EXPLORING THE INFLUENCE OF SOCIOCULTURAL FACTORS ON BODY DISSATISFACTION IN POSTPARTUM WOMEN

A dissertation presented by
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Dedication

I would like to dedicate this dissertation to my parents, Patricia and Joel Lovering, and grandparents, Marjorie and Richard Fogarty, who instilled in me the value of an education and a strong work ethic. They made significant sacrifices and inspired my sisters and me to achieve our goals. I am the person I am today because of these wonderful role models who encouraged me to shoot for the moon and never give up. I love you and I am so fortunate to call you my parents.

With deep admiration, gratitude, and love,

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CHAPTER ONE:

A review of body dissatisfaction in women and the tripartite influence model

Abstract

This literature review examines the theoretical and clinical research pertaining to body dissatisfaction in women. More specifically, a focus is given to how sociocultural factors (i.e., the media, family, peers, and partners) influence the development of body dissatisfaction in new mothers, who report experiencing heightened body dissatisfaction during postpartum. The Tripartite Influence Model, a widely utilized theoretical model exploring influence variables associated with body dissatisfaction, will be discussed in detail. Research utilizing the Tripartite Influence Model with women from various cultures will be summarized. This review will provide rationales for testing the Tripartite Influence Model in a sample of postpartum women and adding the additional partner influence variable to enhancing the model.
A review of body dissatisfaction in women and the tripartite influence model

Definition of Body Image

The term body image is commonly accepted as the internal representation (i.e., one’s unique perception) of one’s appearance (Thompson, Heinberg, Atable, & Tantleff-Dunn, 1999) and is described by Cash as the “view from the inside” (1990, p. 51). Moreover, body image is multidimensional and includes perceptual, attitudinal, and behavioral dimensions (Rallis, Skouteris, Wertheim, & Paxton, 2007). While body image is commonly thought of as one’s perception of shape and size, Nezlek (1999) elaborated that the term also includes one’s perception of one’s own attractiveness and sexuality. A meta-analysis reviewing 93 experimental studies on physical attractiveness stereotype and 75 correlational studies of characteristics associated with physical attractiveness concluded that there is a distinction between subjective and objective attractiveness (Feingold, 1992). More specifically, one’s own self-rating of attractiveness was significantly associated with global self-esteem, whereas objective attractiveness was not associated with self-esteem (Feingold, 1992). Positive thoughts associated with one’s perception may improve self-esteem, whereas negative cognitions may result in low self-confidence and maladaptive behaviors (Delinsky, 2011). Furthermore, excessive negative focus on appearance may lead to body dissatisfaction (Mercurio & Rima, 2011).

Body dissatisfaction consists of subjective unhappiness or discontent with some aspect of appearance (Thompson & Stice, 2001) and is a concern due to its association with eating pathology, depression, smoking, being overweight (Polivy & Herman, 2004), and low levels of psychological adjustment (Cash, 1990). Negative body image and body dissatisfaction are terms often used interchangeably in the literature (Thompson, 2001).
In many Western cultures, slimness has been associated with self-control, social attractiveness, grace, and youth (Grogan, 2008; Orbach, 1993). Media outlets portray the Western ideal female as young, tall, and thin with moderately large breasts (Levine & Chapman, 2011), whereas for males the Western ideal body is moderately muscular and slender (Grogan, 2008). Nonconformity to Western body ideals has been associated with physical unattractiveness and other negative characteristics (e.g., laziness, lack of willpower). Many women and girls in Western culture are dissatisfied with their body size and weight because they desire to be thinner. An extensive literature review examining theoretical and clinical research about women’s attitudes towards their bodies, weight, and shape concluded that women’s discontent with their bodies is so widely spread it is considered normative for women in Western culture (Rodin, Silberstein, & Striegel-Moore, 1985).

Body image disturbances can affect a person in a variety of ways, including perceptual, cognitive, affective, and behavioral disturbances (Delinsky, 2011). Perception is defined as the mental image and sensations associated with one’s body and its parts. More specifically, perceptual aspects include the sense of taking up space, shape of body parts, and body composition (e.g., sensations of feeling toned or flabby). Body image cognitions are beliefs about one’s body appearance and the meaning of this appearance. For instance, an unrealistic expectation for an appearance feature (e.g., desire to look like a fashion model) is an example of a cognitive body image disturbance (Jakatdar, Cash, & Engle, 2006). When faced with a situation that triggers thoughts about weight or body shape, an affective disturbance may include feeling fat, self-conscious, shame, and disgust. Behavioral disturbances can be observed and consist of
actions, such as frequently checking one’s weight or avoiding exposure to one’s appearance (Delinsky, 2011). Extreme body image disturbance (i.e., preoccupation and emotional distress over appearance) is a risk factor that can lead to clinical conditions, such as anorexia nervosa, bulimia nervosa, and body dysmorphic disorder (Delinsky, 2011).

