another study found that women who engaged in three weeks of a mindful meditation intervention saw improvement in body image and still maintained similar scores three months later from the initial three-week intervention (3).

Future Research and Conclusions

The purpose of this review was to illustrate the previous research of body image and the effectiveness of alternative methods to improve body image over time. In addition, research including women with the consideration of the menstrual cycle has been seen to be lacking, which creates a need to fill in the gaps within the research. With body image becoming more prevalent in conversation in recent decades, finding a possible solution to prevent negative body perception is important for everyone, but especially in women with the phases of the menstrual cycle included. Little to no research has been done

combining methods to improve body image while breaking down the effects of them on each of the phases of the menstrual cycle.

Based on previous research, it is important to begin to include a method of improving body image and perception while also accounting for the specific phases of the menstrual cycle. Future research based on previously stated information will focus on the methodology of mindful meditation due to previous research including protocols that have shown significant improvements in body image. Along with mindful meditation, focus on the late luteal and early follicular phase of the menstrual cycle will allow for research to be done during the time that women typically feel more negatively about body image and self-perception. Future research will include linking these specific phases of the menstrual cycle and a protocol of three weeks of mindful meditation to identify possible changes in body image with this specific intervention.

METHODS

Participants

Participants included female collegiate athletes (n=8) that had a regular menstrual cycle (not missing periods and consistently having a 3–5-week cycle) and had not used hormonal based contraceptives for at least six months at the time of participation. This study was approved by the Stephen F. Austin State University Institutional Review Board to include human subjects in this specific protocol.

Protocol

A three week (study duration)and two group (control and intervention) protocol was used to identify changes in self-compassion, self-esteem, and body appreciation during the late luteal and early follicular phases. The first research participant was randomly assigned to either the control or the mindful mediation intervention group and all other participants were grouped in a balanced manner. The researcher helped each participant use the calendar method to calculate the onset of menses. Each subject began the protocol based on the predicted date that corresponds to the week prior to the start of the next menses phase (7, 15, 19). Data was collected for three consecutive weeks and ended one week after the end of each participant's menses phase (7, 15, 19). To identify self-compassion, self-esteem, and body appreciation; the Self Compassion Scale (see Appendix 1), Rosenberg Self-Esteem Scale (see Appendix 2), and the Body Appreciation Scale (BAS)

(see Appendix 3) were used (3, 13). All participants completed each survey on a weekly basis. Both groups completed the surveys before the intervention began and at the end of each week.

Mindful Meditation Protocol*:* Subjects completed a mindful meditation protocol beginning at the start of the late luteal phase and continued till the end of menses. Subjects listened to a mindful meditation audio recording for 20 minutes during each session five days a week for the three-week protocol (3). Each session was led and monitored by the researcher and completed in a quiet and dark environment for the duration of the session. The sessions were all scheduled around the same time of day. Each week subjects listened to a different meditation. Week 1 was the Compassionate Body Scan (24 minutes), and Week 2 was the Affectionate Breathing (21 minutes), and Week 3 was the Loving-Kindness Meditation Self-Compassion (20 minutes). A hand-written assessment of all three of the body image surveys was done on Fridays at the end of each week.

Statistical Analysis

Comparison of the control and mindful meditation intervention was conducted using the Self-Compassion Scale, Rosenberg Self-Esteem Scale and the Body Appreciation Scale. Wilcoxon Signed Ranks Test (matched pairs) was used to compare each corresponding week in the control to the corresponding intervention week. Statistical significance was indicated by $p \leq 0.05$.

RESULTS

Based on the Wilcoxon Signed Ranks test, no significant difference was found in any of the three surveys used for body image and within the correlating week comparison. P-values of the Self-Compassion scale were 0.865, 0.128, 0.496 and 0.091 in order of pre-intervention to Week 3 of survey collection by comparison of the control scores (2.7 ± 0.6, 2.6 ± 0.6, 2.7 ± 0.7 and 2.7 ± 0.5) and intervention survey scores (2.8 ± 0.6, 2.8 ± 0.5, 3.0 ± 0.4 and 3.1 ± 0.4). With the same order of values, p-values of the Rosenberg Self-Esteem survey from the control and intervention were 0.167, 0.175, 0.093, and 0.398 based on the control scores (17.9 ± 6.7, 16.9 ± 6.4. 18.4 ± 4.7 and 19.4 ± 6.5) and the meditation intervention scores (19.0 ± 3.0, 19.0 ± 4.1, 20.8 ± 4.3 and 20.9 ± 3.6). In the same order as the previous surveys, p-values were 0.483, 0.750, 0.144 and 0.90 respectively to the corresponding weeks of the Body Appreciation scale between the control scores (3.8 ± 0.6, 3.7 ± 0.7, 3.5 ± 0.8 and 3.6 ± 0.7) and intervention scores (3.7 ± 0.7, 3.6 ± 0.7, 3.7 ± 0.6 and 4.1 ± 0.4).

