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Efficacy of a Dissonance-Based Intervention for Self-Objectification: A Randomized Controlled Trial

Jessie Erin Menzel

University of South Florida, jessiemenzel@gmail.com

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Efficacy of a Dissonance-Based Intervention for Self-Objectification:
A Randomized Controlled Trial

By

Jessie E. Menzel

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Psychology
College of Arts and Sciences
University of South Florida

Major Professor: J. Kevin Thompson, Ph.D.
Vicky Phares, Ph.D.
Ellis Gesten, Ph.D.
Michael T. Brannick, Ph.D.
Tiina Ojanen, Ph.D.

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ABSTRACT

Self-objectification is the process by which women take on a third-person perspective in evaluating their physical appearance and sexual attributes. Objectification theory states that self-objectification may lead to negative mental health outcomes in women; a growing body of cross-sectional and experimental research supports the connection between self-objectification and the experience of shame, disordered eating, depression, and sexual dysfunction. This study sought to evaluate an intervention designed to reduce self-objectification behaviors and beliefs in order to prevent the development of disordered eating, depression, and sexual dysfunction. An efficacious prevention program using cognitive dissonance induction was adapted to target self-objectification. The efficacy of the self-objectification dissonance intervention was evaluated in comparison to an expressive writing control condition. The self-objectification intervention was also compared to an existing empirically supported cognitive dissonance intervention targeting beliefs regarding the thin-ideal to determine whether or not this intervention provided added benefits in reducing risk factors for disordered eating and depression.

A sample of 119 undergraduate females was recruited to participate in the study. Participants were randomized to one of three conditions: the self-objectification dissonance intervention, the thin-ideal dissonance intervention, or the expressive writing control group. All participants completed a baseline assessment and two intervention sessions over a three week period. One month following the completion of the second

intervention session, participants were asked to complete a follow up assessment. Change in target outcome variables from baseline to post-intervention were evaluated using hierarchical linear models. Maintenance of treatment outcomes from post-intervention to 1 month follow up was evaluated using mixed factor analysis of variance.

Results indicated that significant changes in outcome variables (body shame, disordered eating, body satisfaction, depression symptoms, and sexual self-consciousness) and mediating variables (self-surveillance, self-objectification, thin-ideal internalization) were associated with all three groups. The self-objectification dissonance intervention was associated with a greater reduction in self-surveillance compared to the control group but not with the thin-ideal dissonance intervention. For all groups, there were no significant changes in outcome and mediating variables from post-intervention to 1 month follow up. Participants in the self-objectification dissonance intervention, though, did continue to experience a decrease in self-surveillance over the one month follow up period compared to the thin-ideal dissonance group.

Overall, results did not support that a self-objectification dissonance intervention is associated with significant reductions in eating disorder and depression risk factors above and beyond a general expressive writing task and existing intervention programs. These findings suggest that there is limited utility in specifically targeting objectification processes in prevention programs. Implications of study findings for future eating disorder and mental health prevention program designs are discussed.

CHAPTER ONE:

INTRODUCTION

Research on the psychological consequences of the problematic sexual objectification of women in Western culture has increased in recent years. With a greater focus on this cultural practice came the proposal of *objectification theory* by Fredrickson and Roberts (1997) which provided a framework for understanding the effects of the sexualized focus on women's bodies in our society. Most importantly, numerous studies have linked the sexual objectification of women to an internalized phenomenon called *self-objectification* which has subsequently been linked to outcomes such as shame, depression, sexual dysfunction, and disordered eating (Calogero, 2009; Calogero, Davis, & Thompson, 2005; Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998; Quinn, Kallen, Twenge, & Fredrickson, 2006; Tiggemann & Slater, 2001). In other words, researchers have identified self-objectification as the mechanism by which the cultural practice of sexual objectification negatively affects women's lives. Considering the ubiquitous and often daily nature of sexually objectifying experiences in women's lives and the potentially serious consequences of these experiences, researchers have begun to explore and discuss ways of reducing levels of self-objectification with little research published to date. By drawing on objectification theory and examining research from related fields we can begin to hypothesize which interventions may be successful in battling this phenomenon. Specifically, cognitive dissonance-based interventions, like those used in the eating disorder prevention field, may be effective in targeting and decreasing the dysfunctional beliefs that maintain self-objectification.

Objectification Theory

Objectification refers to the treatment of a person as a thing that can be used, manipulated, controlled, and defined by its physical properties (Calogero, Tantleff-Dunn, & Thompson, 2011). Persons that are objectified are effectively stripped of their own purposes, wishes, interests, agency, feelings, and autonomy (Calogero et al., 2011; Nussbaum, 1995). According to objectification theory, Westernized societies commonly treat people as if they are thing or commodities, but objectification of persons is most common within a heterosexual context – meaning that within heterosexual relationships, women are treated, defined, and valued as objects more often than men (Calogero et al., 2011; Henley, 1977). Moreover, this objectification is often sexualized in such a way that women’s sexual parts or functions are most often separated out from the rest of her person (Bartkey, 1990). This process of reducing women to their physical and sexual parts has been termed sexual objectification.

Sexual objectification can occur (and often does occur) in women’s day to day lives in many forms. “Benign” forms of sexual objectification can be observed in advertisements in which a woman’s body is often used as a prop to sell a number of consumer products. Often the woman’s body in an advertisement is twisted or contorted in such a way as to make it more sexual inviting or appeal. The body may even be portrayed without a head. Occasionally, the product and the woman are portrayed as one and the same thing, taking the objectification a step further. More extreme forms of sexual objectification occur when real women’s bodies are “put to use” by men in the form of sexual assault or rape. Other subtle (and not so subtle) forms of sexual objectification can occur in real women’s lives on a more frequent basis such as catcalling on the street, sexual harassment by friends or coworkers, listening to sexually degrading jokes,

hearing men talk about women in depersonalizing ways (e.g., “the hot one”, “nice piece of ass”), and men staring or leering at their bodies.

Most women are aware of the social value of their physical appearance, even if they do not all experience sexual objectification to the same degree (Fredrickson & Roberts, 1997). From a young age, most girls are taught to invest a great deal of time and energy into cultivating and maintain their physical appearance (e.g., a mother teaching her daughter to apply make-up, playing dress up; Smolak & Murnen, 2011). Girls and women necessarily spend a large amount of time monitoring and evaluating their “looks”, make-up, hair, and clothes by gazing into mirrors, seeking feedback on their appearance from others, trying out different hair/make-up/clothing styles, shopping, and reading tutorials in fashion magazines. This externally-oriented self-focus and valuation of physical appearance is reinforced by social consequences. Evidence suggests that a woman’s physical appearance is associated with – and may even determine – her economic and social success, including job offers, advancement in the work place, admittance to college, dating and marriage opportunities, and popularity (Fredrickson & Roberts, 1997; Rothblum, 1994). Therefore, Fredrickson and Roberts (1997) proposed that it is advantageous for a woman to be her “own first surveyor”.

Self-Objectification. The internalization of the perspective or gaze of the “other surveyor” has been termed *self-objectification* (Fredrickson & Roberts, 1997). Fredrickson and Roberts (1997) theorized that over time, as the result of personal experiences of sexual objectification, women take on and turn inward on themselves the sexualized perspective of the other. Thus, women begin to regard themselves as objects of others’ view and evaluation much as society regards them in that way. Internalizing this “other’s” gaze leads women to engage in a “self-policing” or habitual self-monitoring of their own, outward physical appearance (Calogero

et al., 2011; Fredrickson & Roberts, 1997; McKinley & Hyde, 1996). McKinley and Hyde (1996) referred to this feature as self-surveillance and it is considered to be the hallmark of self-objectification (Calogero, 2011). Thus, when self-objectifying, women tend to worry about their physical appearance, engage in checking behaviors related to their physical appearance, and value appearance-based aspects of their physical appearance (e.g., sex appeal, weight) above other, more competence-based, non-observable aspects of their physical appearance (e.g., stamina, health; McKinley & Hyde, 1996; Noll & Fredrickson, 1998). Self-objectification can be both state-limited (Calogero, 2004; Fredrickson et al., 1998; Hebl, King & Lin, 2004; Quinn et al., 2006) and trait-like (Noll & Fredrickson, 1998).

In empirical studies, self-objectification is most often operationalized as either self-surveillance or as the valuation of appearance-based aspects of appearance. Two different self-report measures are used to assess these constructs: self-surveillance by the surveillance subscale of the Objectified Body Consciousness scale (McKinley & Hyde, 1996; see Appendix C) and valuation of the self in appearance-based terms by the Self-Objectification Questionnaire (Noll & Fredrickson, 1998; see Appendix D). Previous studies examining these two constructs suggest that they are highly related yet slightly distinct. Results show that both self-surveillance and self-objectification (operationalized as the valuation of physical appearance) are highly correlated ($r = .48 - .58$; Calogero, 2009; Syzmanski & Henning, 2007; Tiggemann & Lynch, 2001) but the nature of their relationships to outcome variables are varied. Path analyses from independent studies of the relationships between self-objectification and psychological outcomes (e.g., depression, body shame, and disordered eating) show that self-surveillance fully mediates the relationship between self-objectification and psychological outcomes (Calogero, 2009; Syzmanski & Henning, 2007). Thus, self-objectification – or valuing one’s self in appearance-

based terms – leads to habitual body monitoring which in turn leads to negative psychological outcomes. From this point forward it should be noted that the term self-objectification will be used refer to the valuation of the self in appearance-based terms and self-surveillance will be used to refer to habitual body monitoring.

Psychological Consequences of Self-Objectification

Objectification theory provides a framework for how self-objectification could lead to consequences for women's mental health (Fredrickson & Roberts, 1997). As stated previously, not all women experience sexual objectification to the same degree – and not all women are negatively affected by the ubiquitous practices of sexual objectification to the same degree. Fredrickson and Roberts (1997) stated that it was the extent to which women internalized the gaze of the other and self-objectified that would lead to negative psychological consequences. Thus women with higher levels of self-objectification would experience negative effects to a greater extent. Researchers predicted that self-objectification and self-surveillance would then lead to appearance anxiety, interoceptive deficits (i.e., the inability to accurately identify internal physical and emotional states), shame, and disrupted flow experiences (Fredrickson & Roberts, 1997). Support has been found for these consequences in numerous studies (see Calogero, 2004; McKinley & Hyde, 1996; Moradi, Dirks, & Matteson, 2005; Myers & Crowther, 2008; Szymanski & Henning, 2007). These consequences overtime might then lead to more pervasive and serious mental health consequences like depression, sexual dysfunction, and eating disorders (Fredrickson & Roberts, 1997).

Body Shame. Self-objectification is theorized to lead to negative outcomes in part because of Western society's unrealistic and unattainable standards of beauty. Women must meet extreme standards of thinness, yet have large breasts; appear sexy and seductive without being

overtly sexual; women must have firm, toned muscles that are not too large. When women fail to meet these standards of beauty (which they most likely will) they may feel a sense of shame as a result. The support for the relationship between body shame, self-objectification, and self-surveillance is extensive. Positive, large correlations between body shame and self-surveillance and moderate correlations between body shame and self-objectification have been reported in numerous cross sectional studies (e.g., Calogero, 2009; Noll & Fredrickson, 1998; Tiggemann & Slater, 2001; Tylka & Hill, 2004). Causal relationships have also been demonstrated in experimental studies in which women are manipulated into anticipating an outside observer's perspectives (i.e., induced state self-objectification) and subsequently experience increased levels of body shame (Calogero, 2004; Fredrickson et al., 1998; Tiggemann & Boundy, 2008). In one longitudinal study, researchers found that levels of self-surveillance at Time 1 predicted body shame levels at Time 2 across a 2 year period (Grabe, Hyde, & Lindberg, 2007). The link between self-objectification, specifically self-surveillance, and the experience of body shame is important because several studies have provided support for the function of body shame as the mediating link between self-objectification and other psychological consequences (Calogero, 2009; Calogero et al., 2005; Greenleaf, 2005; Moradi et al., 2005; Noll & Fredrickson, 1998; Tiggeman & Kuring, 2004; Tiggemann & Slater, 2001; Szymanski & Henning, 2007).

Disordered Eating. Other psychological consequences that have been empirically linked to self-objectification include depression, disordered eating, and decreased or worsened sexual functioning. The link between self-objectification and disordered eating has been researched extensively due to the theoretical relationship between self-objectification and impossible standards of beauty. Cross sectional studies have shown that self-objectification is weakly to moderately correlated with drive for thinness (the desire to lose weight and diet), bulimia

behaviors, and body dissatisfaction (Calogero, 2009; Calogero et al., 2005; Tiggemann & Kuring, 2004; Tiggemann & Lynch, 2001). Self-surveillance more consistently shows moderate to strong correlations with drive for thinness, bulimia behaviors, body dissatisfaction, internalization of the thin ideal, and restrained eating (Calogero, 2009; Greenleaf, 2005; Moradi et al., 2005; Muehlenkamp & Saris-Baglama, 2002; Tiggemann & Kuring, 2004; Tiggemann & Lynch, 2001; Tylka & Sabik, 2010). Studies using path analysis and structural equation modeling consistently show that body shame fully mediates the relationship between self-surveillance and disordered eating outcomes and that both self-surveillance and body shame mediate the relationship between self-objectification and disordered eating outcomes (Calogero, 2009; Syzmanski & Henning, 2007; Tiggemann & Lynch, 2001). An experimental manipulation of the state of self-objectification produced changes in eating behavior (Fredrickson et al., 1998). In this study, female participants were randomly assigned to try on either a swim suit or a sweater. Participants who tried on a swim suit ate significantly less food following the try on periods than participants who tried on a sweater (Fredrickson et al., 1998).

Depression. Links have also been supported between self-objectification, self-surveillance, and depression. Again, cross-sectional correlations have been established between self-surveillance and depressive symptomatology in several independent studies and relationships tended to be moderate (Calogero, 2009; Miner-Rubino, Twenge, & Fredrickson, 2002; Muehlenkamp & Saris-Baglama, 2002; Muehlenkamp, Swanson, & Brausch, 2005; Tiggemann & Kuring, 2004). Links have also been established longitudinally between depression and self-surveillance, with self-surveillance predicting depression symptomatology and rumination across a 2 year period (Grabe, et al., 2007). Consistent with model proposed by objectification theory, body shame also significantly and fully mediates the relationship between

self-surveillance and depression symptoms (Calogero, 2009; Tiggemann & Kuring, 2004; Grabe et al., 2007). In addition to depression, self-surveillance has also been indirectly linked through the mediating variables of body shame and depression to self-harm behaviors (Muehlenkamp et al., 2005) and substance abuse (Carr & Syzmanski, 2011).

Other Outcomes. Self-objectification and self-surveillance have also been tied to decreased sexual satisfaction, sexual dysfunction, personality traits, and diminished cognitive performance. Both self-objectification and self-surveillance are moderately correlated with self-consciousness during sexual activity in a sample of female college students (Steer & Tiggemann, 2008). In the same study, body shame mediated the relationship between self-surveillance and sexual self-consciousness and sexual self-consciousness was related to decreased general sexual functioning (Steer & Tiggemann, 2008). These results were replicated in part in an independent study that found that body shame significantly predicted sexual self-consciousness which was in turn related to decreased arousal and sexual pleasure (Sanchez & Kiefer, 2009). In another sample of college women, self-surveillance directly predicted decreased sexual satisfaction (Calogero & Thompson, 2009). Miner-Rubino and colleagues (2002) linked self-objectification positively to neuroticism and negatively to agreeableness. Self-objectification has also been linked experimentally to decreased performance on tests of math performance and cognitive functioning (Fredrickson et al., 1998; Quinn et al., 2006).

It is also important to note that while theories of objectification are based in part on Westernized gender roles and appearance ideals, the major tenets of objectification theory have been demonstrated across racial and cultural groups as well as across the life span. The experimental effects of Fredrickson and colleagues (1998) swimsuit study were replicated in a diverse sample of African American, Hispanic, and Asian American women (Heb et al., 2004).

Similar levels of self-objectification and body shame have also been reported between White and non-White women as well as women of heterosexual and homosexual orientation (Kozee & Tylka, 2006; Moradi et al., 2005). However, some significant differences have emerged that suggest that self-surveillance is higher in European American women compared to Latina and African American women and higher in lesbian woman compared to heterosexual women (Kozee, Tylka, Augustus-Horvath, & Denchik, 2007; Kozee & Tylka, 2006). Furthermore, relationships between self-objectification, surveillance, and body shame have been established in populations of adolescent girls (Grabe, Hyde, & Lindberg, 2007) and in populations of older women (up to 84 years of age; Tiggemann & Lynch, 2001). One of the findings from Tiggemann and Lynch's (2001) work across the life span is that self-objectification, body shame, and self-surveillance significantly decrease with age.

In summary, results from cross sectional, experimental, and longitudinal studies have established links between self-objectification and self-surveillance and a number of psychological outcomes. Specifically, self-surveillance as an outcome of self-objectification has a moderate to strong relationship to disordered eating, depression, and sexual self-consciousness. Furthermore, these relationships are fully mediated by body shame as an outcome of self-surveillance. The negative effects of self-objectification and subsequent self-surveillance are not specific to European American women and have been demonstrated in a number of cultural and ethnic groups as well as in adolescent girls.

Interventions Targeting Self-Objectification

While a considerable amount of work has focused on establishing the consequences of self-objectification, only two studies to date have focused on reducing levels of self-objectification. These studies examined the role of yoga in reducing levels of body shame and

self-objectification using quasi-experimental designs (Daubenmier, 2005; Impett, Daubenmier, & Hirschman, 2006). Daubenmier (2005) found that women who participated in yoga had lower levels of self-objectification, disordered eating, and body dissatisfaction compared to women who either participated in aerobic exercise classes or who did no exercise at all. Impett and colleagues (2006) also found a reduction in levels of self-objectification from baseline to the end of a 2 month yoga immersion program. Researchers concluded that the lower levels of self-objectification in women participating in yoga were associated with greater levels of body awareness and a greater desire to care for one's body also found in the yoga groups (Daubenmier, 2005). Both of these studies, however, lacked random assignment and appropriate control group comparisons which do not allow us to draw any causal conclusions about the efficacy of yoga in reducing self-objectification.

