

THE ROLE OF DIFFERENT TYPES OF PHYSICAL
EXERCISE IN WOMEN'S BODY SATISFACTION
RESPONSES TO IDEALIZED MEDIA IMAGES

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By
Lauren Wendel
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CERTIFICATION OF APPROVAL

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Lauren Wendel

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Dr. Bruce Hesse
Professor of Psychology

Date

Dr. Kurt Baker
Professor of Psychology

Date

Dr. Jessica Lambert
Associate Professor of Psychology

Date

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DEDICATION

I dedicate this thesis to my family. I would not have been able to complete this thesis without your support and encouragement. Thank you for never letting me lose sight of what is important in life. I am grateful to my mom for always pushing me to be the best person I can be. I want to thank my sister who has been by my side when completing this thesis. Lastly, I would like to thank my partner Matt for standing by me during these stressful times. I would not have been able to complete this thesis without anyone of you. Thank you and love you all!

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ABSTRACT

The first purpose of the present study was to examine the effects of idealized media images from fashion magazines on women's body satisfaction. The second purpose of the present study was to determine whether body satisfaction would increase after an exercise condition. The third purpose of the study was to decipher which exercise condition (aerobic or mind-body) influenced body satisfaction the greatest. There has been much disagreement amongst researchers over the issue of whether or not thin ideal media influences women's body dissatisfaction. Women are exposed to idealized media images daily, through television, movies, magazines, etc. In the current study, one group of women was exposed to images of unrealistically thin women in fashion magazines while the control group did not look at magazine images. Body satisfaction scores were compared between both groups to determine if fashion magazines had a negative effect on women's body satisfaction. Following the magazine condition, body satisfaction scores were compared between women in both exercise groups (aerobic/mind-body) before and after working out. The results indicated that magazine images did not have a significant negative effect on body satisfaction. Furthermore, exercise did not have a statistically significant effect in raising body satisfaction. Limitations such as the level of activity in each participants' daily life, additional exercise types, repeated exercise sessions, and a higher number of participants should be considered by future researchers. Due to body dissatisfaction being the strongest predictor of eating disorders, it is important that further research is conducted to determine the most effective interventions for improving women's body satisfaction.

INTRODUCTION

Body dissatisfaction among women has reached an all time high, with approximately 94% of women desiring to be smaller than their actual perceived size (Monteath & McCabe, 1997). Today's society has adopted an unrealistically thin body ideal, thus being thin is an important predictor of how women feel about their bodies. Oftentimes, a woman's feelings about her own body are greatly impacted by the way she believes society views her body. Despite women being aware of these societal influences, many give into the pressures of being thin and are unable to develop their own realistic body ideal (Monteath & McCabe, 1997).

Importance of Studying the Media-Body Satisfaction Relationship Among Women

In recent years, there has been an increase in studies examining the impact of the media on women's body image and body dissatisfaction. To this day, there has been much controversy between researchers over the issue of whether or not thin ideal media influences women's body dissatisfaction. According to Ferguson (2013), few researchers argue that the media does not effect body satisfaction, and the majority of past studies have presumed that the media has a major impact on body dissatisfaction. Even when body weight is considered healthy according to medical standards, women may still view themselves as being overweight due to unrealistically thin body images that are portrayed daily throughout the media (Myers & Biocca, 1992). The high occurrence of body dissatisfaction is concerning because body dissatisfaction is the strongest predictor of eating disorder onset, such as anorexia nervosa and bulimia (Stice, Marti, & Durant, 2011). Women who are exposed to thin ideal media are likely to become dissatisfied with their bodies, which could lead to

further concern about one's appearance and an interest in engaging in anorexic and bulimic behaviors (Grabe, Hyde, & Ward, 2008).

Media Content and Body Satisfaction

Due to the increasing number of women who are unsatisfied with their bodies, and the serious problems that can arise from body dissatisfaction, researchers question why the media may have such a major impact on women's body satisfaction. According to Rodgers, McLean, and Paxton (2015), adolescent girls as young as twelve years old are dissatisfied with their bodies due to internalization of the thin media ideal and social appearance comparison. Internalization of the thin media ideal refers to the extent to which an individual looks to the media's standards regarding physical appearance, and desires to attain these standards while comparing their body to unrealistically thin bodies shown throughout the media. Media internalization then leads to social appearance comparison, which occurs when an individual compares his or her physical appearance to others within their social environment. Social appearance comparison ultimately leads to body dissatisfaction (Rodgers, McLean, & Paxton, 2015).

Women's body dissatisfaction may be influenced by exposure to idealized media images through many different avenues, including television shows, movies, fashion magazines, and advertisements. Girls as young as five years old have been shown to have high body dissatisfaction when exposed to television shows that present women as being thin and attractive (Dohnt & Tiggemann, 2006). Young girls are also viewing television shows and movies that portray below average weight women receiving much more positive attention from male characters compared to above average weight women. As a result, girls are shaped from a young age to believe they must be thin in order to be viewed as attractive by males, and later mature into women who are dissatisfied with their bodies (Fouts & Burggraf, 1999).

Women's desires for an unrealistically thin body are then reinforced when television shows portray thinner women engaging in romantic relationships more often than larger women (Greenberg, Eastin, Hofschire, Lachlan & Brownell, 2003). It's possible that women's body satisfaction would improve if the media presented more women of all shapes and sizes looking and feeling attractive on television shows and in movies.

Today's fashion magazines portray images of unrealistically thin female models, which shape women's perceptions of the ideal female body by exposing women to such stimuli. Reading fashion magazines may lead to body dissatisfaction by causing women to internalize the thin media ideal. After adopting the thin media ideal as her own ideal, a woman begins to judge herself based on her appearance because she believes that's how others judge her. This behavior is known as self-objectification (Morry & Staska, 2001). Due to viewing unrealistically thin bodies in fashion magazines, women are more likely to be frustrated about their weight and have an obsession with being thin compared to women who do not view fashion magazines. Exposing women to unrealistically thin models in fashion magazines influences their judgments of being overweight. Their judgments of being overweight, whether accurate or inaccurate, are correlated with their body image dissatisfaction (Turner, Hamilton, Jacobs, Angood, & Dwyer, 1997).