Comparisons and values can be seen in Figures 1, 2 and 3 and in Figure 3, the Body Appreciation scale, there is a visible difference between the control scores and the intervention scores in Week 3 as previously mentioned. The other figures, Figures 1 and 2 have minimal changes visually.

DISSCUSSION

With no significant difference between the control and mindful meditation, there were p-values in each survey comparison that were close to becoming significant and with more participants, a more definitive answer could have been found. In the Week 3 comparison in both the Body Appreciation and the Self-Compassion scales p-values were 0.090 and 0.091 respectively. The Rosenberg Self-Esteem exhibited a similar p-value score ($p=0.093$) but was found in the Week 2 comparison instead. The trend of mindful meditation is following along with previous research, but without a significant finding, only inferences can be made (3, 21, 22). A continuation of this study with more participants could help to determine if a significant difference exists or not. Previous research has seen a significant improvement in body image, with the Body Appreciation scale and the Self-Compassion scale, so getting confirmation of the results can help to further the research linking low body image with an effective prevention method (21, 22). Previous research did find that an identical approach to the mindful meditation intervention was effective, but also identified significant differences 3 months later which can help to ease subjects' commitment to this intervention if it is adopted into their lifestyle (3).

Regarding all the parameters of this study, there were limitations that were present and this affected the recruitment of the participants and the data collection. Finding women

that met the criteria was shown to be difficult. Some women that did match the criteria of being off of hormone-based contraceptives but would miss the criteria of having a regular menstrual cycle. This could be expected when attempting to work with athletes due to the high volume of exercise that the athletes engage in and lessens the number of possible participants (8). Once recruiting of the participants was completed, other challenges did present themselves. Female athletes were recruited to prevent a conflict of some participants exercising and some not. Previous research has stated that exercise can be used as an intervention to improve body image and ensuring that all participants exercised consistently led to the use of female athletes rather than a wide variety of women (11, 16). Since female athletes were recruited, the scheduling of the athletes did present to be an issue. Women that were willing and able to participate led to the majority of the participants being in competition season for their specific sports, which could have added onto a more stressful environment compared to being out of the competition season. Issues with scheduling came during the intervention phase of the study due to participants coming in five days a week for three weeks while traveling for competition. All participants were able to complete the required meditation sessions by giving alternate options to complete them while traveling. Alternative options included a zoom meeting with the researcher or the materials to complete the sessions on their own around the same time as their original meditation sessions.

Besides adding more participants to this current study due to previously mentioned limitations, there is still a large gap in research that includes women while taking their menstrual cycle into consideration (17). Regardless of if mindful meditation could work for females during the late luteal and early follicular phase of the menstrual cycle, more research needs to be done on alternate methods of improving body image and preventing body dissatisfaction in women. Exercise has been previously shown to make improvements but similar to this study, it needs to be studied with the intention of improving body image in the specific time in a women's menstrual cycle (16, 23). There is no conclusive answer to what type of exercise (i.e., aerobic or anaerobic) would be best but still offer options and alternatives to improving body image. Besides focusing on female collegiate athletes as a whole, comparing sports that are categorized as aesthetic sports (i.e. dance, cheer and wrestling) to sports that are categorized as non-aesthetic sports that may not impact the athlete's perception of themselves (i.e. soccer and basketball) (1) may provide insight into the influence of specific sports on body image. Separating sports into groups based on how physical appearance is perceived and deemed important (i.e. dance and cheer) could clarify if traditional aesthetic sports based on size and beauty can influence a woman's body image as well as her performance. Along with the traditional sports, there are also other sports like wrestling where athletes are grouped based on weight which could also be a body image stressor. Younger women still have greater body image issues than their male counterparts, so opening this study to include

women that do not exercise or participate in a sport could help to expand female research in a time of need for women (22).

A major takeaway from this study is that the continuation of this study needs to be completed to collect more participants and data along with conducting research on other alternatives to mindful meditation. As previously mentioned, more research needs to be done on females with respect to their menstrual cycle on both a mental and physical level.