**Eating Disorders**

Eating disorders are mental health disorders that affect females and males in Western society and are marked by co-occurring medical issues, low response rates, relapse, and mortality (Fairburn, Cooper, Doll, Norman, & O’Connor, 2000; Stice, 2002). A recent study examined the incidence of eating disorders in the United Kingdom from 2000 to 2009 utilizing the General Practice Research Database and documented an increase in the annual incidence rate from 32.3% to 37.2% for women ages 10 to 49, with the highest incidence rate of eating disorders (i.e., anorexia nervosa, bulimia nervosa, and eating disorder not otherwise specified) for girls between 15 to 19 years of age (Micali, Hagberg, Petersen, & Treasure, 2013). While the study documented an increase in first time diagnosis for eating disorders, it should be noted that diagnoses of anorexia nervosa and bulimia nervosa remained relatively stable over the ten-year period, whereas the number of eating disorder NOS diagnoses increased significantly. Eating disorders are serious mental health conditions that have higher levels of suicide attempts, hospitalizations, and mortality when compared to other psychiatric syndromes (Newman et al., 1996; Stice, 2002). More specifically, eating disorders are linked to premature death due to medical complications and elevated suicide risk as a result of suffering from the mental illness (Delinsky, 2011). Eating pathology also increases the risk for
comorbid mental health issues, which include depression, anxiety, and substance dependence (Braun, Sunday, & Halmi, 1994).

Anorexia nervosa is a serious mental illness that is defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) as an intense fear of gaining weight or becoming fat with a refusal to maintain body weight at or above a minimally normal weight for age and height (American Psychiatric Association, 2013). According to the DSM-5 there are two additional criteria for diagnosing anorexia nervosa that pertain to body image disturbance: 1) “intense fear of gaining weight or becoming fat even though underweight” and 2) “disturbance in the way in which one’s body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight” (American Psychiatric Association, 2013, p. 338-339). Recently, Hudson, Hiripi, Pope, and Kessler (2007) surveyed a representative sample of adults in the United States and reported the lifetime prevalence of anorexia nervosa to be 0.9% in females. A study examining the outcome of anorexia nervosa treatment from 1950 to 2000 determined that while 46 percent of people diagnosed with anorexia nervosa fully recovered, 20 percent chronically suffered long term and one-third experienced residual symptoms (Steinhausen, 2002).

Another eating disorder that may develop as a result of body dissatisfaction is bulimia nervosa, which affects between 1 to 3 percent of adolescents and young adult women (Crowther & Williams, 2011). The DSM-5 characterizes bulimia nervosa as recurrent episodes of binge eating with a lack of control over eating and the use of an inappropriate compensatory behavior (i.e., self-induced vomiting, laxatives) in order to prevent weight gain (American Psychiatric Association, 2013). Individuals suffering
from bulimia nervosa set extremely high standards for their weight and shape, which results in dysfunctional thoughts and the pursuit of achieving unrealistic expectations (Crowther & Williams, 2011). Overvaluation of shape and weight is a symptom of bulimia nervosa as well as a maintenance factor for the disorder. Overvaluation is defined as the excessive influence of body weight or shape on self-evaluation (Grilo et al., 2009). A recent study by Grilo and colleagues (2009) examined the differences between bulimia nervosa and binge eating disorder and found 95 percent of the individuals with bulimia nervosa met clinical criteria for excessive self-evaluation of weight and shape. Fairburn et al. (1995) completed a six-year follow-up study to assess the outcome of individuals, males and females with an average age of 29.6 at follow-up, who had participated in a psychotherapy trial for bulimia nervosa in Oxford, England during the 1980s. While 54 percent of the participants did not suffer from an eating disorder at the six-year follow-up, 19 percent met criteria for bulimia nervosa, 3 percent met criteria for anorexia nervosa, and 24 percent met criteria for eating disorder not otherwise specified (Fairburn et al., 1995).

