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The Impact of a Body Self-Compassion Program on Body Image and Experiences of Exercise

Gretchen Paulson
University of Wisconsin-Milwaukee

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THE IMPACT OF A BODY SELF-COMPASSION PROGRAM ON BODY IMAGE AND
EXPERIENCES OF EXERCISE

by

Gretchen Paulson

A Dissertation Submitted in
Partial Fulfillment of the
Requirements for the Degree of

Doctor of Philosophy
in Kinesiology

at

The University of Wisconsin-Milwaukee

August 2023

ABSTRACT

THE IMPACT OF A BODY SELF-COMPASSION PROGRAM ON BODY IMAGE AND EXPERIENCES OF EXERCISE

by

Gretchen Paulson

The University of Wisconsin-Milwaukee
Under the Supervision of Professor Christy Greenleaf, PhD

Body image concerns are a prevalent and pervasive issue among young adult women and are associated with a host of physical and psychological consequences including disordered eating, depression, and anxiety. Body image concerns play a role in physical activity and exercise behavior, where negative body image is related to lower levels of exercise engagement. Self-compassion is a way of relating to oneself with kindness and understanding, particularly in the presence of suffering or feelings of inadequacy. Self-compassion consists of three interrelated components: self-kindness, common humanity, and mindfulness, and has demonstrated effectiveness in reducing body image concerns, while fostering positive body image. Self-compassion is also associated with positive health behaviors, such as engagement in physical activity and exercise through the process of self-regulation. Given the evidence of self-compassion's impact on body image and the critical role body image plays in exercise participation, self-compassion interventions designed to specifically address body image concerns may have the potential to impact exercise engagement.

The purpose of the present research was to further explore the relationship between self-compassion and body image and the role of body self-compassion in exercise motivation. There were three aims of this dissertation including 1.) to conduct a systematic review of the

effectiveness of self-compassion interventions on body image; 2.) to test the effects of a unique body self-compassion intervention on body image and intrinsic motivation to exercise and 3.) to qualitatively explore the women's experiences of engaging in body self-compassion activities.

A systematic review was conducted to assess the effectiveness of interventions that teach self-compassion and their impact on body image. Database searches were conducted using PsycINFO and Web of Science and a narrative synthesis was conducted using PRISMA guidelines for systematic reviewers. Twelve studies met the inclusion criteria which evaluated a variety of self-compassion interventions including self-compassion meditations, writing exercises, and group-based discussions in an adult, female population. Results indicated that despite the heterogenous nature of the interventions (variety in design, duration, and delivery format), interventions utilizing the teachings of self-compassion demonstrated effectiveness in both reducing negative body image and promoting positive body image.

A three-week body self-compassion program was conducted among women exercisers to determine its impact on self-objectification, body appreciation, and intrinsic motivation to exercise. 53 women, ages 18-25, were randomly assigned to either the intervention (n=34) or control group (n=19). Each week, participants were instructed to listen to a 3-minute audio meditation, followed by a 3-minute journaling reflection prior to their normal exercise routine. Findings demonstrated no significant effects on body image or intrinsic motivation for exercise. Despite these findings, a descriptive summary of open-ended responses provided insight into how the participants incorporated body self-compassion both towards their bodies and within their exercise routine. Participants demonstrated engagement and compliance demonstrating acceptability for the intervention approach.

The purpose of the third study was to explore how engaging in a body self-compassion intervention impacts women's relationship with their bodies, in general, and during exercise. Following the intervention described above, seven women participated in one-on-one semi-structured interviews, which were analyzed using a thematic analysis approach. Two themes were developed in response to the participant's experiences engaging in body self-compassion: changing my narrative and uncovering my intuition. The women conveyed that body self-compassion shifted their perspectives to a more accepting and appreciative view of their bodies and supported their ability to listen to their bodies. Results of this study provided deeper insight into the experiences and perceptions women may have when applying a self-compassionate mindset towards their bodies and how this can impact their relationship with exercise.

Previous literature suggests self-compassion interventions to be an acceptable and effective tool in addressing body image concerns. Based on the findings from the one-on-one interviews and reflections from the participants, interventions intended to cultivate body self-compassion have the potential to facilitate body appreciation and body connection within the exercise domain.

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I dedicate this to my husband, Peter Netisingha. Thank you for taking this 'walk' with me. I could not have done this without your love and support.

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Introduction

Body image concerns are a prevalent issue among college-aged and young adult women (Cain et al., 2010; Tiggemann, 2004). In studies conducted in undergraduate females, almost all participants spoke negatively about the size and shape of their bodies (Salk & Engeln-Maddox, 2011) and more than 50% felt their body shape influenced their self-worth (Cain et al., 2010). Body image concerns can manifest in several different ways including body dissatisfaction and body shame, triggering women to attempt to manage and control their appearance through consistent monitoring of their bodies (Fredrickson & Roberts, 1997). Body image concerns are associated with higher levels of depression (Brechan & Kvaalem, 2015), lower levels of physical activity (Sabiston et al., 2019) and are central to the development of eating disorders (Fredrickson & Roberts, 1997). As such, a substantial amount of research has been dedicated to reducing body image concerns and more recently, fostering the promotion of positive body image (Guest et al., 2020; Piran, 2019).

Self-compassion is a construct drawn from Buddhist philosophy and is a way of engaging and understanding with oneself with kindness and compassion (Neff, 2003). Similar to compassion, self-compassion is being touched by and open to one's own suffering with the desire to alleviate it with kindness and understanding (Neff, 2003). Directing self-compassion towards the physical self or the body is a relatively new concept; however, it demonstrates the potential to be an ideal strategy for alleviating the suffering that stems from body image concerns, while offering women an alternative way of valuing themselves. For example, embracing common humanity, a core component of self-compassion, can help women conceptualize a broader or more inclusive standard of beauty and provide a sense of normalcy when focusing on perceived imperfections. Research provides evidence for self-compassion as a

protective factor against body image concerns and a prevention strategy in the occurrences of risk factors associated with body image concerns (Braun et al., 2016 for a review). Furthermore, research has demonstrated self-compassion to enhance women's abilities to appreciate their bodies (Berry et al., 2010; Guest et al., 2020). Interventions aimed at teaching general self-compassion and its impact on body image have demonstrated significant increased levels of body appreciation and reduced levels of body shame (Albertson et al., 2015; de Wet et al., 2018; Toole & Craighead, 2016). While evidence endorses how self-compassion can be a relevant and critical strategy to the body, few studies have determined if and how this plays a role in health behaviors.

Participation in exercise and physical activity is a form of self-care and can be a way to foster positive body image through a sense of body pride and appreciation (Sabiston et al., 2019). However, existing body image and appearance-related concerns can act as a barrier or deterrent for exercise engagement in many women. Studies support the relationship between exercise and self-compassion through the process of self-regulation (Semenchuk et al. 2018) and fostering body appreciation (Cox et al., 2019). An important pathway to consider in this relationship is intrinsic motivation, which entails engaging in physical activity for reasons of joy, satisfaction, and sense of accomplishment and is related to exercise adherence (Teixeira, 2012). Self-compassion has been positively associated with intrinsic reasons for exercise (Semenchuck et al., 2018) and shown to negatively predict obligatory exercise (Magnus et al., 2010). Theoretically, finding ways to appreciate and connect to the body should positively support intrinsic goals for exercise, yet only one study has shown support for this finding (Cox et al., 2019). More research to assess the impact of practicing self-compassion on both body image and intrinsic motivation

for exercise may provide insight into factors that contribute to the role of body image in exercise behaviors.

Given the evidence of self-compassion's impact on body image and the critical role body image plays in exercise participation (Johnson et al., 2013), it is plausible that self-compassion interventions designed to specifically address body image concerns may also impact exercise engagement. I propose that drawing connections between the tenets of self-compassion and its application to the body may provide individuals with a tangible way to address body image concerns, creating a stronger sense of resilience in the face of shame or negative self-evaluations. Moreover, encouraging a self-compassionate mindset in relation to the body may foster love, respect, and appreciation for one's body. Lastly, learning to take a more self-compassionate approach towards one's body may also impact exercise engagement as it shifts motivation from an external focus (i.e., appearance management) to a more internal focus (joy and satisfaction). Therefore, the purpose of the proposed studies is to determine the impact of body self-compassion intervention on body image and motivation for exercise among young women. The results of this research aim to contribute to the existing literature by providing insight into the application of self-compassion directed specifically to the body and further exploration of how those experiences can impact women's relationship with their body and with exercise. This will be assessed in three separate studies:

Study 1: The purpose of this study was to provide a systematic review of the effectiveness of self-compassion interventions on body image in healthy, adult women.

Study 2: The purpose of this study was to investigate the effects of a body self-compassion program on self-compassion, body appreciation, body surveillance, and motivation for physical activity in young adult women.

Study 3: The purpose of this study was to explore how engaging in a body self-compassion program impacts body image and exercise experiences among women exercisers.

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A systematic review of the effectiveness of interventions that aim to teach self-compassion on body image

Abstract:

Objectives: Body image concerns are a pervasive issue among women and a common risk factor in the development of disordered eating. The growing body of research supporting the relationship between self-compassion and body image warrants an exploration of how self-compassion interventions may be an appropriate strategy in addressing body image concerns. The aim of this review was to assess the effectiveness of interventions that teach self-compassion and their impact on body image. **Methods:** Database searches were conducted using PsycINFO and Web of Science and a narrative synthesis was conducted using PRISMA guidelines for systematic reviewers. Twelve studies met the inclusion criteria which evaluated a variety of self-compassion interventions including self-compassion meditations, writing exercises, and group-based discussions in an adult, female population. Methodological quality was analyzed using the Effective Public Health Practice Project Quality Assessment and a narrative analysis of each intervention and its impact on negative and positive body image constructs is described. **Results:** Results indicate that despite the heterogenous nature of the interventions (variety in design, duration, and delivery format), interventions utilizing the teachings of self-compassion demonstrate effectiveness in either reducing negative body image or promoting positive image. However, these results are exhibited among a group of studies using a homogenous sample, which is discussed as a limitation. **Conclusion:** Self-compassion should continue to be examined as an approach for promoting positive body image in women as a potential preventative strategy to developing risk factors for body image concerns and disordered eating.

Introduction

Body image is a multidimensional construct involving thoughts, perceptions, and attitudes towards one's physical self and appearance (Cash, 2004; Cash & Pruzinsky, 1990). It consists of two distinct dimensions, positive and negative body image, and can be influenced by physical, psychological, and socio-cultural factors (Wertheim & Paxton, 2011). For example, constructs related to negative body image, such as body dissatisfaction and body shame, can stem from the common societal and cultural practice of self-objectification, creating pressures to attain a certain standard of beauty. In line with these societal expectations, young women often engage in appearance comparisons with their peers, experience appearance anxiety (Hart et al., 2008), or begin to internalize sociocultural appearance ideals (Thompson & Stice, 2001) further perpetuating negative body image. Body dissatisfaction, body shame, and appearance concerns represent a range of body image concerns that are common risk factors in the development of eating disorders and mental health issues such as depression and anxiety (Fredrickson & Roberts, 1997).

On the other hand, positive body image is a distinct construct from negative body image. Positive body image is not simply the absence of negative body image, but rather an important aspect in developing a healthy sense of self and psychological well-being (Tylka & Wood-Barcalow, 2015). Positive body image is conceptualized as love and respect for one's body. It includes acceptance and appreciation of the body, awareness of its needs, and an ability to reject negative societal messages and emphasize positive messages as a form of self-protection (Tylka & Wood-Barcalow, 2015). Body appreciation, which is defined as acceptance and holding favorable opinions towards one's body and respecting the body by taking care of its needs (Avalos et al., 2005), is a commonly measured construct of positive body image. It is associated

with several indicators of well-being such as increased health behaviors (Halliwell, 2015) and has been shown to protect against the negative effects of exposure to appearance related ideals (Halliwell, 2013). The distinction between negative and positive body image is especially important as more research has pointed to a need for improving positive body image as opposed to solely reducing negative body image (Tylka & Wood-Barcalow, 2015).

Self-compassion is the ability to treat oneself with the same kindness and understanding you would offer others. It comprises of three interconnected components: self-kindness versus self-judgement, common humanity versus isolation, and mindfulness versus over-identification (Neff, 2003). Evidence indicates that self-compassion may also be an effective protective mechanism against body image concerns (Braun et al., 2016) as well as a strategy for fostering positive body image (Guest et al., 2019). For example, self-compassion has been shown to be an effective moderator in the relationship between body comparison and body appreciation (Homan & Tylka, 2015) and to predict lower levels of body shame (Breines et al., 2014). Theoretically, self-compassion can be an important strategy in the face of body image concerns as it emphasizes self-acceptance, making it an effective coping mechanism to self-criticism and encouraging a more loving and appreciative attitude towards the body, especially in the face of perceived imperfections.

The growing interest in the impact of self-compassion on body image concerns warrants the need for researchers to understand how and why a particular intervention may be effective. Current self-compassion interventions targeting body image convey variability in type of intervention, duration, and target population. For example, studies have found significant effects of self-compassion on body image and eating behaviors in populations with binge eating and obesity (Forbes et al., 2020; Leary et al., 2007; Mantazios & Wilson, 2014). Further, Przewdziecki

et al. (2016) found self-compassionate writing to have a positive impact on body image in breast cancer survivors, while Sherman et al. (2020) saw this to be true in women with visible skin conditions using the same intervention. Self-compassion may be a relevant tool for both healthy and unhealthy (i.e., diagnosed medical condition or disordered eating) populations; however, understanding the use of self-compassion as a protective factor in healthy populations may be more informative on not only combatting existing body image issues, but also preventing the occurrences of common risk factors related to disordered eating.

Another key element to determining the effectiveness of interventions are the implications of self-compassion as a strategy for either reducing body image concerns or promoting positive body image. Theoretically, interventions targeting body dissatisfaction or body shame can provide insight into how self-compassion acts as a protective factor in the presence of negative body image or even as a potential treatment tool in those who experience clinical levels of body dissatisfaction. On the other hand, interventions targeting body appreciation shed light on how self-compassion can promote and encourage positive feelings towards the body. Preventative strategies that target body image concerns may be helpful in disrupting the pathways implicated in the development of disordered eating, while fostering positive body image can lead to improved connection, respect for and appreciation for one's body and provide resistance in the presence of body image related threats. It is therefore necessary to evaluate the impact of teaching and utilizing self-compassion within the multidimensional and complex nature of body image.

The aim of this systematic review was to assess the effectiveness of self-compassion interventions on body image variables in a female only population with no stated medical conditions or clinical disordered eating. There have been reviews assessing various interventions

aiming to promote positive body image (Guest et al., 2019), as well as the impact of self-compassion on body image, eating behaviors, nutrition habits, and body weight (Rahimi-Ardabili et al., 2017). However, we propose the current review to be distinguishable in a few key ways. First, examining the effects of self-compassion in a healthy population can help determine the appropriateness of self-compassion interventions in samples that do not already experience compromised self-perceptions due to a medical condition or eating disorder. Secondly, this review provides comprehensive detail on intervention characteristics such as duration and delivery format which may help future researchers in assessing feasibility and efficacy of design.

Methods

This systematic review was conducted according to the PRISMA guidelines for reporting systematic reviews (Page et al., 2021). This review aimed to evaluate the effectiveness of interventions that used specific components of self-compassion (Neff, 2003) to either improve body image (e.g. increase body appreciation) or alleviate body image concerns (e.g. reduce body dissatisfaction).

Search Strategy

A search was conducted up to June 1, 2022. Studies were selected through database searches of Web of Science and PsycINFO as well as references of relevant papers and previous reviews of self-compassion within the context of body image concerns. Databases were searched using the following search string: (“self-compassion” OR “mindfulness” OR “mindfulness-based intervention” OR “writing” OR “meditation”) AND (“body image” OR “body dissatisfaction” OR “body shame” OR “body anxiet*” OR “self-objectification” OR “objectified body consciousness” OR “body surveillance” OR “body appreciation” OR “social physique anxiety”). Within PsycINFO, all terms were first searched in the APA Thesaurus of Psychological Index

Terms and the available terms including “self-compassion”, “mindfulness”, “mindfulness-based intervention”, and “body image” were added to the search box. The remainder terms mentioned in the search string above were then added and placed in the correct grouping. Additional filters including subjects (female or woman or women or females), date (on or after 2003), and language (English) were also applied to the search terms in the PsycINFO database. These filters were used because the authors’ first language is English, the research question was specific to interventions with females, and the Self-Compassion scale was developed in 2003 (Neff, 2003). Within the Web of Science database, the article referencing the development and validation of the Self-Compassion Scale (Neff, 2003) was first searched and a list of all articles citing Neff, 2003 was obtained. Search terms were then used to search within the cited references of this article.

Eligibility Criteria

Search results were imported into Endnote reference manager and screened for duplicates. Two reviewers (GP and AMR) separately screened all titles and abstracts to assess for eligibility. The same two reviewers read the remaining full text articles separately to determine their inclusion for the current review.

Studies were included if they were peer-reviewed, published in English, and evaluated the effects of an identified self-compassion intervention on body image. Studies were included if the target population were women (two studies including both men and women were excluded in the final stage because only aggregate results from both genders were provided) and had a sample mean age of ≥ 18 years old. Two studies (de Wet et al., 2020; Seekis et al., 2020) included participants with an age range of 17-35 ($M = 22.14$, $SD = 2.98$) and 17-21 ($M = 18.04$, $SD = 0.90$) respectively, but all other studies included participants older than 18 years of age.

Studies were excluded if the target population had a clinical or stated sub-clinical diagnosed eating disorder, were being treated for weight loss, or had specific medical conditions such as type 2 diabetes or breast cancer. Studies needed to have the aim of teaching self-compassion as defined by Neff (2003) and assess its impact on at least one body image outcome and include a comparison group. Randomization of the intervention and comparison group was not required.

Data Extraction and Quality Assessment

Data were extracted in relation to study location, participant number and characteristics, sampling recruitment, duration of intervention, content of intervention, outcome measures, and results (see Table 1). The Quality Assessment Tool for Quantitative Studies, developed by the Effective Public Health Practice Project (EPHPP; Thomas et al., 2004) was used to assess methodological quality and was completed by both reviewers. All studies were evaluated based on the following components - selection bias, study design, confounders, blinding, data collection method, and attrition. Each component was rated as weak, moderate, or strong and based on those ratings, a study was given an overall score. A study rated as ‘strong’ indicates no weak ratings; a study rated as ‘moderate’ indicates one weak rating; and a study rated as ‘weak’ indicates two or more weak ratings. The EPHPP was chosen because it has demonstrated good inter-rater reliability (Thomas et al., 2004).

Results

The study selection process is presented in the PRISMA flow diagram in Fig. 1. Ten peer-reviewed journal articles were identified for this review. Upon review, we decided to refer to Stern and Engeln (2018) as three separate studies (Stern & Engeln, 2018a,b,c) as indicated in their manuscript. Therefore, a total of 12 studies detailing 9 different self-compassion interventions were included. Three studies (Albertson et al., 2015; de Wet et al., 2020; Toole & Craighead, 2016) used the same intervention content. More detailed information on participant

characteristics, sampling, intervention duration and content, outcome measures, and results are presented in Table 1.

Figure 1. PRISMA flowchart of included studies.