Although many researchers have concluded that the media does, in fact, have a major impact on women's body dissatisfaction (Monteath & McCabe, 1997; Myers & Biocca, 1992; Grabe, Hyde, & Ward, 2008; Rodgers, McLean, & Paxton, 2015; Dohnt & Tiggemann, 2006; Fouts & Burggraf, 1999; Greenberg, Eastin, Hofschire, Lachlan & Brownell, 2003; Morry & Staska, 2001; Turner, Hamilton, Jacobs, Angood, & Dwyer, 1997), some researchers, such as Ferguson (2013), have contested this idea, arguing that media effects are small to none, or limited to at-risk groups of individuals. Ferguson conducted a meta-analysis and found that

media effects were not population-wide and there was minimal negative impact from the media for most females. Women, who were affected most by thin ideal media images, already had preexisting body dissatisfaction. Ferguson concluded that women who have preexisting body dissatisfaction issues are most at risk for being negatively influenced by thin ideal media, while the general population of women without preexisting body dissatisfaction are not likely to be affected.

Role of Exercise in the Media-Body Satisfaction Relationship

Although there is still controversy in the literature regarding the issue of whether the media does impact body dissatisfaction, researchers are searching for ways to reduce the negative effects of the media on women's body dissatisfaction. Since women are being exposed to thin ideal media on a daily basis through television, movies, and fashion magazines, and, due to the seriousness of problems that can arise from body dissatisfaction, interventions that are subject to increase body satisfaction are being studied. Due to the many mental health benefits of exercise, the effects of exercise on body satisfaction have been widely researched.

Past literature has concluded that all types of exercise have a positive impact on body satisfaction. For example, Joesting (1981) examined college students' level of exercise and its influence on students' body images. It was concluded that students who reported exercising five or more hours per week had better views of their bodies compared to students who did not exercise on a regular basis. In this particular study, Joesting examined the effects of all different types of exercises combined, including running, dancing, weight lifting, and playing sports such as basketball and volleyball. Unfortunately, Joesting did not compare the effects of the individual exercises to determine which type of exercise influenced body image the greatest. A study conducted by Stoll and Alfermann (2002) included a

mixture of aerobic exercises, dancing, stretching, and strength training to improve endurance, strength, and flexibility. The fourteen-week exercise program consisted of older individuals, above the age of 50. The combination of the different exercises resulted in an increase of participants' body image. Not only did participants' perceived body image improve, but participants' physical strength also improved. In a meta-analysis of exercise conducted by Hausenblas and Fallon (2006), exercisers had higher body satisfaction than nonexercisers following an exercise intervention program. Engagement in physical activity was correlated with increases in mental health that are related to high body satisfaction. It's been concluded that exercise in general has a positive influence on women's body satisfaction, but the literature must further its investigation, comparing different types of exercise to determine which type of exercise influences women's body satisfaction the greatest. Two popular types of exercises that have been examined in relation to women's body satisfaction include aerobic and mind-body exercises such as yoga/pilates. These two exercise types are vastly different. Women perform the two exercises for different purposes and goals in mind. To date, these exercises have not been compared in relation to the thin media ideal.

Effects of Aerobic Exercises on Body Satisfaction

Numerous studies exist in which one type of exercise was examined to determine its effect on body satisfaction. The effects of aerobic exercises on body satisfaction have been widely researched since many women engage in aerobic exercises to lose fat or prevent gaining fat (Hausenblas & Fallon, 2006). The literature has examined the effects of multiple exercise session programs, and it has been concluded that body satisfaction does in fact improve when a woman participates in an aerobic exercise program that lasts over an extended period of time. Not only does body satisfaction improve after a multiple exercise session program, but it has also been determined that body satisfaction can improve after a

single exercise session, concluding that body satisfaction can be immediately influenced by exercise. Prichard and Tiggemann (2012) wanted to determine whether a single session of aerobic exercise would reduce the negative impact the media has on women's body satisfaction. Women viewed thin ideal music videos while simultaneously walking or running. It was concluded that when aerobic exercise was combined with the viewing of thin ideal music videos, exercise reduced the negative effects of appearance-focused media. Although exercise reduced the negative effects of appearance-focused media on women's body satisfaction, the study by Prichard and Tiggemann (2012) only examined the effects of aerobic exercise on body image. There are other types of exercises that could possibly improve body satisfaction greater, and those exercises should be investigated.

The majority of the literature examining the effects of exercise on body satisfaction involves aerobic exercise rather than mind-body exercises because many women perform aerobic exercise to burn calories. Women being aware of having burned calories during an aerobic exercise session may influence their level of body satisfaction. Therefore, aerobic exercises may produce more immediate reinforcement than mind-body exercises due to women's beliefs that aerobic exercises burn more calories than mind-body exercises. This belief may then cause an improvement in body satisfaction. According to the results of a study (Vocks, Hechler, Rohrig, & Legenbauer, 2009) examining a single session of aerobic exercise, women's body satisfaction improved immediately after a one-hour session of endurance training. Women felt as if they had slimmer bodies after the exercise session than before. Interestingly, this study discovered that the greater a woman was dissatisfied about her weight, the more the woman's estimations of her body size were affected by the exercise session. If those same women had performed mind-body exercises, which are not known to burn as many calories as aerobic exercise, those women may not have experienced as much

of an improvement in body satisfaction as they experienced after an aerobic exercise session. Mind-body exercises and aerobic exercises need to be compared to determine which type of exercise produces the highest reinforcing effects by an improvement of body satisfaction after physical exercise.