Body dysmorphic disorder (BDD) is defined as preoccupation with an imagined defect or slight physical anomaly that causes clinically significant distress or impairment in important areas of functioning (e.g., social, occupational). Individuals with BDD think about their perceived defect for many hours a day and frequently engage in repetitive behaviors, such as mirror checking, excessive grooming, or reassurance-seeking (Phillips, McElroy, Keck, Pope, & Hudson, 1993). While the research on BDD is limited, studies have examined the prevalence of BDD among different age groups. Bohne and colleagues (2002) reported prevalence rates ranging from 2.5 to 13 percent among female
college students in Germany; however, the study utilized a self-report measure without clinical verification therefore their estimates may be inflated. A study examining the prevalence of BDD in women 36 to 44 years of age in the U.S. documented a 0.7% rate of clinical BDD using structured clinical interviews (Otto, Wilhelm, Cohen, & Harlow, 2001). Koran et al. (2008) conducted a random nationwide telephone survey with 2,048 adults in the United States and estimated the point prevalence of BDD to be 2.5 percent for women and 2.2 percent for men. Moreover, the authors also noted that the prevalence of BDD decreased after 44 years of age and people diagnosed with BDD were more likely to be single than those without BDD. Anorexia nervosa, bulimia nervosa, and body dysmorphic disorder are serious mental illnesses that have an impact on an individual’s quality of life and functioning.

As aforementioned, eating disorders are associated with comorbid mental health issues. Hudson, Hiripi, Pope, and Kessler (2007) reported that after controlling for age, sex, and race/ethnicity, eating disorders were found to be positively related to almost all major DSM-IV disorders (i.e., mood, anxiety, impulse-control, and substance use). A study by Kaye and colleagues (2004) examined the prevalence of anxiety disorders among 741 individuals suffering from eating disorders and reported 63.5 percent were diagnosed with at least one lifetime anxiety disorder, with obsessive compulsive disorder as the most frequent comorbid anxiety diagnosis. An extensive review by Casper (1998) examining clinical, descriptive, family, genetic, and outcome studies documented that the lifetime prevalence rate of major depression in anorexia nervosa is 46-74% and in bulimia nervosa is 50-65%. Moreover, a review of literature examining the comorbidity between eating disorders and other mental health issues concluded that most women with
eating disorders have a history or will also suffer from another axis I or axis II disorder during their lifetime (Pearlstein, 2002). In sum, the development of an eating disorder increases the individual’s risk for suffering from another comorbid mental health issue. Research indicates that individuals with eating disorder symptoms are more likely than individuals without eating disorder symptoms to focus on disliked body parts and report greater negative emotions and cognitions when examining their appearance (Delinsky, 2011). These negative emotions and cognitions can then lead individuals to believe that their body is unacceptable and needs to be carefully monitored through excessive checking. Negative body image is not only a risk factor for developing eating pathology, it is also a core diagnostic feature of eating disorders that is less likely to resolve with treatment than the unhealthy eating behavior (Delinsky, 2011). In sum, body dissatisfaction may lead to the development and persistence of eating disorders and more serious mental health issues. Due to the strong link between body dissatisfaction and eating disorders, it is important to understand how body dissatisfaction is assessed and why it is considered normative.

**Body Dissatisfaction Assessment and Prevalence**

Researchers have developed and utilized a number of quantitative measures to assess body dissatisfaction. The silhouette technique is often utilized as a measure of body dissatisfaction in which the participant is presented with silhouettes ranging from very thin to very overweight and asked to select both her body size and her ideal body size (Grogan, 2008). One of the first studies to utilize the silhouette scale surveyed 227 females and 248 males undergraduates at the University of Pennsylvania and asked them to identify their current figure, ideal figure, and figure most desired by the opposite sex
TRIPARTITE INFLUENCE MODEL AND BODY DISSATISFACTION

On average, the study found women selected a heavier figure to represent their current body size, a thinner figure to represent the attractive figure for men, and an even thinner figure as their ideal body size. Based on their findings, Fallon and Rozin (1985) concluded that not only were the majority of women surveyed dissatisfied with their current figures, but also the women believed men desired a thinner figure than what the men reported preferring.