Other researchers have proposed other possible interventions for self-objectification. Avenues for intervention and prevention have been proposed primary and secondary prevention levels (Caplan, 1964; Tylka & Augustus-Horvath, 2011). Tylka and Augustus-Horvath (2011) advocate for the implementation of prevention program that build self-esteem in young girls and that have already have evidence for their efficacy in preventing body dissatisfaction and disordered eating (e.g., Go Girls!, Piran, Levin, & Irving, 2000, and Full of Ourselves, Steiner-Adair & Sjostron, 2006). They also propose that a primary form of prevention would be to help change sexually objectifying attitudes towards women in boys and men (Tylka & Augustus-Horvath, 2011). One well established and efficacious program that could be used is the Men's Program (Foubert, 2005) that prevents sexual harassment and violence towards women. Lastly, Tylka & Augustus-Horvath (2011) suggest that the results of Daubenmier's (2005) and Impett and colleagues' (2006) not be ignored and posit that mindfulness-based programs (such as yoga) may

be useful to help improve women's relationships with their bodies in terms of improve awareness and desire to take care of the bodies internal needs (e.g., emotions, fatigue, hunger, sickness).

Dissonance-Based Interventions

Another possible intervention for targeting self-objectification that has been extensively employed in eating disorder secondary prevention programs is a cognitive dissonance based intervention (DBI). Tylka and August-Horvath (2011) feel that the use of DBI's in reducing self-objectification warrant further investigation for several reasons. First, self-objectification is thought to be the results of social influences and messages that objectify women and DBI's are typically used (particularly in eating disorder prevention) to help individuals contextualize and understand these messages. Second, DBI's may help to disrupt distorted cognitions that maintain self-objectification beliefs and behaviors in women (e.g., "Appearance is my most important quality"). Thus DBI's may be help women to recognize and understand sexually objectifying messages and practices as well as challenge their own beliefs about valuing women in terms of appearance.

Cognitive Dissonance Theory. DBI's for eating disorders were developed based on Festinger's (1957) cognitive dissonance theory. Cognitive dissonance theory posits that a psychological tension or discomfort is created within in an individual when that person's actions are inconsistent with his or her thoughts or beliefs (Festinger, 1957). A person is then motivated to reduce that psychological tension and does so by altering his or her beliefs to be more in line with his or her actions, thus restoring consistency between actions and beliefs. Cognitive dissonance theory has been applied to research on attitude change and results support that individuals show a change in attitudes towards the direction of their behaviors (e.g., Devine, Tauer, Barron, Elliot, & Vance, 1999). Researchers believe that the same cognitive processes

underlying dissonance-based attitude change are those that are responsible for change in depressed and dysfunctional thoughts in cognitive-behavioral therapy (Tyron & Misurell, 2008). Cognitive-behavioral therapy (CBT) includes a technique in which individuals challenge negative thoughts by producing evidence that is counter to the negative thought or belief (Beck, Rush, Shaw, & Emery, 1979). This cognitive dissonance process is believed to be the key mechanism in CBT that leads to more positive and rational ways of thinking and subsequent changes in depressed mood and behavior (Tyron & Misurell, 2008).

DBI's for the Prevention of Eating Disorders. The principles of cognitive dissonance theory and attitude change have been applied in successful prevention programs for eating disorders (Stice, Shaw, & Marti, 2007). Successful DBI's for the prevention of eating disorders target a key risk factor for the development of eating disorders: the internalization of the thin-ideal (Stice, 2002). These programs aim to reduce the internalization of the thin ideal – or the extent to which a person “buys into” the thin ideal of beauty – by having individuals engage in a number of activities that critique the thin ideal. The efficacy of these interventions has been demonstrated in college women and adolescent girls who had initially elevated levels of thin-ideal internalization (secondary prevention efforts; Stice, Trost, & Chase, 2003; Stice, Marti, Spoor, Presnell, & Shaw, 2008) and in universal risk samples of college-aged women (primary prevention efforts; Becker et al., 2008). These programs have been standardized and published and include The Body Project (Stice & Presnell, 2007) and the Sorority Body Image Program (SBIP), a sorority-run initiative (Becker & Stice, 2008).

In each of these programs, several methods are used to produce dissonance. The first key component of DBI programs is the creation of an open atmosphere and the voluntary engagement of all program participants. The second component is an activity in which

participants are asked to define and discuss the thin ideal as well as identify the costs associated with pursuing the thin ideal. The third component consists of a series of activities in which the participants activity critique or speak out against the thin ideal. These tasks include a writing task in which participants develop verbal challenges to the thin ideal, a role play task in which participants persuade another person to resist the thin ideal, and brainstorming sessions in which participants come up with ideas on how to resist the thin ideal in day to day life. Variations of these activities are used in both prominent DBI programs and may be performed over one or more sessions. If DBI's are conducted across multiple sessions, homework assignments are also a key component of the intervention.

The first DBI that targeted thin ideal internalization was developed by Stice and colleagues (2000). The intervention was initially tested in 30 undergraduate women against a wait-list control and produced significant reductions in body dissatisfaction, negative affect, bulimic symptoms, and thin-ideal internalization from baseline to program completion compared to the control group (Stice et al., 2000). Since the initial efficacy trial, several trials using random assignment and larger sample sizes have been conducted. The intervention proved efficacious compared to an active control group (which consisted of a healthy weight psychoeducation program) in that it produced greater reductions in dieting behavior, disordered eating, and thin-ideal internalization (Stice et al., 2003). Longitudinal analyses of program effects have also found that significant reductions in target variables from baseline, including thin ideal internalization, are maintained at 1 month, 6 month, 2 year, and 3 year follow up (Stice et al., 2000; Stice et al., 2003; Stice et al., 2008). However, it should be noted that the differences between the DBI and the healthy weight control conditions dissipated over time in the 2 and 3 year follow ups (Stice et al., 2008). Stice and colleagues (2007) have also demonstrated that it is

the reduction of thin ideal internalization that mediates the reduction in study outcome variables from baseline to program completion, indicating that changes in the internalization of the thin ideal are the mechanism by which the DBI produces changes in study outcomes.

An independent group of researchers has replicated the work of Stice and his colleagues and demonstrated the effectiveness of DBI's in real world setting. Becker and colleagues (2006) extended their work own work demonstrating the efficacy of the DBI in a population of college sorority members (Becker, Smith, & Ciao, 2005) to show that the DBI could also be efficacious when administered by peer leaders. The study consisted of 80 sorority members who participated in a semi-mandated body image program within their sorority system. Group sessions in the program were led by undergraduate peer facilitators and sorority members who participated in the program showed an 8 month, moderate to large reduction in thin ideal internalization, eating pathology, and body dissatisfaction (Becker et al., 2006). The sorority body image program has now become a self-sustaining prevention program disseminated by a national sorority chapter and research suggests that the disseminated program remains effective at reducing thin ideal internalization and eating pathology (Perez, Becker, & Ramirez, 2010).

Dissonance-Based Interventions and Self-Objectification

Given the large body of evidence that demonstrates the effectiveness of DBI's in reducing thin ideal internalization and associated disordered eating and body dissatisfaction, these techniques may also be effective in reducing self-objectification. It seems warranted to apply theories of attitude change to reducing self-objectification based on the theory that cognitive processes are involved in maintaining a person's objectifying view of the self (Tylka & Augustus-Horvath, 2011). When Fredrickson and Roberts (1997) initially proposed objectification theory, they theorized that women and girls self-objectify because they are aware

of the value of their own appearance and thus they feel it is advantageous for them to monitor and carefully manage their appearance. Self-objectification and self-surveillance can be conceptualized as belonging to a cognitive schema that a woman's appearance determines her value to others and how she will be treated by others. Moreover, her value will in part be determined by how closely she approximates society's standard of beauty. These schemas may not be entirely irrational but they may lead to negative and dysfunctional thoughts such as "Others will only like me if I look beautiful" or "Men only care about how I look, not how smart I am or my personality."

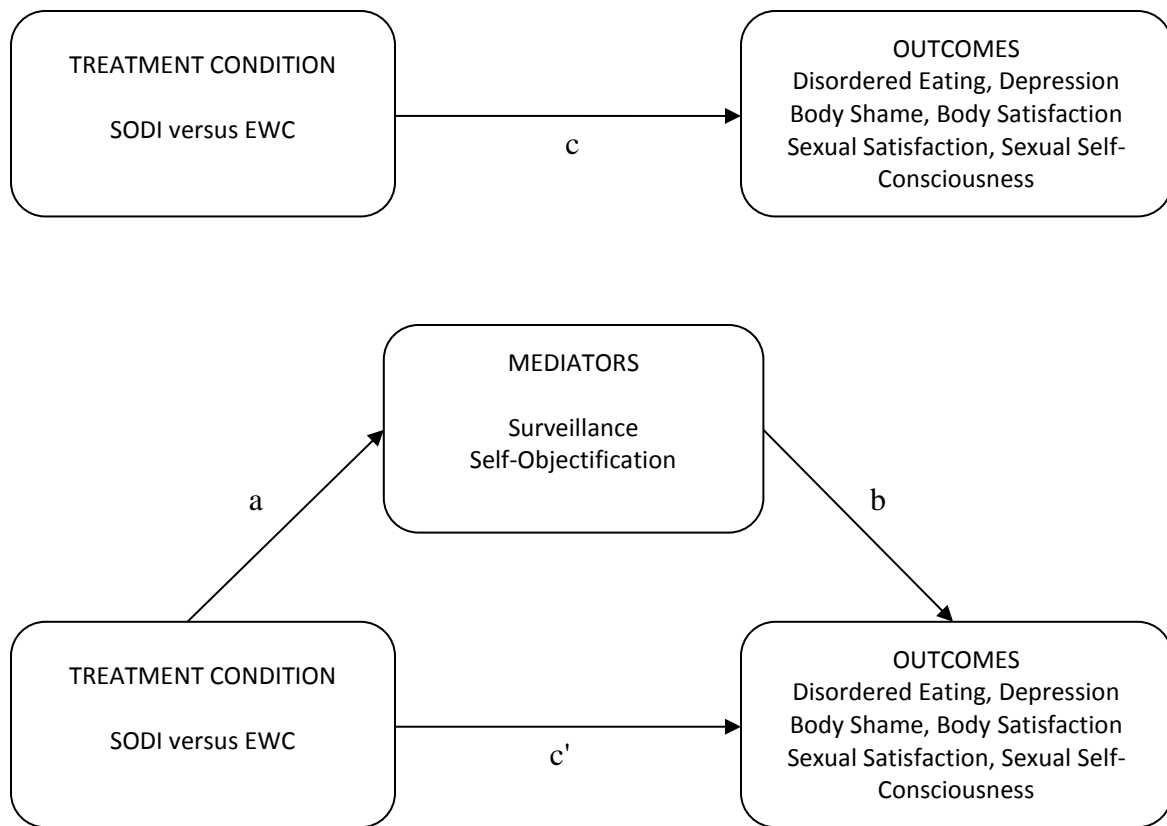
There is some preliminary evidence that DBI's have an effect on levels of self-objectification. Becker and colleagues (2013) recently presented findings that a DBI targeting thin ideal internalization in 188 undergraduate females resulted in significant reductions in self-surveillance in addition previously studied outcome variables. However, the study failed to find significant reductions in body shame and it did not include a measure of self-objectification as measured by valuation of appearance-based aspects of the self. Furthermore, it should be noted that while thin-ideal internalization and self-objectification are related constructs, theoretically, self-objectification extends beyond a "buying into" of societal standards of beauty to a more general belief that a woman's appearance determines her value to others. In other words, while a woman may be able to be persuaded that the thin ideal of beauty is not universal or realistic, she may still be invested in her appearance and focused on how others evaluate her appearance (and thus her self). Therefore, an intervention targeting self-objectification using dissonance-based techniques may be more effective if its content reflects a critique of the broader social practices of sexual objectification and the beliefs and behaviors that are characteristic of self-objectification. Based on objectification theory, an effective intervention program for self-

objectification should also be able to demonstrate reductions in associated depressed mood and sexual satisfaction in addition to reduction in disordered eating as these outcomes are the main mental health risks identified by Fredrickson and Roberts (1997).

Study Aims and Hypotheses

The primary aim of this study was to test the efficacy of a dissonance-based intervention designed to reduce self-objectification in college women at risk for depression and disordered eating. Based on this aim, the following hypotheses are proposed:

- 1) The self-objectification dissonance-based intervention (SODI) will lead to greater changes in the following outcomes from pre-test to post-test compared to an expressive writing control group (EWC) and that these changes will be maintained at one-month follow up: decreased depressive symptomatology, decreased eating disorder symptomatology, decreased body shame, increased body satisfaction, increased sexual satisfaction, and decreased sexual self-consciousness.
- 2) Since the intervention is designed to target women's current high levels of self-objectification, the SODI will produce greater decreases in levels of trait self-objectification and self-surveillance in women from pre-test to post-test in comparison with the EWC and these changes will be maintained at one-month follow up.
- 3) The changes in self-objectification variables are hypothesized to be the mechanisms that theoretically will underlie the change in the outcome variables in the SODI. Thus, changes in trait self-objectification and self-surveillance will mediate the intervention effect on the outcome variables from pre-test to post-test in the SODI group only compared to the EWC group (Figure 1).



A second aim of this study was to test the efficacy of the self-objectification intervention against another popular and effective eating disorder prevention program: a thin ideal internalization dissonance-based intervention (TIDI). The effectiveness of the TIDI on improving levels of eating disorder symptomatology and body satisfaction has been demonstrated in numerous studies. Furthermore, it has been demonstrated that reduction in internalization of the thin-ideal (the underlying mechanism of change) mediates the outcomes of TIDI's. However, the self-objectification dissonance-based intervention aims to target mechanisms of change and outcome variables that are consistent with objectification theory and that have not been consistently or effectively changed by current thin-ideal dissonance-based interventions. Based on this second aim, the following hypotheses are proposed:

- 4) The SODI group, compared to the TIDI group, will be equally effective at producing changes in the following outcome variables from pre-test to post-test and that these changes will be maintained at one-month follow up in both groups: decrease in eating disorder symptomatology, decrease in depressive symptomatology, and increase in body satisfaction.
- 5) The SODI group will lead to greater changes in the following outcome variables from pre-test to post-test, compared to the TIDI group, and these changes will be maintained at one-month follow up: decreased self-objectification, decreased self-surveillance, decreased body shame, increased sexual satisfaction, and decreased sexual self-consciousness.
- 6) To demonstrate mechanisms of change specific to intervention groups, it is predicted that changes in outcome variables from baseline to post-test in the SODI group will be mediated by changes in self-objectification variables from baseline to post-test compared to the TIDI group (Figure 2). Likewise, changes in outcome variables from baseline to post-test in the TIDI group will be mediated by changes in thin-ideal internalization from baseline to post-test compared to the SODI group (Figure 3). In other words, changes in self-objectification variables should not mediate outcomes in the TIDI group and changes in thin-ideal internalization should not mediate outcomes in the SODI group.

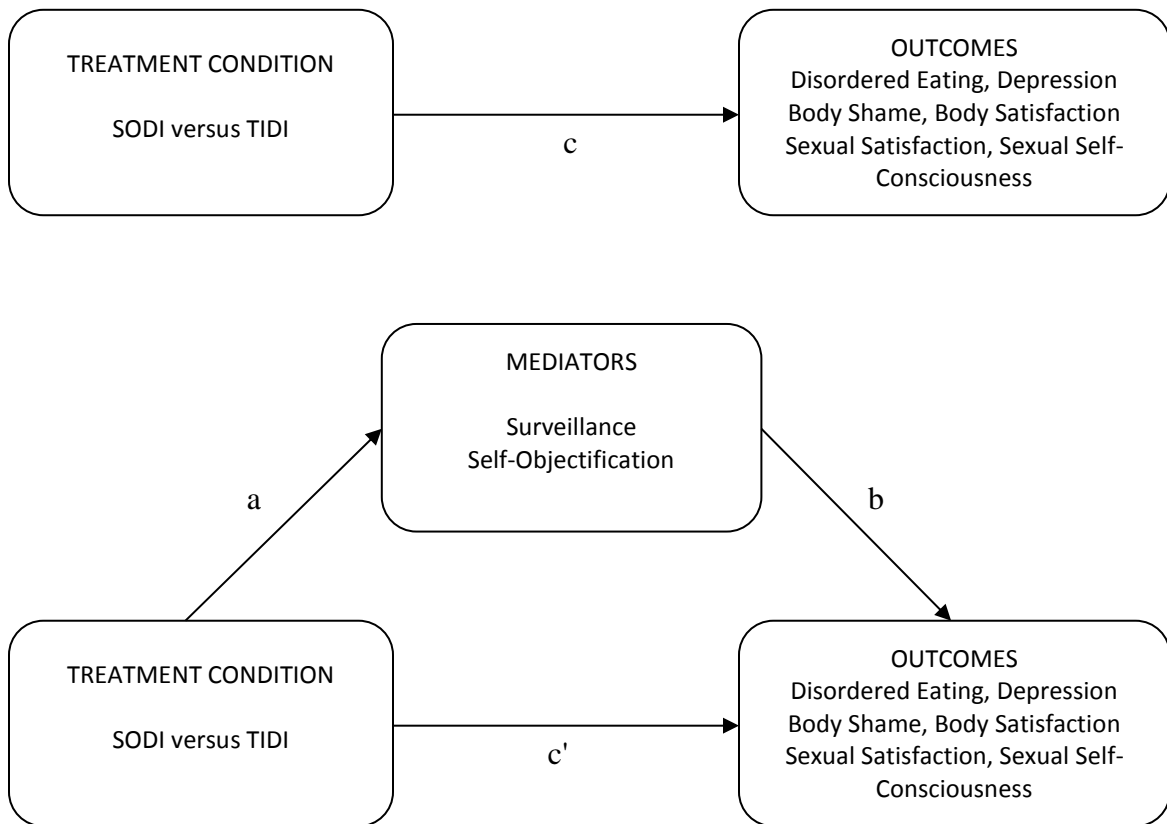


Figure 2. Model of the hypothesized mediators and associated outcomes for the self-objectification dissonance based intervention compared to the thin-ideal internalization dissonance based intervention.