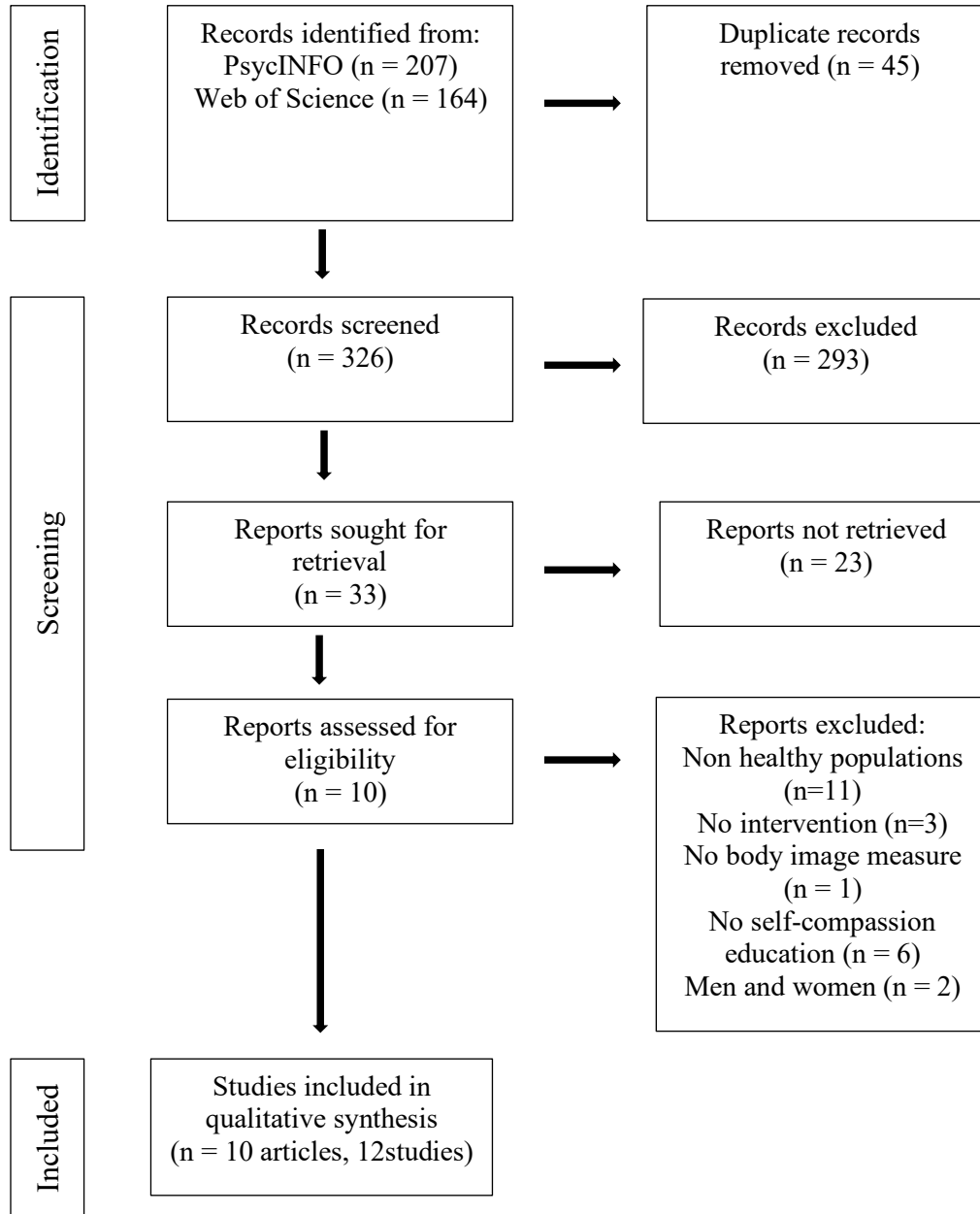


Table 1. Characteristics and Results						
Author, year, location	Participants	Duration	Intervention and Controls	Content	Body Image Measures	Results
Albertson et al. (2015), worldwide	N = 228 Ages 18-60, Mean age = 36.42, SD = 1.31, BMI = not reported, 95% White Recruited from general community	Three weeks 20-minute daily podcasts, (three-month follow-up)	Group 1 (n = 98) – self-compassion podcast Group 2 (n = 130) - waitlist control	Guided self-compassion mediations from MSC- bringing awareness and kindness to the body. Week 1: Compassionate body scan Week 2: Affectionate breathing Week 3: Loving-kindness	Body Shape Questionnaire, Body Shame subscale of Objectified Body consciousness Scale (OBCS), Body Appreciation Scale, Appearance subscale of Contingencies of Self-Worth Scale	Intervention yielded increase in levels of self-compassion ($d = 0.82$) and body appreciation ($d = 0.62$) There was a decrease in body dissatisfaction, shame, and contingent self-worth ($d = 0.73, 0.68, 0.45$, respectively). At 3-month follow-up all measures were significantly different than pre-test scores
de Wet et al. (2020), Australia	N = 70 Ages 17-35, Mean age = 22.14 SD = 3.98 Mean BMI = 22.48, SD = 4.15, 82.8% Australian University students and general community	One week Two 20-minute podcasts	Group 1 (n = 37) -self-compassion podcast Group 2 (n = 33) – imagery meditation	Group 1 - guided self-compassion mediations from MSC- bringing awareness and kindness to the body. Compassionate body scan and Loving-kindness Group 2 –guided imagery meditations teaching breathing	Body Shame subscale of OBCS, Body Appreciation Scale -2, Appearance subscale of Contingencies of Self-Worth Scale	Both groups saw significant increases in self-compassion ($f = 0.39$) and body appreciation ($f = 0.31$) and a significant decrease in body shame ($f = 0.29$). There were no significant effects for appearance contingent self-worth.

				and muscle relaxation		
Moffitt et al., 2018, Australia	N = 149 Age 18-50, Mean BMI = 23.44, SD = 4.82, 79.2% White, 7.4% Asian, 2.7% Latina, 1.3% African American, Indigenous, or Hispanic Undergraduate university students	One day (3 minutes)	Group 1 (n = 49) – self-compassionate writing Group 2 (n = 51) self-esteem writing Group 3 (n = 49) – positive distraction	All participants first viewed magazine images of young, thin women to induce body dissatisfaction Group 1 – 3 minutes of writing, addressing themselves with kindness and compassion Group 2 – 3 minutes of writing about their positive qualities Group 3 – 3 minutes of writing about a hobby	Body Dissatisfaction Subscale from Eating Disorders Inventory-3, 100 point VAS for measuring body dissatisfaction	Significant decrease in body dissatisfaction and bodily distress in all groups. Weight and appearance dissatisfaction and bodily distress were significantly lower in the self-compassion and self-esteem groups combined ($d = 0.47, 0.50, \text{ and } 0.45$, respectively) and was significantly lower in the self-compassion group when compared to the self-esteem group ($d = 0.85, 0.69, \text{ and } 0.27$, respectively).
Seekis et al., 2020, Australia	N = 76 Age = 17-21 Mean age = 18.04, SD = 0.90, BMI = not reported 75% White, 9% Asian, 8% Middle Eastern, 5% Pacific Islander, 3% other	Two weeks One 50-minute online, synchronous session Three posts per week for 2 weeks (1-month and 3-month follow-up)	Group 1 (n=42) – mindful self-compassion Group 2 (n = 34) – waitlist control	Virtual group session including self-compassion psychoeducation from MSC and its relation to body image, two writing tasks to encourage a self-compassionate mindset, and a brief meditation Weekly posts about utilizing a self-	Body Dissatisfaction and Drive for Thinness Subscales from Eating Disorders Inventory-3, Social Appearance Anxiety Scale, Upward Physical Appearance Comparison Scale, Body	Self-compassion group saw significantly lower body dissatisfaction, drive for thinness, social appearance anxiety, upward appearance comparison and higher body appreciation at posttest and 1-month follow-up All findings were maintained at three-month

				compassion strategy in response to an appearance related situation	Appreciation Scale – 2	follow-up except for body dissatisfaction
Seekis et al., 2017, Australia	N = 96 Age = 17-25, Mean age = 19.45, SD = 1.84 First-year university students	One day (15 minutes), two-week follow-up	Group 1 (n = 32) – self-compassion writing Group 2 (n = 32) – self-esteem writing Group 3 (n = 32) – neutral writing	All groups exposed to a body image related threat Group 1 – 3 five-minute bouts of self-compassion writing correlated with each element of self-compassion Group 2 – 3 five-minute bouts of self-esteem writing Group 3 – 3 five minute-bouts of writing on school and career	State Body Appreciation Scale, Body Image State Scales, Physical Appearance State and Trait Anxiety Scale	Self-compassion group demonstrated higher state body appreciation than self-esteem and neutral group ($d = 0.65, 0.1.03$, respectively) and both self-compassion and self-esteem groups demonstrated higher state body satisfaction than neutral group ($d = 0.70$) At follow-up, significant effects were shown between the self-compassion group and neutral group for state body appreciation ($d = 1.15$) and for both the self-esteem and self-compassion group for state body satisfaction ($d = 0.83$) There were no effects for appearance anxiety
Stern and Engeln, 2018(a), USA	N = 254 Mean age = 19.44, SD = 1.22, Mean	One day (15 minutes)	Group 1 (n = 62) – general self-compassion writing	All groups wrote for 10 minutes followed by a 5-minute reflection period	Body Image States Scale	There was a significant increase in body satisfaction among the three experimental groups

	BMI = 22.42, SD = 3.68 University students		Group 2 (n = 61) – body-compassion writing Group 3 (n = 60) - body-functionality writing Group 4 (n = 61) - control	Group 1 – wrote a letter to themselves from the perspective of an unconditionally loving friend Group 2 – wrote a letter using the same prompt as above but addressing their body Group 3 - wrote about their body’s capabilities Group 4 – wrote about their previous day		compared to the control group ($d = .57$) There were no significant differences when comparing the body-compassion and body-functionality groups to the general self-compassion group
Stern and Engeln, 2018(b), USA	N = 240 Mean age = 19.31, SD = 1.30, Mean BMI = 22.03 (3.89). University students	One day (15 minutes)	Group 1 (n = 57) – general self-compassion writing Group 2 (n = 59) – body-compassion writing Group 3 (n = 60) – neutral self-writing Group 4 (n = 56) – neutral body writing	All groups wrote for 10 minutes followed by a 5-minute reflection period Writing prompts for group 1 and group 2 were identical to the first study Group 3 – wrote about themselves from the perspective of someone who knows them Group 4 - wrote about their bodies	Body Image States Scale	There was a significant increase in body satisfaction in the general self-compassion and body-compassion group compared to the self-reflective groups ($d = .39$)

				from the perspective of someone who knows them		
Stern and Engeln, 2018(c), USA	N= 1,158 Mean age= 20.15 SD = 6.33, Mean BMI = 22.41, SD = 3.49 Sorority women	One day (15 minutes)	Group 1 (n = 209) – general self-compassion writing Group 2 (n = 191) – body-compassion writing Group 3 (n = 245) - body-functionality writing Group 4 (n = 264) – positive control condition	All groups wrote 7 sentences in response to the provided prompt with a follow-up reflection period. There were no time requirements Writing prompts for groups 1 -3 were similar to those in study 1 Group 4 – wrote seven sentences about a recent positive event	Body Image States Scale	There were significantly higher levels of body satisfaction among the three experimental groups compared to the control group ($d = .36$)
Toole and Craighead, 2016, USA	N = 80 Age = 18-25, Mean age = 18.85 SD = 0.87, BMI = 22.2, SD = 3.6 University students	One week Three 20-minute podcasts	Group 1 (n = 40) –self-compassion podcast Group 2 (n = 40) – waitlist control	Guided self-compassion mediations from MSC- bringing awareness and kindness to the body. Compassionate body scan, Affectionate breathing, and Loving-kindness	Body Appreciation Scale, Body Surveillance and Body Shame subscale of OBCS, Appearance subscale of Contingencies of Self-Worth Scale, Body Shape Questionnaire	There were significant increases in body appreciation ($\eta p^2 = .05$), appearance contingent self-worth ($\eta p^2 = .05$) and body surveillance ($\eta p^2 = .06$). There were no significant effects for body shame and body dissatisfaction

Toole et al., 2021, USA	N = 151 Age = 18-25, Mean age = 19.70, SD = 1.8519 BMI = 23.67, SD = 4.46 43.7% White, 10.6% Black, 33.8% Asian, 9.3% Multi-Race, 2.6% Other	One week One in-person 45-minute introductory psychoeducation meeting, followed by instructions to complete daily intentions	Group 1 (n = 50) – self-compassion intervention (SC) Group 2 (n = 50) – dissonance based (DB) intervention Group 3 (n = 51) – waitlist control	Group 1 – Introductory session included a psychoeducation video and a 15-minute self-compassionate letter writing exercise. Participants set daily self-compassionate intentions and complete a daily ‘self-care’ practice Group 2 – Introductory session included psychoeducation on the cost of pursuing the thin ideal and a 15-minute counter-attitudinal letter writing. Participants set daily intentions to reject the thin ideal	Body Dissatisfaction Shape Questionnaire-Revised 10, Body Appreciation Scale -2, Appearance subscale of Contingencies of Self-worth Scale, Thin/Low Body Fat subscale of the Sociocultural Attitudes Towards Appearance Questionnaire, Upward Appearance Comparison Subscale of the Upward and Downward Appearance Comparison Scale	There were significant differences in body appreciation and contingent self-worth among the SC group ($d=0.63$, $d=-0.53$, respectively) and DB intervention ($d=0.52$, $d=0.65$, respectively) when compared to the waitlist group. There were significant differences in body dissatisfaction in the SC and DB groups compared to the waitlist group for participants who had moderate ($d=0.73$) and high ($d=1.15$) levels of body dissatisfaction at baseline. Significant effects in DB group for thin-ideal internalization only for participants with high levels of thin-ideal internalization at baseline ($d=0.74$).
Voelker et al., 2019, USA	N = 97 Mean age = 19.53, SD = 1.27, BMI =	Four weeks One 35-minute introductory session and four, 75-minute	Group 1 (n = 57) – Bodies in Motion intervention	The four interactive group discussions were led by a program leader. Education materials	Weight Pressures in Sport for Females, Perceived Sociocultural	Significant effects were demonstrated for thin-ideal internalization ($\eta p^2 = .06$). Although not statistically significant,

	23.68kg/m, SD = 3.59 DI and DIII athletes	sessions, 3-month follow-up	Group 2 (n = 40) - control	included resisting appearance ideals and mindfulness and self-compassionate exercises	Pressures Scale, Sociocultural Attitudes Towards Appearance Questionnaire, Concerns about Weight and Concerns about Shape from Eating Disorder Examination Questionnaire, Body Shame Scale, Body Appreciation Scale-2, Body Parts Satisfaction Scale-Revised	there were group differences in response trajectories for body appreciation, body satisfaction, and shape and weight concerns
Zeimer et al., 2019, USA	N = 152 Age = 18-28, Mean age = 19, 82% white, 7% Asian, 65% African American, 3% Hispanic, 2 % multiracial University or college student	Three weeks 20-minute writing once per week	Group 1 (n = 51) – self-compassionate writing Group 2 (n = 50) – expressive writing Group 3 (n = 51) – control writing	Group 1 –expressing kindness and understanding about their body image Group 2 – expressing their deepest feelings associated with their body image Group 3 - the events of their day in a factual way	Body Appreciation Scale-2, Body Image Quality of Life Inventory	The self-compassion group saw significant increases in self-compassion ($\eta p^2 = .05$); however, no significant differences were seen in body appreciation and body image quality of life

Study characteristics

Eleven studies were randomized control trials (RCT), and one study was a non-randomized control trial (Voelker et al., 2019). Six studies were cross-sectional (Moffitt et al., 2018; Seekis et al., 2017; Seekis et al., 2020; Stern & Engeln, 2018a,b,c) and five studies were longitudinal (Albertson et al., 2015; de Wet et al., 2020; Toole & Craighead; 2016; Voelker et al., 2019; Zeimer et al., 2019) taking into consideration the effects of group and time. Sample size ranged from 70 participants (de Wet et al., 2020) to 1,158 (Stern & Engeln, 2018c). Cross-sectional studies did not report attrition rate; however, for the remaining four studies, attrition rate ranged from 8% to 50%. Four studies (Albertson et al., 2015; Seekis et al., 2017, 2020; Voelker et al., 2019) included additional follow-up measures ranging from two weeks posttest to 3 months posttest.

There were a variety of intervention delivery methods used among the studies. Six studies were completely online and delivered their interventions in the following formats: self-directed audio meditations (Albertson et al., 2015; de Wet et al., 2020); online writing exercises (Moffitt et al., 2018; Stern and Engeln 2018c; Zeimer et al., 2019); and a Facebook synchronous group session and discussion posts (Seekis et al., 2020). Toole and Craighead (2016) and Toole et al., (2021) utilized a hybrid of in-person and online method where participants visited a lab to complete baseline measures and an experiential activity. The participants were then instructed to complete the activities on their own over the course of one week. Three studies utilized in-person writing exercises (Seekis et al., 2017; Stern & Engeln, 2018a,b). One study consisted of four in-person group sessions consisting of four to eight participants, led by a program leader (Voelker et al., 2019). The two types of interventions most commonly used were guided self-compassion

meditations and self-compassionate writing. Two interventions used self-compassionate writing as a response to an induced body image threat. For example, Moffitt et al., (2018) asked participants to view images of young, thin women from fashion magazines and encouraged participants to compare their own bodies to the women in the images. Seekis et al., (2017) asked participants to imagine a hypothetical scenario where they viewed unflattering photos of themselves posted on social media by a friend.

Of the twelve studies, four studies (Seekis et al., 2017; Stern & Engeln, 2018 a,b,c) did not have self-compassion as an outcome measure. Six studies saw an increase in self-compassion (Albertson et al., 2015; de Wet et al., 2020; Seekis et al., 2020; Toole et al., 2021; Voelker et al., 2019; Zeimer et al., 2019) in the intervention groups, one study did not see a change in self-compassion (Toole & Craighead, 2016) and one did not report it (Moffitt et al., 2018). All other body image outcome measures and intervention content are provided in Table 1.

Quality Assessment

Quality rating for included studies are presented in Table 2. Of the twelve studies, one received a strong quality rating, eight received a moderate quality rating, and three received a weak quality rating. A common limitation across studies was selection bias where participants were not representative of the target population. For example, study samples often consisted of homogenous racial backgrounds or were recruited from a limited population such as undergraduate students from one university. Except for de Wet et al. (2020), most studies did not state whether the assessors were blinded or blinding was not possible. However, for all studies, participants were unaware of the research question. Three studies received a ‘weak’ rating for their attrition component due to high attrition or not reporting reasons for withdrawals or dropouts. A strength among all studies was the use of reliable and valid outcome measures.

Table 2. Methodological quality assessment using Effective Public Health Practice Project (EPHPP)

Author/year	Selection Bias	Study Design	Confounders	Blinding	Data collection method	Attrition	Global Quality Rating
Voelker et al., 2019	W	S	S	W	S	M	Weak
Albertson et al., 2015	W	S	S	M	S	W	Weak
De Wet et al., 2020	W	S	S	M	S	W	Weak
Moffitt et al., 2018	W	S	S	M	S	S	Moderate
Stern & Engeln, 2018a (Study 1)	W	S	M	M	S	S	Moderate
Stern & Engeln, 2018b (Study 2)	W	S	M	M	S	S	Moderate
Stern & Engeln, 2018c (Study 3)	W	S	M	M	S	M	Moderate
Seekis et al., 2017	W	S	S	M	S	S	Moderate
Toole & Craighead, 2016	W	S	S	M	S	S	Moderate
Toole et al., 2021	W	S	S	M	S	M	Moderate
Zeimer et al., 2019	W	S	S	M	S	S	Moderate
Seekis et al., 2020	M	S	S	M	S	S	Strong

Intervention Effects

Intervention Approach

Four studies utilized exercises and activities provided in the Mindful Self-Compassion program (Germer & Neff, 2019). Three of these studies (Albertson et al., 2015; de Wet et al., 2020; Toole & Craighead, 2016) used the same 20-minute self-compassion guided meditation

podcasts, yet the frequency of listening and duration of intervention differed (three-weeks, one-week, and one-week, respectively). All three studies saw significant improvements in body appreciation; however, slight differences were used for measuring body appreciation as two studies used the Body Appreciation Scale (BAS) from Avalos et al. (2005) and one used the Body Appreciation Scale -2 (BAS-2) from Tylka and Wood-Barcalow (2015). Albertson et al. (2015) and Toole and Craighead (2016) saw significant decreases in appearance contingent self-worth and both Albertson et al. (2015) and de Wet et al. (2020) saw decreases in body shame.

The other intervention to utilize components of the Mindful Self-compassion program (Seekis et al., 2020) was also delivered online, but consisted of one 50-minute, synchronous group-based discussion followed by three written discussion posts per week for two weeks. Participants were first introduced to the concept of self-compassion and its relation to body image. They engaged in two brief writing tasks using mindfulness and self-kindness, group discussions, and a brief meditation. Following the synchronous session, participants were invited to a closed Facebook group where they were encouraged to post about a strategy they practiced in response appearance-related situation (negative, neutral, or positive). Results indicated improvements in body appreciation and a reduction in drive for thinness, social appearance anxiety, and upward appearance comparisons at posttest, 1- and 3-month follow-up. There were also significant group differences for body dissatisfaction at posttest and 1-month, but those were not retained at 3-month follow-up.

The second group-based intervention was Voelker et al.'s (2019) Bodies in Motion program which was delivered in-person in groups of 8-12 participants. Participants engaged in mindfulness practices, finding ways to resist appearance ideals, and practicing self-compassion towards their bodies. Participants were given home exercises to complete between in-person

sessions and then asked to review and discuss how they incorporated those exercises at the next session. Participants were also invited to share their experiences in completing the exercises on the groups social media platform and offer each other support and encouragement on this platform. Results only indicated significant differences for internalization of the thin-ideal. However, although insignificant, authors reported visually observed group differences in response trajectories for body appreciation, body satisfaction, shape and weight concerns, and sport-specific body pressures and indicated a larger sample size may have demonstrated more robust effects in these measures.

Seven studies evaluated the use of self-compassionate writing on body image. Five of these studies were cross-sectional, examining the impact of just one bout of writing. Two of the studies (Moffitt et al., 2018; Seekis et al., 2017) induced a body image related threat and asked participants to write a response to themselves using kindness and compassion. This was then compared to a self-esteem writing group and a neutral writing group. Both studies indicated significant reduction of state body dissatisfaction in the self-compassion group. However, Seekis et al. (2017) found this to be true among the self-esteem group as well. The same authors saw improvements in state body appreciation in the self-compassion group which remained at the two-week follow-up. Moffitt et al. (2018) extends the findings of Seekis et al. (2017) on body dissatisfaction by demonstrating significant group differences between the self-compassion and self-esteem writing interventions.

Stern and Engeln (2018a,b,c) evaluated the effects of compassionate writing (either general self-compassion or body-compassion) on state body satisfaction. All three studies yielded significant effects on body satisfaction. However, Stern and Engeln (2018a,c) demonstrated these effects in both the compassion-focused groups as well as the body-

functionality group in comparison to the neutral writing group. Stern and Engeln (2018b) also saw improvements in state body satisfaction in both the general self-compassion and body-compassion groups, but not the neutral self-reflective groups. This indicates that the use of compassionate writing whether it is directed towards the physical self or self as a whole can be useful.

Lastly, Zeimer et al. (2019) and Toole et al. (2021) examined the longitudinal effects of a writing intervention. Zeimer et al. (2019) asked participants to write for 20 minutes once per week over the course of three weeks yet saw no significant differences among the three writing groups (self-compassion, expressive writing, control) in body appreciation and body image quality of life. Toole et al. (2021) introduced a self-compassion letter writing to participants as part of an in-person introductory psychoeducation on self-compassion session. Participants were then encouraged to set daily intentions and practices of self-compassion over the course of the subsequent week. This was compared to both a dissonance-based intervention designed to challenge and reject the thin-ideal and a waitlist control group. Authors saw a reduction in body dissatisfaction and appearance contingent self-worth and an increase in body appreciation at posttest in both the self-compassion and dissonance-based intervention groups.