Effects of Mind-Body Exercises on Body Satisfaction

Mind-body exercises such as yoga and pilates have also been shown to have many mental health benefits including positive effects on body image and mood alteration. Mind-body exercises became quite popular in Western society towards the end of the twentieth century. These exercises are a form of relaxation and meditation that consist of different postures, exercises, and breathing techniques. Pilates has been shown to improve mood and body image of breast cancer survivors (Stan et al., 2012), while women who participate in yoga exercises, report being less concerned with how their body looks to others and more concerned with how their bodies feel to themselves (Impett, Daubenmier & Hirschman, 2006). Women who practice yoga accredit their positive emotions and contented state to their regular practice of yoga. When women were asked how their yoga practice had changed their feelings about themselves and the world around them, women's responses were astoundingly positive (Dittmann & Freedman, 2009).

Mind-body exercises, such as yoga and pilates, teach women to be aware of their bodily sensations. This draws their attention towards the inward feelings of their bodies versus scrutinizing their outward appearance. Daubenmier (2005) found that when compared to aerobic exercise, mind-body exercises had greater effects on women's body satisfaction due to awareness of and responsiveness to bodily sensations and their relation to self-objectification. Self-objectification is a form of self-consciousness and is defined as a state of constant checking of the body's outward appearance. This concept is based on the idea that

women view themselves as objects of evaluation. After mastering the practice of being aware and responding to bodily sensations through the practice of yoga, women report feeling a closer connection to themselves and to others, feeling more secure, and having a greater sense of purpose in the world (Dittmann & Freedman, 2009).

Yoga is a form of mindfulness meditation which leads to the acceptance of oneself. Women reach for a goal of improvement by performing certain behaviors within their yoga practice, but the goal is not about reaching perfection. When focusing on reaching goals other than perfection, women can more effectively focus on the present. Being in the present moment is a crucial component of yoga which may be helpful for women who exhibit body dissatisfaction due to perfectionist mindsets. A woman who practices yoga must first accept her own physical limitations, which may help her grow to accept her own body exactly the way it is. This may then help a woman rethink her longing for the ideal, perfect body and be content with her own body, even with its imperfections (Dittmann & Freedman, 2009).

Ultimately, there is still controversy amongst today's researchers (Monteath & McCabe, 1997; Myers & Biocca, 1992; Grabe, Hyde, & Ward, 2008; Rodgers, McLean, & Paxton, 2015; Dohnt & Tiggemann, 2006; Fouts & Burggraf, 1999; Greenberg, Eastin, Hofschire, Lachlan & Brownell, 2003; Morry & Staska, 2001; Turner, Hamilton, Jacobs, Angood, & Dwyer, 1997; Ferguson, 2013) regarding the issue of whether idealized media images of unrealistically thin female bodies negatively influence women's body satisfaction. Aerobic and mind-body exercises have been determined to improve women's body satisfaction, but if idealized media images do, in fact, effect body dissatisfaction, can these exercises reduce the negative effects of the media on women's body satisfaction? If these exercises do reduce the negative effects of idealized media images on women's body satisfaction, which type of exercise reduces the negative effects of the media the greatest? To

date, the literature has not compared these two exercises in relation to thin ideal media and it is unknown as to which type of exercise has the greatest effect of reducing the negative impact of the media on women's body satisfaction.

Rationale for Present Study

The present study focuses on the role of two different exercises including aerobic and mind-body exercises in women's responses to idealized media images from fashion magazines. The first purpose of this study is to determine whether idealized media images will have a negative effect on women's body satisfaction as measured by the Body-Esteem Scale for Adolescents and Adults (Mendelson, Mendelson, & White, 2001). The second purpose of this study is to determine whether body satisfaction will increase after an exercise condition, reducing the effects of the idealized media images on body satisfaction. To assess the degree to which women are satisfied with their bodies, the Body-Esteem Scale for Adolescents and Adults will be given to each participant twice throughout the study. Half of the participants will begin with viewing media images followed by completing the Body-Esteem Scale for the first time. Once the scale is completed, those participants will engage in either aerobic or mind-body exercises. Immediately following the exercise condition, these participants will complete the Body-Esteem Scale for the second time. The other half of participants will not view media images. Instead they will complete the Body-Esteem Scale immediately before and after engaging in one of the two exercise conditions. It is hypothesized that participants who view idealized media images will have lower initial body-esteem scores compared to participants who do not view media images. The second hypothesis of this study is that body-esteem scores will increase after the exercise conditions. Lastly, there will be differences in the body-esteem scores between the two exercise conditions depending on how greatly each exercise condition effects women's body

satisfaction. It is unknown which exercise, aerobic or mind-body will increase body satisfaction the greatest.

Since women are being exposed to idealized media images daily, and their body satisfaction may be negatively influenced by media images, it is important that research is conducted to determine the most effective interventions for improving women's body satisfaction after viewing idealized body images through the media. Rather than studying exercise as a whole, it is important to study the effects of each type of exercise individually to determine which exercise is most effective at improving body satisfaction. Many women resort to aerobic exercises because it is known for burning calories and losing fat, and this may lead to an increase in body satisfaction (Vocks, Hechler, Rohrig, & Legenbauer, 2009), but mind-body exercises may be just as effective or even more effective than aerobic exercise at improving body satisfaction. It is important to compare the two exercises to determine which is most effective. This will allow women who suffer from body dissatisfaction due to the media be aware of which exercise is most likely to improve their body satisfaction. It is also crucial to determine which exercise is most effective in improving body satisfaction after experiencing negative effects from the media, because it will allow intervention programs that treat eating disorders to incorporate an exercise regimen that is known to improve body satisfaction the greatest.