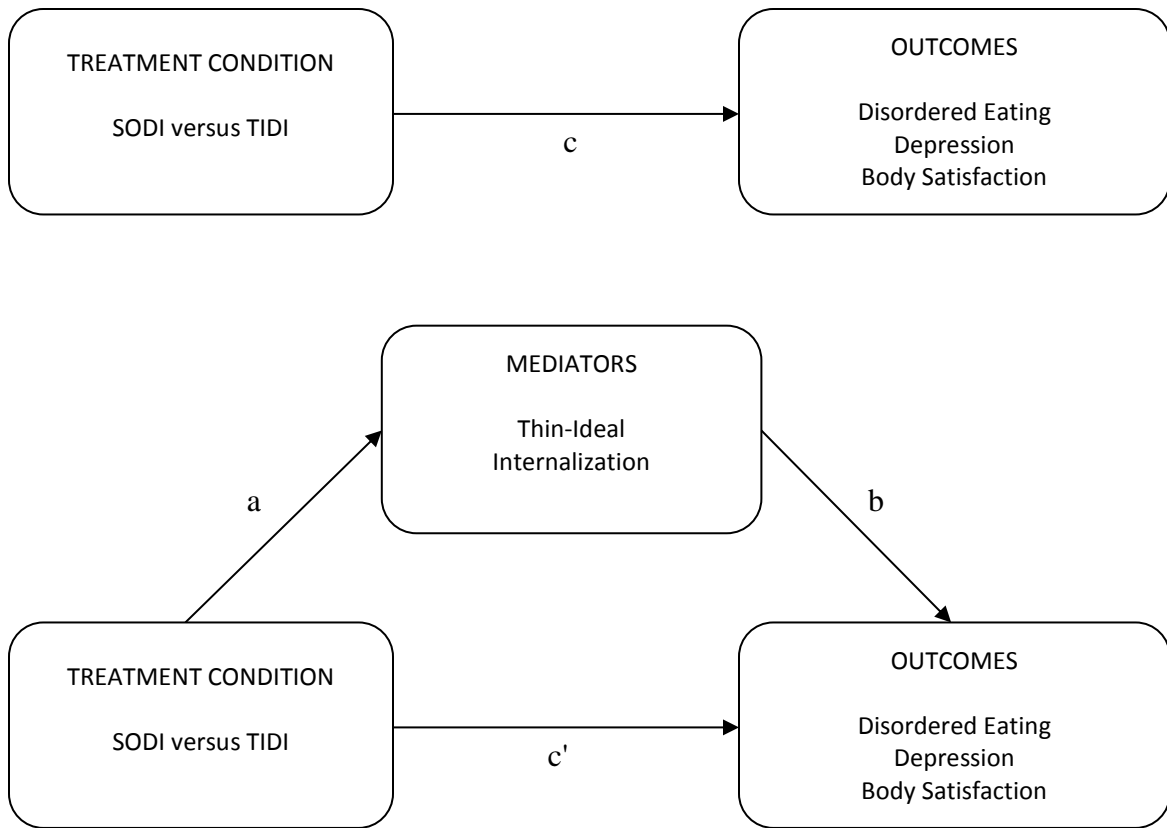


Figure 3. Model of the hypothesized mediators and associated outcomes for the thin-ideal internalization dissonance group compared to the self-objectification dissonance group.

CHAPTER TWO:

METHOD

Participants and Procedure

Participants were 119 female undergraduate students attending a large university in the Southeast. Participants had a mean age of 20.58 years ($SD = 2.64$) and had completed an average of 2.64 years of university ($SD = 1.33$). Of the total sample, 64.7% of participants self-identified as White, 24.4% as Hispanic or Latina, 17.6% as Black or African-American, 5.0% as Asian or Asian-American, .8% as Pacific Islander, and 1.7% as another ethnicity (included African, $n = 1$, Haitian, $n = 1$, and n/a, $n=1$). The sample was comprised of 2 participants who identified themselves as homosexual, 114 participants who described themselves as heterosexual, and 3 participants who indicated an “other” sexual orientation. The average BMI for the sample was 24.33 ($SD = 5.11$) and participants exercised an average of 3.35 days per week ($SD = 1.71$).

Participants were recruited using the psychology department online participant pool, SONA. Participants were presented with a brief description of the study and informed that the study would require multiple study visits. Participants were then asked to complete a short set of screening questionnaires online to determine if they qualified for the study. To obtain the study sample, the following criteria were used to select qualifying participants for the intervention phase of the study:

- (1) Participants were required to endorse some level (i.e., total score > 0) of self-objectification as measured by the Surveillance subscale of the Objectified Body Consciousness Scale.

- (2) Participants were required to be between the ages of 18 and 30 in order to ensure that the sample is representative of college-aged women.
- (3) Participants were excluded if they (a) screened positive for eating disorder behavior consistent with DSM-IV-TR criteria in the past 28 days as indicated by the Eating Disorder Examination Questionnaire, or (b) severe major depressive symptomatology as indicated by the Centers for Epidemiological Studies Depression questionnaire. These exclusion criteria were used because the sample is designed to target women at risk for, but not currently suffering from, these two disorders.

Participants who met the inclusion and exclusion criteria were contacted by phone or email (according to participant preference) and invited to participate in the study's baseline assessment. The initial contact inquired about participants' availability to participate in assessment and group sessions from among a choice of study session times. Participants who meet the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000) diagnostic criteria for an eating disorder in the past 28 days and/or self-reported severe depressive symptomatology in the past week (CES-D score > 27) at the time of completion of pre-study screening measures were excluded from the study. Excluded participants were contacted and provided with referral information for mental health services on campus and encouraged to seek treatment. If participants agreed to participate in the study after the initial contact, participants were randomized into one of three study conditions and scheduled for study participation: (1) the self-objectification cognitive dissonance intervention (SODI), (2) the thin ideal internalization dissonance intervention (TIDI), or (3) the expressive writing control group (EWC). Figure 4 provides details of participant flow throughout the study. At the initial

assessment, all participants were asked to provide their informed consent to participate in the study prior to completing the baseline set of questionnaires.

Recruitment and retention data were evaluated following the first phase of study recruitment ($n = 165$). Of the 165 persons initially screened for the first phase of recruitment, 30.7% were excluded for meeting the depression criterion ($n = 50$). An initial screening criterion score of 21 on the CES-D was used to determine exclusion from the study on the basis of depression symptoms. Due to the high percentage of participants screened out of the study, the CES-D criterion was changed so that participants were excluded if they received a symptom severity score of 27 or higher on the CES-D; this change reflected data that suggested a higher cutoff is more appropriate for screening for probable depression in college-aged students and teenagers (Gotlib, Lewinsohn, & Seeley, 1995; Price, McLeod, Gleich, & Hand, 2006). The new criterion resulted in 11.8% of the sample being excluded due to depression symptom severity across all subsequent phases of data collection ($n = 114$).

A change to the self-objectification inclusion criterion was also made following the initial phase of recruitment to increase the pool of potential participants. Initial eligibility criteria required that participants score at or above the mean score from an equivalent university sample on the self-surveillance subscale of the Objectified Body Consciousness Questionnaire (OBC; McKinley & Hyde, 1996). This criterion was set to ensure that the study sample reflected an at-risk group for the development of disordered eating and depression. Previous research on the prevention of disordered eating using dissonance-based interventions has found that dissonance-based interventions are effective at reducing risk (based on a target outcome variable) even in

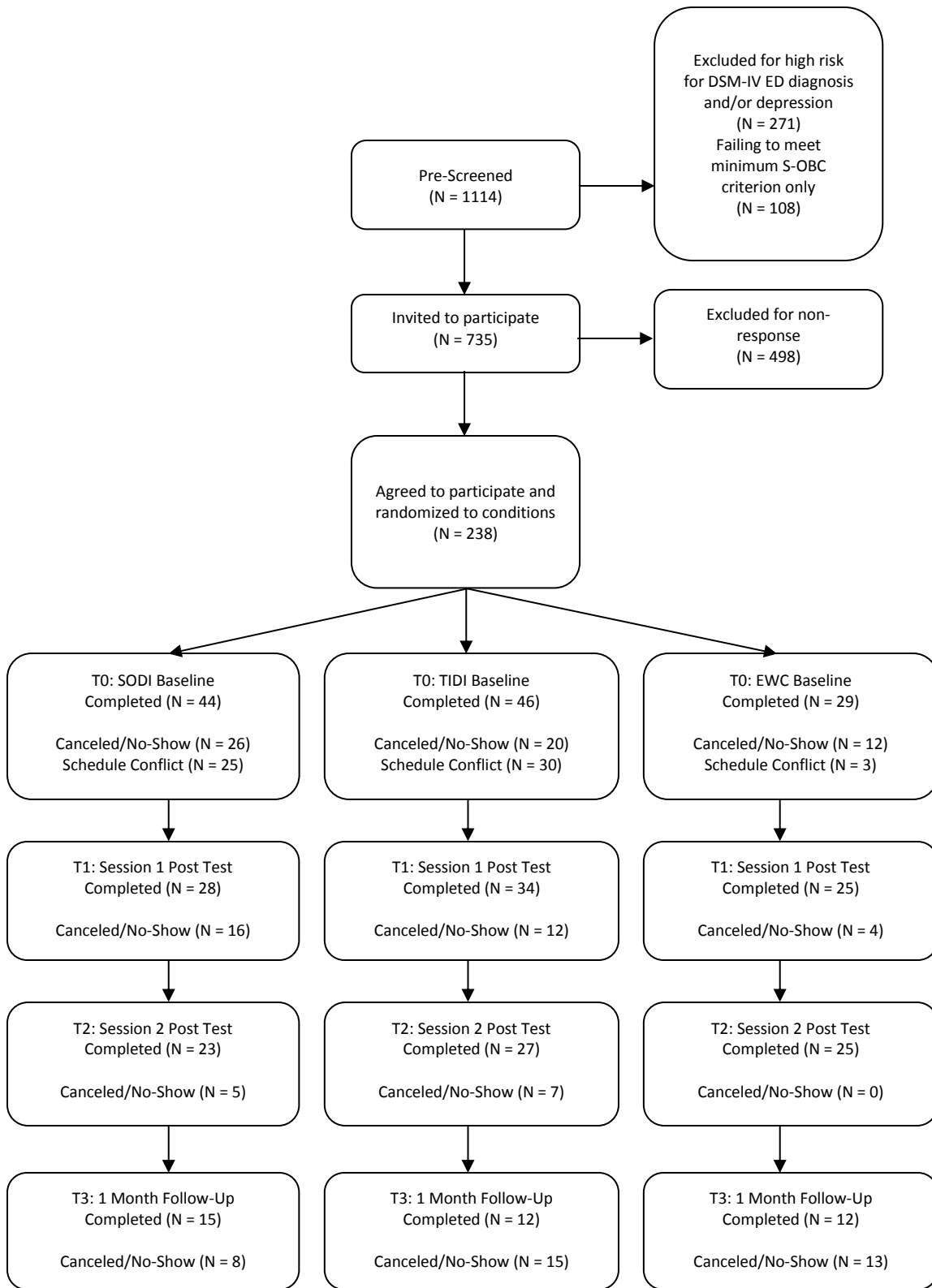


Figure 4. Participant flow throughout study.

universal risk samples. Thus, the decision was made to change the study sample from an at-risk sample to a universal-risk sample by eliminating the initial self-objectification inclusion criterion. As long as participants endorsed some degree of self-objectification, they were eligible to participate in the study. Prior to this change being made, 146 persons were excluded for failing to meet this criterion. The eating pathology exclusion criterion alone remained unchanged throughout the course of the study; 7.5% of persons screened were excluded for meeting DSM-IV-TR diagnostic criteria for bulimia nervosa or anorexia nervosa in the past 28 days ($n = 84$). It should be noted that some persons were excluded for meeting or failing multiple exclusion or inclusion criteria.

Of the total 1,114 persons screened for study participation, 66% ($n = 735$) were eligible and invited to participate in the study; of those persons invited, 32.4% ($n = 238$) agreed to participate and were randomized to one of 3 study conditions (21.8% of the screening sample). Of participants who were randomized to study conditions, 24.3% were excluded for scheduling conflicts (i.e., their schedules did not fit with the scheduled group days/times for their assigned condition) and 24.3% did not show to or canceled their participation in the baseline assessment; 50% of randomized participants completed the baseline assessment ($n = 119$). From T_0 (baseline assessment) to T_1 (mid-intervention assessment), 26.9% of participants dropped out of the study and from T_1 to T_2 (post-intervention assessment), an additional 13.2% of participants dropped out of the study. Finally, from T_2 to T_3 (1 month follow-up assessment), 48% of participants dropped out of the study.

Intervention and Assessment Procedure. The control condition (EWC) consisted of two 45 minute sessions held at 1 week intervals. The active intervention groups (SODI and TIDI) each consisted of two 1 hour and 30 minute sessions conducted at 1 week intervals with 2-4

participants in each group. Active intervention groups were led by a graduate student in clinical psychology and a trained undergraduate research assistant. All group leaders and co-leaders for the active intervention conditions were trained by the study author. Therapists and co-leaders were counter-balanced across the two study intervention conditions so that each therapist and co-leader pair administered approximately the same number of intervention groups in each condition. All group sessions were recorded by videotape or audiotape and a random selection of 20% were viewed and coded for adherence to their respective manualized protocols.

Two scripted manuals were used to administer each active intervention. A modified version of Becker and Stice's (2008) Sorority Body Image Program group leader's guide was used as the manual for the TIDI group. Becker and Stice's (2008) manual was modified to exclude all sorority-specific language since this study did not specifically target sorority women. For the SODI group, the Becker and Stice (2008) manual was adapted to address and target sexual and self-objectification. The organization and structure of Becker and Stice's (2008) protocol was maintained (i.e., number of homework assignments, session length, session organization) but the content and nature of homework assignments was altered to better target the variable of interest (i.e., self-objectification) for this intervention. A more detailed description of the two interventions used is included below.

One month following the completion of the second session of either the control or active intervention conditions, participants were invited to complete a fourth set of study questionnaires to evaluate long-term intervention outcomes. For the follow-up assessments, participants were given the option to complete the assessments in person or via online survey. Following completion of the follow-up measures, participants were provided with a debriefing of the study. Participants from all study conditions were compensated with extra credit points for their

participation at all four time points in the study. Participants' names were also entered into a raffle to win one of 10 gift certificates valued at \$20 each. Participants received an entry into the raffle for each assessment completed.

Treatment Conditions.

Self-Objectification Dissonance Intervention (SODI). The SODI consisted of two 75-90 minutes sessions completed 1 week apart. In the first session of this treatment condition, all participants were provided with an overview of the program and asked if they would be willing to voluntarily participate in the program with an open mind. Participants were told that they were helping to create an intervention designed to target adolescent girls in the prevention of major mental health problems, such as depression and eating disorders. The next portion of the session focused on psychoeducation and a discussion of the costs of sexual and self-objectification. The psychoeducation component asked participants to define sexual and self-objectification, discuss the origins of and perpetuation of sexual and self-objectification, and identify those who benefit from sexual and self-objectification. Examples of sexual and self-objectification were also provided. Participants listed and discussed the potential costs of experiencing sexual and self-objectification. Next, participants were asked to reflect on their own acts of self-objectification, how they felt in light of their self-objectification tendencies following the discussion of costs, and to consider the development of their own self-objectification tendencies. This exercise was a new addition to the cognitive-dissonance protocol included in previous studies (Appendix A). Participants then engaged in a verbal challenge exercise in which they recalled personal examples of sexual and/or self-objectification. Participants wrote down their experiences and later shared with the group how they would respond to these similar instances in the future. Lastly, participants were assigned a homework exercise which asked them to complete 20 “I

am...” statements and then answer a series of questions. The homework exercise was designed to help participants consider the extent to which they objectify themselves. This exercise served as a replacement for the homework exercise included in the Becker & Stice (2008) manual (Appendix B). End of session measures were then administered and collected.

In the second session, participants were provided with an overview of the day’s session and asked again if they would be willing to voluntarily participate in the session and keep an open mind. The session started by reviewing the previous session’s homework exercise. After a discussion of the homework exercise, participants completed a role play exercise. In the role play exercise, participants were asked to confront a person who (1) promotes sexual objectification through the sexualization of her young daughter and (2) who is a high self-objectifier as evidenced by her over-concern with sexual appearance. In each of these role plays, participants provided arguments against each of the individuals’ beliefs about the objectification of women. The remainder of the session focused on ways to verbally challenge everyday examples of sexual and self-objectification and ways in which women can actively try to defy sexual and self-objectification (e.g., through their own actions or comments to others). Lastly, participants identified and committed to complete one of several self-affirmation exercises aimed at helping participants continue to challenge sexual and self-objectification after the program ends. End of session measures were administered and collected at that time.

Thin-Ideal Internalization Dissonance Intervention. The structure and length of the TIDI intervention was exactly the same as the SODI intervention. All differences between the two interventions were in the session content and in the nature of the post-session 1 homework exercise. The TIDI intervention began with an overview of the program and all participants were asked to voluntarily participate and keep an open mind. Again, participants were told that they

were helping to create an intervention designed to target adolescent girls in the prevention of major mental health problems, such as depression and eating disorders. The first part of the session was dedicated to psychoeducation and a discussion of the costs of pursuing the thin ideal. Psychoeducation focused on the definition of the thin ideal, discussing the origination of and perpetuation of the thin ideal, and identifying who benefits from the thin ideal. Participants listed the costs associated with pursuing the thin ideal and these costs were discussed as a group. Participants then engaged in a verbal challenge exercise in which they recalled their own personal examples of when they have encountered the thin ideal and listed verbal responses to these encounters. For their first homework exercise, participants completed a Mirror Exercise in which they looked in the mirror and wrote down their positive physical qualities. End of session measures were administered after homework was assigned.

At the beginning of the second session, participants were asked again if they were willing to voluntarily participate in the session and keep an open mind. Group leaders reviewed the homework exercise with participants and provided an overview of the day's session. Participants then engaged in a series of role plays. Participants argued against or persuade another individual not to pursue the thin ideal. The two role play characters included a chronic dieter and an over exerciser. One role player character was removed (the girl who diets for her boyfriend) due to the fact that this story line echoed that of a girl who self-objectifies (similar to Person B from the SODI group). The remainder of the session was spent discussing ways in which to challenge "fat talk" on a day to day basis and generating a list of things that girls and women can do to challenge society's thin ideal. The session ended with a self-affirmation exercise in which each participant committed to one activity designed to encourage positive talk about women's bodies

to be completed after the end of the program. End of session measures were collected at that time.

Expressive Writing Control Group. The EWC consisted of two, 45 minute individual writing sessions completed 1 week apart. An EWC has been used as the control condition of choice in past evaluations of the efficacy of cognitive dissonance interventions (e.g., Stice et al., 2007). An EWC helps to control for the demand characteristics of the two intervention conditions as well as expectancy effects from non-specific factors. The EWC condition will follow the procedures used by Stice et al. (2007) and suggested by Pennebaker (1997). At the start of the EWC session, participants were informed that research has shown that emotional issues are closely linked to mental health problems in women and that expressive writing can help resolve emotional issues. Participants were asked to spend 30 minutes writing about an emotional issue, such as a relationship or a loss, and to write continuously for the duration of the session (see Appendix C). As suggested by Pennebaker (1997), 30 minute writing sessions are a sufficient amount of time to produce effects on outcome measures. End of session measures were collected after the first and second EWC sessions, during the final 15 minutes of the session.