Self-compassion and positive body image related constructs

Eleven of the twelve studies included a measure for positive body image. There were five measures used to assess positive body image among the included studies: BAS (Avalos et al., 2005), BAS-2 (Tylka & Wood-Barcalow, 2015), State Body Appreciation Scale-2 (SBAS-2; Homan, 2016); Body Image Quality of Life Inventory (Cash & Fleming, 2002), Body Image States Scale (BISS; Cash et al., 2002) and Body Parts Satisfaction Scale (Petrie et al., 2002).

Body Appreciation

Eight of the included studies used body appreciation as an outcome variable and six of these studies found significant improvement. Three of these studies (Albertson et al., 2015; de Wet et al., 2020; Toole & Craighead, 2016) used self-directed guided self-compassion meditation podcasts; one (Seekis et al., 2017) used a 15-minute writing exercise; one used an in-person session providing self-compassion education and a self-compassion letter writing exercise (Toole et al., 2021); and one used an online group intervention (Seekis et al., 2020). It is important to note that Seekis et al., (2017) measured state body appreciation as compared to trait body appreciation. Two studies did not see significant improvements in body appreciation as a result of using an in-person, group intervention (Voelker et al., 2019) and a 3-week online writing intervention (Zeimer et al., 2019).

Body Satisfaction

Five studies measured body satisfaction, with four of them measuring state body satisfaction. Seekis et al. (2017) and Stern and Engeln (2018a,b,c) used a 15-minute self-compassionate writing exercise and saw significant increases in state body satisfaction when measured by the BISS (Cash et al., 2002). However, three of these studies found this to be true among their other writing interventions including a self-esteem writing exercise (Seekis et al., 2017) and a body functionality writing exercise (Stern & Engeln.,2018a,c). Voelker et al. (2019) found no improvements on body satisfaction using the Body Parts Satisfaction Scale (Petrie et al., 2002).

Self-compassion and negative body image related constructs

Eleven of the twelve studies utilized a measure for negative body image. The measures covered a variety of body image concerns including body shame, body dissatisfaction, appearance concerns and anxiety, internalization of the thin-ideal, and contingent self-worth.

Body Dissatisfaction

Five studies measured body dissatisfaction and four of these studies saw significant effects on reducing body dissatisfaction in the self-compassion group. Moffitt et al. (2018) and Seekis et al. (2020) utilized the Body Dissatisfaction subscale from the Eating Disorders Inventory (EDI-BD; Garner et al., 1983). Both saw significant improvements in reducing body dissatisfaction using a three-minute self-compassion writing exercise (Moffitt et al., 2018) and a 50-minute synchronous online discussion, which was maintained at 1-month follow-up (Seekis et al., 2020). Albertson et al. (2015) and Toole and Craighead (2016) determined the effects of a self-directed self-compassion audio meditation on body dissatisfaction using the Body Shape Questionnaire (BSQ-16A; Evans & Dolan, 1993). Toole and Craighead (2016) found no significant effects on body dissatisfaction, while Albertson et al. (2015) found a medium effect at posttest and 3-month follow-up. Toole et al. (2021) utilized a revised version of the Body Shape Questionnaire (BSQ-R-10; Mazzeo, 1999) and saw a significant reduction in body dissatisfaction as a result of their self-compassionate letter writing exercise and daily set self-compassion intentions and practices.

Body Shame

Four studies measured body shame. Three studies, using a self-compassion audio meditation (Albertson et al., 2015; de Wet et al., 2018; Toole & Craighead, 2016), found significant decreases in body shame when using the Body Shame subscale from the Objectified Body Consciousness Scale (McKinley & Hyde, 1996) to measure this variable. Voelker et al., (2019) did not see a significant impact on body shame in their four session, in-person group intervention. This was measured using the Body Shame Scale (Tripp & Petrie, 2001).

Appearance Concerns

Six studies investigated the effects of their intervention on appearance related concerns and three of them found significant improvement. Three studies examined appearance contingent self-worth, or the degree to which one's self-worth depends on one's perceptions of appearance, using the appearance subscale of the Contingencies of Self-Worth Scale (CSW; Crocker et al., 2003). Albertson et al. (2015) and Toole and Craighead (2016) saw significant decreases in appearance contingent self-worth, which were maintained at a 3-month follow-up (Albertson et al., 2015). De Wet et al. (2020) did not find significant effects in appearance contingent self-worth. One study (Seekis et al., 2020) examined both social appearance anxiety and appearance comparisons using the Social Appearance Anxiety Scale (SAAS; Hart et al., 2008) and the Upward Physical Appearance Comparison Scale (UPACS; O'Brien et al., 2009), respectively. As a result of their synchronous, online session using Facebook, Seekis et al. (2020) found participants experienced less appearance anxiety and engaged in less upward appearance comparison at posttest, 1-month, and 3-month follow-up. In another group-based in-person intervention, Voelker et al. (2019) did not see improvement in appearance concerns when using the Concerns about Weight and Concerns about Shape subscales of the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994). Lastly, Seekis et al. (2017) looked at state appearance anxiety as an outcome measure using the Physical Appearance State and Trait Anxiety Scale – state version (PASTAS; Reed et al., 1991). Following a 15-minute self-compassion writing task, there were no significant improvements in appearance anxiety.

Internalization

Two studies examined the sociocultural body pressures and internalization of societal appearance ideals. Voelker et al. (2019) and Toole et al. (2021) used the Sociocultural Attitudes Towards Appearance Questionnaire-4 (Schaefer et al., 2015) to determine the effectiveness of

their interventions thin-ideal internalization. While Voelker et al. (2019) saw a significant decrease in this variable as a result of their group-based intervention, Toole et al. (2021) only saw a significant effect in their dissonance-based intervention. This only held true for participants who reported high levels of thin-ideal internalization at baseline.

Discussion

Overall, self-compassion seems to be an effective strategy at in addressing body image concerns and promoting positive body image. These findings are in support of a recent meta-analysis that found significant causal effects of self-compassion interventions on body image (Turk & Waller, 2020). To our knowledge, this is the first systematic review to provide a narrative analysis of the effectiveness of self-compassion interventions on body image when compared to a control in a healthy, adult female population.

There were three intervention approaches identified in this review: audio meditations, writing exercises, and group sessions. It is difficult to discern any superiority in one intervention approach and its impact on body image as most demonstrated significant improvement. Three studies used the same 20-minute self-compassion audio meditations, yet differed in duration of intervention (three weeks vs one week). Despite the length of time, results indicated that listening to self-compassion guided meditations made available online have a positive impact on body image variables. However, these findings should be interpreted with caution for a couple of reasons. The three-week intervention conducted by Albertson et al. (2015) had a high attrition rate of almost 50% of participants. To account for this and increase engagement, Toole and Craighead (2016) reduced this time frame to one week and de Wet et al. (2020) reduced both the time frame to one week and the number of meditations (from 3 to 2) to reduce burden on participants. While attrition rate between baseline and post measurements for Toole and

Craighead (2016) was low, compliance was also low, where only half of participants indicated listening to more than one meditation over the course of the week. Therefore, 20-minute daily meditations may not be an appealing activity to college students. Moreover, de Wet et al. (2020) was the only study of the three to use a true control (guided imagery group versus waitlist control group) and found significant effects for both groups. For this particular study, it is therefore difficult to know if meditation alone is eliciting the change or if it is the content and practice of self-compassion. When considering intervention design, these audio meditations are easily accessible on the self-compassion website and are a part of the Neff and Germer's Mindful Self-Compassion program and workbook (Germer & Neff, 2019), both of which have demonstrated positive impacts on self-compassion and well-being. However, future studies may want to consider the acceptability of these meditations as well as duration of intervention.

Self-compassionate writing exercises were also a common intervention among the included studies. Zeimer et al. (2019) utilized a longitudinal design and found significant results on self-compassion but saw no improvements on body appreciation and body image quality of life. This was in comparison to an expressive writing group, which has demonstrated efficacy in improving psychological well-being (Arigo & Smyth, 2012) and may be a potential reason for the insignificant differences between groups. Toole et al. (2021) also incorporated a self-compassionate letter writing exercise as a start to their intervention and combined this with a week of setting daily self-compassionate intentions and practices. While the authors found significant effects on body image, this was also demonstrated in their dissonance-based intervention group. Moreover, participants reported setting their intentions and completing their daily practices on an average of 6.69 and 6.71 days per week respectively (Toole et al., 2021).

Therefore, it is difficult to determine whether it was the single letter writing exercise or the daily intentions and practices that contributed to these results.

Five studies utilized one bout of writing to determine its effect on state body image. While all studies saw improvements, it is important to consider the cross-sectional nature of both the intervention and measurement tools. State measurements assess how an individual is feeling in that particular moment, as opposed to general dispositions or feelings about their body. It is therefore difficult to assess the lasting impact of just one, short self-compassionate writing exercise on body image. Seekis et al. (2017) was the only study to conduct a two-week follow-up and found that significant results were maintained. It is possible that just learning the skill or strategy on how to respond to yourself in a self-compassionate way may provide some resilience, allowing individuals to feel more accepting of their bodies especially in the presence of a body image threat. However, more research that examines the long-term effects of these writing exercises is necessary.

Two group-based interventions, one online and one in-person, yielded different results. Seekis et al. (2020) saw a positive impact on body image variables following their one, synchronous session and weekly discussion posts. In intervention evaluations, participants indicated that the workshop and group discussions were useful, the provided self-compassion strategies were easy to use and they found most enjoyment in sharing their experiences. The use of common humanity, a core component of self-compassion, may have been crucial to the effectiveness of this intervention. On the other hand, Voelker et al. (2019) Bodies in Motion program required the greatest time commitment with one 35-minute introductory session and four 75-minute subsequent sessions and only saw significant differences in thin-ideal internalization. These are interesting findings considering the opportunity to also engage in

common humanity considering the multiple opportunities to share as a group. One important consideration is that Bodies in Motion consisted of only Division I and Division III athletes, a population that experiences a different set of body standards (Lunde & Gattario, 2017). It is plausible that the body pressures they feel may make them more resistant to body image related interventions. Despite this, it is important to consider how group interventions may provide a unique component that is particularly relevant to self-compassion and can be done feasibly through the use of an online social media platform without an extraordinary time commitment.

The teachings of self-compassion demonstrated to be an effective strategy at both improving positive body image as well as reducing negative body image. All three studies using the online self-directed meditations (Albertson et al., 2015; de Wet et al., 2020; Toole & Craighead, 2016), one online writing intervention (Moffit et al., 2018), and both group interventions (Seekis et al., 2020; Voelker et al., 2018) demonstrated significant reductions in body image concerns including body dissatisfaction, body shame, appearance concerns, and internalization of the thin ideal. This aligns with the tenets of self-compassion which emphasizes holding critical thoughts in a non-judgmental manner and encourages kindness towards oneself during times of distress (Neff, 2003). Considering the negative consequences of body image concerns, this holds promise for the utilization of self-compassion both as a stand-alone intervention or in conjunction with other effective body image interventions. Moreover, these results support previous research that have found causal evidence of self-compassion reducing body image concerns in populations with existing body image issues such as individuals with disordered eating (Kelly et al., 2013; Pinto-Gouveia et al., 2016) and individuals experiencing weight stigma (Forbes et al., 2020). Self-compassion therefore may be a treatment tool as well as a contributing protective factor in the development of body image issues.

One strength of this review is that almost all of studies (11 of 12) measured an aspect of positive body image and eight of them found significant effects. Three online meditation interventions (Albertson et al., 2015; de Wet et al., 2020; Toole & Craighead, 2016), four writing based interventions (Seekis et al., 2017; Stern & Engeln, 2018a,b,c), and one group intervention (Seekis et al., 2020) saw significant improvements in positive body image. Self-compassion encourages self-kindness and acceptance while recognizing the humanness in imperfections (Neff, 2003). Theoretically, these aspects of self-compassion may be connected to body image through exploration of love, respect, and appreciation for one's own unique body. As more research has called for the promotion of positive body image to foster a healthy and adaptive relationship with one's body (Tylka & Wood-Barcalow, 2015a), these are important implications. Further research should explore how self-compassion directed towards the body can be a preventative strategy in the development of body image issues.

Limitations

There are several limitations to consider. All but two studies were conducted using undergraduate university students and all populations were over 75% white. It would therefore be difficult to infer the effectiveness of these interventions in a racially and culturally diverse group and/or older adult populations. Moreover, the inclusion criteria for this review were healthy individuals with no stated clinical or sub-clinical eating disorders or other medical conditions. However, Rahimi-Ardabili (2017) have found similar results on the effectiveness of self-compassion interventions on eating behaviors and body image in these populations.

The heterogenous nature of the duration and type of intervention make it difficult to compare studies directly or draw conclusions on what may be most effective. However, this review does provide some direct comparisons among the three studies utilizing the same online

audio meditations and how duration of the intervention impacted attrition and efficacy.

Moreover, we provide a strong breakdown of the variety of approaches (i.e., writing, meditation, group-based) and the characteristics of each approach in impacting different aspects of body image.

Similarly, the variety of outcome measures used in the included studies precludes us from making firm conclusions on specific components of negative and positive body image that were impacted as a result of the intervention. Groupings of different measurements into categories (i.e., Body Dissatisfaction subscale from the Eating Disorders Inventory and Body Shape Questionnaire into body dissatisfaction) in the current review allowed for a more digestible interpretation of the impact of the interventions on body image variables. However, measuring these body image variables differently make it difficult to decipher the exact pathway in which self-compassion is working.

Future Directions

Only a handful of studies investigating the long-term effects of their intervention, ranging from a 2-week follow-up to a 3-month follow-up. More research could utilize follow-up measures to determine the long-term impact of the interventions on body image and if these effects last longer than three months. With this, it would be beneficial to determine if these changes are dependent on dose, type, or length of intervention. Future research could utilize a more homogenous approach in their designs with consistent outcome measures. This may help draw more direct conclusions on the components of an intervention and its underlying mechanisms of how self-compassion has an impact.

Research should also consider the use of more group-based interventions. Given that common humanity is a core component of self-compassion, opportunities to connect with others

in a shared body image experience can provide a unique contribution or additional benefits to the intervention. This could be especially relevant in countering the societal and cultural beauty expectations placed on women.

Future research may also benefit from interventions that specifically use self-compassion strategies directed towards the body. Interventions using components of general self-compassion from the Mindful Self-compassion program (Germer & Neff, 2019) demonstrated positive improvements on body image even without a specific body self-compassion component. Only a handful of interventions included in this review modified the self-compassion interventions to target body image and saw improvements in state body image measures (Moffitt et al., 2018; Stern & Engeln, 2018a,b,c), with the exception of Seekis et al. (2020) and Toole et al. (2021) who utilized trait body image measures. It would be interesting to investigate how self-compassion meditations and writing exercises directed towards the body would impact the effects of trait body image variables especially long-term. This may aid in the development of future interventions or highlight ways to improve upon existing interventions.

Conclusion

The present findings indicate self-compassion interventions to have a significant impact in both reducing body image concerns and improving positive body image in healthy, adult women when compared to a control. Given that a variety of designs (i.e., writing, audio, group-based) and delivery methods (i.e., online, self-directed, in-person) showed promise for impacting body image, researchers can take advantage of the several formats or approaches that can be utilized when designing an intervention. Our findings highlight the need for the use of more homogenous outcome measures which may help provide more insight into the mechanisms of change self-compassion has on body image. Self-compassion should continue to be examined as

an approach for promoting positive body image in healthy individuals as a potential preventative strategy to developing risk factors for body image concerns and disordered eating.

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The Impact of a Body Self-Compassion Program on Women's Body Image and Intrinsic Motivation for Exercise

Abstract

Objectives: Evidence suggests body image concerns to play a critical role in physical activity and exercise engagement. Self-compassion interventions have demonstrated effectiveness in both reducing negative body image and fostering positive body image. The present study investigated the effects of a three-week body self-compassion program in women who regularly exercise on self-objectification, body appreciation, and intrinsic motivation to exercise. **Methods:** 53 women, ages 18-25, were randomly assigned to either the intervention (n=34) or control group (n=19). Each week, participants were instructed to listen to a 3-minute audio meditation, followed by a 3-minute journaling reflection prior to their normal exercise routine. Participants reflected on their experiences during their exercise routine by responding to six open-ended questions. **Results:** Findings demonstrated no significant effects on body image or intrinsic motivation for exercise. Despite these findings, a descriptive summary of open-ended responses provided insight into how the participants incorporated body self-compassion both towards their bodies and within their exercise routine. **Conclusion:** Participants demonstrated engagement and compliance demonstrating acceptability for the intervention approach. However, more research is needed to explore the inconsistencies between the quantitative results and the open-ended responses that reflected tenets of self-compassion.

Introduction

Recent research has identified a need for strategies and resources that can ameliorate, buffer, or even prevent risk factors associated with body image concerns. Objectification theory (Fredrickson & Roberts, 1997) is a common framework for understanding the causes, manifestations, and consequences of body image concerns that are especially prevalent among young women. Self-objectification describes the sociocultural practices of treating oneself as an object and placing significant value on the body's aesthetic as opposed to its agency and functionality (Fredrickson & Roberts, 1997). Consequently, women begin to equate their appearance with their self-worth leading to body shame, appearance anxiety and reduced awareness of internal states (Fredrickson & Roberts, 1997). Research supports the negative consequences of self-objectification as it is associated with higher risk of disordered eating (Calogero, 2009, 2012; Greenleaf, 2005), depression (Moradi, 2008), lower levels of physical activity (Greenleaf, 2005) and lower health and enjoyment reasons for exercise (Prichard & Tiggemann, 2008). Conversely, positive body image, which is described as an overarching love and respect for one's body, emphasizes gratitude and acceptance of one's body and can be fostered through body appreciation. Developing ways to improve body image through body appreciation and self-compassion may act as a buffer against body image concerns and may be key in helping young women adopt a healthier body image (Tylka & Wood-Barcalow, 2015b).

Self-compassion is a useful emotional regulation tool that has been linked to psychological well-being (Zessin et al., 2015) and fosters an understanding and non-judgmental self-attitude (Neff & Vonk, 2009). According to Neff (2003), self-compassion is composed of three interrelated components: (1) self-kindness (treating oneself with kindness and unconditional self-acceptance), (2) mindfulness (remaining in the present moment without

suppressing or over catastrophizing our thoughts and emotions), and (3) common humanity (recognizing that our experience is part of the larger human experience). Self-compassion teaches us to provide comfort and understanding towards ourselves, especially in the presence of feelings of failure and inadequacy (Neff, 2003). Taking a self-compassionate mindset towards our bodies can provide both comfort and care in times of struggle, making it a potential protective mechanism for body image concerns (Braun et al., 2016).

The tenets of self-compassion may be particularly applicable to body image concerns as they provide a way to recognize imperfections as universal, while promoting self-kindness and body acceptance. Indeed, self-compassion has been linked to lower levels of self-objectification (Braun et al., 2016; Liss & Erchull, 2015) and higher levels of body appreciation in women (Albertson et al., 2015; Homan & Tylka, 2015; Wasylikiw et al., 2012). Several studies have shown self-compassion to act as a moderating effect or buffer against some of the negative consequences of self-objectification, such as appearance contingent self-worth (Homan & Tylka, 2015), body shame (Liss & Erchull, 2015), and depression (Wollast et al., 2020).

Experimental designs have been utilized to test interventions based in self-compassion on body image variables (Albertson et al., 2015a; de Wet et al., 2020a; Seekis et al., 2017; Stern & Engeln, 2018; Toole & Craighead, 2016). These interventions, based on Germer and Neff's Mindful Self-Compassion program (Germer & Neff, 2019), have included both compassionate meditation tasks (Albertson et al., 2015a; de Wet et al., 2020a; Toole & Craighead, 2016), as well as compassionate writing tasks (Seekis et al., 2017; Stern & Engeln, 2018) and have demonstrated success in either ameliorating negative body image concerns or improving positive body image. For example, for three weeks, participants who listened to daily, 20-minute self-compassion meditations demonstrated increased body appreciation and decreased body shame

and contingent self-worth (Albertson et al., 2015). A study with similar methodology, yet a shorter intervention time (one week) yielded similar results in its impact on body appreciation and contingent self-worth in undergraduate women (Toole & Craighead, 2016).

While these interventions have utilized the general teachings of self-compassion and measured its impact on body image variables, few studies adapted the elements of self-compassion specifically to the body. Stern and Engeln (2018) attempted to address this gap by investigating the effects of a compassionate letter-writing program on body satisfaction in college women. The four letter-writing conditions included general self-compassion, body-compassion, neutral self-prompt and neutral body-prompt. The *self-compassion* prompt asked participants to write themselves a letter from the perspective of a friend who conveys kindness, acceptance, and caring for their health and happiness. The *body-compassion* prompt asked participants to write a letter from a similar perspective but to focus on words or descriptions that friend may say about their body. The authors found that both the general self-compassion and body compassion writing groups lead to significantly greater body satisfaction when compared to the neutral writing groups (Stern & Engeln, 2018). Self-compassionate training exercises, whether general or body-focused, seem to positively impact body image concerns. Given this is one example of teaching body-focused compassion and its impact on body image, more research is necessary to determine the underlying mechanisms of how and why self-compassion directed towards the body is effective.

Self-compassion directed towards the body may also be an acceptable tool in the presence of body image concerns and its impact on physical activity. In a review by Sabiston et al. (2019), engagement in physical activity and sport for women was related to more positive body image; however, when examining the inverse relationship, negative body image, such as

body dissatisfaction and weight and shape concerns, were found to be a barrier to physical activity and linked to lower levels of physical activity engagement. The implications of this paradox are important. Given the physical and psychological benefits of exercise and its potential to improve body image (Reel et al., 2007), it is something to be encouraged. However, it can also be a context for self-objectification and negative self-evaluation (Sabiston et al., 2014) and can perpetuate the desire to alter one's appearance in search for unrealistic body standards.