METHOD

Experimental Design

The present study utilized a quasi-mixed and repeated measures factorial design. Participants were randomly assigned to the magazine condition while not randomly assigned to the exercise condition. This design was used to test for differences between 2 independent groups without random assignment whilst subjecting participants to repeated measures. The study investigated the effect of three independent variables including idealized media images, time, and an exercise condition on the dependent variable of the Body-Esteem Scale for Adolescents and Adults. The first independent variable (idealized media images) has 2 levels since half of the participants were subjected to viewing media images from fashion magazines while the other half of participants did not view the images. The second independent variable of time consists of 2 levels since each participant was assessed for changes in their body-esteem scores 2 separate times throughout the study. Half of the participants were assessed after viewing idealized media images and immediately after the exercise condition. The other half of the participants were assessed before and after the exercise condition. The third independent variable (exercise condition) also consists of 2 levels including aerobic and mind-body conditions. Each participant engaged in either aerobic or mind-body exercises. Each participant completed the Body-Esteem Scale for Adolescents and Adults two separate times to assess for changes in body satisfaction over time. The researcher attended the gyms and fitness clubs during different times of the day as well as different days of the week to ensure a random sample of participants

Participants

A sample of 80 women ranging from ages 18 to 50 years were recruited from gyms and fitness clubs from Southern and Central California. Each of the two exercise conditions consisted of 40 women, equaling 80 women involved in the study. Twenty women viewed magazine images and engaged in aerobic exercise. Twenty other women viewed magazine images and engaged in a mind-body exercise. Another 20 women did not view magazine images and engaged in aerobic exercise. The final 20 women did not view magazine images and engaged in a mind-body exercise. The researcher stood at the entrance of the gym and asked women when they entered if they would like to participate in the study. To incentivize participants to take the time to complete the Body-Esteem Scale and look at media images, participants received a five-dollar gift card to Starbucks in exchange for their participation. Each participant had to complete the entire study before receiving the gift card.

Materials

Exercise Condition

To determine which type of exercise each participant engaged in, participants were asked to indicate which type of physical activity (aerobic or mind-body) they engaged in for the majority of the time and the duration of the physical activity on the final completion of the Body-Esteem Scale. Participants were asked to engage in their normal fitness routine, requiring nothing out of the ordinary. Therefore, participants did not have to exercise above and beyond what they were already planning on doing. Each participant must have engaged in the exercise condition for at least 20 minutes. If a participant engaged in the exercise condition for less than 20 minutes, the results for that participant were thrown out.

Magazines

Idealized media images of unrealistically thin women were gathered from an array of fashion magazines that had reputations for exhibiting thin body images, including *Vogue* and *In Style*. Only half of the participants were exposed to the same magazine images and instructed to look through the images. The other half of the participants were not exposed to the magazine images. To ensure participants thoroughly examined the images, they were prompted before and told they would be asked several questions about the pictures afterwards. Those participants were asked to identify the images they found most interesting after viewing the magazine images. The amount of time each participant looked at the magazine images was up to their own discretion.

Body Satisfaction

To assess the degree to which participants were satisfied with their bodies and to assess changes in body satisfaction throughout the study, the Body-Esteem Scale for Adolescents and Adults was used (Mendelson, Mendelson, & White, 2001). The Body-Esteem Scale is a 21-item Likert scale, which measures changes in body satisfaction. The scale consists of 3 subscales. The first subscale assesses participants' satisfaction regarding their weight (e.g., "My weight makes me unhappy"). The second subscale assesses participants' satisfaction regarding their appearance (e.g., "I like what I see when I look in the mirror"). The third subscale assesses the degree to which participants associate positive outcomes with their looks (e.g., "I think my appearance would help me get a job"). Participants were asked to indicate how often they agree with the 21 items by circling (1) never, (2) seldom, (3) sometimes, (4) often, or (5) always. The subscales have high internal consistency and high test-retest reliability (Mendelson, Mendelson, & White, 2001).

Half of the participants viewed the idealized magazine images followed by completing the Body-Esteem Scale. After completing the scale, these participants continued onto the exercise condition. The other half of the participants did not view the magazine images, although they did complete the Body-Esteem Scale before the exercise condition. If the initial body satisfaction scores for the participants who viewed the magazine images were lower than the scores of participants who did not view magazine images, it is assumed the magazine images had a negative effect on body satisfaction. Every participant completed the Body-Esteem Scale for the second time immediately after the exercise condition. This concluded whether the exercise conditions had a positive effect on body satisfaction ultimately reducing the predicted negative effects of the magazine images on body satisfaction. Lastly, it determined which exercise type had a greater effect.

The scale has 13 positively and 8 negatively worded items. After reverse scoring negatively worded items, participants' responses were added together from all 21 items so that higher numbers represent more positive body satisfaction and lower numbers represent less positive body satisfaction. Scores can range from 21 (very low body satisfaction) to 105 (very high body satisfaction). The higher the total score for the 21 items, the higher the participant's body satisfaction.

Procedure

The researcher contacted gym instructors and owners and asked for permission to enter their gym for the purpose of recruiting participants for the study. If the instructor agreed, the researcher stood at the front of the gym/fitness club and asked women as they entered the gym if they would like to participate in a research study. If a woman expressed interest, the researcher described the study briefly. She was informed that the study was designed to assess body satisfaction among women and offered a five-dollar Starbucks card

in exchange for her participation. The participant was informed that the gift card would be given after completion of the study. If the woman decided to participate, she was handed a consent form to read and sign. Once the participant signed the consent form and handed it back, the researcher put the signed consent form into a folder for records. The researcher also gave an unsigned consent form to the participant for her own records. After consent was given, half of participants were randomly assigned to the magazine condition and given idealized media images of unrealistically thin women from fashion magazines. The participants were prompted to look through the magazine images and would be asked several questions about the images afterwards. Once each participant had finished viewing the magazine images, they completed the Body-Esteem Scale for Adolescents and Adults. Following the completion of the survey, the participants were asked to engage in the exercise condition of their choosing. The other half of the participants did not view the magazine images and completed the Body-Esteem Scale for Adolescents and Adults after giving consent. Participants sat down at a nearby chair or completed the survey while standing. Participants were told to not write their names or any other identifying information on the surveys. They were also told they do not have to answer any questions that may make them feel uncomfortable. In addition, the researcher informed the participants that they may return the survey blank if they chose to discontinue with the study. Once the participants completed the surveys and returned them to the researcher, the researcher stored the surveys in a folder separate from the consent forms. These participants were then asked to engage in the exercise condition of their choosing. The scores from the first completion of the Body-Esteem Scale acted as the baseline for that participant's body satisfaction. Each participant engaged in only one exercise condition, either aerobic or mind-body condition. After the participants were finished engaging in the physical activity of their choosing, the researcher

provided participants with the final Body-Esteem Scale. After completing the final scale, each participant was given a debriefing form and the researcher orally debriefed the participant, followed by giving the participant a Starbucks gift card. Thus, in the whole experimental procedure, half of the participants viewed idealized media images from fashion magazines, each participant underwent an exercise condition for at least 20 minutes and completed the Body-Esteem Scale two times.