Measures

Self-Surveillance. The self-surveillance subscale of the Objectified Body Consciousness questionnaire (S-OBC) is one of the most widely-used and well-validated measures of self-objectification (McKinley & Hyde, 1996; Appendix D). This measure was used to screen for potential participants for inclusion in the study and as a measure of a mediating variable in the SODI group. The S-OBC scale measures the degree to which women are concerned with and monitor how their bodies appear to others. Participants indicate on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) the extent to which they agree with each of 8 statements

(e.g., “I often worry about whether the clothes I am wearing make me look good”). Given that *does not apply* is also a response option for each statement, the participant’s score on the S-OBC is the item mean for the scale. Higher scores indicate more body surveillance. Acceptable internal reliabilities have been reported in previous research (McKinley & Hyde, 1996; Tylka & Hill, 2004); internal reliability of the measure at T₀ was .87; at T₁ was .87; at T₂ was .92; and at T₃ was .92.

Self-Objectification. The Self-Objectification Questionnaire, developed and validated by Noll and Fredrickson (1998; see also Fredrickson et al., 1998; Appendix E), assesses the degree to which various physical qualities and attributes are valued as part of a woman’s physical self-concept. Trait self-objectification as measured by the SOQ will serve as the measure of the second mediating variable in the SODI group. Participants rank ordered, from 1 (*least important*) to 10 (*most important*), five competence-based attributes (strength, stamina, physical fitness, physical coordination, and health) and five appearance-based attributes (sexual appeal, weight, physical attractiveness, firm/sculpted muscles, and measurements). The appearance-based attributes reflect a more objectified view of self while the competence-based attributes reflect a non-objectified view of the self. The SOQ total score is obtained by subtracting the subtotal of the ranks of the competence-based items from the subtotal of the ranks of the appearance-based items. Scores range from -25 to 25, with higher scores indicating greater levels of trait self-objectification.

Thin-Ideal Internalization. Thin-ideal internalization was measured using the 3rd edition of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-3; Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004; Appendix F). The SATAQ-3 internalization subscales served as the measure of the mediating variable for the TIDI intervention group.

Participants completed the 14-item internalization subscale of the 30-item questionnaire. The internalization subscale combines 9-items that assess for general internalization – the extent to which an individual “buys into” the societal norms regarding appearance and body weight and shape (e.g., “I would like my body to look like the people who are on TV”) – and 5-items that assess for athletic internalization – the extent to which an individual strives to achieve a look that reflects the bodies of athletes portrayed in the media (e.g., “I wished I looked as athletic as sports stars”). Participants respond on a 5-point Likert scale from 1 (*definitely disagree*) to 5 (*strongly agree*). The subscale has demonstrated excellent internal consistency in a sample of undergraduate women ($\alpha = .95-.96$; Thompson et al., 2004) and good evidence of convergent and divergent validity (Thompson et al., 2004). Participants’ responses are summed to obtain a total scale score with higher scores indicating greater internalization of appearance ideals. At T₀, the internal consistency of the scale in the present sample was .93; at T₁ was .95; at T₂ was .95; and at T₃ was .95.

Disordered Eating. The Eating Disorders Examination – Questionnaire (EDE-Q; Fairburn & Beglin, 2008; Appendix G) is the self-report version of a diagnostic structured interview called the Eating Disorders Examination (EDE; Fairburn, Cooper, & O’Connor, 2008). This 28-item questionnaire is a mixture of statements rated on a Likert-scale and fill-in-the-blank questions. There is solid evidence that the convergent validity of previous versions of the EDE-Q is comparable to that of the well-established EDE (Mond, Hay, Rodgers, & Owen, 2006).

The EDE-Q contains four subscales comprised from 22 items: Restraint ($n = 5$ items), Eating Concern ($n = 5$), Shape Concern ($n = 8$), and Weight Concern ($n = 5$). These subscale scores are calculated using only the Likert-scale items; information from the fill-in-the-blank

items is not included. Given that the subscale scores are often highly correlated, Fairburn and Beglin's (2008) propose procedures for obtaining a global score by averaging the mean of the 4 subscale scores. All subscales have demonstrated a high degree of internal consistency in community samples, with Cronbach's alpha values between .70 (restraint) and .90 (global; Peterson et al., 2007). In the present sample, Cronbach's alpha for the global scale items at T₀ was .94; at T₁ was .94; at T₂ was .95; and at T₃ was .94. Norms for the scale have been established in a sample of young adult women, aged 18-42 (Mond et al., 2006). Higher mean item scores indicate a greater level of eating or body image disturbance. The remaining 6 items assess for frequency of overeating episodes, objective binge episodes, subjective binge episodes, purging episodes, laxative use, and excessive exercise. In previous studies, these items have been summed to form a composite of bulimic behaviors (Becker, Smith, & Ciao, 2006).

The EDE-Q is also used as a screening measure for the presence of an eating disorder. A previous study with over 800 females aged 18-45 from a community population showed that the EDE-Q, when used to identify cases of individuals with an eating disorder, has a positive predictive value of .56, a specificity of .96, and a sensitivity of .83 (Mond, Hay, Rogers, Owen, & Beumont, 2004). Participants who met the screening criteria proposed by Mond et al. (2004) had their EDE-Q questionnaire reviewed in detail by the study author. Since the EDE-Q is designed to assess for DSM-IV-TR eating disorder diagnoses, the study author made the decision to exclude participants from the study who meet criteria for a current eating disorder diagnosis based on the data from the EDE-Q.

Depression Symptoms. The Center for Epidemiological Studies Depression scale (CES-D; Radloff, 1977; Appendix H) was used to assess for severity of depression symptomatology in the current study. The CES-D has been extensively used as a research tool for assessing

depression symptomatology and correlates highly with the Beck Depression Inventory, another measure of depression symptomatology that is widely used in both research and clinical settings with good psychometric properties (Shean & Baldwin, 2008). Participants indicate the frequency of 20 items experienced in the past week using a 4-point scale ranging from 0 (*rarely or none of the time; less than 1 day*) to 3 (*most or all of the time, 5-7 days*). The CES-D is unidimensional in factor structure and higher scores indicate greater severity of depression symptoms. The internal consistency of the CES-D items at T₀ was .88; at T₁ was .91; at T₂ was .90; and at T₃ was .85.

The CES-D has also been used as a screening tool to detect the presence of current or past major depressive disorder. It has demonstrated good positive predictive value (78.6), sensitivity (73.0), and specificity (96.1) in a sample of college-aged students using a criterion score of 21 (Shean & Baldwin, 2008). In the current study, participants who met or exceeded the criterion score of 27 on the CES-D were excluded from participation.

Body Shame. Body shame was measured using the body shame subscale of the OBC (BS-OBC; McKinley & Hyde, 1996; Appendix D). This 8-item scale measures the extent to which a woman feels shame regarding her physical appearance as the result of failing to achieve or meet societal standards of beauty (e.g., “I feel like I must be a bad person when I don’t look as good as I could”). Items are scored on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An N/A option is also available for the participant to use if she feels that an item does not apply to her. A score for the total scale is achieved by averaging participants’ item responses. Good internal consistency has been demonstrated for the scale ($\alpha = .74$; McKinley & Hyde, 1996), good 2-week test-retest reliability ($r = .79$; McKinley & Hyde, 1996), and excellent

convergent and divergent validity (McKinley & Hyde, 1996). The internal consistency of the body shame items at T₀ was .86; at T₁ was .83; at T₂ was .85; and at T₃ was .89.

Body Satisfaction. The Appearance Evaluation (AE) subscale of the Multidimensional Body-Self Relations Questionnaire (MBSRQ) was used to assess body satisfaction (Brown, Cash, & Mikulka, 1990; Appendix D). The AE scale consists of 7 items assessing the extent to which ones likes one's body (e.g., "I like the way I look without my clothes"). Each item is rated on a scale from 1 (*definitely disagree*) to 5 (*definitely agree*). Items 6 and 7 are reverse scored. The AE scale has been demonstrated to be a reliable and valid measure in both clinical and community populations and Cronbach's alpha has been reported as excellent in previous samples (e.g., Brown et al., 1990). Cronbach's alpha for items in the present sample at T₀ was .72; at T₁ was .69; at T₂ was .69; and at T₃ was .72. Scores for the scale are obtained by summing participants' responses. Higher scores indicate greater body satisfaction.

Sexual Self-Consciousness. To assess self-consciousness during sexual activity, participants completed the Body Image Self-Consciousness Scale (BISC; Wiederman, 2000; Appendix J). The BISC is a 15-item measure that asks participants to respond to statements on a 6-point Likert scale ranging from 0 (*Never*) to 5 (*Always*). Items are worded in such a way that women without any sexual experience will be able to respond, as well as women who have male or female partners, e.g., "During sex, I (would) prefer to be on the bottom so that my stomach appears flat". Item responses are summed to obtain a total scale score and possible scale scores can range from 0 to 75. Previous studies have demonstrated excellent internal consistency ($\alpha = .94$; Wiederman, 2000) and good evidence of the scale's convergent and divergent validity among undergraduate women. Test-retest reliability over a 3 week interval is also high ($r = .92$;

Wiederman, 2000). Internal consistency of items on the BISC at T₀ was .96 in the present study; at T₁ it was .96; at T₂ was .97; and at T₃ was .97.

Sexual Satisfaction. Participants also completed 3 items that comprise the Sexual Satisfaction Scale (SSS) created by Dove and Wiederman (2000; Appendix K). The three items capture satisfaction with one's opinion of the quality of sexual experiences, pleasure in sexual experiences, and physical response to sexual experiences. Participants will indicate their level of agreement with each item on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*). This scale has demonstrated excellent internal consistency in a sample of female undergraduate students ($\alpha = .91$; Dove & Wiederman, 2000). A total score for the scale is obtained by summing item responses with higher scores indicating greater sexual satisfaction. Participants were allowed to skip this questionnaire if they were not sexually active. Internal consistency of the SSS items at T₀ was .98 in the present study; at T₁ was .98; at T₂ was .98; and at T₃ was .99.

Body Mass Index. The Body Mass Index (BMI) is a frequently used estimate of body fat obtained as ratio of weight to height. The following formula was used to calculate BMI for the current study: weight (pounds) divided by squared height (inches) multiplied by 703. Height and weight were obtained by self-report from the EDE-Q fill in the blank questions. BMI values can be grouped into categories for interpretation of weight status (e.g., underweight, normal weight, overweight). Higher BMI values indicate higher levels of body mass.

Nonspecific Factors. Participants also completed the Message Rating Form (MRF; Sperry, Thompson, Roehrig, & Vandello, 2006), a measure of participants' perceived effectiveness of the group leader in communicating the intervention message. This measure was administered at T₂ (at the conclusion of the intervention) and used to evaluate whether both intervention conditions were interpreted as equally credible and convincing. The Message Rating

Form has 6 items answered on a Likert scale and high internal consistency ($\alpha = .79$; Sperry et al., 2006). In addition, at T₂ participants completed the Group Leader Rating Scale (GLRS) which assessed for non-specific therapist characteristics such as friendliness and warmth using 5 items rated on a 5-point Likert scale (Roehrig, Thompson, Brannick, & van den Berg, 2006). The Likert scale ranges from 1 (*not at all*) to 5 (*very much so*) and have shown high internal consistency in previous studies ($\alpha = .96$; Roehrig et al., 2006). Lastly, participants completed one item at the beginning of the first intervention session (either of the SODI, TIDI, or EWC) that assessed their expectancy that they would benefit from the intervention in terms of improved feelings about themselves and their bodies after receiving the descriptions of the interventions (but prior to the interventions being administered). Participants responded on a 6-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*). All non-specific factors measures are located in Appendix L.

Treatment Fidelity. All intervention sessions from the SODI and TIDI groups were videotaped to ensure that treatment integrity was maintained. Two research assistants, blinded to condition, independently reviewed a random sample of 20% of all recorded treatment groups and rated treatment group sessions for adherence to the manualized protocols (see Appendix M for Session Integrity Check Forms). If there was any significant deviation from manualized treatment protocols, those sessions would be discarded and the corresponding therapist would be retrained. Video reviews revealed that there were no significant deviations from the protocol that required retraining. For each group rated, all required components of the session were completed. Raters indicated that for all groups, the manualized protocol was followed either “most of the time” or “all of the time”; there were no lower ratings of overall treatment fidelity.

Design and Analyses

This study used a mixed model experimental design with time as the repeated factor (T_0 = baseline, T_1 = mid-intervention following session 1, T_2 = post-test following session 2, and T_3 = 1 month follow up) and group as the between subjects, non-repeated factor (self-objectification dissonance group, thin-ideal internalization dissonance group, and expressive writing control group).

Power for this study was considered based on the study aim with the least powerful test and smallest expected effect size – the significant tests of difference between the self-objectification dissonance intervention and the thin-ideal internalization dissonance intervention on changes in study variables from baseline (T_0) to post-test (T_2). The desired effect size for this treatment was the Number Needed to Treat (NNT) because it is an effect size that conveys clinical significance (Kraemer & Kupfer, 2006). The NNT represents the number of individuals (or patients) that need to be treated to result in one more success (or one less failure) than would have resulted had all individuals received the control condition/intervention (Cook & Sackett, 1995). Values of the NNT can range from negative infinity to -1 when the control condition results in better outcomes than the intervention condition and from 1 to infinity when the intervention results in better outcomes than the control condition (Kraemer & Kupfer, 2006). Kraemer and Kupfer (2006) proposed guidelines for the use of NNT to demonstrate clinical significance in psychotherapy studies and stated that a NNT of 2 is a reasonable minimum effect of clinical significance to demonstrate. However, when a treatment is characterized by less cost, it is reasonable to propose a higher NNT, such as an NNT of 3 (previous studies of the effectiveness of psychotherapy have demonstrated an NNT of 3; Kraemer & Kupfer, 2006). Thus, in the present study we proposed an effect size of $NNT = 3$ due to the low cost of our

intervention (i.e., only two sessions). According to Kraemer and Kupfer (2006), a NNT of 3 is roughly equivalent to a Cohen's d of .6, a moderate effect size. A meta-analysis of eating disorder prevention programs reported moderate to large effect sizes for prevention programs using dissonance-based techniques in targeted samples (Stice, Shaw, & Marti, 2007).

To determine the initial sample size needed to power this study, the repeated measures aspect of our design and group format was taken into account. We calculated the effective sample size needed to detect our desired effect size accounting for the effect of dependency of the data on our study design (Heo & Leon, 2008). We then adjusted this sample size upwards to account for attrition during the study. Sample size calculations were based on 3 measurement time points and an average group size of 5 with an estimated intraclass correlation coefficient (ICC) for time of .70 and an ICC for participants within groups of .10. The estimated design effect was 3.6 for the comparison between both dissonance interventions from baseline to post-test. With that effect, a total sample size of 165 would yield a sample size of 110 for the comparison between both active intervention groups (55 participants/group; 330 observations). We initially estimated a 10% attrition rate based on previous studies (Becker et al., 2006; Stice, Chase, Stormer, & Appel, 2001; Stice et al., 2002); thus we needed 99 participants (297 observations) to power the active intervention comparisons. After dividing the total number of observations by the design effect (Cochran, 1977), an effective sample size for this study would be 90. A sample size of 88 is necessary to detect a NNT of 3 at a power of .80 and an alpha level of .05.

Given that attrition rates ended up being considerably higher than our original estimate, study analyses used an intent-to-treat approach to conserve data. The last observation for each participant was carried forward through all future study time points. Additionally, because

attrition rates were higher for the active treatment conditions, participants were oversampled for random assignment to these two conditions. Thus, using the intent-to-treat approach, final sample sizes for each group used in study analyses were 44 for the SODI group, 46 for TIDI group, and 29 for the EWC group.

Prior to testing study hypotheses, all study conditions were evaluated for baseline equivalency of BMI, target mediating variables, and target study outcome variables to confirm successful random assignment. Additionally, analyses checked for equivalence of expectancies across groups at baseline. Analyses were conducted for participant ratings on the Message Rating Form and Group Leader Rating Form at post-test to check for equivalency of non-specific factors across both intervention groups. For any group differences that were discovered, the variables were included as covariates in analyses testing study hypotheses.

Statistical analyses to test primary study hypotheses were based on hierarchical linear models (Raudenbush & Byrk, 2002) and conducted using SPSS (IBM Corp., 2013) and HLM 7 software (Raudenbush, Byrk, & Congdon, 2004). An HLM analysis was selected due to the hierarchical structure of the data such that repeated measures (Level 1) are nested within persons (Level 2). Fixed effect estimates were obtained for time and the time x condition interaction. Covariates and corresponding interactions were included if indicated by baseline level analyses of mediating variables, outcome variables, and expectancies and post-test analyses for non-specific factors (specified above). Time x condition interactions were used to determine differences in outcome slopes from baseline to post-intervention between conditions. Mixed model 2 (time) x 2 (group) ANOVA's were used to test for follow-up comparisons. Mixed model ANOVA's were chosen for the follow-up comparisons due to the fact that HLM requires at least 3 measurement time points and only 2 time points were being compared to determine treatment

maintenance effects. Tests of mediation (Hypotheses 3, 6, and 7) were planned to be conducted using the product of coefficients method to test for the significance of indirect effects (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; MacKinnon, Lockwood, & Williams, 2004). This method involves testing significance by calculating the confidence intervals of the distribution of the product of the coefficients of the indirect effect (Paths a and b in Figures 1 and 2; MacKinnon et al., 2004). MacKinnon and colleagues (2002) recommend this procedure because it has a more accurate Type 1 error rate and greater statistical power.

CHAPTER THREE:

RESULTS

Preliminary Analyses

Descriptive statistics were calculated for all demographic variables, mediating variables, and outcome variables at baseline (Table 1). Descriptive statistics were also calculated for all non-specific factors (Table 2). One-way analysis of variance (ANOVA) tests were performed for interval and ratio level data. Pearson chi-square analyses were conducted to detect differences between conditions in the percentage of White and heterosexual participants. Due to the fact that sample sizes were not equal across groups, Levene's test for equality of variance was performed prior to one-way ANOVA analyses to ensure that tests did not violate the homogeneity of variance assumption. Results revealed unequal variances for participant days of exercise and thin-ideal internalization at baseline. For these two variables, the Welch F test (Welch, 1951) was used to estimate group differences instead of the traditional F -test (ANOVA). Analyses revealed no significant differences among conditions for all mediating study variables and outcome variables. Among the demographic variables, no differences were found between groups for age, years in school, percentage of White participants, percentage of heterosexual participants, average days of exercise per week and BMI. These analyses indicate that random assignment of participants across conditions was successful.