One important factor to consider in the relationship between body image and physical activity is the role of motivation. Intrinsic motivation, the most autonomous form of motivation, is the strongest predictor of sustained exercise behavior (Teixeira et al., 2012; Thøgersen-Ntoumani & Ntoumanis, 2006) and posits that those who are intrinsically motivated are more inclined to learn, explore, or engage in a certain behavior as a source of enjoyment, excitement, or inherent satisfaction as opposed to controlled or external factors (Ryan & Deci, 2000). Indeed, similar internal experiences relevant to body image, i.e., joy, agency, body connection and appreciation of one's body and function, have been positively correlated with exercise motives (Tylka & Homan, 2015), while body shame and appearance anxiety have been negatively linked to self-determined or intrinsic reasons for exercise (Sabiston et al., 2010; Thøgersen-Ntoumani & Ntoumanis, 2006). The mindful awareness and unconditional understanding inherent to self-compassion may provide an opportunity for women to counter negative self-evaluations that are often present within the exercise domain. While there is some research to support the relationship between self-compassion and intrinsic motivation to exercise (Cox et al., 2019; Magnus et al., 2010) more evidence on how specifically addressing these body image concerns can impact intrinsic motivation and physical activity behavior is necessary.

Mindful Self-Compassion Program

Given the effectiveness of self-compassion as a useful tool in the presence of body image concerns, components of the Mindful Self-Compassion (MSC) program developed by Christopher Germer and Kristen Neff (MSC; Germer & Neff, 2019) were used to inform the activities provided in the intervention design of the current study. The MSC teaches self-compassion skills to the general public aiming to cultivate mindfulness and self-compassion as strategies and techniques for addressing difficult thoughts, feelings, and emotions with openness and awareness, while providing ourselves kindness, comfort, and acceptance in these moments. The most extensive MSC training is offered over the course of 8 weeks and consists of 2.5 hours of training each week, ending with a half-day silent meditation retreat. The program describes the empirical evidence supporting self-compassion including its connection to well-being, physiological underpinnings, and links to more effective coping and resilience. Throughout the training, attendees partake in a variety of activities including self-compassionate journaling, formal meditation, and group discussion. Neff and Germer (2013) have examined the effects of the MSC program on self-compassion by conducting a randomized control trial of the program. Results indicated significant increases in self-compassion levels, mindfulness, and life-satisfaction and decreases in depression, anxiety, and emotional avoidance when compared to a waitlist control group.

The Present Study

The current study aims to examine the effects of a body focused self-compassion intervention and its impact on self-objectification, body appreciation, and intrinsic motivation for exercise in young women. This was investigated by instructing participants to engage in a short bout of both compassionate meditation and compassionate writing practices as a way to foster self-compassion towards the body prior to their normal exercise routine. To our knowledge, this

is the first study to examine the effects of engaging in a body-focused self-compassion practice and its impact on body image variables and intrinsic motivation for exercise. The body self-compassion intervention was first piloted using a small sample of adult women exercisers to test the acceptability and feasibility of the intervention (see appendix A). Given the evidence on general self-compassion interventions and improvements in body image concerns, it is hypothesized that women who engage in a body-focused self-compassionate meditation and writing exercise would demonstrate reduced self-objectification, higher body appreciation and higher intrinsic motivation for exercise over time as compared to a control.

Methods

Participants

Following approval from the Institutional Review Board, participants were recruited through posted flyers on campus and announcements on course pages (i.e., Canvas, Blackboard) across several U.S. college campuses. Recruitment material was also sent to college club advisors and posted on social media platforms including Facebook and Instagram. More than half the participants (60.3%) were from the University of Wisconsin-Milwaukee.

Participants included 53 individuals, ages 18-25 who identified as women and reported an intentional exercise routine at least three days per week for at least 20 minutes at a time. Women were excluded if they had a current or previous history of a clinically diagnosed eating disorder, body dysmorphic disorder, or if they are or have been pregnant. Previous research has demonstrated effectiveness of self-compassion intervention programs in similar age range, especially since body image concerns have been shown to be more prevalent among young adult women (Seekis et al, 2017; Toole and Craighead, 2016; Voelker et al., 2019). Excluding those with a history of disordered eating or pregnancy was to help control for any extraneous influences. Participants with a history of a clinically diagnosed eating disorder or body

dysmorphic disorder likely have received treatment or strategies to help improve body image concerns which may potentially impact how they engage with the intervention program. Moreover, women who have been pregnant, often experience an increase in body image concerns, especially during the postpartum period (Baskin et al., 2021) and the significant body changes that occur during and after pregnancy have been shown to impact both body image and self-compassion (Papini et al., 2022).

Group characteristics of the sample collected at baseline including race, age, exercise frequency, how they exercise (alone, group, class), and exercise duration are provided in Table 3. Using an open-ended question, participants were also asked to describe the kind of exercise they normally engage in. Participants provided a variety of answers including yoga, running, strength training, cycling, swimming, basketball, exercise classes, and dance.

Table 3: Baseline demographics of participant sample by group

	Intervention (n=34)	Control (n=19)	Total (N=53)
	Mean (SD)	Mean (SD)	Mean (SD)
Age (years)	21.06 (1.74)	20.63 (1.38)	20.91 (1.62)
Exercise Frequency (days per week)	3.88 (1.09)	3.63 (1.07)	3.79 (1.08)
Exercise Duration (minutes)	42.94 (13.38)	37.89 (15.48)	41.13 (14.23)
	n (%)	n (%)	N (%)
Race/Ethnicity			
African American	4 (11.8)	7 (36.8)	11 (20.8)
Asian	3 (8.8)	0 (0.0)	3 (5.7)
Hispanic	2 (5.9)	2 (10.5)	4 (7.5)
White	22 (64.7)	9 (47.4)	31 (58.5)

Native American	2 (5.9)	0 (0.0)	2 (3.8)
Multiracial	1 (2.9)	1 (5.3)	2 (3.8)
<hr/>			
College Student			
<hr/>			
Yes	31 (93.9)	18 (94.7)	49 (94.2)
No	2 (6.1)	1 (5.3)	3 (5.8)
<hr/>			
Exercise			
<hr/>			
Alone	18 (52.9)	10 (52.6)	28 (52.8)
With a partner	3 (8.8)	1 (5.3)	4 (7.5)
Group-based exercise class	4 (11.8)	7 (36.8)	7 (13.2)
A combination	9 (26.5)	5 (26.3)	14 (26.4)

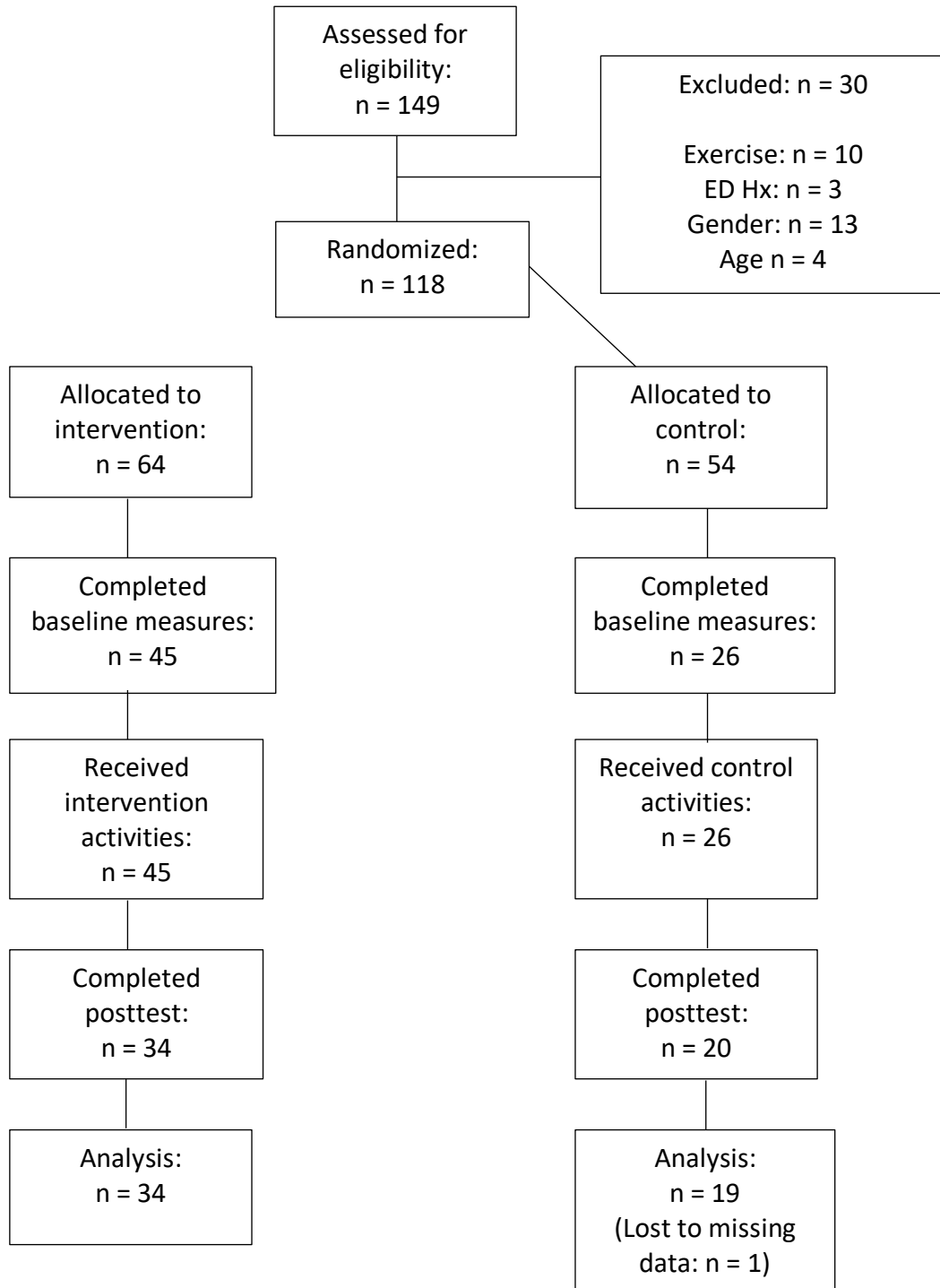
Initially, 149 individuals expressed interest in the study and were assessed for eligibility.

A flow diagram displaying recruitment numbers, group allocation and attrition throughout the data collection process is provided in Figure 2.

Procedures

The study implemented a 2 (intervention, control) X 2 (baseline, posttest) randomized design with a between-groups comparison. All participants were allocated to either the body self-compassion intervention group (n=34) or the control group (n=19) and engaged in a set of activities (either intervention or control) over the course of three weeks. They completed measures of self-objectification, body appreciation, self-compassion, and intrinsic motivation for exercise at baseline and at the end of week 3.

Figure 2. Flow Diagram of Enrollment and Allocation Process



Individuals who were interested could scan a QR code or click on a direct link to Qualtrics to screen for eligibility. The form asked individuals to provide their name, email,

preferred gender, age, typical exercise frequency during the week, typical time spent engaging in one bout of exercise, and any history of a clinically diagnosed eating disorder, body dysmorphic disorder, or pregnancy. Those who were eligible were placed into cohorts and then systematically randomized into the intervention group or control group within their cohort. Throughout the recruiting process, which ranged 8/28/2022 – 2/20/2023, a total of seven cohorts completed the study with sample sizes ranging from 4-12 participants in each cohort.

Participants were emailed a Qualtrics link to the baseline survey which included electronic informed consent, demographic measures, and baseline measures. This email also provided a general layout of the activities that they would be asked to engage in over the course of the next 3 weeks. On the Monday following completion of the baseline survey, participants received an email with the “Week 1” activities, which provided a step-by-step list of activities to be completed ONE time per week prior to a normal exercise routine. If possible, participants were encouraged to complete the activities prior to their first workout of the week. The contents of the activities for each group are described below and an example of ‘Week 1’ is provided in Figure 2. Emails including activities for “Week 2” and “Week 3” were sent on the following two consecutive Mondays and reminder emails were sent on Tuesdays and Wednesdays of each week. After week three, participants were emailed a link to complete the posttest survey. All participants received a \$10 Amazon gift card upon completion of the posttest survey.

Intervention Group

Each week, the participants were emailed with instructions to complete the following activities one time prior to their normal exercise routine: a short pre-exercise questionnaire, a 3-minute compassionate audio clip, and a 3-minute compassionate journaling exercise (all intervention materials are provided in appendix b). At the completion of their exercise routine,

participants then completed a post-exercise questionnaire. The audio and journaling prompts changed each week, but the pre- and post-exercise questionnaires did not change.

Each of the three audio clips and journaling exercises were designed to reflect one of the three core components of self-compassion: self-kindness (week 1), common humanity (week 2), and mindfulness (week 3). The audio clips were meant to act as a teaching tool providing the listener with the definition of self-compassion, an introduction to its three elements, and an example of a scenario in which self-compassion can be directed towards the body. The audio clips were written and narrated by the researcher and were informed from both the Mindful Self-Compassion program (Neff, 2019) and previous research (Berry et al., 2010; Toole & Craighead, 2016). Each clip began with a few calming deep breaths, asking the listener to focus on the present moment. The narrator defined the concept of self-compassion as well as that respective week's core component (self-kindness, common humanity, mindfulness). The listener is then asked to reflect on the core component of self-compassion, first thinking about ways they can apply it to their lives and then how they can apply it towards their own physical bodies. For example, during week one's self-kindness audio, the listeners are informed that treating our bodies with kindness can be done in a varied ways such as respecting our bodies, listening to its needs, celebrating the body, and reflecting on what it provides for us. They are then asked to reflect upon what it means to show up for, take care of, and listen to their own bodies. Finally, the listener is encouraged to offer themselves and their body a kind word or phrase and given a few moments to repeat those words or phrases to themselves.

The journaling prompts were meant to provide an opportunity to reflect on what they heard in the audio and to practice and apply the information in the scenario towards themselves. An example of the week one, self-kindness journaling prompt is provided in Figure 2. Self-

compassionate writing has been demonstrated to be effective in increase self-compassion as well as reducing body image concerns (Moffit et al., 2018; Seekis et al., 2017). Considering the sensitive nature of writing about one's own body image and to ensure participants felt comfortable to honestly reflect about their experience, the journal entries were not collected. In order to assess for compliance, participants were asked to disclose the number of times they journaled during the intervention at posttest. Both the audio and journaling were designed to only last three minutes to increase feasibility for the participant and help ensure compliance. Research has shown that even brief bouts of meditation and self-compassion writing can impact body image variables (Paulson & Rodriguez, in review).

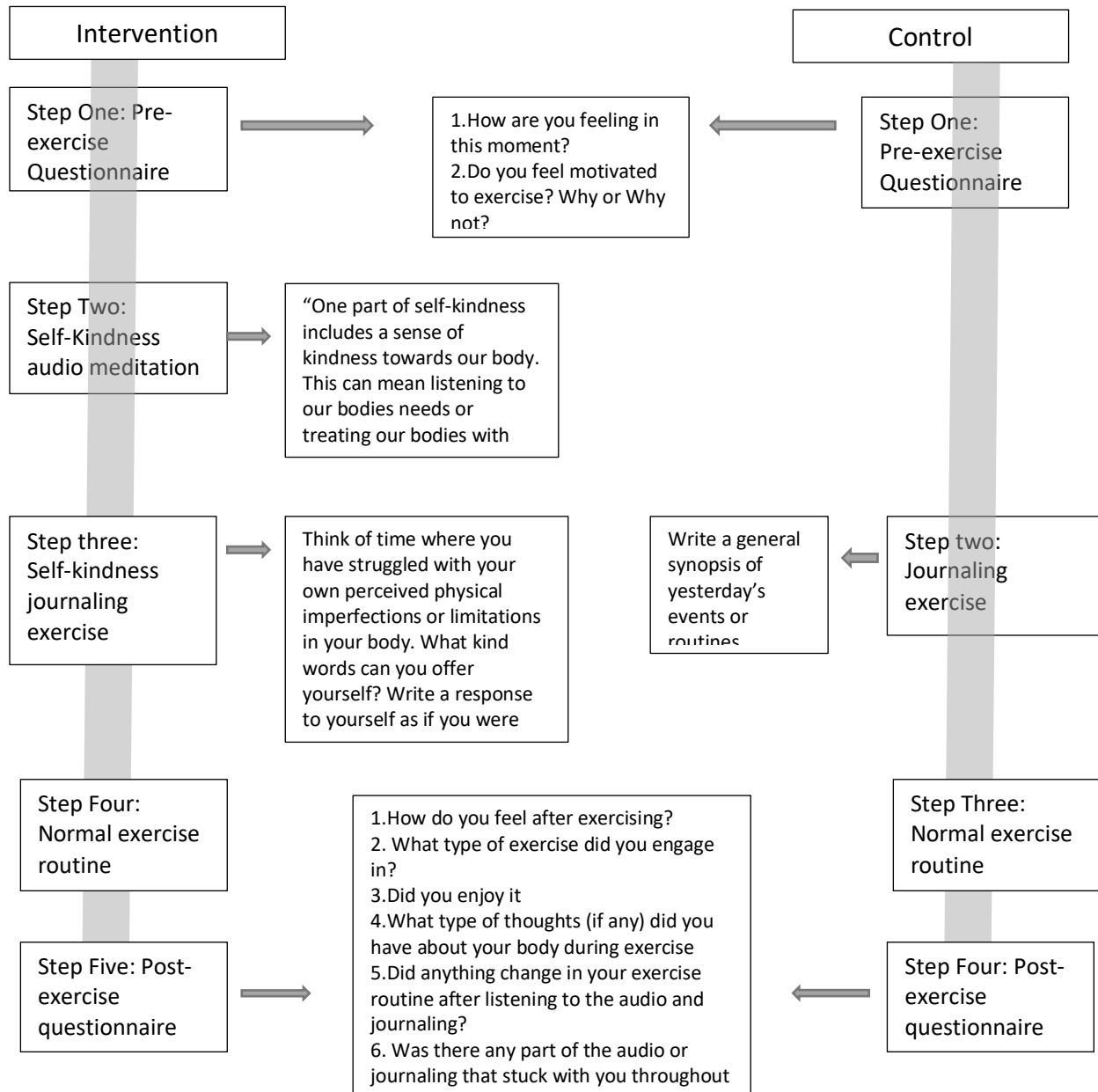
Lastly, the pre- and post-exercise questionnaires are open-ended responses designed to encourage and enhance reflection in the participants about their exercise routine. They were also used to assess if any part of the intervention activities resonated with the participants or if participants responded to the audio clips or journaling by changing anything about their exercise routine or providing information about self-compassion or connecting with their bodies during their routine. The responses from the open-ended questionnaires were used as supplemental information to support the interpretation of the results and are presented as a descriptive summary. Figure 3 provides an example of "Week 1" activities and includes the open-ended questions for the pre- and post-exercise questionnaires.

Control

Each week, the participants were emailed with instructions to complete the following activities one time prior to their normal exercise routine: a short pre-exercise questionnaire and a 3-minute journaling activity. At the completion of their exercise, they filled out a post-exercise

questionnaire. The neutral journaling prompt asked participants to provide a description of yesterday's events and routines in a factual way for 3 minutes.

Figure 3. Intervention and Control Activities



Measures

Demographics

Prior to completing baseline measures, participants were asked to complete demographic questions including age, gender, race, height, weight, and exercise frequency (days per week they exercised in a normal week), exercise duration (minutes they normally exercised at one time period), whether they were enrolled in a university or college, and how they generally exercise (alone, partner/group, organized exercise class). There was also one open-ended question asking about the type of exercise they normally engaged in, i.e., running, yoga, Orange Theory.

Self-Compassion

Self-compassion was measured using the Self-Compassion Scale (SCS; Neff, 2003). The SCS consists of 26 items and 6 subscales. Three of the subscales measure the components of self-compassion: *Self-Kindness* (5 items; i.e., “I try to be loving towards myself when I’m feeling emotional pain.”); *Common Humanity* (4 items; i.e., “When things are going badly for me, I see the difficulties as part of life that everyone goes through.”); and *Mindfulness* (4 items; i.e., “When something upsets me I try to keep my emotions in balance.”). The other three subscales represent opposition to the components of self-compassion: *Self-Judgement* (5 items; i.e., “I’m disapproving and judgmental about my own flaws and inadequacies.”); *Isolation* (4 items; i.e., “When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.”); and *Over-identification* (4 items; i.e., “When I am feeling down, I tend to obsess and fixate on everything that’s wrong.”). Scores for the latter three subscales are reversed scored. Scores are calculated by computing the mean of each subscale item response and then computing a grand mean of all six subscale means (Neff, 2003). To demonstrate construct validity, scores on the SCS were associated in the expected direction of similar constructs such

as The Social Connectedness Scale and the Self-Criticism subscale of the Depressive Experiences Questionnaire (Neff, 2003). Internal consistency for the current study sample at baseline was $\alpha = .90$ (Neff, 2003).

Body Surveillance

Body Surveillance (a manifestation of self-objectification) was measured using the Body Surveillance subscale of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996). The Body Surveillance scale consists of 8 items where participants rate their agreement on a 7-point scale from strongly disagree (1) to strongly agree (7) for 8 different items (i.e., “During the day, I think about how I look many times.”). After reverse scoring the negative items, response items are summed and reflected as a mean score. Higher scores indicate higher levels of body surveillance and represents evaluation of the body in terms of how it looks rather than how it feels (McKinley & Hyde, 1996). Evidence of construct validity is reflected in the negative correlation between body surveillance scores and scores on The Body Esteem scale (McKinley & Hyde, 1996). Internal consistency for the entire sample in the current sample at baseline was $\alpha = .82$.

