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A Bridge between the Mind and Body: The Effects Of Massage On Body Image State

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Bonnie Fletcher is a senior majoring in Psychology and Physical Education, with a concentration in Exercise Physiology, and a minor in Art. She conducted this research under the mentorship of Dr. Teresa King of the Psychology Department. After presenting this research at the 2009 National Conference for Undergraduate Research in Wisconsin, Bonnie will begin working on her interdisciplinary Honors Thesis.

While research suggests positive effects of massage on psychological health, little is known about the effects of massage on body image. The purpose of this study was to examine the effect of massage on body image and to examine relationships between body image and attitudes toward massage. Twenty-one female college students aged 18 to 67 ($M=25.2$, $SD=13.20$) were randomly assigned to either a massage or control condition. Participants completed questionnaires measuring body image state and trait, attitudes toward massage, and demographics. It was hypothesized that the experimental group would show greater body image change than the control group. Results showed improved body image in both conditions, while large correlations were found between body image and attitudes toward massage.

With unrealistic appearance ideals being increasingly more present in both the media and society, it is no wonder that body image has been receiving more attention by researchers. The construct of body image is coming under scrutiny more and more, both empirically and clinically (Cash, Morrow, Hrabosky, & Perry, 2004). Body image was once defined as “the picture of our own body which we form in our own mind” (Pruzinski & Cash, 2002). Due to its increasingly more recognized complexity, it has been more recently described as “a person’s mental image and evaluation of his or her physical appearance and the influence of these perceptions and attitudes on behavior” (Foster, 2004).

Body dissatisfaction is so common in women that it has come to be known as “normative discontent” (Rodin, Silberstein, & Striegel-Moore, 1985). Research has shown that women typically want to be smaller than their actual body size. For example, in a study of 101 female university students, about two fifths of the women reported moderate to strong negative feelings about both individual body parts and their bodies as a whole (Monteath & McCabe, 1997). The high prevalence of body dissatisfaction, coupled with its association with health compromising behaviors, makes female body image an important focus for continued research.

Body image disturbance had been defined as a continuum of a person’s body-image dissatisfaction, distress, and dysfunction (Cash, Phillips, Santos, & Hrabosky, 2004). Not restricted to weight and body shape alone, body image dissatisfaction extends to include hair, muscle tone, or any of numerous

other personal characteristics. General body dissatisfaction has been shown to be related to several indicators of psychological health. For example, a study on adolescent females revealed body dissatisfaction to be a strong predictor of low self-esteem (Johnson & Wardle, 2005). Further associations have been found between negative body image and depression (Noles, Cash, & Winstead, 1985), social anxiety (Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002), and sexual difficulties (Wiederman, 2002).

Body Image and Health Behaviors

A negative body image has been shown to be related to several health behaviors such as eating disorders, excessive exercise, and difficulty quitting smoking (King, Matacin, White, & Marcus, 2005). In 2005, Johnson and Wardle showed that body dissatisfaction is strongly correlated with dietary restraint, which is directly connected with the purging characteristic of bulimia nervosa (Herman and Mack (1975). There is also evidence to show that improved body image may lead to improved health behaviors. For example, according to a report on body image coping in women with breast cancer, women who felt better about their bodies held stronger personal confidence in dealing with illness and more empowered coping abilities (Pikler & Winterowd, 2003). Thus, improving body image may not only affect body image, but also improve health behaviors.

Massage and Body Image

While massage is an often recommended technique to improve body image, very little research has examined what happens to body image as a result of massage. The American Massage Therapy Association (AMTA) defines “massage” as “manual soft tissue manipulation that includes holding, causing movement, and/or applying pressure to the body.” The AMTA further defines massage *therapy* as “a profession in which the practitioner applies manual techniques, and may apply adjunctive therapies, with the intention of positively affecting the health and well-being of the client” (AMTA, 2008).

According to Cash (1995), a poor body image may lead to emotional upset due to pressing body anxieties. When an individual is emotionally upset, the body may react through muscle contraction. This muscular tension may remain well after the causal emotions have passed, which may leave the individual even more prone to future emotional upset. He further suggests that the control of muscle tension may be important for emotional control, in cases of body image and other issues. Massage therapy is a treatment that may be used specifically to reduce muscular tension.