For non-specific factors, a few significant differences did emerge across groups. Levene's tests indicated unequal variances for the Message Rating Form (i.e., perceived

Table 1.*Descriptive statistics at baseline (T₀) by treatment condition.*

	Self-Objectification	Thin-Ideal	Expressive Writing Control	F-Value	χ^2
	M (SD)	M (SD)	M (SD)		
<i>Demographics</i>					
Age	20.64 (2.89)	20.57 (2.33)	20.55 (2.77)	.01	-
Years in School	2.70 (0.34)	2.67 (1.38)	2.48 (1.27)	.25	-
% White	59%	76%	55%	-	4.37
% Heterosexual	93%	98%	97%	-	2.93
Days of Exercise ^a	3.82 (1.90) ^b	2.93 (1.65) ^b	3.25 (1.32)	2.71	-
BMI	24.55 (4.93)	23.92 (5.16)	24.67 (5.44)	.25	-
<i>Mediating Variables</i>					
Surveillance	4.49 (1.06)	4.70 (1.00)	4.86 (1.10)	1.13	-
Self-Objectification	-2.27 (12.00)	-.42 (12.80)	1.80 (13.05)	.92	-
Thin-Ideal Internalization ^a	24.77 (7.48)	24.96 (8.12)	24.90 (10.42)	.01	-
<i>Outcome Variables</i>					
Body Shame	3.07 (1.22)	3.07 (1.23)	3.12 (1.33)	.02	-
Eating Pathology	1.95 (1.34)	2.08 (1.45)	1.78 (1.33)	.50	-
Body Satisfaction	21.05 (5.03)	19.74 (4.50)	21.03 (5.15)	1.01	-
Depression Symptoms	13.32 (8.68)	15.04 (9.38)	13.07 (8.10)	.61	-
Self-Consciousness	24.23 (19.74)	23.76 (18.73)	26.31 (21.13)	.16	-
Sexual Satisfaction	11.28 (6.54)	12.67 (5.44)	11.48 (6.32)	.65	-

Note. * = $p < .05$; ** = $p < .01$; ^a = unequal variances, Welch test F -statistic reported.

credibility of conditions). Thus, the Welch's F statistic was reported for this analysis instead of the traditional F statistic. One-way ANOVA tests revealed significant differences in participant expectancy of intervention efficacy across conditions, $F(2, 118) = 4.20, p < .05$. Participants in the EWC condition had a significantly lower expectation for the intervention's effectiveness ($M = 3.96, SD = .94$) compared to the SODI and TIDI conditions. Participant expectancy for the

SODI ($M = 4.54, SD = .58$) and TIDI conditions ($M = 4.44, SD = .79$) were not significantly different. Similarly, Welch's F -test revealed a significant difference in intervention credibility across conditions, $F(2, 36.98) = 3.91, p < .05$, with the EWC condition being perceived as significantly less credible ($M = 26.12, SD = 5.77$) than the SODI or TIDI conditions. Once again, the credibility ratings for the SODI ($M = 29.08, SD = 1.20$) and the TIDI conditions ($M = 29.37, SD = 1.18$) did not differ significantly. Due to these differences, which are attributed to effects of the conditions themselves, participant expectancy and perceived credibility of the study conditions were included as covariates in later study analyses. Participant engagement in the groups, $F(2, 118) = .20, p = ns$, and participant ratings of the characteristics of the group leaders, $F(2, 118) = 1.14, p = ns$, were equivalent across all conditions. Thus, these non-specific factors were not included as covariates in subsequent analyses.

Table 2.

Descriptive statistics for non-specific factors at baseline (T_0) by treatment condition.

	Self-Objectification	Thin-Ideal	Expressive Writing Control	F-Value
	M (SD)	M (SD)	M (SD)	
<i>Non-Specific Factors</i>				
Expectancy	4.54 (.58)	4.44 (.79)	3.96 (.94) ^a	4.20*
Participant Engagement	5.53 (.61)	5.34 (.85)	5.11 (1.10)	.20
Credibility ^b	29.08 (1.20)	29.37 (1.18)	26.12 (5.77) ^a	3.91*
Group Leaders	24.78 (.60)	24.07 (3.87)	23.48 (3.18)	1.14

Note. * = $p < .05$; ** = $p < .01$; non-specific factors were measured at T_0 for expectancy and T_2 for credibility and group leader characteristics; participant engagement was measured at T_1 and T_2 following completion of the intervention sessions and is reported as an average; ^a = mean is significantly different from other groups; ^b = unequal variances, Welch test performed.

As previously reported (see Method section), attrition rate of participants across study time points was quite large. Furthermore, the attrition rates differed across conditions. Overall,

27% of participants dropped out of the study between the baseline assessment (T_0) and the first session (T_1). Across conditions, 36% dropped out of the SODI condition, 26% dropped out of the TIDI condition, and 14% dropped out of the EWC condition. The uneven rates of attrition across conditions suggests that perhaps attrition was systematic (i.e., attrition rates were greater in the SODI and TIDI conditions than the EWC condition). These participants dropped out of the study prior to being exposed to the study manipulation, though. Thus, attrition at this point may be attributable to other study characteristics that differed between the conditions. For example, participants in the EWC condition had a greater number of times available to them in which they could participate in the study. This scheduling difference was due to the fact that the EWC condition was not run in a group format (i.e., participants did not interact as a group) and thus participants' personal schedules were more easily accommodated by study personnel. Attrition rates from T_1 to T_2 were 18% for the SODI condition, 21% for the TIDI condition, and 0% for the EWC group. Once again, attrition rates were not consistent across conditions. These rates indicate that the two active intervention conditions were not as well tolerated at the EWC condition. One likely explanation for this difference is that the active intervention conditions were longer than the EWC condition (90 minutes versus 45 minutes). Another reason for the difference could stem from the nature of the interventions themselves. For example, participants in the active intervention conditions had to interact with others and share personal experiences or thoughts whereas the participants in the EWC condition completed a writing assignment on their own. From T_2 to T_3 (1 month follow up), attrition rates were 35% for the SODI group, 56% for the TIDI group, and 52% for the EWC group.

Participants who dropped out of the study were compared to participants who completed the study on all demographic, mediating, and outcome variables in order to look for other

sources of bias. First, participants who did not complete the full 2 session intervention were compared to those who completed both sessions on all baseline levels. Independent samples *t*-tests revealed that participants who completed the full intervention reported significantly higher body shame scores at baseline ($n = 73$; $M = 3.26$, $SD = .15$) than participants who dropped out of the study ($n = 46$, $M = 2.80$, $SD = .17$), $t(117) = -1.98$, $p = .05$. Participants did not differ significantly, though, on any demographic variables, including BMI, age, ethnicity, and sexual orientation. Participants who completed the 1 month follow up were also compared to participants who did not complete the 1 month follow up assessment on all variables at the end of full intervention (T_2). Independent samples *t*-tests revealed that participants did not differ significantly on any measures or demographic variables.

Hypothesis Testing

H1: Self-Objectification Dissonance Intervention (SODI) vs. Expressive Writing Control (EWC), Test of Outcome Variables. Hierarchical linear models were used to test for the effects of participation in the SODI group on change in hypothesized outcome variables from baseline to post-test (T_0 , T_1 , T_2). The outcome variables of interest were body shame, body satisfaction, eating disorder pathology, depression, sexual self-consciousness, and sexual satisfaction. Time was entered into the model as a Level 1 (repeated measures level) predictor. Intervention group (dummy coded), credibility, and participant expectancies were entered as Level 2 (person level) predictors. The latter two variables were included as Level 2 predictors due to the fact that these non-specific factors were significantly different between groups at baseline with the SODI group participants. Table 3 provides means and standard deviations for all outcome variables across groups and time points.

Table 3.*Means scores and standard deviations for all outcome variables across all groups and time points.*

Outcome Variables	Group	N	T ₀	T ₁	T ₂	T ₃
Body Shame	EWC	44	3.13	2.92	2.78	2.95
			(1.33)	(1.19)	(1.11)	(1.30)
	SODI	46	3.07	2.77	2.56	2.52
			(1.23)	(1.16)	(1.15)	(1.14)
	TIDI	29	3.07	3.02	2.69	2.73
			(1.22)	(1.07)	(1.08)	(1.07)
Eating Pathology	EWC	44	1.78	1.68	1.54	1.54
			(1.33)	(1.31)	(1.30)	(1.29)
	SODI	46	1.95	1.70	1.61	1.64
			(1.34)	(1.25)	(1.27)	(1.28)
	TIDI	29	2.08	1.95	1.74	1.70
			(1.15)	(1.19)	(1.21)	(1.19)
Body Satisfaction	EWC	44	21.03	21.34	22.41	22.03
			(5.15)	(5.03)	(5.69)	(5.49)
	SODI	46	21.05	22.09	22.14	22.07
			(5.03)	(4.67)	(4.56)	(4.69)
	TIDI	29	19.73	20.31	21.47	21.60
			(4.55)	(4.49)	(4.41)	(4.47)
Depression	EWC	44	13.07	11.79	8.72	9.10
			(8.10)	(10.10)	(7.48)	(7.46)
	SODI	46	13.32	11.48	10.89	10.77
			(8.68)	(8.00)	(8.91)	(8.74)
	TIDI	29	15.04	13.83	12.72	12.48
			(9.38)	(10.75)	(11.11)	(11.11)
Self-Consciousness	EWC	44	26.31	25.97	23.24	21.90
			(21.13)	(21.66)	(20.85)	(20.15)
	SODI	46	24.23	21.48	20.77	20.50
			(19.74)	(19.25)	(19.20)	(19.53)
	TIDI	29	23.76	24.24	21.30	20.80
			(18.73)	(20.42)	(19.51)	(19.36)
Sexual Satisfaction	EWC	24	11.48	11.24	11.52	11.21
			(6.32)	(6.66)	(6.47)	(6.61)
	SODI	21	11.28	11.56	11.28	11.47
			(6.54)	(6.66)	(6.72)	(6.84)
	TIDI	26	12.61	12.27	12.95	12.95
			(6.49)	(5.79)	(5.59)	(5.58)

Note. Means and group N's reported for ITT analyses; standard deviations reported in parentheses; EWC = expressive writing control group; SODI = self-objectification dissonance intervention; TIDI = thin-ideal internalization dissonance intervention; T0 = baseline; T1 = mid-intervention; T2 = post-intervention; T3 = 1 month follow up.

Table 4.

Results of HLM analyses for outcome variables for self-objectification dissonance intervention compared to expressive writing control.

	BS-OBC	EDEQ	AE	CES-D	BISC	SSS
Intercept (γ_{00})	3.23**	2.06**	20.40**	13.78**	26.22**	11.63**
Time (γ_{10})	-.31**	-.22**	.93**	-2.28**	-2.23*	-.11
Condition x Time (γ_{11})	-.02	-.04	-.43	1.13	.39	-.25
MRF x Time (γ_{12})	-.03**	-.01	.04	-.06	.00	.04
Expect x Time (γ_{13})	-.04	-.19*	.94**	-2.04*	-2.12	.23

Notes. * = $p < .05$; ** = $p < .01$; BS-OBC = Body shame subscale of Objectified Body Consciousness Scale; EDEQ = Eating Disorder Examination Questionnaire; AE = Appearance Evaluation subscale of the Multidimensional Body-Shape Relations Questionnaire; CES-D = Center for Epidemiological Studies Depression scale; BISC = Body Image Self-Consciousness Scale; SSS = Sexual Satisfaction Scale; MRF = Message Rating Form; Expect = participant expectancy item; Intercepts and slopes reported are unstandardized; Time and condition variables were not centered; MRF and Expect scores were grand-mean centered.

The hypothesis that participants in the SODI group would show greater rates of change in outcome variables compared to the EWC group was not supported (Table 4). Analyses did reveal significant effects for time across conditions for body shame ($b = -.20$, $SE = .04$, $p < .01$), disordered eating pathology ($b = -.19$, $SE = .04$, $p < .01$), body satisfaction ($b = .80$, $SE = .16$, $p < .01$), depression symptoms ($b = -1.68$, $SE = .42$, $p < .01$), and body image self-consciousness ($b = -2.21$, $SE = .58$, $p < .01$). Thus, for these outcome variables, there was significant change over time in the direction expected for both the SODI group and the EWC group. The effect of time for sexual satisfaction outcomes was not significant. At Level 2 of analysis, the interaction between group and time was not significant for any of the outcome variables. In other words, rates of change for the outcome variables did not differ between the active SODI intervention and the control group. After controlling for non-specific factors, the group x time interaction accounted for only 2% of the variance in slope for body shame, 4% of the variance in slope for

eating disorder pathology, 6% of the variance in slope for depression symptoms, 9% of the variance in slope for body satisfaction, and 2% of the variance in slope for body image self-consciousness.

We also hypothesized that the SODI group would perform better than the EWC in maintaining treatment outcomes. A 2 x 2 mixed model ANOVA was used to analyze group differences in change from post-test (T_2) to 1 month follow up (T_3). Once again, participant expectancies and credibility of the intervention were included as covariates in the model. Results indicated that our hypothesis was not supported. Analyses revealed no significant results for the main effect of time for all outcome variables, indicating that all post-intervention effects were maintained at 1 month follow across the two groups. Main effects for group also were not significant for all outcome variables. The main analysis of interest, the interaction effect for time x group, revealed that there was no significant difference between groups from post-test to 1 month follow-up for body shame, $F(1, 42) = 3.22, p = .08$, eating disorder pathology, $F(1, 42) = .00, p = .99$, depression symptoms, $F(1, 42) = .22, p = .64$, body satisfaction, $F(1, 42) = .00, p = .95$, body image self-consciousness, $F(1, 42) = .37, p = .55$, and sexual satisfaction, $F(1, 42) = 1.02, p = .32$. These results indicate that the groups did not differ in change in outcome variables from post-test to 1 month follow up.

H2: Self-Objectification Intervention (SODI) vs. Expressive Writing Control (EWC), Test of Mediating Variables. Hierarchical linear models were also used to test for the effects of participation in the SODI group on change in hypothesized mediating variables from baseline to post-test. The hypothesized mediating variables for the SODI group were surveillance and trait self-objectification. Once again, time was entered into the model as a Level 1 predictor and intervention group, credibility, and participant expectancies were entered as Level 2

predictors. Table 5 shows means and standard deviations for all mediating variables across all groups and time points.

Table 5.

Means scores and standard deviations for all mediating variables across all groups and time points.

Mediator Variables	Group	N	T0	T1	T2	T3
Surveillance	EWC	44	4.86	4.95	4.87	4.94
			(1.10)	(1.08)	(1.21)	(1.16)
			SODI	46	4.49	4.45
			(1.03)	(1.06)	(1.14)	(1.27)
	TIDI	29	4.70	4.57	4.27	4.36
			(1.00)	(1.07)	(1.10)	(1.10)
Self-Objectification	EWC	44	1.79	1.07	1.28	-1.03
			(13.05)	(12.70)	(14.01)	1(4.50)
			SODI	46	-2.27	-4.09
			(12.00)	(13.02)	(14.14)	(13.57)
	TIDI	29	-0.42	-1.91	-4.49	-3.56
			(12.80)	(14.28)	(14.44)	(13.56)
Thin-Ideal Internalization	EWC	44	24.90	24.45	24.17	24.24
			(10.42)	(10.43)	(10.54)	(10.21)
			SODI	46	24.77	23.55
			(7.48)	(7.83)	(6.96)	(7.30)
	TIDI	29	24.96	25.02	22.80	22.76
			(8.12)	(8.59)	(8.82)	(9.07)

Note. Means and group N's reported for ITT analysis; standard deviations reported in parentheses; EWC = expressive writing control group; SODI = self-objectification dissonance intervention; TIDI = thin-ideal internalization dissonance intervention; T0 = baseline; T1 = mid-intervention; T2 = post-intervention; T3 = 1 month follow up.

This set of hypotheses was partially supported (Table 6). Once again, HLM analyses indicated that the two mediating variables changed significantly over time from baseline (T₀) to post-test (T₂). Across groups, surveillance scores decreased significantly over time ($b = -.17$, $SE = .03$, $p < .01$) and self-objectification scores also decreased significantly over time ($b = -2.39$, $SE = .52$, $p < .01$). A significant group x time interaction effect also emerged for surveillance scores only ($b = .22$, $SE = .11$, $p < .05$), indicating that the slope for surveillance scores did vary

significantly as a function of group membership. For members of the SODI group, the slope was significantly greater than the members of the EWC group, meaning that the SODI group resulted in a greater decrease in surveillance scores from baseline to post-test, consistent with study hypotheses (see Figure 5). The addition of group as a predictor in the Level 2 model accounted for a 31% reduction in the variance of the time slope even after controlling for non-specific factors. This interaction effect was not found, though, for the self-objectifications scores; there was no significant effect of group on slope ($b = 3.01$, $SE = 1.57$, $p = .12$). After accounting for non-specific factors, the group x time interaction accounted for 5% of the variance in slope for the self-objectification scores.

Table 6.

Results of HLM analyses for mediating variables for self-objectification dissonance intervention compared to expressive writing control.

	S-OBC	SOQ
Intercept (γ_{00})	4.80**	1.80
Time (γ_{10})	-.14*	-2.66*
Condition x Time (γ_{11})	-.11*	-1.53
MRF x Time (γ_{12})	.01	-.33*
Expect x Time (γ_{13})	-.18*	-1.49

Notes. * = $p < .05$; ** = $p < .01$; S-OBC = Self-surveillance subscale of the Objectified Body Consciousness scale; SOQ = Self-Objectification Questionnaire; MRF = Message Rating Form; Expect = participant expectancy item; Intercepts and slopes reported are unstandardized; Time and condition variables were not centered; MRF and Expect scores were grand-mean centered.

For the follow-up analyses, results indicated a pattern of findings similar to the outcome variable analyses. A set of 2 x 2 mixed model ANOVAs revealed no main effects of time for surveillance scores and for self-objectification scores, indicating that post-intervention scores were maintained at one month follow-up across groups. Again, there were also no main effects for group on the mediating variables. The interaction effects in both models were not significant.