Body appreciation

Acceptance and appreciation for one’s body was measured using the Body Appreciation Scale (BAS-2) (Tylka & Wood-Barcalow, 2015a). 10 items (i.e., “I take a positive attitude towards my body.”) are rated on a 5-point scale ranging from never (1) to always (5). Participants scores are averaged with a higher score indicating higher body appreciation. Evidence of construct validity is demonstrated by the scores on the BAS-2 and their strong and inverse relationship with body surveillance and body dissatisfaction (Tylka & Wood-Barcalow, 2015a). Cronbach’s alpha for the sample in this study at baseline was .93.

Motivation for Physical Activity

Intrinsic motivation for physical activity was measured using subscale *Intrinsic regulation* (4 items, i.e., “I get pleasure and satisfaction from participating in exercise.”) of the Behavioral Regulation for Exercise Questionnaire -2 (BREQ) (Markland et al., 2004). The scale is rated on a 5-point scale from 0 (not true for me) to 4 (very true for me). A mean score is calculated with higher positive scores indicating greater autonomy and intrinsic motivation. Studies using this subscale have provided evidence of construct validity in adults (Markland & Tobin, 2004). Cronbach’s alpha for intrinsic motivation for the sample at baseline was $\alpha = .87$.

Pre-exercise Questionnaire

The pre-exercise questionnaire included two questions including: 1) How are you feeling in this moment and 2) Do you feel motivated to exercise? Why or why not? Participants were instructed to complete these questions prior to engaging in the activities.

Post-exercise Questionnaire

The post-exercise questionnaire included six questions: 1) How do you feel after exercising; 2) What type of exercise did you engage in; 3) Did you enjoy it; 4) What type of thoughts (if any) did you have about your body during exercise; 5) Did anything change in your exercise routine after listening to the audio and journaling; 6) Was there any part of the audio or journaling that stuck with you throughout your routine?

Posttest Measures

In addition to the above measures, participants reported their exercise frequency and duration throughout the three-week study. Participants also reported their compliance to the activities with the following two questions: 1) How many audio clips did you listen to in the past

three weeks; 2) How many journaling prompts did you respond to in the past three weeks? Both questions will provide an option to choose 0 – 3.

Results

Preliminary analysis

Results from the outcome measures were visually inspected for outliers and statistical assumptions. Plots yielded reasonable distribution for all dependent variables in each group and assumptions of normality were met. Each variable was checked for outliers. Observed box plots identified three scores more than three standard deviations away from the mean. However, removing the outliers did not influence the outcomes of analysis and these values were still included. ANOVA assumptions of homogeneity of variance indicated by Box's test ($ps > .05$) and sphericity as indicated by Mauchley's Test ($ps > .05$) were also met.

The pattern for missing data was assessed for each variable and missing values were replaced with the series mean for those scales where percent missing was less than 5% (Parent, 2013). There were no variables where percent missing was greater than 5% at both pre- and posttest and less than 3% of participant data had missing values. Only one participant was eliminated due to non-completion of all four posttest measures.

Two questions were used to assess compliance and identify the number of audio and journaling activities that participants completed throughout the three weeks (0-3). For the intervention group, 100% of the participants listened to 2 or more audio clips where 97.1% reported listening to all three audio clips and 2.9% reported listening to 2 out of 3 audio clips. Compliance was slightly lower for the journaling where 79.4% reported journaling all three times, 14.7% reported journaling 2 out 3 times, and 5.9% reported journaling only once. Journaling for the control group were as follows: 52.6% reported journaling 3 times, 21.1% reported journaling twice, 5.3% reported journaling once, and 15.8% reported not completing

any of the journaling activities. Similar to Toole and Craighead (2016), if participants indicated they only completed one intervention session, but completed both the pre- and posttest surveys, their data was analyzed.

The open-ended questionnaires were also assessed for compliance. All participants completed at least one set (both the pre- and post-exercise questionnaires that correspond to each week's activity) of the open-ended pre- and post-exercise questionnaires. Within the intervention group, 79.4% completed all three sets of questionnaires, 11.8% completed two sets of questionnaires, and 8.8% completed one set. Within the control group, 61.1% completed all three sets of questionnaires, 27.8% completed two sets of questionnaires, and 9.6% completed one set. There were no significant differences in the completion of questionnaires between the two groups $\chi^2(2, N=53) = 2.35, p = .309$.

The responses to the open-ended questions were examined to gain further insight into the participants motivation for exercise and reactions to the intervention activities. Each set of responses were labeled by participant number and grouped into control or intervention. The pre-exercise questionnaires for both groups were first examined for the types of feelings and motivations participants described prior to exercising. The responses to questions four, five, and six of the post-exercise questionnaires (Did you enjoy it?, What type of thoughts (if any) did you have about your body during exercise?, Did anything change in your exercise routine after listening to the audio and journaling?, Was there any part of the audio or journaling that stuck with you throughout your routine?) were then examined within the intervention group to gain a better understanding of how this group interpreted the intervention. While reading these responses, I looked for thoughts and phrases that represented the three components of self-compassion or ways in which the participants connected with their bodies during their exercise

routine. Lastly, within the intervention group, responses across the pre- and post-exercise questionnaires were also examined in each participant for changes in exercise experience as a result of the intervention activities. For example, if a participant stated they were feeling anxious or tired prior to exercising, but then stated they changed a piece of their workout to adapt to these feelings due to what they heard in the audio. A descriptive summary of their responses is provided below.

Main Analysis

An Independent Sample T-test was conducted to determine whether there were differences between conditions at baseline and revealed no significant mean differences between groups across all study variables ($ps < .05$). Table 4 provides baseline and posttest mean scores for each group. Bivariate correlations for the entire sample, as well as the intervention and control group, were calculated for exercise frequency, exercise duration, and all dependent variables at pretest, which is provided in Table 5. Within the entire sample, self-compassion was significantly correlated with both body image variables and intrinsic motivation and these variables were correlated with each other.

Table 4. Means and standard deviations of each group at baseline and posttest and effects for outcome measures

Outcome	Intervention (n=34)		Control (n=19)		Effect	F	p	ηp^2
	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>				
Self- Compassi on	3.03 (.54)	3.12 (.51)	3.15 (.71)	2.93 (.60)	Time	.301	.586	.006
					Group	.132	.718	.003
					Time x Group	1.53	.222	.029

Body Surveillance	4.39 (1.0)	4.18 (.80)	4.16 (1.2)	4.13 (1.1)	Time	.367	.537	.008
					Group	.443	.509	.009
					Time x Group	.241	.625	.005
Body Appreciation	3.79 (.65)	3.68 (.76)	3.79 (.96)	3.76 (.73)	Time	.006	.938	.000
					Group	.684	.412	.013
					Time x Group	.608	.439	.012
Intrinsic Motivation	3.07 (.86)	3.23 (.69)	3.37 (.75)	3.14 (.76)	Time	.041	.840	.001
					Group	.432	.514	.009
					Time x Group	1.52	.224	.029

M = Mean; SD = standard deviation

Table 5. Bivariate Correlations between Dependent Variables

Entire Sample	Ex Freq	Duration	SCS	BAS	OBCS	Intrinsic
Duration	.466**					
SCS	-.010	-0.36				
BAS	.142	.050	.743**			
OBCS	-.109	.030	-.661**	-.622**		
Intrinsic	.246	.309*	.433**	.588**	-.363**	
Intervention	Ex Freq	Duration	SCS	BAS	OBCS	Intrinsic
Duration	.335					

SCS	-.065	-0.36				
BAS	-.177	-.051	.696**			
OBCS	.118	.130	-.326	-.484**		
Intrinsic	.231	.309*	.440*	.614**	-.283**	
Control	Ex Freq	Duration	SCS	BAS	OBCS	Intrinsic
Duration	.658**					
SCS	.480*	.196				
BAS	.257	.412	.587**			
OBCS	-.153	-.388	-.368	-.660**		
Intrinsic	.156	.419	.274	.472*	-.363	

Ex Freq = Exercise frequency (times/week); Duration = Exercise duration in minutes; SCS = Self-compassion scale; BAS = Body appreciation scale, OBCS = Objectified Body consciousness scale; IM = Intrinsic Motivation

*Correlation is significant at 0.05 level. **Correlation is significant at the 0.01 level.

Data was analyzed using a series of 2 (group) X 2 (time) repeated measures ANOVA for each dependent variable (self-compassion, body appreciation, body surveillance, and intrinsic motivation for exercise). Analysis revealed no significant group x time differences for any of the study variables (see Table 4). Although nonsignificant, differences in group means were in the expected directions for three of the study measures. Participants in the intervention group experienced an increase in self-compassion and intrinsic motivation as compared to the control group and a greater decrease in objectified body consciousness as compared to the control group. Similarly, visual inspection of profile plots demonstrated group differences (the trajectories for intervention and control crossed) in self-compassion and intrinsic motivation.

Open-ended Questionnaires

The results from the participants' responses on how they felt, in general, before and after exercise are provided for both groups. However, the results from the participants' responses to the last three questions of the post-exercise questionnaire are only reported for the intervention group since they directly address how the participants responded to the intervention activities (audio and journaling).

Regardless of group, the majority of women reported positive feelings after engaging in exercise, even if they stated they were not motivated or feeling tired in the pre-exercise questionnaire. Common responses to "How do you feel after exercising?" were "energized", "rejuvenated", "ready to start my day", "tired", "accomplished", and "happy". In general, women stated they enjoyed their exercise session. For those who reported that they did not enjoy that day's exercise, it was due to outside factors such as a crowded facility or poor weather conditions.

Participants in the intervention group reported a variety of responses on how listening to the audio clips on self-compassion and journaling impacted their exercise experience, self-talk, and feelings about their body. For example, when asked about the thoughts they had towards their body during exercise, some stated that they did not really think about their body or were distracted by tasks they had to do later that day and just wanted to get through their workout. On the other hand, some women conveyed a sense of appreciation for what their bodies could do, stating they felt strong or proud of the weights they were lifting. One woman expressed this in her three different responses, stating "I am thankful for what my body does for myself" and "I am thankful for the ability to exercise and have gratitude for what my body does". Some discussed a desire to stay more in tune with their bodies and reflected on how they listened to their bodies during their exercise routine. For example, one woman stated, "I listened more to my

body and allowed myself to take more or less rest time. I decided to see rest and lighter weights as a good thing for my body rather than a weakness.” Others commented more on their bodies appearance and reported a sense of appreciation for what their bodies looked like as a result of exercising, often commenting on the ability to see their muscles. For example, one woman wrote “I have positive thoughts regarding my muscle growth. I can tell through progress that my body has become healthier and stronger.” A few women expressed negative thoughts such as feelings of self-consciousness or insecurities in their workout clothes or feelings of guilt if their body was tired and they could not complete the workout they intended.

Responses to the question “Was there any part of the audio or journaling that stuck with you throughout your routine?” for the intervention group provided a variety of answers that reflected the three different components of self-compassion. Participants expressed self-kindness towards themselves and their bodies by stating that they offered themselves kind words during exercise and attempted to be less critical. For example, one participant wrote “One thing that stuck with me was the idea of just being happy with how your body is and appreciating it for how it is now. It is easy to pick out the things we do not like about ourselves, but realizing that there are many good things we should be appreciating instead is more important to focus on.” Participants also indicated a sense of common humanity as they exercised. One participant reported “I thought about how everyone has a piece of them that they would change, but it serves a purpose for their body. Today I was reminded that while I may not like how parts of my legs look, they allow me to run on the treadmill and increase my speed.” Lastly, a few women expressed the importance of staying present during their exercise routine and reflected “One thing that stuck with my while I was exercising was not to suppress how I was feeling through

my routine. For example, instead of ignoring the negative thoughts about myself- I tried to be honest and acknowledge what I was feeling and why (about my body)”

Answers to the question on if they changed anything about their exercise routine was also only reported in the intervention group. While a majority of participants stated that they did not change the exercise routine they had planned for the day as a result of engaging in the intervention activities, some exhibited mindset changes or described changing a few parts of their routine based on how their body was feeling. One woman reported on how listening to their bodies felt like a self-compassionate approach to exercise. She stated, “I ended my workout a little early by not finishing a set because I was concerned about my knee. I would have probably stopped anyway, but I think I leaned into modifying my workout as self-compassion instead of as pushing myself.” For some women, it was more about a mindset change, even after admitting they were having self-conscious feelings about their body in the moment. For example, one woman reported constantly worrying about the way she looked while she was lifting, but then stated, “I remembered partway through the lift that there are many parts of our body that we don't appreciate or that we talk negatively about all the time. Instead of focusing on the negatives, I stayed positive and thought about one part of my body that I liked during the lift, telling myself that I am strong and beautiful. I think the intervention activity helped me to stay focused, in the present, and loving myself more, even though I was a tad uncomfortable with how I looked/felt today. Instead of beating myself up about it or worrying, I gave myself some love and it helped me be more happy with my body.”

Discussion

Identifying ways to foster body appreciation and body self-compassion can be key in both adopting a healthier body image and cultivating consistent engagement in health behaviors

such as exercise. While previous research on self-compassion interventions has demonstrated effectiveness in reducing body image concerns (Paulson & Rodriguez, in review), to our knowledge, this is the first study to examine how this type of intervention may also play a role in exercise motivation. The current study hypothesized that a three-week body self-compassion intervention consisting of brief meditation and journaling exercises would increase self-compassion, body appreciation, and intrinsic motivation to exercise and decrease self-objectification in young adult women when compared to a control. Our quantitative results demonstrated a small increase in both self-compassion and intrinsic motivation; however, these results were insignificant. Moreover, there was no observed change in the measured body image variables: body appreciation and self-objectification. While our hypothesis for the quantitative data was not supported, review of the responses to the open-ended questions provided powerful insight into how women responded to learning about self-compassion and its relevance to their body and exercise experiences.

Despite seeing an insignificant group x time interaction, the scores for self-compassion varied over time in the expected direction for the intervention group. These findings are somewhat consistent with previous intervention studies that have demonstrated mixed findings in relation to its impact on self-compassion. As the result of online self-compassion intervention, Seekis et al. (2020) also found insignificant changes in self-compassion, while Toole and Craighead (2017) saw significant increases in self-compassion by time, but not group following one week of meditations. On the other hand, both Albertson et al. (2015) and Zeimer et al. (2018) saw significant increases in self-compassion both within- and between-subjects as a result of their interventions. One possibility for the differences in the latter findings compared to the current study is that both these interventions entailed a longer exposure to self-compassion.

Albertson et al. (2015) participants were asked to listen to daily 20-minute meditations over the course of three weeks and Zeimer et al. (2018) asked participants to write for 20-minutes one time per week for three weeks. The sample in the current study may have also played a role in the insignificant differences, especially considering the control group exhibited a higher mean of self-compassion at baseline than the intervention group. Although posttest score means showed a decrease for the control group and an increase for the intervention group, a substantial change would have been needed to see significant differences between these two groups.

The hypothesis that the intervention group would experience higher levels of body appreciation and lower levels of self-objectification was not supported. While this is not consistent with findings from previous research where self-compassion had a positive impact on body appreciation (Albertson et al., 2015; de Wet et al., 2020; Seekis et al., 2017) and self-objectification (Toole & Craighead, 2016), the current study offers a unique perspective into the participants' thoughts and reflections on their body and self-compassion throughout the intervention. Based on responses from the open-ended questions, it is indeed surprising that the findings did not support changes in the body image outcomes. Most women commented on feeling strong, feeling appreciative, or having a sense of pride in their bodies. Moreover, the concept of self-kindness, a tenet of self-compassion that is strongly correlated with body appreciation (Albertson et al., 2015; Braun et al., 2016) seemed to particularly resonate with many of the participants as they reported reflecting on this concept throughout their exercise routine. The inconsistency in the quantitative results and the participants' own reflections is important to consider in our interpretation of the effectiveness of the intervention. One explanation for these findings is that women exercisers may already experience a greater sense of body appreciation at baseline as exercise is a health behavior that represents care for one's body

(Sabiston et. al, 2019), making it difficult to see a large change over time. Moreover, self-objectification in the current study was measured using the body surveillance subscale. Despite reporting positive feelings towards their bodies (happy with their muscles), this still exhibits a focus on appearance and a form of surveying their body. A body-focused self-compassion intervention may have directed more attention to their appearance in addition to a focus on respect, connection, kindness, and care for their body.

Similar to the findings on self-compassion, inspection of the means for intrinsic motivation were in the expected direction, although insignificant. Considering the inclusion criteria for this study (regular exercisers), it can be theorized that a large change would be difficult to see as pre-intervention scores were above mid-range at baseline demonstrating that the sample have already felt intrinsically motivated. This is especially apparent in the responses provided in the open-ended questionnaires. Indeed, participants in both groups expressed feeling motivated prior to exercise and feelings of joy, satisfaction, and accomplishment following their exercise routine which are representative of more internal experiences that are related to intrinsic motivation (Ryan & Deci, 2007). It is important to note the impact the intervention activities had for some intervention participants as they described accounts of listening to and appreciating their bodies. Given that previous research supports the notion that body appreciation and connection are predictors of intrinsic motivation to exercise (Cox et al., 2019), this may have important implications for individuals who do not feel as intrinsically motivated or have difficulty engaging in sustained exercise behaviors.

Despite the insignificant findings, examination of the open-ended responses reflected a strong engagement with the intervention and an understanding of the three components of self-compassion as it applies to both the body and exercise. The open-ended responses gave us

unique insight into how the participants utilized messages or reflections from the intervention during a particular workout. This included listening to their bodies, shifting their mindset from a critical perspective to a more positive perspective during their exercise routine, and offering themselves kindness. These findings demonstrate that providing brief self-compassion education can be beneficial, even in a context such as exercise where it can be easy to succumb to negative thoughts around performance or appearance. This not only can help improve an individual's exercise experience, but also impact the reasons why they choose to engage in exercise. Practicing self-compassion may act as a catalyst that facilitates a shift from more external motives to exercise, such as appearance related reasons, to internal motives to exercise as they begin to focus on connection and kindness towards their body as part of their exercise experience. The implications of this may be particularly important for individuals who find the exercise environment to be a context for self-consciousness or an avenue to engage in more punitive workouts as a way of managing their appearance. Moreover, given the relationship between internal motives for exercise and sustained exercise behavior, continuing to assess if and how self-compassion is in fact a mechanism for this shift is important.

Limitations

There are several limitations to consider when interpreting the results and their implications. First, a significant number of participants expressed interest, but did not complete the baseline measures following group allocation, leading to both a smaller sample size and unequal sample sizes between groups. Although there were no significant differences between groups at baseline, the unequal sample sizes make it difficult to determine if the groups were comparable. The attrition rate for those who started the study was similar for both groups (below 25%), suggesting no selective attrition. It is unclear why such a large number of participants did not complete the

baseline measures. One reason may be that participants interpreted the activities in the study to be overwhelming, cumbersome, or a significant time commitment after reading the initial instructions. Previous studies using all online formats for interventions reported similar dropout rates (Albertson et al., 2015; de Wet et al., 2020).

Findings may have also been impacted by placebo effects or ceiling effects. The current study utilized an active control group that engaged in both the neutral writing activity and the pre- and post-exercise questionnaires. Just the act of journaling for three minutes or reflection on their exercise behavior may have impacted their relationship with their body and exercise, especially given the nature of the questions in the post-exercise questionnaire. Moreover, it was disclosed to all participants that the study was about body image, self-compassion, and exercise behavior. Those in the control group may have responded in a way to confirm their interpretation. Similarly, the population of the current study may have experienced ceiling effects due to the specific inclusion criteria (exercise at least 3 days per week). Previous research has shown regular exercise to be a strong correlate of positive body image (Sabiston et al., 2019) as well as self-compassion (Wong et al., 2021). This seems to align with the current sample as pre-intervention means for the body image and self-compassion outcome measures were above the mid-point at baseline. Although some change occurred, results may differ for individuals who report higher levels of self-objectification or lower levels of body appreciation and self-compassion at baseline.

Implications and Future Directions

Developing brief and feasible intervention programs that target body image concerns and impact health behaviors such as physical activity is important. Although our quantitative findings were insignificant, examination of the intervention used in this study indicates that participants

were compliant and engaged in aspects of self-compassion throughout their exercise routine. An important strength of this study is our ability to delve deeper into our findings and comment on the interpretation of the results through review of the open-ended questionnaires. The open-ended responses demonstrated an openness to body self-compassion education and its applicability to exercise. Given the role of self-compassion in improving body appreciation and as a result, intrinsic motivation, our findings support the need for future interventions that direct self-compassion to the body.

There are several recommendations for future research that may impact the efficacy of the intervention. First, future research is needed to explore the inconsistencies between the quantitative results and the open-ended responses to determine the effectiveness of this particular intervention. Utilizing different constructs to further understand the impact of the intervention may shed light on some of the inconsistencies seen in the quantitative and qualitative results. Given that many participants reflected feelings of body connection and listening to their bodies, it may make sense to measure embodiment to determine if these measures align more with the participants' reflections. Further, utilizing the intuitive exercise scale (Reel et al., 2016) or obligatory exercise scale (Thompson & Pasman, 1991) may provide a different interpretation to why participants reflected on listening to their bodies or modified their workout routine as a form of self-compassion but did not demonstrate any changes in intrinsic motivation to exercise. A population that reports less of a regular exercise habit may provide more insight into the underlying mechanism of body self-compassion impacts motivation to exercise. Lastly, utilizing three groups (body self-compassion, neutral, waitlist control) may also help to negate any expectancy effects.