Statistical Analyses

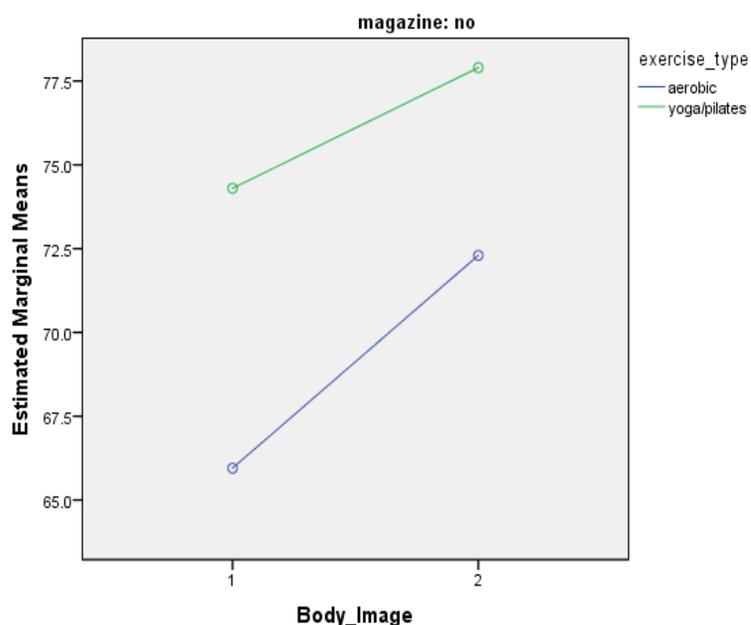
The dependent variable (DV) is the Body-Esteem Scale, which has only one level. The three independent variables (IV) are time that has 2 levels, the exercise condition that has 2 levels (aerobic and mind-body exercises), and the magazine images that has two levels. The first hypothesis was that the initial body-esteem scores for the participants who viewed the magazine images would be lower than participants who did not view the magazine images. This would indicate that idealized media images of unrealistically thin women' lower body-esteem. The second hypothesis was that body-esteem scores would increase following the exercise condition. It was hypothesized that body esteem scores after the exercise condition would be higher than the initial baseline scores. The third hypothesis was there would be differences in the increase of body-esteem scores between the exercise conditions depending on how greatly each exercise effected body-esteem. It was unknown which type of exercise would have a greater effect on body-esteem. A mixed-design analysis of variance was used to test for differences between the exercise conditions and magazine images. The between-subjects variables are the two levels of the exercise conditions and the two levels of the magazine images and the within-subjects variable is the difference between each individual's scores from the first survey and the second survey.

RESULTS

Eighty women participated in the current study. The mean age was 34.44 years ($sd=9.348$). The mean age for women who viewed magazine images was 34.17 years ($sd=9.075$). The mean age for those who did not view images was 34.7 years ($sd=9.722$). The mean age for women in the aerobic condition was 34.5 years ($sd=8.933$) and the mean age for those in the mind-body condition was 34.37 years ($sd=9.348$). The ethnicity of participants included 11.3% Asian, 5% Black/African descent, 22.5% Latino/Hispanic, 1.3% Pacific Islander, 58.8% White/Caucasian, and 1.3% other.

An independent-samples t test was calculated comparing the mean score of participants who were exposed to the magazine images to the mean score of those who were not. No significant difference was found ($t(78) = -.555, p > .05$). The mean of those exposed to the magazine images ($m = 68.58, SD = 12.59$) was not significantly different from the mean of those not exposed to the images ($m = 70.13, SD = 12.40$). Although participants exposed to the magazine images overall rated lower in their perception of body satisfaction when compared to those who did not see the images, the differences were not significant. A 2×2 mixed-design ANOVA was calculated to examine the effects of the type of exercise (aerobic or yoga) and body satisfaction (before and after exercising) scores. A Levene's test of .77 for within-subjects reports that the obtained differences in sample variances are likely to have occurred based on random sampling from a population with equal variances. The scores within-subjects, the individual's pre/post test scores ($F(1, 78) = .362, p > .05$) and between-subjects, the scores between the two exercise groups ($F(1,78) = 2.61, p > .05$) were not significant. In addition, to the independent-samples t test, the magazine conditions were added to the analysis as covariates or an ANCOVA approach. The ANCOVA approach

compares means across one or more variables based on repeated observations while controlling for a confounding variable (magazine condition). Within-subjects (the individual's pre/post scores) and those who were exposed to the magazine images ($F(1,38) = .241, p = .627$) was not significant. Between-subjects (the scores between the two exercise groups) and those who were exposed to the magazine images ($F(1,38) = .101, p = .752$) was not significant. Within-subjects (the individual's pre/post scores) and those who were not exposed to the magazine images ($F(1,38) = 1.753, p = .193$) was not significant. Between-subjects (the scores between the two exercise groups) and those who were not exposed to the magazine images ($F(1,38) = 4.565, p = .039$) was significant, with an observed power of .549. Figure 1 shows the mean scores of participants who did not view magazines images within the aerobic and mind-body groups. However, after further analysis of the observed power of .549, this is considered moderately significant. The standard in research studies is an observed power of .8 or higher, meaning there is an 80% chance of detecting a real effect (Reinhart, 2015). Overall, there was no significance for the within-subjects perception on their body satisfaction after engaging in either aerobic or mind-body exercises.



Estimated Marginal Means of Body Satisfaction

Figure 1. Estimated Marginal Means of Body Satisfaction for participants who did not view magazine images and both aerobic (blue) and mind-body (green) groups.