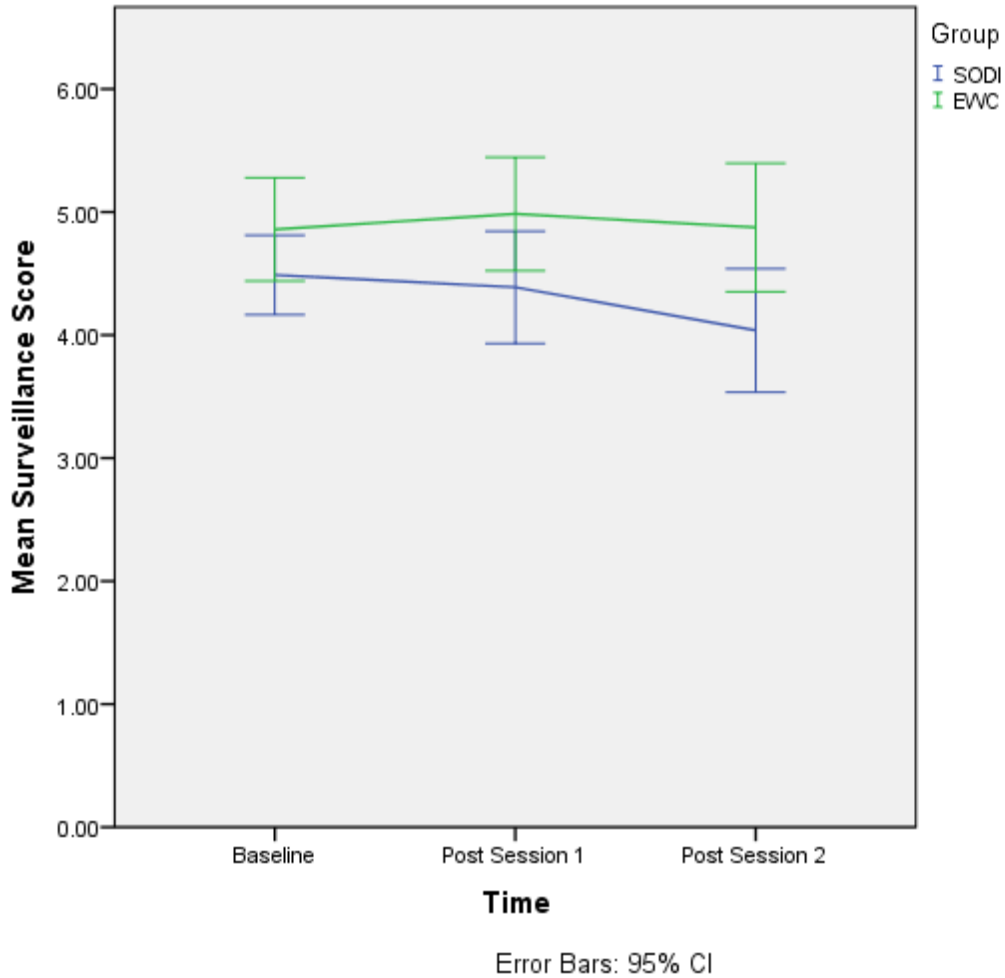


Figure 5. Change in surveillance scores from baseline to post-intervention by group.

There was no effect of group x time for surveillance scores, $F(1, 42) = 3.61, p = .06$, nor for self-objectification scores, $F(1, 42) = .91, p = .35$. The interaction effect for surveillance scores did trend towards significance, though, indicating a greater difference between the SODI group ($M = 4.02, SD = 1.27$) and EWC group ($M = 4.94, SD = 1.16$) at 1 month follow up. Thus, results seem to indicate that while participants in the SODI group experienced a greater rate of decrease in their self-surveillance scores, the difference in these scores between the SODI group and the EWC group at post-test and follow-up was not significantly different.

H3: Self-Objectification Intervention (SODI) vs. Expressive Writing Control (EWC), Test of Intervention-Specific Mechanisms of Change. According to Barron and Kenny's (1986) mediation criteria, in order to test for intervention-specific mechanisms of change (H3), the SODI group must first demonstrate a predictive relationship with change in outcome variables. Secondly, the SODI group must also predict a change in the hypothesized mediating variables. In the current study, the first criterion was not met as SODI group membership was not associated with change in study outcome variables over time. Criterion 2 was partially met as SODI group membership was associated with change for one of the hypothesized mediating variables, self-surveillance. Unfortunately, because both of these crucial 2 criteria were not met, we were unable to perform mediating analyses to test for intervention-specific mechanisms of change.

H4: Self-Objectification Intervention (SODI) vs. Thin-Ideal Intervention (TIDI), Test of Outcome Variables. Hierarchical linear models used again to test for the effects of participation in the SODI group on change in hypothesized outcome variables compared to a previously established, efficacious prevention program (TIDI). The models tested for change over time from baseline to post-intervention for the outcome variables of body shame, body satisfaction, eating disorder pathology, depression, sexual self-consciousness, and sexual satisfaction. Similar to the models tested in H1 and H2, time was entered as a Level 1 predictor and intervention group (dummy coded) was entered as a Level 2 predictor. Credibility and participant expectancies were not entered as additional predictors because these non-specific factors did not differ significantly between the active intervention groups at baseline.

They hypothesis that there would be no differences between the SODI group and the TIDI group in producing change in eating disorder pathology, body satisfaction, and depression

symptoms was supported (Table 7). Across both groups, HLM analyses resulted in a significant time slope for eating disorder pathology ($b = -.16, SE = .04, p < .01$), depression ($b = -1.04, SE = .51, p < .05$), and body satisfaction ($b = .85, SE = .19, p < .01$). Level 2 effects for the condition x time interaction were not significant, indicating that the SODI group performed equally as well the TIDI group in decreasing eating disorder pathology ($b = -.01, SE = .07, p = .85$) and depression symptoms ($b = -.30, SE = .83, p = .72$) and increasing body satisfaction ($b = -.24, SE = .28, p = .39$). The group x time interaction accounted for no additional variance in the slope for depression symptoms and eating disorder pathology, and only accounted for 3% additional variance in the slope for body satisfaction scores.

Table 7.

Results of HLM analyses for outcome variables for self-objectification dissonance intervention compared to thin-ideal dissonance intervention.

	BS-OBC	EDEQ	AE	CES-D	BISC	SSS
Intercept (γ_{00})	3.09**	2.01**	20.41**	14.09**	24.11**	11.94**
Time (γ_{10})	-.18**	-.16**	.81**	-1.02*	-1.21*	.10
Condition x Time (γ_{11})	-.07	-.02	-.16	-.35	-.54	-.11

3.09Notes. * = $p < .05$; ** = $p < .01$; BS-OBC = Body shame subscale of Objectified Body Consciousness Scale; EDEQ = Eating Disorder Examination Questionnaire; AE = Appearance Evaluation subscale of the Multidimensional Body-Shape Relations Questionnaire; CES-D = Center for Epidemiological Studies Depression scale; BISC = Body Image Self-Consciousness Scale; SSS = Sexual Satisfaction Scale; MRF = Message Rating Form; Expect = participant expectancy item; Intercepts and slopes reported are unstandardized; Time and condition variables were not centered; MRF and Expect scores were grand-mean centered.

Our hypothesis that participant scores in the SODI group and the TIDI group would be equally well maintained at 1 month follow up was also supported. A series of 2 x 2 mixed model ANOVA's revealed that for all three treatment outcomes, there was no significant main effect for time or group. There also was no significant group x time interaction for eating disorder pathology, $F(1, 88) = 1.70, p = .20$, depression symptoms, $F(1, 88) = .04, p = .85$, and body

satisfaction, $F(1, 88) = .14, p = .71$. These results indicate that both intervention groups resulted in equivalent maintenance of treatment outcomes at 1 month follow up.

The hypothesis that the SODI group would be associated with greater change in outcomes theoretically related to self-objectification compared to the TIDI group from baseline to post-intervention was not supported. Again, across both groups, there was significant effect for time for body shame ($b = -.19, SE = .04, p < .01$) and body image self-consciousness ($b = -1.22, SE = .58, p < .05$). There was no significant effect for time for sexual satisfaction ($b = .10, SE = .14, p = .46$). There was also no significant effect of group on the slope of body shame scores ($b = -.07, SE = .07, p = .35$) and body image self-consciousness ($b = -.52, SE = 1.10, p = .63$). These results indicate the SODI group was not associated with greater rate of change in outcomes over time compared to the TIDI group. The group x time interaction did not account for any additional variance in the slopes for body shame or body image self-consciousness. However, both groups resulted in significant change in body shame and body-image self-consciousness from baseline to post-intervention.

For the follow-up analyses, it was hypothesized that the SODI group would be associated with superior maintenance of treatment outcomes at follow-up compared to the TIDI group. This set of hypotheses was not supported. For body shame, there was no significant main effect for time, group, or for the interaction effect of group x time, $F(1, 88) = 1.87, p = .18$. Body shame outcomes were maintained from post-intervention to follow-up and there was no difference between groups. For self-objectification and sexual satisfaction, a similar pattern of findings was observed. There was no main effect for time, group, or group x time, $F(1, 88) = 1.41, p = .24$, for body image self-consciousness. For sexual satisfaction, there was also no main effect for time, group, or group x time, $F(1, 88) = 1.38, p = .24$. Thus, the SODI group was not superior to

the TIDI group in maintaining treatment outcomes at 1 month follow up; both interventions resulted in maintained treatment outcomes.

H5: Self-Objectification Intervention (SODI) vs. Thin-Ideal Intervention (TIDI), Test of Mediating Variables. The final set of hierarchical linear models tested for the effects of participation in the SODI group on change in hypothesized, intervention-specific mediating variables from baseline to post-test compared to the active intervention control group (TIDI). Once again, surveillance and trait self-objectification were hypothesized as the mediating variables specific to the SODI group. Thin-ideal internalization was hypothesized as the mediating variable specific to the TIDI group. Time was entered as a Level 1 predictor and intervention group (dummy coded) was entered as a Level 2 predictor.

We hypothesized that the SODI group would be associated with a greater rate of change in self-surveillance and self-objectification scores from baseline to post-intervention compared to the TIDI group. We also hypothesized that the TIDI group would be associated with a great rate of change in thin-ideal internalization scores compared to the SODI group. Neither of these hypotheses was supported (Table 8). Surveillance ($b = -.20, SE = .04, p < .01$) significantly decreased over time; self-objectification ($b = -1.94, SE = .53, p < .01$) significantly decreased over time; thin-ideal internalization ($b = -1.05, SE = .36, p < .01$) significantly decreased over time. However, intervention group membership did not affect the rate of change for surveillance ($b = .05, SE = .07, p = .48$), self-objectification ($b = -.91, SE = .97, p = .35$), and thin-ideal internalization ($b = -.39, SE = .53, p = .46$). Thus there was no difference between groups in the rate of change in mediating variables from baseline to post-intervention. The group x time interaction accounted for 8% of the variance in slope for self-surveillance scores, 16% of the

variance in slope for self-objectification scores, and no additional variance in the slope for thin-ideal internalization scores.

Table 8.

Results of HLM analyses for mediating variables for self-objectification dissonance intervention compared to thin-ideal dissonance intervention.

	S-OBC	SOQ	SATAQ
Intercept (γ_{00})	4.53**	-1.09	25.09**
Time (γ_{10})	-.20**	-1.97**	-1.05**
Condition x Time (γ_{11})	.05	-.86	-.40

Notes. * = $p < .05$; ** = $p < .01$; S-OBC = Self-surveillance subscale of the Objectified Body Consciousness scale; SOQ = Self-Objectification Questionnaire; SATAQ = Sociocultural Attitudes Towards Appearance Questionnaire; MRF = Message Rating Form; Expect = participant expectancy item; Intercepts and slopes reported are unstandardized; Time and condition variables were not centered; MRF and Expect scores were grand-mean centered.

At 1 month follow up, though, group differences did emerge. A 2 x 2 mixed model ANOVA revealed no main effect for time or group for self-surveillance scores between post-intervention and 1 month follow up. However, there was a significant group x time interaction effect, $F(1, 88) = 6.61, p < .01$. A graph of the interaction effect indicated a greater difference in surveillance scores between the SODI group ($M = 4.02, SD = 1.27$) and the TIDI group ($M = 4.36, SD = 1.10$) at 1 month follow up compared to the difference between SODI group ($M = 4.20, SD = 1.14$) and the TIDI group ($M = 4.27, SD = 1.10$) at post-intervention (Figure 6). The Figure suggests that surveillance scores in the SODI group continued to decrease post-intervention while TIDI scores did not. Follow up analyses using paired-samples t-tests confirmed no significant change from post-intervention to 1 month follow up for the TIDI group, $t(45) = -1.71, p = .09$. For the SODI group, there was a marginally significant drop in surveillance scores, $t(43) = 1.97, p = .06$. Similar findings were not observed for self-objectification scores. Analyses revealed a main effect for time for self-objectification scores,

$F(1, 88) = 6.27, p < .05$, such that self-objectification scores increased slightly from post-intervention to 1 month follow up across groups. However, there was no main effect for group or for the group x time interaction, $F(1, 88) = .04, p = .85$. For thin-ideal internalization scores, there was no significant main effect for time, group, or interaction effect of group x time, $F(1, 88) = 2.41, p = .12$. Thin-idealization scores were maintained from post-intervention to 1 month follow up for both the SODI and TIDI groups.

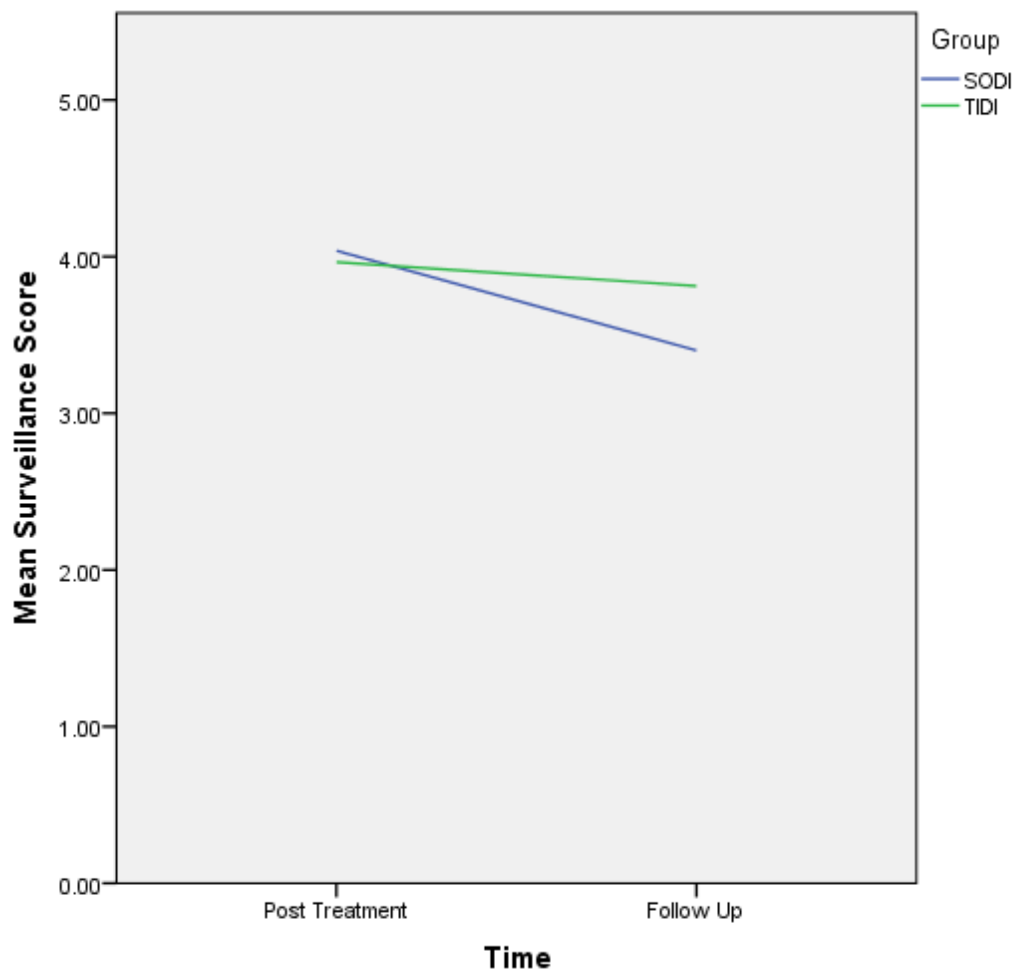


Figure 6. *Interaction effect of surveillance scores from post-treatment to 1 month follow up.*

**H6: Self-Objectification Intervention (SODI) vs. Thin-Ideal Intervention (TIDI),
Fest of Intervention-Specific Mechanisms of Change.** Due to the fact that the initial 2 criteria

for mediation analyses were not met, we could not test for intervention-specific mechanisms of change. The SODI group was not significantly associated with change in outcome variables (criteria 1; Baron & Kenney, 1986) nor was it associated with change in hypothesized mediating variables (criteria 2). Thus, mediation could not be established. There was no evidence to support that the SODI group specifically targeted surveillance and self-objectification to a greater extent compared to the TIDI group and that this change in mediating variables accounted for the change in outcome variables.

CHAPTER FOUR:

DISCUSSION

A growing body of research supports the efficacy of cognitive dissonance-based interventions to target and reduce certain risk factors related to eating disorders (Stice, Shaw, & Marti, 2007). The majority of these interventions have targeted a single risk factor implicated in the etiology of eating disorders: internalization of the thin-ideal. Evidence has accumulated, though, for another important risk factor – self-objectification – in the development of disordered eating as well as depression and sexual dysfunction in women (Calogero, 2009; Greenleaf, 2005; Moradi et al., 2005; Muehlenkamp & Saris-Baglama, 2002; Tiggemann & Kuring, 2004; Tiggemann & Lynch, 2001; Tylka & Sabik, 2010). The current study examined the efficacy of a cognitive dissonance-based intervention used to target and reduce self-objectification. The efficacy of the intervention was determined by comparing the intervention to a control group and to a well-established intervention for reducing behaviors and symptoms related to disordered eating. The intervention was evaluated based on its efficacy in reducing target risk factors (i.e., self-objectification) and outcomes and on how well intervention outcomes were maintained over a 1 month follow up period. Results indicate that targeting self-objectification using cognitive dissonance techniques does result in reductions of self-objectification and related outcomes. However, there was very little support that using a cognitive dissonance intervention that specifically targets self-objectification resulted in superior treatment outcomes than other interventions or above and beyond a control condition task.

Results indicated that the self-objectification dissonance intervention (SODI) resulted in greater reductions in self-surveillance scores, a measure of self-objectification, compared to a control group. Effect sizes indicated that the change from pre to post-intervention for the SODI group was small to moderate. Significant time effects also emerged for self-objectification, as measured by the SOQ, and other outcome variables. Time effects indicated an overall decrease in self-objectification, decreased body shame, decreased eating disorder pathology, increased body satisfaction, and decreased body-image self-consciousness. However, there were no significant group x time interaction effect on the rate of change of SOQ scores and the outcome variables. Unlike the results in this study, a previous study used a similar expressive writing control condition and found significant group x time effects on the change in eating disorder and body satisfaction outcome variables (Stice et al., 2007). However, this same study did not present information on the pattern of change for variables in the expressive writing control condition, only that there was a difference in the rate of change between the two groups.