Research does support a relationship between massage treatment and improved psychological health. For example, massage

therapy is positively correlated with lower depression levels in patients with bulimia nervosa (Field et al., 1998) and with decreases in cortisol levels in patients with anorexia nervosa (Hart, 2001). Massage has also been shown to aid female body acceptance post-mastectomy (Bredin, 1999).

In addition to relieving muscular tension in emotionally upset individuals, massage may also be beneficial to individuals with negative body image. It is possible that the experience of massage may cause the person to be less likely to see his or her body solely as an object. A person with a negative body image often objectifies his or her body, that is, it is viewed as an object to be evaluated. Thus, the body brings unhappiness because it is perceived as not measuring up to society’s ideals (McKinley, 2002). The rationale behind the use of massage as an intervention is simple; when an individual receives a massage, his or her body becomes a vehicle for the experience of relaxation. This is in sharp contrast to how the body is typically experienced by an individual with a negative body image.

Body Image States and Traits

Because body image is greatly impacted by context (Cash, 2002), an understanding of the differences between “traits” and “states” is especially crucial in body image research. “State Anxiety” (A-State) is defined as “a transitory emotional condition characterized by subjective feelings of tension and apprehension.” This may be best described as how an individual feels in a given moment, which by definition is expected to have varying intensities and to fluctuate over time. “Trait Anxiety” (A-Trait) can be considered as a relatively stable baseline level of proneness towards anxiety. Rather than a feeling in a given moment, A-Trait may be described as how an individual feels generally (Spielberger, Vagg, Barker, Donham, & Westberry, 1980). For the purposes of understanding body image state and trait, they may be viewed as parallel to A-State and A-Trait.

The Current Study

The current study closely examined the effects of a single massage on body image state through a randomized controlled pre-post test experiment. It was hypothesized that massage would improve body image state. A secondary aim was to examine relationships among body image and attitudes toward massage.

Method

Participants

A total of 23 female college students were recruited through an introductory psychology student subject pool at a Northeastern state college. Of the 23, one decided not to participate after reading the informed consent document, and a second dropped out due to emotional discomfort after the pre-test. Of the 21 final participants, 8 were randomly assigned to the

massage condition and 13 to the control condition. They were aged 18 to 67 ($M=25.6$, $SD=12.9$). Weight ranged from 95 to 230 pounds ($M=143.9$, $SD= 31.9$) and height ranged from 61 to 71 inches ($M=64.7$, $SD= 2.6$). Participants were 85.7% Caucasian.

All participants were treated in accordance with APA guidelines, and were informed of their right to cease participation at any time before, or during the study in the event of physical or emotional discomfort.

Measures

Body Image State Measures

Two scales were employed in this study to measure body image state. The Body Image States Scale (BISS) has six items that are used to assess an individual's evaluative and affective body image state at a given moment in time (Cash, 2008). Possible scores range from 1 to 9, and higher scores indicate more positive body image. The Physical Appearance State and Trait Anxiety Scale (PASTAS) was developed to measure the anxiety of appearance concern immediately before and after a treatment session, and participants rate the anxiety associated with 16 body sites. This scale has a two week test-retest reliability of 0.87, indicative of good reliability (Reed, Thompson, Brannick, & Sacco, 1991).

Body Image Trait Measures

The Figure Rating Scale (FRS) was used in this study as a trait measure to assess body image disturbance. Participants marked their current and ideal body sizes, and the difference between the two was used as a measure of body image disturbance (Stunkard, Sorenson, & Schulsinger, 1983). The second scale used to measure body image trait was the Multidimensional Body-Self Relations Questionnaire- Appearance Scales (MBSRQ-AS; Cash, 2000). This 34-item measure consists of 5 subscales to measure various aspects of body image. Higher scores in the Appearance Evaluation and the Body Areas Satisfaction Scales reflect higher body image satisfaction. Higher scores on the Appearance Orientation reflect more investment in appearance. For the remaining two subscales, Overweight Preoccupation, and Self-Classified Weight, lower scores indicate higher satisfaction. Participants respond to questions on a scale of 1 ("Definitely disagree") to 5 ("Definitely agree").