When comparing mean scores as shown in Figure 2, the mean scores for participants in the aerobic condition increased from the mean of 67.08 ($SD = 1.945$) before the exercise condition to the mean of 72.80 ($SD = 1.799$) after the exercise condition. The mean scores for participants in the mind-body exercise condition increased from the mean of 71.63 ($SD = 1.945$) before the exercise condition to the mean of 76.48 ($SD = 1.799$). Although participants' body satisfaction scores in both exercise conditions increased, the differences were not significant. The difference between mean scores of the aerobic condition was 5.725 while the difference between mean scores of the mind-body condition was 4.85. Therefore, body satisfaction scores of women in the aerobic condition increased more from the exercise than the mind-body condition, while women in the mind-body condition had overall higher body satisfaction scores.

Descriptive Statistics				
	exercise_type	Mean	Std. Deviation	N
survey1	aerobic	67.08	11.969	40
	yoga/pilates	71.62	12.628	40
	Total	69.35	12.437	80
survey2	aerobic	72.80	11.514	40
	yoga/pilates	76.48	11.243	40
	Total	74.64	11.457	80

Figure 2. Mean scores of participants within the aerobic and mind-body groups, regardless of magazines, for both survey 1 and 2.

DISCUSSION

The first purpose of the present study was to examine the effects of idealized media images from fashion magazines on women's body satisfaction. The second purpose of the present study was to determine whether body satisfaction would increase after an exercise condition. The third purpose of the study was to decipher which exercise condition (aerobic or mind-body) influenced body satisfaction the greatest. The study was intended to shed light on whether fashion magazines have a negative effect on women's body satisfaction. There has been much disagreement amongst researchers over the issue of whether or not thin ideal media influences women's body dissatisfaction (Ferguson, 2013). Many women are exposed to idealized media images daily, through television, movies, magazines, etc. It would be important to research possible interventions if these images were potentially harmful to women's body image. Due to women's body dissatisfaction leading to eating disorders, it is crucial that specific interventions known to increase body satisfaction are studied. Past literature has determined that all types of exercise improves body satisfaction (Joesting, 1981). Although, not every exercise has the same range of effect, justifying the reasoning for examining each exercise effect individually. The two exercises that have been studied (aerobic/mind-body) are performed by women for two different reasons. Aerobic exercises are known for burning calories and many women specifically engage in this type of exercise for that benefit. Due to women being aware of these benefits, aerobic exercises may create a more immediate reinforcement in body satisfaction compared to other exercises that are lower impact (Vocks, Hechler, Rohrig, & Legenbauer, 2009). On the other hand, mind-body exercises (yoga/pilates) focus of the inward self and being in the present moment. The goal is not perfection, but accepting one's physical limitations (Dittmann & Freedman, 2009).

In the current study, there was no significant difference in participants' body satisfaction of those who were exposed to the magazine images versus women who were not exposed to the images. These results are consistent with researchers claiming that media effects are small to none or limited to at-risk groups of individuals. In a meta-analysis conducted by Ferguson (2013), media effects were not population wide and had very little impact for most women. In previous research, it was determined that women who were most negatively influenced by the media, already had preexisting body dissatisfaction, while women without preexisting body dissatisfaction were unlikely to be affected (Ferguson, 2013). This may explain why no significant difference was found in the current study among women who viewed magazine images and those who did not view the images.

It is possible that the viewing of magazine images of unrealistically thin women did not create a significant negative effect due to the nature of it being an isolated event. Repeated exposure to images prior to exercise may have had a greater effect than a single exposure. Although participants were prompted with questions regarding the magazine images prior to viewing, media images may not have an immediate effect. Alternatively, negative media effects may be developed over prolonged periods of time. It is important for future researchers to consider whether significant negative media effects are developed over repeated, longer periods of exposure versus a single exposure.

In addition to idealized magazine images not having a significant negative impact amongst participants, exercise was not statistically significant in raising women's body satisfaction. It is possible that a single exercise session does not produce as great of a significant effect as in extended exercise programs. Extended exercise programs have been proven to have significant effects on body image (Yigiter, 2014; Stoll and Alfermann, 2002). If researchers want to develop an exercise program successful in significantly raising

women's body satisfaction, an extended exercise program may be more useful than just a single exercise session.

In the current study, both exercise conditions were not statistically significant in raising body satisfaction following the single exercise session. When comparing means, the mean scores for participants in the aerobic condition increased from the mean of 67.08 before the exercise condition to the mean of 72.80 after the exercise condition with a difference of 5.725 points. The mean scores for participants in the mind-body exercise condition increased from the mean of 71.63 before the exercise condition to the mean of 76.48 with a difference of 4.85 points. Women perform aerobic and mind-body exercises for different purposes. Previous research has found that women engage in aerobic exercise to lose fat and prevent gaining fat (Hausenblas & Fallon, 2006). Body satisfaction may increase after an aerobic exercise due to women believing they are burning calories during that session, whereas mind-body exercises are lower impact and women do not engage in these types of exercise for the purpose of burning calories. Mind-body exercises are a form of mindfulness meditation, which teach women to focus their attention on the inward feelings of their bodies instead of dissecting their outward appearance. Mind-body exercises increase body satisfaction due to women feeling a closer connection to themselves and accepting their bodies' imperfections (Dittmann & Freedman, 2009). Although both exercise conditions in the current study did not significantly raise body satisfaction, researchers should continue to investigate whether exercise can create a significant immediate effect on body satisfaction or whether high body satisfaction is developed overtime through regular exercise activity.