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Exploring the experiences of a body self-compassion program in women exercisers

Abstract

Objectives: Body image concerns have been shown to negatively impact physical activity levels, especially in women. While exercise can be an important way to take care of and connect with the body, it can also be a context for body dissatisfaction and negative self-evaluation, potentially reinforcing negative body image. Body self-compassion may be an advantageous and relevant resource in the presence of body image concerns, as it emphasizes self-kindness and acceptance, particularly in relation to perceived inadequacies. The purpose of this study was to explore how engaging in a body self-compassion intervention impacts women's relationship with their bodies, in general, and during exercise. **Methods:** Participants included women ages 18-25 who regularly exercise. Over the course of three weeks, participants listened to a three 3-minute self-compassion podcasts, followed by a 3-minute journaling activity prior to their normal exercise routine one time per week. Seven women participated in one-on-one semi-structured follow-up interviews, which were analyzed using a thematic analysis approach. **Results:** Two themes were developed in response to the participant's experiences engage in body self-compassion: changing my narrative and uncovering my intuition. Reflections from the women conveyed body self-compassion to facilitate a shift in perspective towards a more accepting and appreciative view of their bodies, and to support their ability to listen to their bodies. **Conclusion:** Results of this study provide deeper insight into the experiences and perceptions women may have when applying a self-compassionate mindset towards their bodies and how this can impact their exercise engagement.

Introduction

Recent research has focused on self-compassion as a resource in managing body image concerns. Body image concerns, such as body dissatisfaction and body shame, are associated with a host of negative consequences including disordered eating, appearance anxiety and depression (Fredrickson & Roberts, 1997) and are especially prevalent among young adult women (Salk & Engeln-Maddox, 2011). Similar to having compassion for others, self-compassion entails treating oneself with care and kindness, particularly in the presence of perceived imperfections (Neff, 2003). According to Neff (2003), self-compassion consists of three interrelated components including self-kindness, common humanity, and mindfulness (Neff, 2003). Self-kindness refers to treating oneself with kindness and understanding, as opposed to self-judgement and criticism, in times of failure or feelings of inadequacy (Neff, 2003). Mindfulness entails a non-judgmental awareness of thoughts, feelings, and emotions. Central to Neff's definition of mindfulness is a balanced awareness, which avoids either over-identification or suppression of painful experiences (Neff, 2003). Lastly, common humanity refers to the recognition that all humans suffer and that feelings of failure and inadequacy are a part of the human experience (Neff, 2003).

While exercise can be a way to connect with and take care of one's body, it can also be a context for negative self-evaluation (Sabiston et al., 2014). Moreover, it is often advertised as a way for women to manipulate the size and shape of their bodies as they strive to attain societal beauty standards. Research has shown that women who engage in exercise for weight and appearance management display higher levels of self-objectification and lower body esteem (Prichard & Tiggemann, 2008). However, finding joy and appreciation for movement and function is related to decrease in self-objectification (O'Hara et al., 2014). Directing self-

compassion towards the body may provide an opportunity for women to shift their mindset towards a relationship with exercise that is both positive and enjoyable, while fostering confidence, competence, and appreciation for the body. A deeper understanding into how women respond to learning about and engaging in self-compassion and how this impacts their relationship to exercise can provide valuable information in understanding the underlying mechanisms of self-compassion as a relevant and realistic resource.

Indeed, self-compassion has been linked to psychological well-being including lower levels of anxiety, depression, and stress (MacBeth & Gumley, 2012) and an increase in ones' ability to cope with failure (Leary et al., 2007). Research has also shown self-compassion to be an effective resource in buffering negative self-evaluations related to the physical self. Higher levels of self-compassion are associated with lower levels of body shame and thin-ideal internalization (Ferreira et al., 2013; Liss & Erchull, 2015) and is positively associated with body appreciation (Albertson et al., 2015a; Wasylikiw et al., 2012b). Additionally, interventions aimed at teaching self-compassion have demonstrated a promising impact on body image in undergraduate women (Albertson et al., 2015a; de Wet et al., 2020a; Seekis et al., 2017; Ziemer et al., 2019). The emphasis on self-acceptance and self-kindness makes self-compassion a particularly relevant and advantageous construct in the presence of body image concerns because it provides a strategy that directly counters negative self-evaluations and social comparisons (Mosewich et al., 2011). Teaching the components of self-compassion may provide young women with the knowledge that imperfections are a part of the human experience and that embracing self-acceptance, rather than criticism is an appropriate and acceptable way of relating to themselves.

Authors recently explored the impacts of a cognitive dissonance and self-compassion intervention (Bodies in Motion, Voelker et al., 2019) in collegiate athletes using qualitative methods (Barret et al., 2022; Voelker et al., 2021). Three to four months after completion of the program, the athletes reported becoming more aware of themselves and their bodies with an increased ability to change their attitude towards their bodies in an appreciative and accepting manner (Voelker et al., 2021). Similarly, Barrett et al. (2022) interviewed retired athletes about their experiences and the impact of the Bodies in Motion program. Based on what they had learned in the program, the women reported an increased awareness of how societal messages impact their body image as well as the ability to shift their perspectives. These studies are the first of their kind to offer qualitative support for the impact of an intervention. Research that continues to provide rich and nuanced understandings of the experiences throughout an intervention through qualitative methods may be beneficial in guiding intervention methodology.

Some qualitative literature have examined the meanings and experiences of self-compassion directed towards the body providing empirical support on how body self-compassion may be conceptualized and utilized in young women. Using a phenomenological approach, Berry et al. (2010) explored the meaning of body self-compassion as a sub-domain of global self-compassion in young adult women exercisers. Their findings supported the conceptualization of body self-compassion in the women exercisers and generated three essential structures: appreciating one's unique body, taking ownership of one's body, and engaging in less social comparison. Similarly, Eke et al. (2019) used a narrative approach to explore body self-compassion in adolescent women athletes and its influence on performance perceptions and well-being. After an introduction to the concepts of self-compassion and body self-compassion, specifically within the sporting domain, participants were asked to journal over the course of

three weeks about their body experiences during practices and competitions. Participants completed follow-up one-on-one interviews where they were encouraged to share experiences of body self-compassion documented in their journals. Eke et al. (2019) found similar insights to Berry et al. (2010) in the athletes' meanings and experiences of body self-compassion. In both studies, adult and adolescent women were able to recognize negative feelings and self-evaluations and respond with self-kindness, while finding appreciation for and confidence in what their bodies could do. These findings demonstrate the power of a compassionate perspective towards one's own body, while also providing evidence of its usefulness within the exercise domain.

Present study

The present study was part of a larger study investigated the effects of the body self-compassion intervention on body appreciation, self-objectification, and intrinsic motivation to exercise in young women exercisers. Over the course of the intervention, at the start of each week, participants were instructed to complete the following body self-compassion activities *one time* prior to their normal exercise routine: a short-pre-exercise questionnaire, a 3-minute compassionate audio clip, and a 3-minute compassionate journaling exercise. At the completion of their exercise routine, participants then completed a post-exercise questionnaire, which consisted of 6 open-ended questions about their experiences during that specific workout. Each activity correlated with one of the three main components of self-compassion: self-kindness (week 1), common humanity (week 2), and mindfulness (week 3). The audio clips were meant to act as a teaching tool providing the listener with the definition of self-compassion, an introduction to its three elements, and an example of a scenario in which self-compassion can be directed towards the body. The journaling prompts were meant to provide an opportunity to

reflect on what they heard in the audio and to practice and apply the information in the scenario towards themselves. Lastly, the pre- and post-exercise questionnaires are open-ended responses designed to encourage and enhance reflection in the participants about their exercise routine. They were used to assess aspects of their motivation and examined for reflections on self-compassion and body connection throughout their exercise routine.

While quantitative analysis is important to demonstrate the effectiveness of the intervention, it does not fully capture how the participants engaged with the intervention, their experiences or their constructed meanings of the concept and its utility. Therefore, the purpose of our present study was to explore *how* engaging in body self-compassionate activities provided from an intervention impacted participant's relationship with their bodies in general, and with exercise.

Methods

Using a narrative framework, I aimed to explore the experiences of participants who engaged in a body self-compassion program and how these experiences may have impacted their relationship with their body, in general, and during exercise. Narrative inquiry can provide an account of an event or experience through story structures told by the individual, revealing their lived experiences and perceptions into how the individual may see themselves (Creswell, 2014). As a researcher conducting narrative analysis, it is important to seek a rich understanding of the told stories and interpret the underlying assumptions and insights of the lived experience. Understanding the lived experiences while engaging in body self-compassion may provide context on how their narratives have shaped their experiences with their body over time.

Researcher Reflexivity

The researcher is a 36-year-old white woman whose research focuses on self-compassion as a resource for women with body image issues and how this relationship impacts physical activity. As a part of the reflexive thematic analysis process, it is important to reflect upon assumptions, previous experiences, personal perspectives, and theoretical assumptions that inform my research interests throughout the entire data collection and analysis process (Braun & Clarke, 2021). As the researcher, I considered the role that body image plays in my own relationship with exercise and how my research in this field has influenced that relationship. As part of the analysis process, I kept a reflexive research journal where I first documented my own positionality and life experiences around the topic prior to data collection. Throughout the interview process, I continued to document and reflect upon my thoughts and feelings as participants shared their experiences. I read transcripts and listened to recordings multiple times while continuing to reflect, question, and extract meanings from the conversations. My reflexive journal provided a way for me to stay actively engaged with my data while ensuring continued awareness of biases and assumption that I may bring to the research process.

Procedure

Approval was obtained from the university's Institutional Review Board. Participants were purposively sampled from a larger study where they took part in a three-week intervention focusing on body self-compassion. Inclusion criteria for this study were women, ages 18-25, who exercised at least three times per week for twenty minutes and had no current or previous history of a clinically diagnosed eating disorder, body dysmorphic disorder, or previous history of pregnancy.

Following completion of the intervention, participants were asked if they were interested in partaking in a follow-up interview with the researcher. Self-compassion, especially when

directed towards the body, can be a difficult concept to understand and practice. It is possible that individuals practice the components of self-compassion without conceptualizing or defining it as such. However, it is also possible that engaging in the self-compassion activities provided in the intervention was the first time individuals had heard this term or put it into practice. It is therefore important to interview individuals who participated in this intervention program because it provides participants with the language and the tools necessary to understand body self-compassion. The interviews gave them an opportunity to reflect on the meanings of self-compassion and whether this was an experience they have felt throughout their lives. The purpose of the interviews was to gain a deeper understanding of the participant's relationship with exercise and their bodies prior to the intervention, if and how they began to conceptualize self-compassion and body compassion throughout the intervention, and how this impacted their relationship with their body and exercise. For example, sample questions from the interview guide included: "How did the audio clips and journaling prompts impact your concept of self-compassion?" and "How did the audio clips and journaling prompts impact how you see your body?" A full interview guide is provided in appendix D.

Participants were informed that the interview process was voluntary. Those interested, participated in a semi-structured one-on-one interview. Interviews were held virtually over Microsoft Teams and recorded both on Teams and with an audio recorder. Using the Microsoft Teams recording and transcription function, interviews were transcribed throughout the interview and then downloaded into a word document. Immediately following completion of the interview, the researcher listened to each recording while following along the transcription to correct any mistakes and ensure that the interviews were transcribed verbatim.

Interview Guide Development

The interview guide was developed from reflecting on my experiences during the Mindful Self-Compassion program, previous research, and findings from the pilot study. I first developed the pilot study interview guide, which entailed questions about feasibility and acceptability of the intervention (how would you describe the time commitment for this intervention; please describe how this was either a positive or negative experience), and questions about their experiences engaging in the intervention. Based on the responses from this interview, I felt I needed greater detail on the participant's background and relationship with body image and exercise prior to the intervention to create better context around the impact of the intervention. This prompted the addition of several questions at the beginning of the interview guide focusing on the first time they were aware of their body and their motivations behind their exercise behaviors. In addition, results from the pilot study also demonstrated some difficulty with the concept of self-compassion, as it can be somewhat abstract. Therefore, I used previous research from the themes generated from Eke et al. (2019) and Berry et al. (2010) to help guide some of my questions. For example, one of common finding from both studies was that a key aspect of body self-compassion was increased recognition of critical thoughts and learning to appreciate their bodies. This prompted questions such as 'Please describe any critical thoughts you have towards your body' and 'are there times when you appreciate or take pride in your body during exercise?' Lastly, it was important for the interview guide to provide enough detail to allow the participants to express their lived stories to support our use of a narrative framework (Creswell, 2014).

Participants

Seven young adult women, ages 18-25, who first participated in the body self-compassion intervention volunteered for a one-on-one follow-up interview. Participant

characteristics, pseudonyms, and exercise behavior are provided in Table 7. Previous literature exploring the meanings of self-compassion (Ferguson et al., 2014) and the meanings of body self-compassion in young women (Berry et al., 2010; Eke et al., 2020) used similar sample sizes and provided sufficient quality and substantive data to support their themes.

Table 6. Participant characteristics and exercise frequency

Participant pseudonym	Age (years)	Race	Exercise frequency (days per week)	Exercise type
Vanessa	23	Hispanic	5-6	CrossFit
Tabitha	24	White	3-4	Running, skiing, log rolling
Alyssa	20	White	3-4	Running, group exercise
Taylor	22	Black	4-5	Weightlifting, peloton, volleyball
Coral	22	White	3-4	Walking, pilates
Laura	19	White	3-4	Cardio, weightlifting
Mia	22	White	5-6	Weightlifting, rowing

Data Analysis

Reflexive thematic analysis following the six-phase process outlined by Braun and Clarke (2021) was used to analyze the data. The first step, familiarization of the data, was completed by reading and re-reading the transcripts several times and beginning to reflect on initial thoughts and ideas about the data. The reflections and notes during this process influenced the draft of my initial codebook with descriptions and operational definitions. After uploading all data into MAXQDA, I began the second step, coding, where I coded segments and phrases to capture its meaning. When the phrase seemed limited or superficial, semantic codes were used

(i.e., I exercise to improve my endurance). For more in-depth phrases or phrases that represented the more theoretical concept of self-compassion latent and deductive coding was used (i.e., I gave myself grace when I chose to use lighter weights). As I continued to code relevant and meaningful data, I engaged in memoing to reflect upon my own reactions and insights to the data with the understanding that some codes may evolve and change. Once my codebook was finalized, I re-read all transcripts alongside my codebook to ensure all relevant data was labeled.

Step 3 involves generation of initial themes, where I began to cluster codes that seem to reflect shared meaning across the dataset. The purpose of this phase is to explore potential themes as well as the relationship between themes to determine how they may work together to tell a story about the data (Braun & Clarke, 2021). During this phase, I determined the purpose or essence of my themes and used thematic mapping to uncover how codes may or may not fit within those themes. During step 4, developing and reviewing themes, I reviewed the codes clustered for each theme to ensure the initial themes were representative of the data. It was important for me during this phase to demonstrate clarity about what can be included and excluded in each theme, ensure there is enough data to support the theme, and reflect on how this theme is important in relation to the data and my research question (Braun and Clark, 2021). Step 5 involved defining and naming the themes. Here, I defined what the theme was about, why it was unique, and how it contributed to the overall analysis (Braun and Clark, 2021). Finally, step 6 involved writing of the data analysis.

Rigor. While rigor is important to establish in quality research, the notion of rigor in qualitative research can be variable (Smith & McGannon, 2018). Strategies used to ensure validity included establishing credibility of the researcher by stating my positionality, clarifying research bias, and establishing prior knowledge of the research topic (Morse, 2015; Patton,

1999). Secondly, I utilized triangulation using multiple methods by comparing the responses to the post-exercise questionnaires to what was being reflected in the respective participant's interview. The two different methods of collecting data (written response and verbal response) to different types of questions provided a variety of perspectives from the participant allowing for more complexity and nuance in the data. It also ensured the pieces of data aligned. Lastly, as a way to continually check my biases, I had informal conversations with a colleague who has a similar research background about my reactions and interpretations of the data.

Results

The findings from the interviews provided a range of experiences around body image, exercise behavior, and the utility of body self-compassion within these contexts. Consistent with narrative analysis, the first part of this section describes a glimpse into the beginning of the participant's story by providing a descriptive summary of their introduction to exercise and body image awareness. Moreover, it details the common motivating factors for exercise discussed by the women in this study and the reasons why they find it important to engage in a consistent exercise routine. This background into their journey provides insight into how their relationship with body image and exercise began and gives both context and deeper meaning to the potential impact of the intervention and the changes that participants expressed when reflecting back on the intervention during the interview.

Women were asked to describe their first experiences with engaging in exercise or physical activity. Five of the seven stated that their exposure to physical activity began very young with organized sports and although they did not necessarily view their sport as 'exercise' growing up, it was an important influence in their current exercise behaviors. Two participants remembered being exposed to exercise and physical activity during grade school P.E., but did

not begin regularly exercising until college or shortly after college. One participant was a retired Division I volleyball player who continues to train and stay competitive within her sport.

The women were also asked to describe a time when they first felt aware of their body's appearance. Four participants described an awareness that began around middle school as a result of comments from peers or social comparisons. Three of these women described being tall for their age, stating that peers often commented on their height or how 'tall and skinny' they are. Another participant explained that her peers often laughed about how skinny she was making her more aware of what she looked like in the mirror. The comments from peers were the source of self-consciousness about their bodies for these women. In contrast, two of the participants first became aware of their appearance in high school, but described feelings towards their bodies as relatively neutral and not something that impacted their self-concept. One participant stated she did not really become aware of her appearance until she started a regular exercise routine in college. As she reflected on 'not caring' what her body looked like growing up, she was grateful that body image was not a source of struggle for her.

Understanding the role exercise currently played in their lives and the women's motivation for exercise was essential to appreciating how the body self-compassion program impacted the women's engagement with exercise. Participants were motivated to exercise for many different reasons including mental and physical health, connection within a community, enjoyment, and a way to challenge themselves. However, a common motivating factor reported in all participants was managing their appearance as a result of physical body changes. This was manifested in the participant's relationship with exercise in several ways. Some women discussed that weight gain in college was a significant catalyst for starting an exercise routine, while other women discussed the role consistent exercise played in maintaining a certain 'look'

or self-image. These women expressed that they enjoyed the physical changes that they could achieve as a result of exercise which ultimately impacted their confidence and self-worth.

Another common motivating factor for exercise engagement were feelings of pride in their capabilities and an appreciation for the function of their bodies. Women remarked on the fact that exercise was something that made them feel good because they were taking care of their physical health, improving their endurance, and getting stronger. When reflecting on the functional abilities of their bodies, some indicated a sense of surprise or awe in what their bodies could do, especially when referring to strength training.

The stories shared about their current body image and reasons for exercise provided context for how the participants engaged with the intervention and how body self-compassion was utilized within their own exercise behaviors. The reflections from the participants experiences were organized into two overarching themes: Changing My Narrative and Uncovering My Intuition.

Changing My Narrative

When it came to describing their responses to body self-compassion, women described an ability to resist critical thoughts about their body and/or their exercise experience. This mindset shift was identified as engaging in more self-kindness and body acceptance, understanding natural body changes as they age, and challenging social media messages. Essential to this theme was recognizing when they needed to offer themselves grace and understanding in times where it felt routine to listen to their critical voice. As the women described their accounts of what it looked like to treat their body with self-compassion, many discussed the utility of self-kindness and became more aware of how detrimental negative thinking was to their mental health and

progress. Further, it extended beyond awareness to changing their self-talk and the way they relate to themselves and to exercise.

Some women provided specific moments where they focused on a component of self-compassion they had learned and used it to free themselves from a negative mental space. Mia discussed a time where she struggled getting ready for work because of the way her body looked in her clothes. At first this was really impacting her ability to move on with her day; however, she found a way to change her self-talk, reminding herself to be kind and appreciate the way her body looks. Tabitha also identified an experience of utilizing self-compassion when she was having difficulty with managing her schedule and felt guilt for not exercising. She was tempted to criticize herself for putting exercise on the back burner, but knew she had to implement some self-compassion when thinking about her own time constraints. When asked how she practiced self-compassion during this time she stated:

“...Over the past few weeks, school has been a little stressful and hectic, and so I had some days where, like I couldn't stick to [exercise]. So, I definitely focused on compassion a little more, like, I'm working on other realms of my life, [exercise] isn't something I always have to focus on, and it's something I can always come back to. So, I definitely gave myself more slack with that and tried to focus on that more, which was helpful and those stressful weeks were a lot better because of that.”

Tabitha created an alternative perspective in recognizing that priorities shift without over-catastrophizing the inability to exercise and observed her thoughts in a nonjudgmental way. This allowed her to focus on what most important to her at the time (school) as opposed to ruminating or distracting herself with negative thoughts.

Another way women showed compassion for their bodies was learning to appreciate and accept their bodies. Women described strategies to change their mindset when noticing their imperfections or what they perceived to be negative about their body. For example, when Laura found herself engaging in criticism towards her body during a workout, she explained that she

tried to shift her focus to why she initially started going to the gym, which was to support her mental health. She reminded herself not to stress out over her perceived imperfections or engage in negativity towards her body. Integral to finding body acceptance, others found compassion to be helpful in acknowledging the unrealistic images they see in social media and challenging these messages as they came to terms with their own imperfections. Mia explained how she works on accepting her natural body changes that happen with age.

“Yeah, I would just say that I always like make a joke and call it like my “woman body”. But like, that's really what it is, like you're an adult, and that's just like how you look. So, just the things that I don't like about myself, they aren't even a big deal. Just like being understanding that like everything that we see on like social media, like that type of stuff is literally fake, like all of it is fake or the lighting and stuff is perfect, so I think like when it comes to that it's just... I feel like self-compassion for me is like just ignoring all that and just like not really feeding into it.”

Mia recognized the temptation to compare herself to what she sees on social media, which was often detrimental to her ability to accept that her body as a woman in her twenties will look different than her body as a teenager. Engaging in self-compassion helped her recognize separate the filtered bodies on social media from her own unfiltered body.