Reed, D., Thompson, J.K., Brannick, M.T. and Sacco, W.P., 1991. In: Allison, Editor, 1991. *Handbook of assessment methods for eating behaviors and weight-related problems*, Sage Publications, CA. p.126 *Attitudes toward Massage Scale (ATOM)*

The Attitudes toward Massage Scale (ATOM; Moyer, 2008) was included to measure how participants view various aspects of massage. The global ATOM scale is comprised of the "Massage as Healthful" and the "Massage as Pleasant" subscales. With a total of 9 items, higher scores on each subscale indicate a more positive attitude toward massage. Subscales have been found to be both reliable and valid (Moyer, 2008).

Additional Measures

A demographic questionnaire was included at the end of all post-tests which included age, sexual orientation, ethnicity, and height and weight as measured by the researcher. Those participants assigned to the massage condition were also asked to fill out a health history form that included massage treatment preferences silhouettes.

Other Materials

Participants randomized to the control condition viewed the 50-minute episode "Pole to Pole" from the Planet Earth series with commentary by David Attenborough. Those randomized to the massage condition received massage on an Oakworks portable massage table, with Pure Pro Hypoallergenic massage oil and freshly washed natural color cotton linens. Selections from the Planet Earth soundtrack by the BBC Orchestra were played softly as background music during the massage treatment. All heights and weights for participants in both conditions were measured using a Detecto medical scale.

Procedure

Approval to conduct this study was obtained from the Bridgewater State College Internal Review Board (IRB). Time slots were randomly assigned to either the massage condition or the control condition by the flipping of a coin prior to being posted for sign ups. All researchers involved were female, and the primary researcher was also the massage therapist.

Pre-test

After informed consent was obtained, the participant was given a pre-test which consisted of the FRS, the MBSRQ-AS, the PASTAS, the BISS, and the ATOM. Upon completion of the pre-test, the participant was informed of the condition to which she was assigned.

Conditions

If the participant was assigned to the control condition, she watched a 50-minute nature video. If assigned to the experimental condition, the participant received a 50-minute massage. Prior to the massage she completed a health history form that included marking on a silhouette any areas that she did not wish to have touched. She then signed the bottom of the form indicating her consent to be massaged. Each massage

treatment was identical, with the exception of avoidance of areas marked by each participant.

Post-test

Following the 50-minutes spent in a condition, the participant completed a post-test consisting of the BISS, the PASTAS, and a demographic questionnaire. Height and weight were then measured by the research assistant before debriefing and dismissal.

Results

Paired sample t-tests were conducted for each condition to evaluate the effects of the condition on body image state. Results indicated that the mean pre-score for the PASTAS in the massage condition (M=.74, SD=1.75) was significantly greater than the post-score (M=.54, SD= .52), $t(7) = 3.3, p < .05$. In the control condition, the mean pre-score (M=.64, SD=.51) was also significantly greater than the post-score (M=.50, SD=.54), $t(12) = 3.4, p < .01$. Both indicate a decrease in state anxiety which can be seen in Figure 1. Additional results in the control group indicate that the mean BISS pre-score (M=4.97, SD=1.30) was significantly less than the post-score (M=5.4, SD=1.17), $t(12) = -2.6, p < .05$. These results, shown in Figure 2, also indicate an improvement in body image state after the 50 minute condition. There were no significant correlations between the ATOM subscales and the body image scales (see Table 1.).

Discussion

The purpose of this study was to examine whether or not massage treatment would improve state body image. As body image state and anxiety improved significantly in both the massage and the control conditions, results do not fully

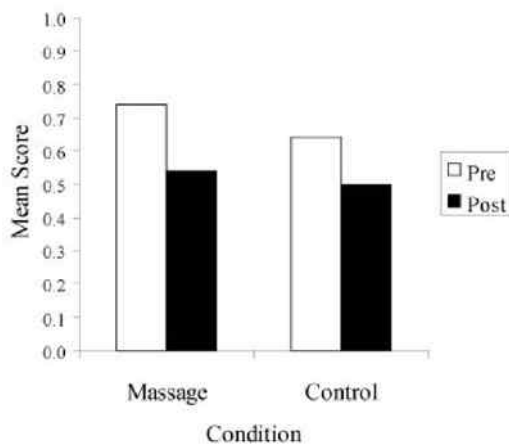


Figure 1. Mean scores of the Physical Appearance State and Trait Anxiety Scale (PASTAS) for each condition, pre and post manipulation