Age is an important factor in this study when examining the insignificant effect of the magazine images. The mean age of participants was 34.44. Previous studies have determined that older women have more appreciation for their bodies, leading to higher body satisfaction

compared to younger women (Tiggemann & McCourt, 2015). Young women are often exposed to social media daily. Social media allows for appearance-focused social comparisons with friends and media figures. A study that examined the effects of social media on women's body satisfaction determined that women who use Facebook have lower body satisfaction compared to nonusers (Stronge et al., 2015). Younger women had lower body satisfaction than older women suggesting that exposure to social media may be more harmful for younger populations due to increased exposure to social comparison. Another study that examined college women ages 18 and 19 determined that women involved in social media had increases of body comparison, low body esteem, and high depressive symptoms (Choukas-Bradley et al., 2018). Current social media is focused on women's physical appearance, causing women to judge their outward appearance while comparing their looks to others. Due to bombardment of appearance-focused social comparisons within social media platforms, younger women may be more negatively influenced to idealized magazine images. Research by Webster and Tiggemann (2003) concluded that cognitive control increases with age. Therefore, as women age, they can better control their thinking and perceptions about their body, which results in higher body satisfaction throughout the aging process. Although, women move farther away from the youthful thin ideal media as they age, they develop the cognitive capabilities of lowering body expectations and accepting one's aging body as is. A study that involved women ages 30 to 80, found that women older in age were less likely to compare themselves to fashion models (Kozar & Damhorst, 2009). Although women who reported a larger difference between their actual age versus the age they feel, were more likely to compare themselves to fashion models. Another study explored the link between body appreciation and age among 289 women (O'Neil et al., 2018). Women aged 36 years and older appreciated their bodies more than women under the

age of 36. Body appreciation leads to higher levels of body satisfaction. Eighty women were involved in the current study ranging between the ages of 18 and 50 with the mean age of 34.4. Magazine images may not have had a significant effect due to women in their 30's and 40's being less influenced by the thin ideal media. Older women are less likely to compare themselves to fashion models, have better cognitions regarding their bodies, and greater appreciation for their bodies. Further research should look at whether the body satisfaction of the younger population is more vulnerable to the thin, ideal portrayal of women in fashion magazines.

Future research should consider how a woman's level of activity on a weekly/monthly basis affects her body satisfaction from a single exercise session. The level of regular activity in participants' daily lives was not asked in the current study. How consistently a woman exercises in her regular life may affect body satisfaction. A study by Joesting (1981) examined the effects of student's body image with their level of exercise. He found that students who exercised on a regular basis, five or more hours per week, had better views of their bodies compared to students who did not exercise regularly. A woman who rarely exercises may experience a decrease in body satisfaction after a single exercise session due to feelings of inadequacy; whereas a woman who exercises on a regular basis, may experience a higher increase in body satisfaction after a single exercise session due to the ease of it. This could be one reason why there was not a significant effect of exercise on body satisfaction overall.

Furthermore, the effects of regular exercise on body satisfaction may have been a factor when examining the insignificant effect of magazine images. The level of regular activity in participants' daily lives was not asked in the current study. Studies have shown that body satisfaction is higher in women who exercise on a regular basis compared to those

who do not exercise regularly. A study by Yigiter (2014) implemented a 12-week exercise program in which 40 women regularly exercised while 40 women were in the control group. Hopelessness and self-esteem were two factors examined within both groups of participants. Hopelessness is a crucial component within a person's psychological health and low self-esteem is a symptom of hopelessness. Self-esteem reflects how a person feels about themselves and their level of self-confidence. Participants involved in the exercise program experienced significant increases in self-esteem leading to higher body image and lower levels of hopelessness compared to women in the control group. A meta-analysis of exercise by Hausenblas and Fallen (2006) found that women who exercise have higher body satisfaction than non-exercisers. Due to higher body satisfaction in those who regularly exercise, it is possible that women who exercise are not as easily influenced by thin ideal media compared to women who do not exercise. This could explain why participants in this study were not influenced by the magazine images. Further studies should compare body satisfaction between women who exercise regularly and those who do not, as thin ideal media may have a stronger influence with those who do not exercise.

There are several limitations of the current study that should be considered by future researchers. This study should be followed up with additional studies which consider: the level of activity in each participants' daily life, additional exercise types, repeated exercise sessions, and a higher number of participants. With these additional factors incorporated in future studies, these data may better inform intervention programs for eating disorders. Additionally, increasing the sample size will allow the comparison of body satisfaction amongst many different ethnicities and determine if ethnicity is a factor.

In conclusion, the current study did not have a significant negative effect of magazine images, and both exercise conditions were not statistically significant in raising body

satisfaction. However, this research helps shine light on factors that may deserve further investigation. Future studies should expand on this research to discover exercise programs that create a significant effect on women's body satisfaction. Thus, exercise programs effective in increasing body satisfaction can be incorporated into intervention programs for treating eating disorders.

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APPENDICES

APPENDIX A
 BODY-ESTEEM SCALE FOR ADOLESCENTS AND ADULTS (NO
 MAGAZINE)

Date: _____

How old are you? _____

Create a 4-digit code you can easily remember: _____

What is your ethnicity?

- | | | |
|------------------------|------------------|-------------------|
| -Asian | -Latino/Hispanic | -Pacific Islander |
| -Black/African descent | -Middle Eastern | -White/Caucasian |
| -East Indian | -Native American | -Other |

Directions: For questions 1-21 indicate how often you agree with the following statements. Circle the appropriate number beside each statement.

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

- | | | | | | |
|---|---|---|---|---|---|
| 1. I like what I look like in pictures. | 1 | 2 | 3 | 4 | 5 |
| 2. Other people consider me good looking. | 1 | 2 | 3 | 4 | 5 |
| 3. I am proud of my body. | 1 | 2 | 3 | 4 | 5 |
| 4. I am preoccupied with trying to change my body. | 1 | 2 | 3 | 4 | 5 |
| 5. I think my appearance would help me get a job. | 1 | 2 | 3 | 4 | 5 |
| 6. I like what I see when I look in the mirror. | 1 | 2 | 3 | 4 | 5 |
| 7. There are lots of things I'd change about my looks if I could. | 1 | 2 | 3 | 4 | 5 |
| 8. I am satisfied with my weight. | 1 | 2 | 3 | 4 | 5 |
| 9. I wish I looked better. | 1 | 2 | 3 | 4 | 5 |