Coral also shared that being body self-compassionate meant changing the way she looked at her body by recognizing the toxic and unhealthy messages on social media. This ultimately helped shift her experiences during her workout. She explained that it was common for her to approach her workouts from an appearance perspective, as a form of weight loss or to look better. In her post-exercise questionnaire, she acknowledged some of the changes she made in altering this perspective. The knowledge and incorporation of self-compassion reminded her that she was there to take care of her health and get stronger. It was also a reminder for her to resist the social narrative and focus just on herself.

“...it was a nice reminder of like, you know, like this is your body and like it's so amazing and it can do all these things versus, you know, you go on Tik T.O.K or like Instagram and it's, all

these like fake women and they're tagging their like diet stuff. And it just pushes that unhealthy culture. It was nice to just like take time and just like appreciate my body and where it's at and everything that it can do.”

Changing my narrative was about women finding alternative perspectives to negative and critical thoughts both towards their own bodies and within the exercise domain. Through engaging in more body self-compassion, women saw the value in leaning into self-kindness and body acceptance through rejecting both their internal critical voice and the external social narrative.

Uncovering My Intuition

As the women reflected on their experiences engaging in body self-compassion over the course of the three weeks, they described developing a better sense of discernment when approaching exercise and an increased awareness of what it meant to listen to their bodies. Women expressed that it allowed them to give themselves grace and understanding, especially when it came to how they engaged in movement and exercise. For some, that meant starting to engage in a workout that they enjoyed or choosing exercises at the gym that made them happy. It was common for these women to describe a mental battle around their exercise routine because they attached its value to discipline and productivity. However, one way in which they embraced self-compassion was to reframe their definition of a workout and give themselves permission to listen to their needs. For Alyssa, going for a run or attending a group exercise class was essential to her feeling productive, whereas, not leaving the house often generated feelings of anxiety. However, she understood that especially with her schedule and working a full-time job, there are days where she feels tired or unmotivated and needs to exercise a more compassionate mindset to support her mental health, accepting that there are other ways to feel productive.

“I just feel like going on like a nice like casual walk is... just shows a lot of love and like I don't have to be like running every second of the day to make myself feel better. Like, I think showing kindness is knowing what kind of exercise your body needs for that day. And it doesn't have to be like a hard-core cardio kind of thing. It could just be like relaxing and enjoying your scenery kind of thing, and getting you know, all the sunshine in that you can.”

Alyssa recognized that listening to her body may mean something different than just working out as hard as she possibly can just to feel productive.

Practicing body self-compassion was also an awareness of when to take a break from the gym or modify a workout in a way that felt like self-care as opposed to guilt. Mia described difficulty in finding a balance between what she perceived as discipline in her exercise routine and listening to her body. She expressed that learning body self-compassion was a gateway to giving herself permission to tap into kindness towards herself, which sometimes meant allowing herself to skip a day at the gym or eat a scoop of ice cream. When asked about what it means to treat her body with kindness she responded:

“I would say I'm still figuring that one out, what exactly it means for me. But right now, I feel like being nice with myself about like working out in the gym and not always having to like have my workout be like tough... it's like I can walk the dog and like at nice pace and like that can be the way I move my body for the day.”

Mia further discussed how she sometimes modified the number of sets and reps she did while weightlifting or decided to row for 20 minutes on day where she originally planned to strength train because she felt it better supported what she needed that day. Before learning about self-compassion, Mia had not realized that listening to her needs and wants was not necessarily lacking discipline, but rather a form of kindness.

Underlying the women's stories and experiences within the intervention was the way in which self-compassion supported their intuition. Incorporating self-compassion into their lives was a reminder to be kind and patient towards themselves, something that impacted their insights and awareness of their self-talk and behaviors. At first, several women observed how difficult it

was to find self-compassion because it was not something that was discussed or learned in society. When asked to reflect on engaging in the self-compassionate activities, Vanessa admitted that offering herself kindness felt foreign. She explained that prior to the intervention, she thought she was being kind and loving towards herself, but quickly realized in her journaling how critical she was towards her body. Over time, Vanessa realized the importance of not putting too much pressure on her body, stating:

“I feel like it helped me...to learn to be kind of caring towards my body...and just learn that it’s a process, just like some people have compassion for others, why can’t we have compassion for ourselves? Like that’s important.”

Many other women spoke about how being body self-compassionate was a way to listen to and respect their bodies, while accepting where their body was in the moment. Taylor described a similar sentiment when she said:

“I would describe self-compassion as just like being aware of where you are and doing what you need for your body in that moment, instead of like hyper-fixating on one thing, just being aware of where it is in that moment and doing what you need to do for it, to keep your emotions, mental and physical, to keep it all aligned and still work towards your goal”

Exposure to and engaging in self-compassion was something that empowered these women to uncover and support their intuition. Participants embraced its utility in their lives as they realized how self-compassion facilitated a greater acceptance of their bodies as they learned more about listening to their body and its needs. The women acknowledged that self-compassion relieved pressure, giving them permission to make decisions informed by their intuition.

Discussion

The purpose of this study was to explore how engaging in an intervention intended to cultivate body self-compassion impacted young adult women’s body image and experiences of exercise. Using a narrative inquiry, the women told their unique stories about their history with exercise and body image, how these factors play a role in their motivations and current

relationship with exercise, and how they understood and incorporated the concept of body self-compassion in this relationship. Learning the concept of body self-compassion impacted how these young women related to their bodies and exercise in two overarching ways. First, women reported a greater awareness of negative thoughts towards their body and subsequently, utilized self-compassionate strategies to appropriately respond to and alter these thoughts. These attitudinal shifts reflected increased feelings of body appreciation and acceptance and resistance to unrealistic social media messages. Second, participants indicated that engaging in the body self-compassion program facilitated an ability to listen to their bodies. This was portrayed through reflections of grace, understanding, acceptance, and patience towards their bodies. Practicing self-compassion supported their ability to connect with and respond to the body's needs as an act of self-kindness. These findings reflect the Neff's (2003) conceptualization of self-compassion while also providing unique insights into how young women understand and utilize the concept of body self-compassion within an exercise context.

Background stories gathered from the participants reflected both appearance and function as key aspects of the women's motivations for exercise prior to the intervention. For the women in this study, physical changes to their bodies were a facilitator for either the genesis of their exercise journey or in maintaining a consistent exercise routine. Insight into how the women perceived these changes illustrated that focusing on their appearance and achieving results through the act of exercise was vital to feeling positive towards their body, which ultimately impacted their confidence and self-concept. Concurrently, almost all women in the study expressed that appreciation for the function and capabilities of their bodies played an important role in their relationship with exercise. This was apparent in the women's reflections on their strength and accomplishments both in the gym and in their daily lives. These reflections are

consistent with the concept of body functionality, which is multifaceted and consists of everything the body can do both physically and internally (Alleva & Tylka, 2021). Focusing on functionality is a key aspect in nurturing positive body image (Alleva & Tylka, 2021) as it emphasizes an appreciation for the body's capabilities. The women reflected a sense of body functionality in viewing exercise as a way to take care of themselves and appreciating how it supported their mental and physical health.

Insight into past exercise experiences and the role body image played in the women's exercise habits provided a deeper understanding of how the women reacted to and internalized body self-compassion as they participated in the intervention over the three weeks. One benefit to engaging in body self-compassion was an increased awareness of critical and negative thoughts and an ability to shift their narrative to kindness and understanding. For these women, being body self-compassionate meant acceptance and appreciation for their bodies, reacting to challenges in a balanced and nonjudgmental way, and resisting unhealthy and unrealistic social media messages. The stories that reflected these meanings of body self-compassion are consistent with Neff's (2003) conceptualization of self-compassion. Mindfulness, a core tenet of self-compassion, is the balanced awareness of thoughts and emotions and an ability to not overidentify or suppress these emotions (Neff, 2003). These women demonstrated an increased awareness of their critical thoughts and created alternative perspectives without significant rumination. Moreover, consistent with Neff's (2003) conceptualization of self-kindness, when tempted to critique their own imperfections and inadequacies, they challenged these thoughts with finding ways to appreciate and accept their bodies. A part of engaging in self-kindness was refuting unrealistic social media messages that seemed to be detrimental to their ability to accept and appreciate their bodies. As such, embracing body self-compassion could play a critical role

in challenging the narrative to be consistently dissatisfied with our bodies in pursuit of a perceived ideal and facilitating a kinder approach in the face of failure or suffering.

Learning to be more body self-compassionate helped the participants uncover their intuition by offering them a sense of self-permission, where they could listen to their bodies needs without feeling pressure or guilt. The women identified ways in which they could engage in joyful movement or take part in movement as a form of self-love and kindness. Learning to respond to their own intuition is consistent with self-compassion which emphasizes an awareness and acceptance of one's thoughts and emotions and the ability to respond with kindness and understanding (Neff, 2003). For some, the act of offering themselves kindness and listening to their bodies needs felt foreign. This was depicted in their difficulty in changing their exercise routine to respect how they were feeling or wanting to put pressure on how their body was performing. However, exposure to the concept of body self-compassion supported their ability to make decisions informed by their intuition as opposed to external pressures, reflecting a deeper connection with their body and a more internally motivated process for exercise. Considering the appearance motivations for exercise portrayed among many of the participants, this has important implications. Strong focus on appearance and pursuit of a specific body ideal can impact sustained exercise behavior and lead to further body dissatisfaction. However, those who are more internally motivated often report higher body appreciation and positive body image (Tylka & Homan, 2015) which are important factors linked to physical and psychological well-being (Tylka & Wood-Barcalow, 2015). It is plausible that practicing self-compassion was an important contributor in fostering this shift. Being body self-compassionate allowed these women to focus on the process and respect their own decisions around their body and exercise behaviors.

There are a few limitations to the study that warrant discussion. At the end of the intervention, participants self-reported whether or not they listened to the audio and journaled, so it is difficult to know if they engaged in all intervention activities. The interviews were conducted following the three-week intervention which consisted of teaching one of the three components of self-compassion each week. Participants admitted that it was difficult to remember some of the activities from the first week due to the time lapse. While this meant some of their responses were less specific to those activities, they still felt confident in their ability to comment on their overall reactions to learning about and engaging in body self-compassion.

Although the participants learned about the importance of common humanity, engagement in the intervention was an individual process. This was reflected in their descriptions of body self-compassion, which gave few notions of feeling connected to others or seeing imperfections or failure as part of the human experience. In Berry et al. (2010) phenomenological study on body self-compassion in women exercisers, the women reported the importance of others and feeling connected to others in their meanings of body self-compassion. Moreover, Barrett et al. (2022) also found athletes to report strong connections with others as an important part of their group sessions utilized in their program. Therefore, it may be important to consider how incorporating activities in an intervention that foster common humanity can expand the meanings and experiences of body self-compassion for young women.

There are also several strengths of this study. To our knowledge, this is the first study to explore how women engaged in a body self-compassion program using a thematic qualitative approach. While Voelker et al. (2021) and Barret et al. (2022) evaluated their Bodies in Motion program through qualitative methods, the program was created as an eating disorder prevention program targeted towards athletes that incorporated components of mindful self-compassion in

addition to other psychological strategies. The use of interviews offered the ability to probe and ask women to elaborate on their experiences, provided greater access to their unique stories. The narrative approach to the current study provided context into both their exercise and body image history allowing participants expand upon the impacts of learning body self-compassion as they constructed their own meanings of this concept. Lastly, all participants reported their experience engaging in the intervention was positive. They felt the intervention activities were a positive reminder of how to relate to themselves especially in times where they felt critical or negative towards their body. A common sentiment among the participants was the importance of having self-compassion for both themselves and for sharing with others.

Conclusion

The findings from the current study contribute to our understanding of body self-compassion in young adult women exercisers and how this concept can impact their relationship with their bodies and with exercise. The women embraced the concept of body self-compassion and allowed themselves to apply the concepts directly to their lives. Moreover, body self-compassion facilitated a shift in negative thoughts and perspectives allowing participants to be more open to listening to and respecting their bodies. Future research should continue to explore the experiences of engaging in body self-compassion and how the meanings gleaned from this concept are an applicable and relevant resource within exercise.

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Discussion

The studies included in this dissertation project aimed to demonstrate the effectiveness of self-compassion in addressing body image concerns by first, highlighting its robust relationship in previous literature and second, testing a unique intervention that incorporated body self-compassion practices in young adult women exercisers. Further, this research explored the relationship between self-compassion and intrinsic motivation to exercise by exploring how women understood and practiced body self-compassion within their own exercise behaviors. The tenets of self-compassion encourage mindful awareness in the presence of critical thoughts and to offer ourselves comfort and kindness in times of suffering and feelings of inadequacy (Neff, 2003). In relation to body image, self-compassion provides an effective coping mechanism to negative self-evaluations and fosters body appreciation and acceptance (Guest et al., 2021). However, less researched is the way in which self-compassion impacts physical activity. Those who are regular exercisers tend to be higher in self-compassion, yet little is known about how increasing self-compassion impacts physical activity engagement (Wong et al., 2021). Given, self-compassion's impact on body appreciation and psychological well-being, one pathway in which self-compassion could theoretically impact physical activity and exercise behavior is through its support for intrinsic motivation. Individuals who feel more appreciation and respect for their body may be more inclined to engage in exercise as a way to connect with and care for their body, which is representative of internal experiences. The three included studies aimed to investigate this relationship and provide an overall picture of the ways in which self-compassion is utilized in body image and exercise. The use of quantitative and qualitative analysis offered a variety of data that provided insight into the underlying mechanisms of self-compassion when it is directed towards the body and exercise. In particular, a narrative approach using semi-

structured interviews provided a rich understanding of women's experiences with engaging in the intervention providing further evidence of the utility of self-compassion.

The findings from all three studies exhibited inconsistencies between the quantitative and qualitative results highlighting the nuance and complexities of both mixed methods and the current study concepts. Results from the systematic review indicated self-compassion to be an effective strategy in both reducing negative body image and promoting positive body image regardless of length, delivery method and format. However, the intervention in the current study demonstrated no significant change in the quantitative measures. While there are some limitations that may explain these insignificant findings (i.e., sample size, ceiling effects, etc.), the qualitative findings highlighted meaningful experiences gained from the intervention and offered salient reflections on how the women were interpreting, connecting to, and utilizing the concepts of self-compassion within their exercise routine. The contradictions between the quantitative measures and participant reflections may provide valuable information into the limitations of using only surveys to assess the effectiveness of an intervention. Similarly, the chosen measures may have not been particularly sensitive or representative of the participants' interpretations of body self-compassion. Although the discussions around their understanding of body self-compassion included body acceptance, being aware of and shifting negative thoughts, and listening to their bodies, it is plausible that the participants did not fully grasp the phenomena of body self-compassion. My own knowledge of the theoretical construct of self-compassion impacted how I interpreted the women's reflections as I allowed self-compassion to take on multiple meanings that felt representative of the three components of self-compassion.

While the quantitative results preclude the understanding that self-compassion directly increased body appreciation and intrinsic motivation to exercise as a result of the respective intervention, the insights into how the participants conceptualized body self-compassion have important implications as they relate to body image and exercise behaviors. Body image concerns are a normative experience for women, especially in western culture, as they are socialized to conform to a dominant feminine ideal (McKinley, 2002). An inability to meet societal beauty norms and expectations can have a significant impact on a women's relationship with her body and psychological well-being. The rise of social media further acts as a catalyst to body image ideals and is an ever-present platform for social comparison (Cohen et al., 2017; Tiggemann et al., 2018). Consequences of social comparisons via social media use among young women include increased body dissatisfaction, drive for thinness, self-objectification, and eating disorder symptoms (Fardouly et al., 2015; Seekis et al., 2020; Tiggemann et al., 2018). The women in the current study found self-compassion to be a facilitator of increased awareness their critical thoughts, allowing them to shift their perspectives towards a place of body appreciation and acceptance. This shift in perspective also gave way to challenging the unrealistic media ideals as well as more discernment when viewing filtered images. Future interventions may benefit from targeting these cognitive processes when teaching self-compassion (i.e. how to specifically shift from self-criticism to self-kindness) as this perspective change may have a potential impact beyond just increasing the tenets of self-compassion.

After engaging in a body self-compassion program, the women in the study also expressed finding ways to appreciate, listen to, connect with, and care for the body, which are reflective of concepts aligned with internal experiences and intrinsic motivation. This seems especially important considering that many of the women expressed appearance motivations, an

extrinsic goal of exercise, as a key factor in their relationship with exercise. While embracing your body's appearance can be an aspect of body satisfaction and positive body image, it is important to consider the implications of a strong focus on appearance, especially within the realm of exercise. Women may experience improved body image due to the results from exercise such as decreased body fat or increased muscle tone, yet it is possible this stems from sociocultural pressure to fit a specific body ideal (Frederick et al., 2022). Pursuit of a body image ideal can lead to higher levels of self-objectification within the exercise domain (Prichard & Tiggemann, 2008) and can often have the opposite impact on body image where women become more dissatisfied with their bodies. It is therefore important to consider how body self-compassion fosters more internal experiences related to exercise. While appearance related reasons for exercise can be an incentive for adoption of exercise behavior, our findings demonstrate that self-compassion may be a pathway or mechanism in shifting their focus towards care for and appreciation of the body which can ultimately impact internal motives for exercise.

Future Directions

The findings from these studies further our understanding of the concept of body self-compassion and can guide future intervention methodology. Future research is needed to explore the inconsistencies between the quantitative results and the qualitative results to further understand the efficacy of the intervention. More stringent methods beyond self-reported compliance may help confirm the fidelity of the intervention and may shed light on why the meaningful experiences reflected from the participants did not seem quantifiable. Other constructs such as embodiment, intuitive exercise, or obligatory exercise might be more responsive to the current intervention considering the women's conceptualizations of self-

compassion. Moreover, research to determine how the intervention can impact non-exercisers or women in a different age group can highlight the most age appropriate and acceptable time to intervene. Understanding the utility of this type of intervention in non-exercisers may provide more insight into how body self-compassion can both directly and indirectly impact intrinsic motivation for exercise. Future qualitative studies can also help uncover how body self-compassion plays a role in exercise adherence or adoption in a sample who struggles with body image concerns.

Conclusion

Body image concerns are a contributing factor in physical activity and exercise engagement among young women. Self-compassion is an effective strategy in reducing negative body image and promoting experiences of body acceptance, appreciation, and connection within an exercise context. The present research demonstrates that young women are open to learning about and embracing the components of body self-compassion both towards their bodies and within their exercise behavior. Moreover, these studies help to illuminate the underlying mechanisms of self-compassion when directed towards the body and provide a deeper understanding of how and why an intervention program might be successful in helping women foster appreciation and love for their bodies.

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APPENDICES

APPENDIX A: Results of Pilot Study

The body self-compassion intervention was first piloted using a small sample of adult women exercisers to test the acceptability and feasibility of the intervention. Prior to completing the pilot, I attended a two-day MSC weekend retreat taught by Kristen Neff and Christopher Germer and had the opportunity to experience the benefits of learning, engaging in, and practicing mindful self-compassion. While my intentions for attending this workshop were to deepen my own understanding and practice of self-compassion, I also took the opportunity to view the activities through the lens of a researcher. Exploring my own reactions to the discussions, journaling, and meditations shed light on some of the underlying mechanisms of self-compassion. I particularly tried to examine the connections between the research on body image concerns and the tenets of self-compassion that seemed most appropriate and beneficial in navigating those experiences. While I understand that these are my own experiences, constructed through my own world view, I do believe that it offered significant value in considering the feasibility and utility of the design of the body self-compassion intervention. After completing the workshop and considering its application to body image, I adapted some of the activities toward the body for my intended intervention. I describe some of these adaptations below.

Over the course of the retreat, activities generally included an introduction to a specific concept (i.e., definition of self-kindness and its value in our lives), followed by a focused meditation on that concept, and a writing exercise. Therefore, I designed the intervention to mimic this format for each of the three components of self-compassion, while also keeping in mind a feasible time commitment that would encourage participants to complete the intervention in its entirety. As I reflected on the definitions of each component and how they were

successfully taught within the program, I wrote similar definitions for the audio script. However, in order to make each component applicable to the body, I added specific prompts that gave the listeners the opportunity to apply each component towards their physical body. For example, after describing the concept of common humanity, participants were asked to reflect upon either common struggles or experiences of joy within their bodies that may also be experienced by others to encourage a sense of connection. Further, the journaling prompt gave specific instructions to apply the component they learned that day to their body. For example, participants were asked to write about a unique aspect of their body in ways that show appreciation for that aspect. They were then asked to describe how recognizing uniqueness (which can feel both positive or negative) might help them broaden their perspectives of beauty and appreciate the value of all bodies. All audio scripts and journaling prompts are provided in appendix B. Details on the methods and results of the pilot are described below.

Methods

After receiving IRB approval on August 30, 2021, participants were recruited using social media and via word of mouth within my own social networks. Participants were included if they identified as a woman, were between the ages of 18-40, exercised for at least 30 minutes, 4 days per week, and had no previous or current history of a clinically diagnosed eating disorder. Of the twenty-two participants initially recruited, only 16 participants completed the baseline measures. Fifteen of the 16 participants (11 intervention and 5 control) completed all the intervention activities; however, only 8 completed the post-intervention outcome measures. Although it is unclear why 8 participants dropped out, it is most likely due to the fact that they did not receive a reminder to complete the posttest measures. Participant characteristics are provided in Table 1.

Procedures

Women who expressed interest in participating were randomly allocated to either the intervention or control group. All participants were asked to schedule a 10-minute virtual meeting with the researcher to review informed consent documents and to provide access to the app *Slack*, which was the platform used to provide all the necessary materials to complete the study. The researcher created two versions of Slack, one with links to the activities for the intervention group, and one with links to the activities for the control group. The researcher provided a link to either the ‘intervention’ version or the ‘control’ version but kept participants blinded to their group assignment. At the end of the meeting, participants were instructed to complete all baseline measures on Qualtrics and to begin their ‘Day 1’ activities prior to their next planned exercise routine.