TABLES AND FIGURES

Table 1: Subject Characteristics

Subjects	**Age (years)**	**Height (m)**	**Weight (kg)**	**Body Composition (% fat)**
n=8	20.5 ± 1.8	1.67 ± 0.1	62.4 ± 8.9	26.4 ± 6.9

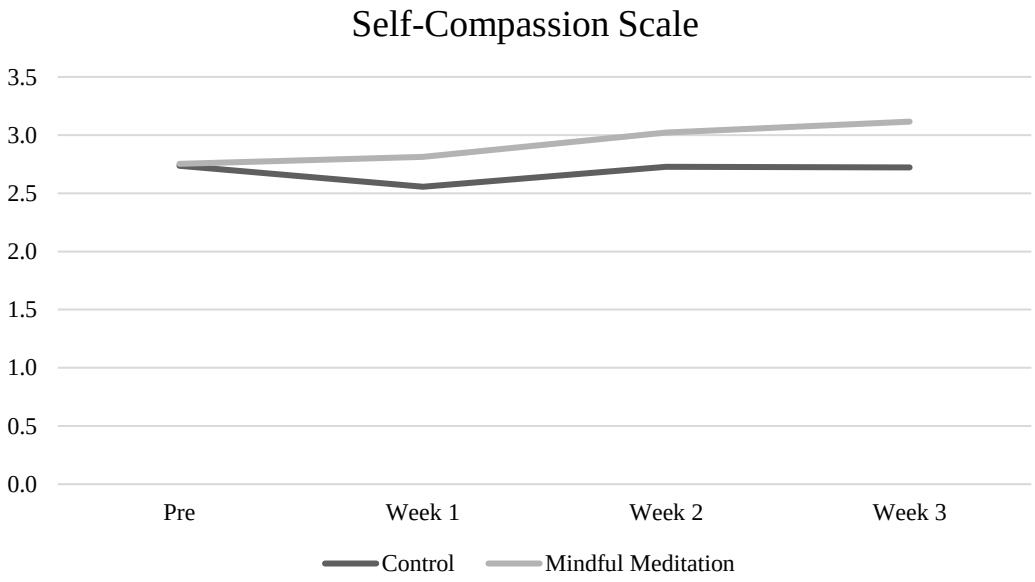

Figure 1: A comparison of the mean scores in the Self-Compassion Scale between the control and mindful meditation intervention

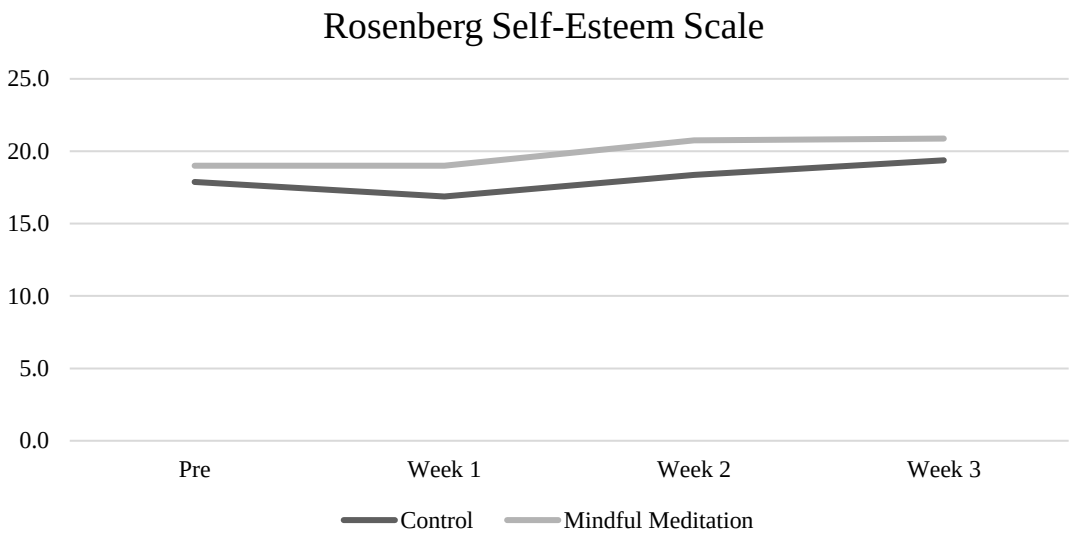

Figure 2: A comparison of the mean scores in the Rosenberg Self-Esteem Scale between the control and mindful meditation intervention