One possible explanation for the lack of group effects for the SODI group and the control group could be the influence of non-specific treatment factors. Results indicated that the credibility of the intervention and participant expectations regarding treatment benefits had significant influence on treatment outcomes for several study variables. Participants with higher expectations of treatment benefits experienced greater reductions in negative outcomes at the end of the study. Also, the SODI group was generally viewed as more credible than the control group and participant ratings of credibility were also associated with greater change in outcomes variables at the end of the study. Thus, the influence of these two factors may have outweighed any direct effects of the intervention in producing participant change. Very few other studies evaluating the efficacy of cognitive dissonance interventions on eating disorder and body image

outcomes included or reported measures of non-specific factors (e.g., Roehrig et al., 2006; Stice et al., 2007). Stice and colleagues (2007) also found that participant expectations of treatment benefits were lower in a control condition but did not report whether or not this difference was also associated with a difference in intervention effects on the outcomes. Due to the fact that these two non-specific factors were associated with significant variance in outcome variable change, it would be important for future studies of dissonance-based interventions to include measures of these non-specific factors.

Finally, a possible explanation for the lack of difference between the self-objectification dissonance intervention and the expressive writing control could be that the expressive writing control intervention also had some active intervention effect on participant scores. There is some research evidence to support that expressive writing can reduce depression symptoms and promote psychological well-being (Gortner, Rude, & Pennebaker, 2006; Pennebaker & Chung, 2011). It is also not unreasonable to hypothesize that providing participants with a way to cope with negative emotions would subsequently change their beliefs about their bodies, reduce eating pathology, and relieve depressed mood. There has been a growing trend towards using interventions for eating disorders that teach patient skills to regulate their emotions, such as Dialectical Behavior Therapy (DBT; Linehan, 1993; Safer, Telch, & Agras, 2001). The rationale behind the use of DBT to treat eating disorders is that disordered eating behaviors develop in part as a way to cope with negative emotions and relieve emotional distress (Safer et al., 2001).

Results also indicated that largely, the self-objectification dissonance intervention performed equally as well as the well-established thin-ideal dissonance intervention. HLM analyses revealed significant time effects across groups with overall reductions in targeted risk factors, including self-surveillance, self-objectification, and thin-ideal internalization. However,

there were no significant effects for a group x time interaction. While we had hypothesized that the SODI group would produce greater rates of change compared to the TIDI group for the theoretically related risk factors, the lack of difference between the two groups was not entirely unexpected. Becker and colleagues (2013) previously reported reductions in self-surveillance associated with dissonance interventions targeting the thin-ideal. The current study does extend these findings such that the thin-ideal intervention is related to reductions in another measure of self-objectification (i.e., the Self-Objectification Questionnaire, a measure of beliefs regarding the importance of appearance to one's physical self-concept). Our findings also indicate that the self-objectification intervention is also associated with reductions in internalization of the thin-ideal.

The lack of difference between the two groups likely speaks to the relatedness of the self-objectification variables and internalization of the thin-ideal. Some research suggests that self-objectification is problematic only to the extent that a woman evaluates her self-worth against the impossible appearance standards of the thin-ideal (Smolak & Murnen, 2004). It is reasonable to hypothesize that participants in the thin-ideal dissonance intervention experienced reductions in self-objectification because they were being encouraged to adopt more realistic beliefs about a healthy weight (i.e., evaluate their self-worth against a much more realistic and achievable standard). Additionally, if participants were discouraged from striving towards an impossible appearance standard, they may have started to focus less on their overall appearance due to decreased pressure to adhere to a rigid and narrow appearance standard. Conversely, participants in the self-objectification dissonance intervention may have experienced reductions in their internalization of the thin-ideal as the result of being encouraged to place their attention and resources on aspects of their being other than appearance. Thus participants may have reduced

their overall investment in appearance, including their desire to be thin. Unfortunately, it is difficult to draw conclusions about the mechanisms by which both of these interventions worked as we were unable to find differences in the degree to which the interventions produced change in their specific, targeted mechanism (i.e., self-objectification or thin-ideal internalization).

Results also demonstrated that the self-objectification dissonance intervention and the thin-ideal dissonance intervention were equally effective in reducing outcomes related to disordered eating, body satisfaction, depression, and sexual functioning. Significant effects for time emerged and indicated reduced body shame, decreased disordered eating pathology, increased body satisfaction, decreased depression symptoms, and decreased body-image self-consciousness. These results support numerous other studies that have found similar patterns of findings for thin-ideal dissonance interventions and their effectiveness in reducing eating disorder pathology and negative affect. However, this study was the first to examine outcomes theoretically specified in Fredrickson and Roberts (1997) objectification theory, namely outcomes related to sexual dysfunction (i.e., sexual satisfaction and body image self-consciousness during sex). While significant change was not found for sexual satisfaction, body image self-consciousness during sex was significantly reduced across both the self-objectification and thin-ideal dissonance interventions. Furthermore, this study also revealed that both groups were associated with significant reductions in body shame, a finding that has not been found in other studies (Becker et al., 2013). This finding is especially important as it suggests that shame is a construct that may respond to intervention. Previous studies have suggested that body shame is a much more stable construct that may not be modifiable in a short-term intervention (Becker et al., 2013; Rolnik, Engelin-Maddox, & Miller, 2010).

Again, though, results did not indicate any group x time effect as was originally hypothesized. Our ability to detect these effects (if they were present) was compromised, though, by the small sample size. Thus, while our initial results may lead us to conclude that the interventions were equivalent in affecting outcomes, we cannot draw definite conclusions because the analyses were underpowered. Furthermore, due to the lack of significant findings, we were unable to evaluate any of the theoretical mechanisms of change. Both interventions are based on two distinct theoretical models eating disorder development: Objectification Theory (Fredrickson & Roberts, 1997) and the Tripartite Influence Model (Thompson et al., 1999). In fact, though, the two interventions are equivalent, these results raise interesting questions about how these variables (i.e., self-objectification and internalization of the thin-ideal) are related. The results in this study seem to suggest that the causal relationship between the two could be bidirectional. The lack of difference between the two groups could also have resulted from the use of the same intervention technique: inducing cognitive dissonance. Thus, perhaps these interventions were both effective not because of the risk factors they targeted, but because of the approach used. The cognitive dissonance approach is a useful method for changing/challenging thoughts and beliefs, and distorted thoughts and beliefs *in general* are targets of treatment in the Cognitive-Behavioral treatment of eating disorders (Fairburn, 2008).

The only difference that did emerge between the self-objectification and thin-ideal dissonance interventions was at the 1 month follow up assessment. There was a significant group x time effect for self-surveillance scores such that the SODI group was associated with a decline in self-surveillance scores at 1 month follow up while the TIDI group was not. There were no other significant main effects for time or interaction effects for group x time for all other risk factor variables and outcome variables. These results were as expected and indicated that

treatment outcomes were maintained following the completion of the 2 week interventions for both the SODI group and the TIDI group. While 1 month is not a particularly long follow up period, other studies have shown that outcomes from similar dissonance interventions have been maintained for intervals of up to 3 years (Stice et al., 2008). Thus, while the follow up period was relatively short, it is promising that such brief interventions were able to replicate the lasting benefits that have been found in previous studies.

Limitations

Despite evidence of change in target risk factors and outcomes over time, it is difficult to draw conclusions about the efficacy of the self-objectification dissonance intervention due to significant methodological limitations of the study. First, the sample size for the study was smaller than required and thus the study analyses for group comparisons were underpowered. Recruitment of study participants fell below the target for achieving effective study power largely due to low participant interest in the study and problems with participant retention. We attempted to ameliorate this limitation by conducting more conservative, intent-to-treat analyses which allowed us to retain a greater number of randomized participants for the final analyses regardless of drop out. However, the intent-to-treat approach has its drawbacks as well because it increases Type II error rates. As a result, despite some patterns of findings that suggest that the self-objectification dissonance intervention may have been associated with greater change in targeted variables over time compared to the control group, we did not have a large enough sample size to detect those differences as significant. Furthermore, the size of the study effects – particularly analyses comparing the self-objectification dissonance intervention with the thin-ideal dissonance intervention – was smaller than those originally included in the power analysis

for the study. Thus, it is likely that a much larger sample size would be required to detect any significant differences that might be present between those groups.

Additionally, dropout rates were very high for this study which led to multiple drawbacks for the present study. First, high dropout rates indicate that the interventions were not tolerated well, a limitation that would affect the application of these interventions to real-world settings. It is likely that dropout rates could have been attenuated if the study was able to provide additional monetary compensation. However, increased compensation would also have affected the external validity of the study. The high dropout rates also led to a significant amount of missing data. While HLM analyses are able to handle missing data, they do not make use of missing data at Level 2 (group level) of the analyses. Certain group variables (e.g., expectancy) were collected only at T₁ and T₂ after several participants had already dropped out of the study. Thus, even using HLM and an intent-to-treat approach to conserve data, sample sizes were further reduced for some HLM analyses, again, limiting study power particularly for the self-objectification and control group comparisons. Lastly, the high dropout rates also led to the collection of unequal sample sizes, due to the fact that more participants did not complete the two active intervention conditions.

Despite these limitations, though, this study did have several strengths that should be noted. First, this study took into account and controlled for several non-specific therapeutic factors, including therapist effects, participant expectancies, and the credibility of the interventions (and control condition) delivered. These are potentially confounding variables that have rarely been accounted for in the current body of dissonance-based eating disorder prevention research. Second, our interventions used standardized protocols which led to high adherence rates of the clinicians to their delivered interventions. Our study also used multiple

assessments and a multi-level modeling approach which allowed for a more refined analysis of change that was able to account for nesting effects within the data. Finally, even if a larger sample size was conducted to detect the small differences between our two active interventions, our study was powered to detect any *clinically* significant difference between these two groups. On that basis, we are able to draw conclusions that an intervention specifically targeting self-objectification does not provide any additional benefits to participants above and beyond the thin-ideal internalization intervention.

Conclusions and Implications

The results of this study serve as an important contribution to the current literature on self-objectification and its harmful consequences for women's psychological well-being. This study was the first to apply popular cognitive-dissonance interventions directly to concepts pertinent to objectification theory. It also provides an independent replication of previous findings that current interventions targeting internalization of the thin-ideal can also produce change in self-objectification and its related outcomes. Thus, these findings led more support to the growing body of evidence that cognitive dissonance-based interventions are efficacious and effective prevention programs for eating disorders.

While far from conclusive, these findings do indicate that interventions targeting the broader risk factor of self-objectification can also lead to change in eating disorder risk factors and related behaviors. These data best serve as a pilot for future studies that should evaluate the efficacy of this intervention relative to a purer control group (e.g. an assessment-only condition) to better ascertain its effects. These results also provide additional support for the high degree of relatedness between internalization of the thin-ideal and self-objectification. Future studies should attempt to elucidate the nature of the relationship between these two variables using

longitudinal approaches. Due to the lack of differences between the two interventions, we were not able to draw any conclusions about the effect that change in one of these variables has on the other. Finally, researchers have demonstrated that a great number of risk factors are associated with the development of eating disorders. Future research in the prevention field should continue to attempt to answer the question of whether or not targeting any single specific risk factors is more worthwhile. It may be, though, that the value of prevention programs really lies in teaching young women and men the tools they need to combat distorted beliefs and disordered behaviors present across the spectrum of risk factors. Thus, perhaps continued research in the prevention of eating disorders should focus not just on reducing risk factors, but on the mechanisms by which those reductions in risk factors are achieved.

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APPENDICES

Appendix A: Self-Reflection and Forgiveness Exercise

The following exercise was conducted during Session 1 of the SODI group. The exercise followed a discussion of the definition of sexual and self-objectification as well as the costs of self-objectifying.

Self-Reflection and Forgiveness Exercise

What were your feelings as you made the list of the negative effects of self-objectification and discussed the costs of focusing on your appearance?

As part of my training and participation in this group, I remember that I initially felt a lot of shame [or insert other feelings here, such as self-blame, guilt] because of how much I focus on looking pretty, the fact that I like to buy clothes and shoes, and the fact that I like to look sexy sometimes [again, can substitute with leader's own words].

Should we blame ourselves for the fact that we all self-objectify to some degree? I'd like to ask everyone to think back to when you were first encouraged to engage in some of the self-objectifying behaviors we've discussed. How old were you? How did it happen?

[Most of the participants' answers here should reflect an extremely young age. Possible answers might include playing dress up with mom, playing with makeup, dressing Barbie, reading stories about princesses and princes, imaginative play about finding prince charming and being a princess. Discussion might also focus on toys and clothing marketed towards young girls and how it promotes sexual or self-objectification.]

Many of us have pointed out that we have been encouraged to focus on our appearance and self-objectify from a very young age. [Following questions are meant to be rhetorical.] When we are that young, are we able to understand these pressures? Do we know what we are doing? Most of us probably just did these things because that's what young girls do!

So knowing about the costs of self-objectification, is it okay for us to want to look nice? It is okay for us to care about our appearance?

[Participants should respond that these things are OK. Leaders should help guide discussion so that participants acknowledge that despite caring about appearance, we should not let our looks determine our value or dominate our time and energy.]

Appendix B: Twenty Statements Homework

Please complete this worksheet with a list of statements that describe yourself and your identity. Please try to complete this list as quickly as possible, writing down the first things that come to your mind as you go down the list. Things that come to mind might be adjectives that describe the way you look or your personality. They might also be nouns, such as a group that you identify with. Please complete the list first before moving on to the next page of the exercise.

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

I am _____

Now that you have completed your statements, go back through and count the number of statements that reflect physical attractiveness. Add to that number the number of statements that reflect body weight or size. Next, count the number of statements that reflect physical competence (e.g., strength or athletic ability). Record these numbers below.

Physical Attractiveness/Body Size: _____

Physical Competence: _____

What was your initial reaction as you were filling out the list of statements?

Did anything strike you about the ratio of physical appearance “I am...” statements to physical competence “I am...” statements? If so, what?

How does the way you identify yourself fit in with the conversation we had about sexual and self-objectification from the first session?

Appendix C: Expressive Writing Control Group Protocol

The following prompts will be administered to participants during two sessions. Participants will be asked to choose one of the available prompts and to respond to the prompt in writing for the entire duration of 30 minutes.

The writing prompts will be introduced at each session with the following script:

Session 1

Welcome to the Culture and Body Image Study. Previous research suggests that women's issues with depression and body dissatisfaction can be linked to emotional issues. Weekly expressive writing may help to solve these issues. On the sheet in front you, you will find several writing prompts. You should choose one prompt and write about it for the next 30 minutes. Please make sure to write for the full 30 minutes. Your written answers will be completely confidential and will not be read by members of the research team. During this writing time, you should really let go and explore your deepest thoughts and emotions. Do not worry about spelling, writing, or grammar. You only need to write and continue until your time is up.

Session 2

Welcome back to the Girls' and Women's Mental Health Study. As a reminder, we informed you last session that previous research suggests that women's issues with depression and body dissatisfaction can be linked to emotional issues. We also informed you that weekly expressive writing may help to solve these issues. Today will be your second weekly writing session. On the sheet in front you, you will find the writing prompts from last week's session. You should choose one prompt and write about it for the next 30 minutes. Try to pick a different prompt than you chose last week. However, if you want to repeat your prompt, you may do so. Please make sure to write for the full 30 minutes. Your written answers will be completely confidential and will not be read by members of the research team. During this writing time, you should really let go and explore your deepest thoughts and emotions. Do not worry about spelling, writing, or grammar. You only need to write and continue until your time is up.

Expressive Writing Prompts

Prompt 1: For the next 30 minutes, please write about your deepest thoughts and feelings related to an emotional experience you had with a family member. The member of your family could be a mother, father, a sibling, or other relative. It could involve an argument, an illness, a death, a birth, a

divorce, a move, or another situation that was *emotionally important*. While you are writing, try to really let go and explore your deepest thoughts and emotions.

Prompt 2: For the next 30 minutes, please write about your deepest thoughts and feelings related to an emotional experience you had related to a life-long goal you are currently trying to achieve or a life-long goal you used to have. It could be a goal related to a job, getting into college, traveling to another country, starting a business, starting a family, or getting a scholarship. It could involve struggles working towards your goal, a failure to achieve your goal, a goal you abandoned, a road block you experienced on your way to a goal, or the experience of obtaining your goal as long as it was *emotionally important*. While you are writing, try to really let go and explore your deepest thoughts and emotions.

Prompt 3: For the next 30 minutes, please write about your deepest thoughts and feelings related to an emotional experience concerning an important relationship. The relationship could be with a lover, partner, boyfriend or girlfriend, a close friend, or a mentor. It could involve an argument, an illness, a death, a break in the relationship, a struggle that affected you and the other person, or another situation that was *emotionally important*. While you are writing, try to really let go and explore your deepest thoughts and emotions.

Prompt 4: For the next 30 minutes, please write about your deepest thoughts and feelings related to an emotional experience you had when you began college. It could involve homesickness, conflict with a roommate, struggles with the demands of college life, academic problems, social problems or pressures, or another situation that was *emotionally important*. While you are writing, try to really let go and explore your deepest thoughts and emotions.

Appendix D: Objectified Body Consciousness Scale (McKinley & Hyde, 1996): Surveillance and Body Shame subscales

For the following statements, please think about how you feel about yourself and your body and rate to what extent you agree or disagree with each item. You may also select N/A (*does not apply*) if the item does not apply to you.

	Strongly Disagree					Strongly Agree		
	1	2	3	4	5	6	7	N/A
1. I rarely think about how I look.	1	2	3	4	5	6	7	N/A
2. I think it is more important that my clothes are comfortable than whether they look good on me.	1	2	3	4	5	6	7	N/A
3. I think more about how my body feels than how my body looks.	1	2	3	4	5	6	7	N/A
4. I rarely compare how I look with how other people look.	1	2	3	4	5	6	7	N/A
5. During the day, I think about how I look many times.	1	2	3	4	5	6	7	N/A
6. I often worry about whether the clothes I am wearing make me look good.	1	2	3	4	5	6	7	N/A
7. I rarely worry about how I look to other people.	1	2	3	4	5	6	7	N/A
8. I am more concerned with what my body can do than how it looks.	1	2	3	4	5	6	7	N/A
9. When I can't control my weight, I feel like something must be wrong with me.	1	2	3	4	5	6	7	N/A
10. I feel ashamed of myself when I haven't made the effort to look my best.	1	2	3	4	5	6	7	N/A
11. I feel like I must be a bad person when I don't look as good as I could.	1	2	3	4	5	6	7	N/A
12. I would be ashamed for people to know what I really weigh.	1	2	3	4	5	6	7	N/A
13. I never worry that something is wrong with me when I am not exercising as much as I should.	1	2	3	4	5	6	7	N/A

- | | | | | | | | | |
|--|---|---|---|---|---|---|---|-----|
| 14. When I'm not exercising enough, I question whether I am a good person. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | N/A |
| 15. Even when I can't control my weight, I think I'm an okay person. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | N/A |
| 16. When I'm not the size I think I should be, I feel ashamed. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | N/A |

Appendix E: Self-Objectification Questionnaire (Noll & Fredrickson, 1998)

We are interested in how people think about their bodies. The questions below identify 10 different body attributes. We would like you to rank order these body attributes from that which has the greatest impact on your physical self concept (rank this a “9”) to that which has the least impact on your physical self concept (rank this a “0”).