Over the course of one week, both groups participated in three activities on three separate days immediately prior to their normal exercise routine. Each activity correlated with one of the three components of self-compassion: self-kindness, common humanity, and mindfulness. The intervention group completed a pre-exercise short answer questionnaire with one question (Do you feel motivated to exercise today? Why or Why not?), listened to a 3-minute body self-compassion audio clip and completed 3 minutes of self-compassionate journaling. They were then prompted to engage in their normal exercise routine followed by an open-ended post-exercise questionnaire with three questions (How do you feel after exercising?, What type of exercise did you engage in?, and Did you enjoy it?). The control group completed the same pre- and post-exercise questionnaires. However, their 3-minute audio clip was a general meditation unrelated to self-compassion and they did not journal. Once participants completed their third day of activities, they were asked to fill out the posttest survey which was also made

available to them on *Slack*. Upon completion of the study, those who were allocated to the intervention group were asked if they were interested in participating in a one-one-one follow-up interview with the researcher to share their experiences with engaging in the intervention. Details about the interview process including length, interview guide, and general results are further described in the ‘pilot study’ section of the study 3.

Table 1. Pilot Study Participant Characteristics

	Mean age (SD) (years)	Age range	Race	Exercise frequency (days/week)
Intervention (n =11)	28.96 (3.96)	25-38	100% White	4.3
Control (n = 5)	26.8 (1.09)	26-28	100% White	4.6

SD = standard deviation

Results

Quantitative data from baseline and posttest measures were assessed for change scores which revealed an increase in self-compassion for the intervention group as compared to the control, as well as a decrease in self-objectification for the intervention group. However, statistical analysis was not conducted due to the small sample size. Feedback from directly asking the participants about their experience engaging in the activities provided insight into the success of the pilot study.

Overall, participants reported that the intervention was a positive experience, simple to complete and was a minimal time commitment. The participants stated that they did not find anything triggering about the activities and the audio clips were easy to listen to. Five participants agreed to an interview and provided more in-depth detail about their experiences. A table with direct quotations from the participants on their interpretations of the intervention and its feasibility is provided in Table 2.

The logistical feedback provided will also be used to improve upon the design. First, while some participants reported that Slack was easy to use, others did not find it as user friendly and felt that the audio clips were difficult to find. Some reported they did not like using the app at all. Second, most participants stated that they had trouble remembering to complete the activities. While they reported it took little effort and time, they commonly stated “I just had to remember to do it.” Third, the instructions provided for each journaling activity were embedded within the audio clip, i.e., they were asked to reflect on a specific prompt via a three-minute journaling activity immediately following the listening activity. Some participants stated they would prefer to have the ability to read the journaling prompt as opposed to hearing the instructions. As a result of this feedback, several changes were made to the design of the intervention that I am now proposing as a part of my dissertation.

The biggest change will be the length of the intervention, which will now take place over the course of three weeks. This change is being made for several reasons. During the pilot, participants were encouraged to complete the activities on any three days throughout the week that aligned with their normal exercise routine. However, this made it difficult to track when participants were starting and ending their intervention week and especially difficult to provide reminders. Therefore, the length of the intervention for the new study will be three weeks, where the participants will engage in one activity per week. This is similar to other self-compassion intervention studies who utilized a three-week format (Albertson et al., 2015; Zeimer et al., 2019). At the beginning of each week, participants will receive an email with the list of activities and be asked to complete the activities before their first workout of the week. Subsequent reminder emails will be sent over the next two days. The extended period of time will not only offer a greater opportunity for reminders, it will also give participants the opportunity to

contemplate and reflect over each element of self-compassion for a longer period of time. The other changes made to the intervention (discontinuing the use of Slack and adding a written journal prompt) can be seen within the procedures section of the subsequent section (the present study). Finally, to decrease likelihood of attrition, participants will be emailed a link to the post-intervention measures survey at the completion of their third week. Within this survey, participants will be given a \$10 Amazon gift card.

Table 2. Acceptability and Feasibility

Question	Quote
How did you feel about the time commitment or effort needed to complete the intervention?	<p data-bbox="516 753 1411 894">“I didn't think it was a large time commitment at all. I think it was fairly simple. So, I think it was just remembering to do the videos like before, like it's basically scheduling it in...it was more of like a time management thing to include that in the schedule.” (Megan, age 27)</p> <p data-bbox="516 932 1411 999">“I didn't think it was too much, I thought it was perfectly fine. I just had to remember to do it.” (Carol, age 26)</p> <p data-bbox="516 1037 1411 1440">“I didn't feel like they were cumbersome, and I think, uh, well, OK, so here's a couple of things, for me, who like dreads working out. I'm the type of person who like... Alright, I'm gonna go workout and if there is something that's thrown off like...the garage is really messy...it throws me. So having to do something right before a workout was a little bit like Uhm?... Like an obstacle, like I don't know. It's sort of like, I didn't want to necessarily have any additional obstacles in my way before doing a workout. BUT I do think doing the thing right before the workout did put me in a better mindset. I wasn't able to hold onto it most of the time. But it started with a calmer, with me starting my workout in a calmer state.” (Mary, age 38)</p>

<p>Can you describe how this was either a positive or negative experience for you?</p>	<p>“Yeah, I think it was positive. Sometimes I’ll find like the mindfulness videos and you know clips and stuff can be kind of like goofy, but I didn’t find that, I thought they were pretty like reasonable and I didn’t feel like negatively towards them. They weren’t like cringy or anything like that, so that’s good because I think mindfulness can get like a bad rap in that way.” (Elizabeth, age 25)</p> <p>“It was a positive experience for me for sure. Like I said, like I, it’s a, It’s an opportunity for me to explore the idea of like talking kindly to myself throughout a workout and being, trying to like get curious about am I enjoying what I’m doing right now?” (Mary, age 38)</p> <p>“I would say it was more positive, more of a positive experience. Just like listening to the video clips, I feel like they had a more positive tone to them, so you know, how can you think of that as negative?” (Hattie, age 27)</p>
<p>What do you think, I as the researcher was trying to accomplish with the intervention?</p>	<p>“I think like the pre videos that we heard... I think is what they were called. Just trying to like provide one with like self-efficacy and confidence to kind of go forward through the exercise program and then kind of have that carry over and so I kind of took it as like giving yourself thoughts of like, you know, you’re doing great and I don’t remember the specific things that you said, but it was very like uplifting and motivating. And so, I think just using that as motivation for someone to kind of think highly of themselves going forward. (Megan, age 27)</p> <p>“Trying to use like body positivity in an exercise realm to, I don’t know about like increase exercise behavior, but maybe like increase the value of exercise. (Elizabeth, age 25)</p> <p>“It felt like you were focused on kind of like mindfulness, umm, and kind of connecting with ourselves. It was like being compassionate towards yourself and like I kind of thought about after listening to it and journaling. And then, uh, exercising how that like all kind of connects together.” (Carol, age 26)</p> <p>“Uh, I think, it seemed like, umm trying to get the people to like change how they feel, like before, during and after exercise and like, in more of a loving, compassionate way. If we tend to beat ourselves up or think we didn’t do a good job or dread the exercise, kind of change the story that we tell ourselves.” (Mary, age 38)</p>

Pilot Interviews

Participants from the intervention were asked if they were interested in completing follow-up interviews. The purpose of the interviews was twofold: to determine the acceptability and feasibility of the intervention and to gain insight into the experiences of the participants during the intervention. The reflections from the interviews provided context into the potential impact of the intervention, providing me with the opportunity to adjust its future design. Further, it highlighted some important gaps in the interview guide which informed both the framework and interview guide for the current study.

Participants

Upon completion of the intervention program, five women volunteered to partake in the interviews. All women identified as white and described themselves as regular exercisers. To provide anonymity and protect confidentiality, participants chose pseudonyms to be used throughout the interview process. The age and exercise frequency of each participant is provided in Table 6.

Table 6. Pilot participant characteristics

Participant pseudonym	Age (year)	Exercise frequency (days per week)
Hattie	27	5-6
Elizabeth	25	3-4
Mary	38	3-4
Carol	26	4-5
Megan	27	5-6

Results

Overall, participants felt the intervention was a positive experience that helped them explore how to speak more kindly to themselves. In response to engaging in the body self-compassion activities and how it impacted their engagement with exercise, participants noted

that some of the activities provided them an alternative approach to how they experience exercise and how they feel about their bodies during exercise. This was often demonstrated in their reflections on their own self-talk throughout the intervention. Participants stated that it gave them the opportunity to embrace their workout with more of an open mind, while giving themselves some kindness or acknowledging feelings of pride and competency.

While the insights from these experiences were beneficial, they also highlighted areas that needed more questioning and probing. For example, in order to better understand the underlying mechanisms of the impact of the intervention, it is important to gather a deeper understanding of the participants' experiences with exercise and their bodies prior to the intervention. This realization inspired the use of a narrative framework for my present study, which provides a more rich and complex narrative of their lived experiences and is dependent on the interview guide.

APPENDIX B: Intervention Materials

Week 1 Script:

Self-compassion and self-kindness

Today, I would like us to bring our attention to self-compassion and learning how to provide ourselves with self-compassion. Begin by taking a few deep breaths and focusing on the present moment and settling into your body.

What is self-compassion? Self-compassion is treating yourself with kindness and understanding in the face of suffering or feelings of failure and inadequacies. In the simplest terms, it is treating yourself the way you would a friend.

One core component of self-compassion, the one that we will be focusing on the most today, is self-kindness. Self-kindness is treating yourself with comfort, care, and understanding instead of self-judgement and criticism. What happens when you make a mistake? Think back to how you handled a difficult situation? For many of us, our first response is to criticize and shame ourselves for our mistakes. We begin to ruminate over how we could have been better and bring ourselves down with negative, unkind words. Self-kindness gives us a way to cope with those stressors in a more gentle and comforting way. It can counter our tendency to beat ourselves up. Allowing yourself kindness gives you room to alleviate your suffering, accept that short-comings and mistakes are a part of life and creates a bigger sense of resilience.

One part of self-kindness includes a sense of kindness towards our bodies. This can mean listening to our bodies needs or treating our bodies with respect and kindness. How do you show

up for your body? How do you try to feel connected with your body? How do you celebrate your body? What does your body provide for you?

In the next few moments, take some time to give yourself loving-kindness. First, find gesture that provides you with a gentle or supportive touch. This can be putting one or two hands over your heart, one or two hands on your stomach, or one or two hands on the back of your neck. What are some words or phrases you can offer to yourself? What do you need to hear today? What does your body need to hear today? Maybe it is “May I be kind to myself” or “May I begin to accept myself as I am” or “May I be strong.” Find a word or phrase that resonates with you. Repeat these words to yourself, offering you and your body loving-kindness.

At the completion of this recording, I would like you to take 3 minutes to respond to this session with some compassionate journaling. Once you hit stop, open the link to the word document and read the journaling prompt. Set a timer for 3 minutes. You can choose to journal in the word document, on a piece of paper, or in your own personal journal.

Week 1 Journaling activity:

Set a timer for 3 minutes and respond to the following prompt:

What kind words can I say to my body? Think of a time where you have struggled with your own perceived physical imperfections or limitations in your body? Then, write a response to that situation as if you were consoling a friend. Offer yourself kind words and understanding towards that struggle.

Week 2 Script:

Self-Compassion and Common Humanity

I would like us to bring our attention to self-compassion and learning how to provide ourselves with self-compassion. Begin by taking a few deep breaths and focusing on the present moment and settling into your body.

Self-compassion is treating yourself with kindness and understanding in the face of suffering or feelings of failure and inadequacies. In the simplest terms, it is treating yourself the way you would a friend.

Today, we will focus on a second component of self-compassion, which is common humanity. Common humanity entails feeling connected with others in the experience of life and recognizing that suffering and personal inadequacies are a part of the human experience. All humans are flawed, and all of us make mistakes. Instead of feeling isolated in our thoughts, feelings, and emotions, staying connected can allow us to identify with others who have similar experiences and more easily accept support from others. This can be a wonderful coping strategy in the face of setbacks or feelings of failure.

One way we can embrace common humanity is finding an appreciation for all bodies, as well as one's own unique body. What body experiences or struggles do you think you have in common with others? What about the experiences of joy you may have in your body? Remind yourself that you are not alone. Does recognizing that many of us share a common struggle to find love

and acceptance for our bodies make you feel more socially connected? In what ways can you use this knowledge to find appreciation for the uniqueness of all bodies, including your own?

In the next few moments, take some time to offer words of acceptance and appreciation for your unique body. What can you tell your body in this moment? Maybe its recognizing your differences and finding love for those differences.

At the completion of this recording, I would like you to take 3 minutes to respond to this session with some compassionate journaling. Once you hit stop, open the link to the word document and read the journaling prompt. Set a timer for 3 minutes. You can choose to journal in the word document, on a piece of paper, or in your own personal journal.

Week 2: Journaling activity

Set a timer for 3 minutes and respond the following prompt:

Think of a unique aspect of your body that you can appreciate. Reflect on how you can show appreciation for this aspect of your body. How can this broaden your perspectives of beauty, in general, and appreciate the value of all bodies?

Week 3 Script:

Self-compassion and Mindfulness

I would like us to bring our attention to self-compassion and learning how to provide ourselves with self-compassion. Begin by taking a few deep breaths and focusing on the present moment and settling into your body.

Self-compassion is treating yourself with kindness and understanding in the face of suffering or feelings of failure and inadequacies. In the simplest terms, it is treating yourself the way you would a friend.

Today, we will focus on our third component of self-compassion, which is mindfulness.

Mindfulness is the ability to be aware of our experiences and to observe our thoughts and emotions without judgement. A key piece of mindfulness is to take a balanced approach towards our thoughts, feelings, and experiences so that we can view them with clarity. This prevents us from over-identifying with the situation and exaggerating the implications of our mistakes.

Imagine a time when you made a mistake or felt inadequate in some way. How did you respond? Did you suppress the emotions or feelings around that experience? Or did you dwell on them for far too long, allowing yourself to unnecessarily suffer? Self-compassion and mindfulness allow us to hold these experiences in a non-judgmental way so that we can neither be too reactive or in denial. We can then try to respond to our emotions and feelings with compassion and kindness, playing a proactive role in alleviating our own suffering.

When it comes to mindfulness, it is also important to learn how to connect with our bodies and practice bringing awareness to our body's sensations. How do you feel connected to your body? How do you listen to your body? What are you feeling in your body in this moment? If it is anxiety or pain, acknowledge these emotions. See if you can provide yourself with comfort by

showing yourself some kindness. If it is joy or appreciation, express some gratitude. Remind yourself that you are not alone in these emotions. How can you approach the emotions and feelings around your body in a nonjudgmental way?

At the completion of this recording, I would like you to take 3 minutes to respond to this session with some compassionate journaling. Once you hit stop, open the link to the word document and read the journaling prompt. Set a timer for 3 minutes. You can choose to journal in the word document, on a piece of paper, or in your own personal journal.

Week 3 Journaling Activity:

Set a timer for 3 minutes. As you are journaling, try to respond to the following prompt:

Think of a time when you felt disconnected to your body and as a result, did not treat your body with care. Maybe you pushed too hard through an injury. Try and respond to this experience with kindness and understanding, offering it care. How can you connect and listen to your body in the future, nurturing it and responding to its needs without judgement?

Open-ended Questionnaires:

Prior to exercise:

1. What is your participant number?
2. How are you feeling in this moment?
3. Did you feel motivated to exercise today? Why or why not?

Post exercise:

1. What is your participant number?

2. How do you feel after exercising?
3. What type of exercise did you engage in?
4. Did you enjoy it?
5. What type of thoughts (if any) did you have about your body **during** exercise?
6. Did anything change in your exercise routine today after listening to the audio and journaling? If so, how?
7. Was there any part of activities that stuck with you throughout your routine?

APPENDIX C: Measurement Scales

1. Self-Compassion Scale

For each statement, participants will respond on a scale from 1 (almost never) to 5 (almost always).

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, 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.

Self-Kindness Items: 5, 12, 19, 23, 26

Self-Judgment Items (reverse scored): 1, 8, 11, 16, 21

Common Humanity Items: 3, 7, 10, 15

Isolation Items (reverse scored): 4, 13, 18, 25

Mindfulness Items: 9, 14, 17, 22

Over-identification Items (reverse scored): 2, 6, 20, 24

2. The Objectified Body Consciousness Scale

For each statement, participants will respond on a scale from 1 (strongly disagree) to 7 (strongly agree).

Surveillance Subscale

1. I rarely think about how I look.
2. I think it is more important that my clothes are comfortable than whether they look good on me.
3. I think more about how my body feels than how my body looks.
4. I rarely compare how I look with how other people look.
5. During the day, I think about how I look many times.
6. I often worry about whether the clothes I am wearing make me look good.
7. I rarely worry about how I look to other people.
8. I am more concerned with what my body can do than how it looks.

Reverse Scale Items:

1, 2, 3, 4, 7, 8

3. The Body Appreciation Scale – 2

Please indicate whether the question is true about you never, seldom, sometimes, often or always. 1 = Never, 2 = seldom, 3 = sometimes, 4 = often, 5 = 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 for 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)

4. The Behavioral Regulations in Exercise Questionnaire

Using the scale below, please indicate to what extent each of the following items is true for you.

Response scale starts from 0 (not true for me) to 4 (very true for me).

Intrinsic motivation subscale

1. I exercise because it's fun.
2. I enjoy my exercise sessions.
3. I find exercise a pleasurable activity.
4. I get pleasure and satisfaction from participation in exercise.

APPENDIX D: Interview Guide

Interview Guide

Thank you for participating in this interview. We are interested in your experiences while participating in this study and appreciate you taking time to speak with us and answer our questions. Please remember there are no right or wrong answers to these questions.

The interview should take no longer than an hour. This interview is completely voluntary and you may opt out of at any time for any reason. You may also skip a question for any reason.

In order to keep the data anonymous, you will begin the interview by picking a pseudonym, which will be used throughout interview process.

Finally, I would like to ask if I can record the audio from our interview. This allows us focus on what you are saying and later transcribe your answers to our questions. This recording will not be shared with anyone other than the research team or dissertation committee and will be used for data analysis only.

We will begin by asking questions about the role of exercise in your life, both in the past and currently

1. Please start by telling me a little bit about yourself.
2. At what point in your life do you remember first engaging in physical activity?
 - Involved in sports? PE? Etc.

3. Has the type of exercise that you engage in changed throughout your life? If so, how?
4. Tell me about the role exercise plays in your life now?
 - What do you do for exercise? How often?
 - What does your normal routine look like?
 - Why do you exercise? Motivation for exercise?
5. Has there been a time in your life where you took a break from exercising? Is so, why?
 - What was your motivation to get back to exercise?

We are now going to shift into questions about body image, your own body perceptions and experiences with body image.

6. Tell me about a time when you were first aware of your body's appearance.
7. Growing up, how was body image talked about among friends? Family?
 - How has this changed over time?

8. Tell me about how you feel about your body currently?
- How do you feel about the way it looks?
 - How much does what your body looks like matter to you?
 - How do you feel about the function of your body (i.e., what it can do)?

9. How do you pay attention to your body during exercise?

Probes:

- Are there times when you criticize your body during exercise?
- Are there times when you appreciate or feel pride in your body during exercise?

10. Please describe if and how body image plays a role in your exercise experiences?

- What role does managing your body's appearance have in your exercise habits?

Self-Compassion

11. How would you describe the concept of self-compassion?

12. Describe a time when you treated yourself with self-compassion (prior to the intervention)? In other words, describe a time when you have tried to treat yourself with kindness and understanding or attempted to be less critical of yourself?

13. How would you describe being self-compassionate towards your body? (What does it mean to apply the components of self-compassion towards your body)?

- How do you take care of your body?
- What are some specific aspects of your body's capabilities that you appreciate? Why are these important to you?
- Do opinions or perceptions from significant others in your life (friend, partner, family member) affect your relationship with your body? If so, how do you react to these opinions?

I am now going to ask you about your thoughts, reflections, and experiences throughout the intervention.

14. What initial reactions did you have to the audio clips and journaling?

15. What do you think I, as the researcher, was trying to accomplish with the intervention?

16. How would you describe the time commitment to complete the activities throughout the intervention?

- Effort?

17. Were any of the activities meaningful to you?

- Was there any activity you avoided? Why? (maybe explicitly ask if they journaled) Or anything you completed but would not want to do again?

18. How did you feel about completing the activities prior to your normal exercise routine?

19. Describe how the audio clips and journaling impacted your relationship with exercise?

20. Describe how the audio clips and journaling impacted your view of your body?

21. Describe how the audio clips and journaling impacted your view of self-compassion?

- Provide an example of a component of self-compassion that seemed meaningful to you?

(For 18-20, want to leave these open-ended, but may need some follow-ups. Maybe just ask if they can provide a specific example for each? Other probes....can you tell me more about that, are you saying that....?)

22. What are some thoughts or reflections you have on the concept of treating your body with kindness and compassion?

- How did learning about self-compassion impact your relationship with your body?

23. Describe a time throughout the three weeks of participation where you practiced self-compassion towards your body?

24. Describe a time throughout the three weeks of participation where you practiced self-compassion during exercise?

- How did understanding more about self-compassion impact your exercise experience?

For question 23 and 24...probe with asking for examples of self-kindness, staying in tune with the body, resisting critical thoughts, or understanding of differences in body's physicality and capabilities.

25. What would it look like if you continued to apply the teachings of self-compassion towards your body?

26. Describe how this was either a positive or negative experience for you.

27. How have the concepts provided during the intervention been useful?

28. Was anything triggering?

29. If you did find this useful, how do you think the concept of self-compassion or body self-compassion could be introduced earlier?