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 10. I wish I looked like someone else. | 1 | 2 | 3 | 4 | 5 | | |
| 11. People my own age like my looks. | 1 | 2 | 3 | 4 | 5 | | |
| 12. My looks upset me. | 1 | 2 | 3 | 4 | 5 | | |
| 13. I'm as nice looking as most people. | | 1 | 2 | 3 | 4 | 5 | |
| 14. I'm satisfied with how I look. | 1 | 2 | 3 | 4 | 5 | | |
| 15. I feel I weigh the right amount for my height. | | | 1 | 2 | 3 | 4 | 5 |
| 16. I feel ashamed of how I look. | 1 | 2 | 3 | 4 | 5 | | |
| 17. My weight makes me unhappy. | 1 | 2 | 3 | 4 | 5 | | |
| 18. My looks help me get dates. | 1 | 2 | 3 | 4 | 5 | | |
| 19. I worry about the way I look. | 1 | 2 | 3 | 4 | 5 | | |
| 20. I think I have a good body. | 1 | 2 | 3 | 4 | 5 | | |
| 21. I look as nice as I'd like to. | 1 | 2 | 3 | 4 | 5 | | |

APPENDIX B

BODY-ESTEEM SCALE FOR ADOLESCENTS AND ADULTS (MAGAZINE)

Date: _____

How old are you? _____

Create a 4-digit code you can easily remember: _____

What is your ethnicity?

-Asian

-Latino/Hispanic

-Pacific Islander

-Black/African descent

-Middle Eastern

-White/Caucasian

-East Indian

-Native American

-Other

Describe the images you found most attractive:

What did you like about those photos?

Directions: For questions 1-21 indicate how often you agree with the following statements. Circle the appropriate number beside each statement.

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

- | | | | | | |
|--|---|---|---|---|---|
| 1. I like what I look like in pictures. | 1 | 2 | 3 | 4 | 5 |
| 2. Other people consider me good looking. | 1 | 2 | 3 | 4 | 5 |
| 3. I am proud of my body. | 1 | 2 | 3 | 4 | 5 |
| 4. I am preoccupied with trying to change my body. | 1 | 2 | 3 | 4 | 5 |
| 5. I think my appearance would help me get a job. | 1 | 2 | 3 | 4 | 5 |
| 6. I like what I see when I look in the mirror. | 1 | 2 | 3 | 4 | 5 |

- | | | | | | |
|---|---|---|---|---|---|
| 7. There are lots of things I'd change about my looks if I could. | 1 | 2 | 3 | 4 | 5 |
| 8. I am satisfied with my weight. | 1 | 2 | 3 | 4 | 5 |
| 9. I wish I looked better. | 1 | 2 | 3 | 4 | 5 |
| 10. I wish I looked like someone else. | 1 | 2 | 3 | 4 | 5 |
| 11. People my own age like my looks. | 1 | 2 | 3 | 4 | 5 |
| 12. My looks upset me. | 1 | 2 | 3 | 4 | 5 |
| 13. I'm as nice looking as most people. | 1 | 2 | 3 | 4 | 5 |
| 14. I'm satisfied with how I look. | 1 | 2 | 3 | 4 | 5 |
| 15. I feel I weigh the right amount for my height. | 1 | 2 | 3 | 4 | 5 |
| 16. I feel ashamed of how I look. | 1 | 2 | 3 | 4 | 5 |
| 17. My weight makes me unhappy. | 1 | 2 | 3 | 4 | 5 |
| 18. My looks help me get dates. | 1 | 2 | 3 | 4 | 5 |
| 19. I worry about the way I look. | 1 | 2 | 3 | 4 | 5 |
| 20. I think I have a good body. | 1 | 2 | 3 | 4 | 5 |
| 21. I look as nice as I'd like to. | 1 | 2 | 3 | 4 | 5 |

APPENDIX C

BODY-ESTEEM SCALE FOR ADOLESCENTS AND ADULTS (FINAL)

4-digit code from the previous survey: _____

Circle the type of exercise you engaged in the majority of your workout

- **Aerobic (endurance training)**

Or

- **Yoga/Pilates**

How many minutes did you engage in that exercise? _____

Directions: For questions 1-21 indicate how often you agree with the following statements. Circle the appropriate number beside each statement.

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

- | | | | | | |
|---|---|---|---|---|---|
| 1. I like what I look like in pictures. | 1 | 2 | 3 | 4 | 5 |
| 2. Other people consider me good looking. | 1 | 2 | 3 | 4 | 5 |
| 3. I am proud of my body. | 1 | 2 | 3 | 4 | 5 |
| 4. I am preoccupied with trying to change my body. | 1 | 2 | 3 | 4 | 5 |
| 5. I think my appearance would help me get a job. | 1 | 2 | 3 | 4 | 5 |
| 6. I like what I see when I look in the mirror. | 1 | 2 | 3 | 4 | 5 |
| 7. There are lots of things I'd change about my looks if I could. | 1 | 2 | 3 | 4 | 5 |
| 8. I am satisfied with my weight. | 1 | 2 | 3 | 4 | 5 |
| 9. I wish I looked better. | 1 | 2 | 3 | 4 | 5 |
| 10. I wish I looked like someone else. | 1 | 2 | 3 | 4 | 5 |
| 11. People my own age like my looks. | 1 | 2 | 3 | 4 | 5 |
| 12. My looks upset me. | 1 | 2 | 3 | 4 | 5 |

- | | | | | | | |
|--|---|---|---|---|---|---|
| 13. I'm as nice looking as most people. | 1 | 2 | 3 | 4 | 5 | |
| 14. I'm satisfied with how I look. | 1 | 2 | 3 | 4 | 5 | |
| 15. I feel I weigh the right amount for my height. | 1 | 2 | 3 | 4 | 5 | 5 |
| 16. I feel ashamed of how I look. | 1 | 2 | 3 | 4 | 5 | |
| 17. My weight makes me unhappy. | 1 | 2 | 3 | 4 | 5 | |
| 18. My looks help me get dates. | 1 | 2 | 3 | 4 | 5 | |
| 19. I worry about the way I look. | 1 | 2 | 3 | 4 | 5 | |
| 20. I think I have a good body. | 1 | 2 | 3 | 4 | 5 | |
| 21. I look as nice as I'd like to. | 1 | 2 | 3 | 4 | 5 | |