Note: It does not matter how you describe yourself in terms of each attribute. For example, fitness level can have a great impact on your physical self-concept, regardless of whether you consider yourself to be physically fit, not physically fit, or any level in between.

Please first consider all attributes simultaneously, and record your rank ordering by writing the ranks in the right most column.

IMPORTANT: Do not assign the same rank to more than 1 attribute!
When considering your physical self-concept...

9 = greatest impact
8 = next greatest impact

1 = next to least impact
0 = least impact

1. ...what rank do you assign to *physical coordination*? _____
2. ...what rank do you assign to *health*? _____
3. ...what rank do you assign to *weight*? _____
4. ...what rank do you assign to *strength*? _____
5. ...what rank do you assign to *sex appeal*? _____
6. ...what rank do you assign to *physical attractiveness*? _____
7. ...what rank do you assign to *energy level* (e.g., stamina)? _____
8. ...what rank do you assign to *firm/sculpted muscles*? _____
9. ...what rank do you assign to *physical fitness level*? _____
10. ...what rank do you assign to *measurements* (e.g., waist, chest, hips)? _____

Appendix F: Sociocultural Attitudes Towards Appearance Scale-3 (Thompson, van den Berg, Roehrig, Guarda & Heinberg, 2004)

Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

Definitely Disagree = 1
Mostly Disagree = 2
Neither Agree Nor Disagree = 3
Mostly Agree = 4
Definitely Agree = 5

	Definitely Disagree			Definitely Agree	
1. TV programs are an important source of information about fashion and “being attractive.”	1	2	3	4	5
2. I’ve felt pressure from TV or magazines to lose weight.	1	2	3	4	5
3. I care if my body looks like the body of people who are on TV.	1	2	3	4	5
4. I compare my body to the bodies of people who are on TV.	1	2	3	4	5
5. TV commercials are an important source of information about fashion and “being attractive.”	1	2	3	4	5
6. I feel pressure from TV or magazines to look pretty.	1	2	3	4	5
7. I would like my body to look like the models who appear in magazines.	1	2	3	4	5
8. I compare my appearance to the appearance of TV and movie stars.	1	2	3	4	5
9. Music videos on TV are an important source of information about fashion and “being attractive.”	1	2	3	4	5
10. I’ve felt pressure from TV and magazines to be thin.	1	2	3	4	5
11. I would like my body to look like the people who are in movies.	1	2	3	4	5
12. I compare my body to the bodies of people who appear in magazines.	1	2	3	4	5
13. Magazine articles are an important source of information about fashion and “being attractive.”	1	2	3	4	5

14. I've felt pressure from TV or magazines to have a perfect body.	1	2	3	4	5
15. I wish I looked like the models in music videos.	1	2	3	4	5
16. I compare my appearance to the appearance of people in magazines.	1	2	3	4	5
17. Magazine advertisements are an important source of information about fashion and "being attractive."	1	2	3	4	5
18. I've felt pressure from TV or magazines to diet.	1	2	3	4	5
19. I wish to look as athletic as the people in magazines.	1	2	3	4	5
20. I compare my body to that of people in "good shape."	1	2	3	4	5
21. Pictures in magazines are an important source of information about fashion and "being attractive."	1	2	3	4	5
22. I've felt pressure from TV or magazines to exercise.	1	2	3	4	5
23. I wish I looked as athletic as sports stars.	1	2	3	4	5
24. I compare my body to that of people who are athletic.	1	2	3	4	5
25. Movies are an important source of information about fashion and "being attractive."	1	2	3	4	5
26. I've felt pressure from TV or magazines to change my appearance.	1	2	3	4	5
27. I try to look like the people on TV.	1	2	3	4	5
28. Movie stars are an important source of information about fashion and "being attractive."	1	2	3	4	5
29. Famous people are an important source of information about fashion and "being attractive."	1	2	3	4	5
30. I try to look like sports athletes.	1	2	3	4	5

Appendix G: Eating Disorder Examination – Questionnaire (Fairburn & Beglin, 1994)

Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each questions carefully. Please answer all of the questions.

Questions 1 to 12: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days) only.

	On how many of the past 28 days...	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
1.	Have you been deliberately <i>trying</i> to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
2.	Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?	0	1	2	3	4	5	6
3.	Have you <i>tried</i> to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
4.	Have you <i>tried</i> to follow definite rules regarding your eating (e.g., a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
5.	Have you had a definite desire to have an <i>empty</i> stomach with the aim of influencing your shape or weight?	0	1	2	3	4	5	6
6.	Have you had a definite desire to have a <i>totally flat</i> stomach?	0	1	2	3	4	5	6
7.	Has thinking about <i>food, eating, or calories</i> made it very difficult to concentrate on things you are interested in (e.g., working, following a conversation, or reading)?	0	1	2	3	4	5	6

8.	Has thinking about <i>shape or weight</i> made it very difficult to concentrate on things you are interested in (e.g., working, following a conversation, or reading)?	0	1	2	3	4	5	6
9.	Have you had a definite fear of losing control over eating?	0	1	2	3	4	5	6
10.	Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
11.	Have you felt fat?	0	1	2	3	4	5	6
12.	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

Questions 13 – 18: Please fill in the appropriate number in the boxes on the right. Remember that the questions only refer to the past four weeks (28 days).

Over the past four weeks (28 days)...

- | | | |
|-----|--|-------|
| 13. | How many <i>times</i> have you eaten what other people would regard as an unusually large amount of food (given the circumstances)? | _____ |
| 14. | On how many of these times did you have a sense of having lost control over your eating (at the time you were eating)? | _____ |
| 15. | How many DAYS have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food <i>and</i> have had a sense of loss of control at the time)? | _____ |
| 16. | How many <i>times</i> have you made yourself sick (vomit) as a means of controlling your shape or weight? | _____ |
| 17. | How many <i>times</i> have you taken laxatives as a means of controlling your shape or weight? | _____ |
| 18. | How many <i>times</i> have you exercised in a “driven” or “compulsive” way as a means of controlling your weight, shape or amount of fat, or to burn off calories? | _____ |

Questions 19 – 21: Please circle the appropriate number. *Please note that for these questions, the term “binge eating” means eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.*

- | | | | | | | | | |
|-----|--|----------------|-----------------|------------------|-------------------|-------------------|-------------------|------------------|
| 19. | Over the past 28 days, on how many days have | No days | 1-5 days | 6-12 days | 13-15 days | 16-22 days | 23-27 days | Every day |
|-----|--|----------------|-----------------|------------------|-------------------|-------------------|-------------------|------------------|
-

you eaten in secret (i.e., furtively)?

0 1 2 3 4 5 6

...Do not count episodes of binge eating.

20. On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight?

None of the times	A few of the times	Less than half	Half of the times	More than half	Most of the times	Every time
-------------------	--------------------	----------------	-------------------	----------------	-------------------	------------

0 1 2 3 4 5 6

...Do not count episodes of binge eating.

21. Over the past 28 days, how concerned have you been about other people seeing you eat?

Not at all	Slightly	Moderately	Markedly
------------	----------	------------	----------

0 1 2 3 4 5

...Do not count episodes of binge eating.

Questions 22 – 28: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days).

Over the past 28 days...

Not at all	Slightly	Moderately	Markedly
------------	----------	------------	----------

22. Has your weight influence how you think about (judge) yourself as a person?

0 1 2 3 4 5 6

23. Has your shape influenced how you think about (judge) yourself as a person?

0 1 2 3 4 5 6

24. How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?

0 1 2 3 4 5 6

25. How dissatisfied have you been with your weight?

0 1 2 3 4 5 6

26. How dissatisfied have you been with your shape?

0 1 2 3 4 5 6

27. How uncomfortable have you felt seeing your body (e.g., seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?

0 1 2 3 4 5 6

28. How uncomfortable have you felt about others seeing your shape or figure (e.g., in communal changing rooms, when swimming, or wearing tight clothes)?

0 1 2 3 4 5 6

What is your weight at present? (Please give your best estimate)

What is your height? (Please give your best estimate)

If female: Over the past three to four months, have you missed any menstrual periods?

- If so, how many?
- Have you been taking the “pill”?

Appendix H: Center for Epidemiological Studies Depression scale (CES-D; Radloff, 1997)

Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way during the past week.

During the past week...	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
I was bothered by things that usually didn't bother me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I did not feel like eating; my appetite was poor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt that I could not shake off the blues even with help from my family or friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt I was just as good as other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I had trouble keeping my mind on what I was doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt depressed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt that everything I did was an effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt hopeful about the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I thought my life had been a failure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt fearful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My sleep was restless.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I was happy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I talked less than usual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt lonely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People were unfriendly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoyed life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I had crying spells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt sad.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt that people dislike me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I could not get "going".	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Appendix I: Multidimensional Body-Self Relations Questionnaire – Appearance
Evaluation subscale (Cash, 1997)**

Instructions: Using the scale below, please circle the number that best matches your agreement with the following statements.

Definitely disagree 1	Mostly Disagree 2	Neither agree nor disagree 3	Mostly Agree 4	Definitely Agree 5
-----------------------------	-------------------------	------------------------------------	----------------------	--------------------------

- | | | | | | |
|--|---|---|---|---|---|
| 1. My body is sexually appealing. | 1 | 2 | 3 | 4 | 5 |
| 2. I like my looks just the way they are. | 1 | 2 | 3 | 4 | 5 |
| 3. Most people would consider me good looking. | 1 | 2 | 3 | 4 | 5 |
| 4. I like the way I look without my clothes. | 1 | 2 | 3 | 4 | 5 |
| 5. I like the way my clothes fit me. | 1 | 2 | 3 | 4 | 5 |
| 6. I dislike my physique. | 1 | 2 | 3 | 4 | 5 |
| 7. I'm physically unattractive. | 1 | 2 | 3 | 4 | 5 |

Appendix J: Body Image Self-Consciousness Scale (BISC; Wiederman, 2000)

Please use the following scale to indicate how often you agree with each statement or how often you think it would be true for you. The term partner refers to someone with whom you are romantically or sexually intimate.

0	1	2	3	4	5
Never	Rarely	Sometimes	Often	Usually	Always

1. I would feel very nervous if a partner were to explore my body before or after having sex.
2. The idea of having sex without any covers over my body causes me anxiety.
3. While having sex I am (would be) concerned that my hips and thighs would flatten out and appear larger than they actually are.
4. During sexual activity, I am (would be) concerned about how my body looks to my partner.
5. The worst part of having sex is being nude in front of another person.
6. If a partner were to put a hand on my buttocks I would think, "My partner can feel my fat".
7. During sexual activity it is (would be) difficult not to think about how unattractive my body is.
8. During sex, I (would) prefer to be on the bottom so that my stomach appears flat.
9. I (would) feel very uncomfortable walking around the bedroom, in front of my partner, completely nude.
10. The first time I have sex with a new partner, I (would) worry that my partner will get turned off by seeing my body without clothes.
11. If a partner were to put an arm around my waist, I would think, "My partner can tell how fat I am".
12. I (could) only feel comfortable enough to have sex if it were dark so that my partner could not clearly see my body.
13. I (would) prefer having sex with my partner on top so that my partner is less likely to see my body.
14. I (would) have a difficult time taking a shower or bath with a partner.
15. I (would) feel anxious receiving a full-body massage from a partner.

Appendix K: Sexual Satisfaction Scale (Dove & Wiederman, 2000)

Please circle your response to the statements below using the scales provided. There are no right or wrong answers. We are interested in your personal responses to these statements.

	Not at all					Very much
1. In general, how satisfied are you with the quality of the sexual experiences you have had with a partner?	1	2	3	4	5	6
2. Overall, how pleasurable have your sexual experiences with a partner been for you?	1	2	3	4	5	6
3. All things considered, how satisfied are you with the ways your body has responded during sexual activity with a partner?	1	2	3	4	5	6

Appendix L: Non-Specific Factors

Expectancy for Change:

- 1) I believe that participating in this study will make me feel better about myself and my body.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

Group Leader Rating Scale:

My therapists were...	Definitely Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Definitely Agree
Friendly	1	2	3	4	5
Respectful	1	2	3	4	5
Confident	1	2	3	4	5
Genuine	1	2	3	4	5
Warm	1	2	3	4	5

Message Rating Form:

Please answer the following questions regarding the therapists delivering the intervention information. (Circle number)

- 1) How believable were the therapists?

1	2	3	4	5
Highly Unbelievable	Somewhat Unbelievable	Undecided	Somewhat Believable	Highly Believable

- 2) How effective was the therapists' delivery of the information?

1	2	3	4	5
Highly Ineffective	Somewhat Ineffective	Undecided	Somewhat Effective	Highly Effective

3) How easy to understand were the therapists?

1	2	3	4	5
Very Difficult	Somewhat Difficult	Undecided	Somewhat Easy	Very Easy

4) How relevant was the therapists' information?

1	2	3	4	5
Very Irrelevant	Somewhat Irrelevant	Undecided	Somewhat Relevant	Highly Relevant

5) How convincing were the therapists in their delivery?

1	2	3	4	5
Very Unconvincing	Somewhat Unconvincing	Undecided	Somewhat Convincing	Highly Convincing

6) How influential were the therapists in their delivery?

1	2	3	4	5
Very Un-influential	Somewhat Un-influential	Undecided	Somewhat Influential	Highly Influential

Appendix M: Session Integrity Check – Video Coding

Self-Objectification Condition

Session 1

- 1. Group Leaders
Graduate Student
Leader: _____
RA Co-Leader: _____
- 2. Session date
Date: _____
- 3. Session Length
Time: _____

The following questions refer to central components of the protocol.

- 4. Did introductions include informed consent and videotaping?
Yes No
- 5. Were “sexual objectification” and “self-objectification” defined and their origins discussed?
Yes No
- 6. Did the group generate a list of the costs of sexual and self-objectification?
Yes No
- 7. Did participants complete the Self-Reflection and Forgiveness exercise?
Yes No
- 8. Did participants complete the Verbal Challenge Exercise?
Yes No
- 9. Was the “I am...” Statements homework assigned?
Yes No
- 10. Were there any significant deviations from the protocol?
Yes No

The final question refers to the overall session.

- 11. To what extent was the full protocol followed in this session? (circle one)
None of the time Rarely any of the time Less than half the time More than half the time Most of the time All of the time

Session Integrity Check – Video Coding

Self-Objectification Condition

Session 2

1. Group Leaders
Graduate Student
Leader: _____
RA Co-Leader: _____
2. Session Date
Date: _____
3. Session Length
Time: _____

The following questions refer to central components of the protocol.

4. Was the “I am...” Statements homework reviewed?
Yes No
5. Did participants complete both role play exercises?
Yes No
6. Did participants practice challenging derogatory and objectifying talk?
Yes No
7. Did participants complete a Top 10 List of ways to challenge sexual and self-objectification?
Yes No
8. Did each participant select a Self-Affirmation Exercise?
Yes No
9. Were there any significant deviations from the protocol?
Yes No

The final question refers to the overall session.

10. To what extent was the full protocol followed in this session? (circle one)
None of the time Rarely any of the time Less than half the time More than half the time Most of the time All of the time

Session Integrity Check – Video Coding

Thin-Ideal Condition

Session 1

1. Group Leaders
Graduate Student
Leader: _____
RA Co-Leader: _____
2. Session date
Date: _____
3. Session Length
Time: _____

The following questions refer to central components of the protocol.

- | | | |
|---|-----|----|
| 4. Did introductions include informed consent and videotaping? | Yes | No |
| 5. Was the “thin-ideal” defined and its origins discussed? | Yes | No |
| 6. Did the group generate a list of the costs of pursuing the thin-ideal? | Yes | No |
| 7. Did participants complete the Verbal Challenge Exercise? | Yes | No |
| 8. Was the Mirror Exercise homework assigned? | Yes | No |
| 9. Were there any significant deviations from the protocol? | Yes | No |

The final question refers to the overall session.

10. To what extent was the full protocol followed in this session? (circle one)
- | | | | | | |
|---------------------|---------------------------|----------------------------|----------------------------|---------------------|--------------------|
| None of the
time | Rarely any
of the time | Less than
half the time | More than
half the time | Most of the
time | All of the
time |
|---------------------|---------------------------|----------------------------|----------------------------|---------------------|--------------------|

Session Integrity Check – Video Coding

Thin-Ideal Condition

Session 2

1. Group Leaders
Graduate Student
Leader: _____
RA Co-Leader: _____
2. Session Date
Date: _____
3. Session Length
Time: _____

The following questions refer to central components of the protocol.

- | | | |
|---|-----|----|
| 4. Was the Mirror Exercise homework reviewed? | Yes | No |
| 5. Did participants complete both role play exercises? | Yes | No |
| 6. Did participants practice challenging Fat Talk? | Yes | No |
| 7. Did participants complete a Top 10 List of ways to challenge the thin-ideal? | Yes | No |
| 8. Did each participant select a Self-Affirmation Exercise? | Yes | No |
| 9. Were there any significant deviations from the protocol? | Yes | No |

The final question refers to the overall session.

10. To what extent was the full protocol followed in this session? (circle one)
- | | | | | | |
|---------------------|---------------------------|----------------------------|----------------------------|---------------------|--------------------|
| None of the
time | Rarely any
of the time | Less than
half the time | More than
half the time | Most of the
time | All of the
time |
|---------------------|---------------------------|----------------------------|----------------------------|---------------------|--------------------|

ABOUT THE AUTHOR

Jessie E. Menzel earned her B.A. in Psychology with a concentration in Women and Gender Studies from Kenyon College in Gambier, Ohio in 2003. She earned her M.A. in Clinical Psychology from the University of South Florida in Tampa, FL in 2010. She will earn her Ph.D. in Clinical Psychology from the University of South Florida in Tampa, FL in 2013, where she studied under the mentorship of J. Kevin Thompson, Ph.D. Jessie completed her pre-doctoral internship in clinical psychology at the University of California San Diego/VA San Diego Healthcare System with a focus on eating disorders and behavioral medicine. She is continuing her training as a postdoctoral fellow with the University of California San Diego's Department of Psychiatry. Jessie has authored several peer-reviewed journal articles, book chapters, and conference presentations in the areas of clinical psychology, body image, and eating disorders. She was the recipient of the Stephanie Gilbert Endowed Memorial Scholarship Award in 2011, the Tom Tighe Research Award in 2011, and the USF Valerie Reed Memorial Award in 2010.