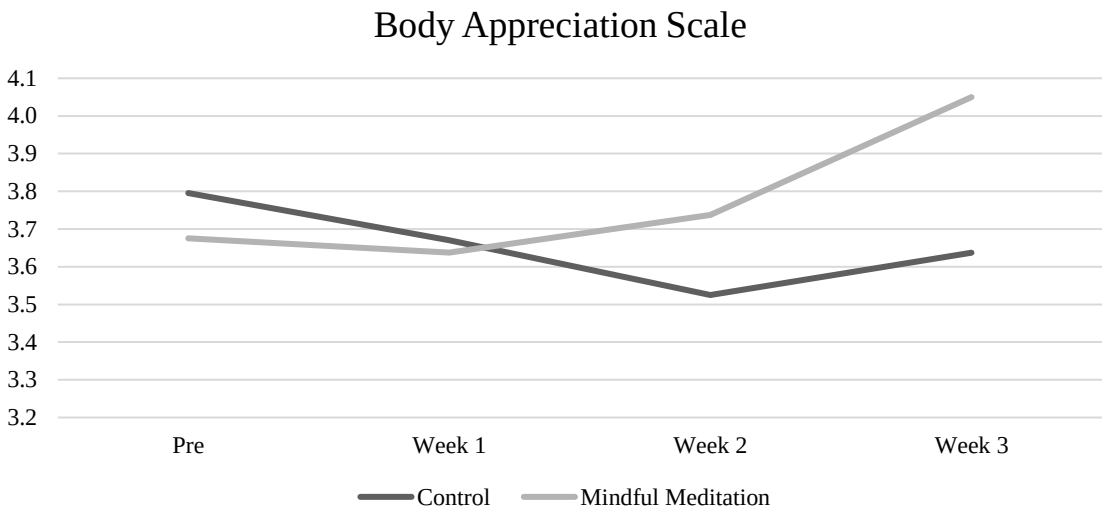

Figure 3: A comparison of the mean scores in the Body Appreciation Scale between the control and mindful meditation intervention

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APPENDIX 1: Self Compassion Scale

Almost never				Almost always
1	2	3	4	5

_____ 1. I'm disapproving and judgmental about my own flaws and inadequacies.

_____ 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.

_____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.

_____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.

_____ 5. I try to be loving towards myself when I'm feeling emotional pain.

_____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.

_____ 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.

_____ 8. When times are really difficult, I tend to be tough on myself.

_____ 9. When something upsets me I try to keep my emotions in balance.

_____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.

_____ 11. I'm intolerant and impatient towards those aspects of my personality I don't like.

_____ 12. When I'm going through a very hard time, I give myself the caring and tenderness I need.

_____ 13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.

_____ 14. When something painful happens I try to take a balanced view of the situation.

_____ 15. I try to see my failings as part of the human condition.

_____ 16. When I see aspects of myself that I don't like, I get down on myself.

_____ 17. When I fail at something important to me I try to keep things in perspective.

_____ 18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.

_____ 19. I'm kind to myself when I'm experiencing suffering.

_____ 20. When something upsets me I get carried away with my feelings.

_____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.

_____ 22. When I'm feeling down I try to approach my feelings with curiosity and openness.

_____ 23. I'm tolerant of my own flaws and inadequacies.

_____ 24. When something painful happens I tend to blow the incident out of proportion.

_____ 25. When I fail at something that's important to me, I tend to feel alone in my failure.

_____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.

APPENDIX 2: Rosenberg Self-Esteem Scale

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle ***SA***; if you agree with the statement, circle ***A***; if you disagree, circle ***D***; and, if you strongly disagree, circle ***SD.***

1. On the whole, I am satisfied with myself.	***SA***	***A***	***D***	***SD***
2.* At times, I think I am no good at all.	***SA***	***A***	***D***	***SD***
3. I feel that I have a number of good qualities	***SA***	***A***	***D***	***SD***
4. I am able to do things as well as most other people	***SA***	***A***	***D***	***SD***
5.* I feel I do not have much to be proud of	***SA***	***A***	***D***	***SD***
6.* I certainly feel useless at times	***SA***	***A***	***D***	***SD***
7. I feel that I'm a person of worth, at least equal to others	***SA***	***A***	***D***	***SD***
8.* I wish I could have more respect for myself	***SA***	***A***	***D***	***SD***
9.* All in all, I am inclined to feel that I'm a failure	***SA***	***A***	***D***	***SD***
10. I take a positive attitude toward myself	***SA***	***A***	***D***	***SD***

Scoring:
-For questions 1, 3, 4, 7, and 10 score SA=3, A=2, D=1, and SD=0: Your Total_____
-For questions 2, 5, 6, 8, and 9 score SA=0, A=1, D=2, and SD=3: Your Total_____

Grand Total_____

APPENDIX 3: Body Appreciation Scale

For each item, the following response scale should be used:

1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often, 5 = Always

Directions for participants: Please indicate whether the question is true about you never, seldom, sometimes, often, or always.

1. I respect my body.

2. I feel good about my body.

3. I feel that my body has at least some good qualities.

4. I take a positive attitude towards my body.

5. I am attentive to my body's needs.

6. I feel love for my body.

7. I appreciate the different and unique characteristics of my body.

8. My behavior reveals my positive attitude toward my body; for example, I hold my head high and smile.

9. I am comfortable in my body.

10. I feel like I am beautiful even if I am different from media images of attractive people (e.g., models, actresses/actors).

VITA

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