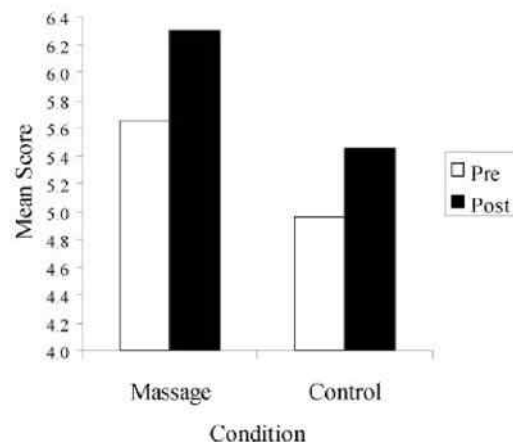


Figure 2. Mean scores of Body Image States Scale (BISS) for each condition, pre and post manipulation

Table 1. Intercorrelations (Pearson's r) between Subscales of the Attitudes toward Massage Scale (ATOM) and Body Image Scales (N=13)

ATOM Scales	BISS	PASTAS	FRS	AE	AO	BAS	OP	SCW
Massage as Healthful	.25	-.08	-.25	.36	.02	.05	-.20	-.17
Massage as Pleasant	.32	-.06	-.27	.44	-.01	.32	-.30	-.19
Global	.32	-.08	-.29	.45	.01	.21	-.29	-.20

Note. Reported state scale data are from pre-tests only.
*p < .05.

support the hypothesis. Since the primary variable of interest was body image state, which by definition can fluctuate with the passage of time, it was important to control for the passage of time. However, the control condition may have also had an unintended effect on body image. It may also be the case that engaging in any type of relaxation for a sufficient period of time may have a positive effect on body image state; however, the difference in the means was greater for both of the measures in the massage group. This suggests that the massage condition was more powerful than the control condition, but that the study did not have enough statistical power to detect differences in body image state.

It was also interesting to note the correlations between the ATOM and pre-test body image measures. While none of the correlations reached statistical significance, ATOM subscales were consistently positively correlated with positive body image state scores, positive appearance evaluation scores, and positive body areas satisfaction scores. ATOM subscales were

also consistently negatively correlated with physical appearance state anxiety, body image disturbance (as measured by the FRS), and overweight preoccupation. It seems evident from these results that individuals with more positive attitudes about their bodies in general may carry more positive attitudes toward massage therapy treatment.

Strengths and Limitations

The major strength of this study is the fact that the effect of massage on body image state has never been examined before, thus the findings make a contribution to the current literature. The experimental nature of the study should also be highlighted. Participants were randomly assigned to each condition. Although random assignment was used to create equivalent groups, there were some differences between the two groups. Increasing the sample size should result in more equivalent groups. Another strength of the study included using the same therapist for each massage. It is difficult in massage therapy research to control consistency of massage treatment elements across subjects, due to the cost, and matched therapist experience, and technique. As the therapist was also the primary researcher, extreme care was taken to monitor every aspect of treatment for high control levels.

As noted above, the major limitation of this study was the very small sample size. With only 8 final participants in the massage condition, results are inconclusive. Additionally, it was very difficult to control for extraneous participant anxiety pre-massage. For most of the participants, the massage treatment received was their first massage experience.

Future Research

Continued progress in the current study leading to a larger final sample size will be important to determine whether the relationship between massage and body image change is greater than the control. Besides increasing the statistical power, a larger sample size would allow the researcher to examine characteristics of individuals who would benefit from massage treatments. Participant experience with massage should also be taken into consideration, in order to control for the introduction of pre-manipulation anxiety. Future research should also examine the effect of massage therapy over time on body image trait to see if changes in body image stabilize.

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