In 1998, Feingold and Mazella conducted a meta-analysis comparing gender differences in body image and attractiveness across five decades using 222 studies. Feingold and Mazella (1998) documented that from the 1950s to 1990s the difference between men and women’s body dissatisfaction had substantially increased with many women endorsing more negative body evaluations than men over the 50-year period. A recent study by McCabe and colleagues (2006) utilized computer software to evaluate factors related to perceptual disturbances of body image. Using new digital technology, participants (107 women and 82 men) were asked to adjust a digital body image to represent their perceived body size, with a focus on their frontal image (i.e., chest, waist, hips, thighs, and calves) and complete a few psychological measures (i.e., depression scale and sociocultural influences questionnaire). The study found both men and women overestimated the size of their body, with women perceiving their bodies as ‘fatter’ than they actually were and men believing they were more ‘muscular’ than their actual size (McCabe, Ricciardelli, Sitaram, & Mikhail, 2006). Additionally, high levels of depression and thin-ideal influences from the media and peers predicted women’s overestimation of body size, whereas men’s overestimation of body size was predicted by body mass index and influences to increase muscles from the media and peers. While
research has documented an association between overestimation of body size and depression, there also appears to be link with body dissatisfaction. One study with 532 university students in Korea found that students who overestimated their body size scored higher on measures of depression, weight dissatisfaction, obesity stress, and obsession to lose weight, compared to students who accurately estimated their body size (Kim & Lee, 2010).

During the mid-1990s, media and advertising outlets began portraying attractiveness as a very thin, fit body shape, which has transformed the body ideal for women living in Western cultures (Garner, Garfinkel, Schwartz, & Thompson, 1980). One recent study aimed to measure the prevalence of body dissatisfaction with 310 college students at a university in the Eastern part of the United States (Neighbors & Sobal, 2007). The majority of females (87%) sampled, who were within the normal body mass index range ($18.5 - 24.9 \text{ kg/m}^2$), desired to weigh less and 10% of females in the normal body mass index range desired to lose enough weight to move them to the underweight body mass index range. Females who fell into the underweight body mass index range ($<18.5 \text{ kg/m}^2$) reported the least body dissatisfaction (36%) compared to the other body mass index groups (normal weight and overweight). Underweight women may not desire to change their weight or body size because they are closest to the cultural thin-ideal and perceive themselves as at the right weight (Brownell, Schwartz, Puhl, & Rudd, 2005; Neighbors & Sobal, 2007). A large nationally representative study explored the self-perceived weight status in over 15,000 men and women in the United States by asking participants to categorize their weight as underweight, overweight, or about right (Chang & Christakis, 2003). Notably, the study found 38.3% of women in the normal
body mass index range categorized their bodies as overweight. While the body mass index measurement does not take into consideration muscle mass, the results suggest close to one-third of women in the U.S. who are normal weight are dissatisfied with their bodies and desire to be thinner. The research demonstrates women of all sizes experience body dissatisfaction, even women who are considered normal or underweight by medical standards. In sum, both men and women experience body dissatisfaction; however, research documents that women are endorsing more negative body evaluations, which may put them at greater risk for mental health issues, such as depression and obsessive thoughts about weight loss.

**Ethnic and Cultural Differences**

Until recently little was known about body dissatisfaction differences among women of different races and/or ethnicities. Grabe and Hyde (2006) conducted a meta-analysis examining ethnic differences in body dissatisfaction using six comparison groups (i.e., White-Black, White-Asian, White-Hispanic, Black-Asian, Black Hispanic, and Asian-Hispanic). The first comparison between White and Black women resulted a small effect size ($d = 0.29$) suggesting that White women were slightly more dissatisfied with their bodies than Black women. The White to Asian American and White to Hispanic comparisons did not yield a significant difference between groups. The Black to Hispanic comparison yielded a small effect size ($d = -0.18$) indicating slightly more body satisfaction among Black women. The Black to Asian American and Asian American to Hispanic comparisons both yielded small effect sizes with a confidence interval that included zero. Baugh and colleagues (2011) surveyed 118 college students at two universities (one historically White and one traditionally Black) and examined
how their ethnic identity (i.e., sense of belonging to particular ethnic group) related to body image among White and Black students. The authors did not find a significant relationship between ethnic identity and body dissatisfaction. However, their results indicated a similar finding for women of different races: White and Black women who selected smaller ideal body types scored higher on the body dissatisfaction measure (Baugh, Mullis, Mullis, Hicks, & Peterson, 2011). In sum, the research does not indicate large differences in body dissatisfaction across ethnic groups; rather, it suggests women of varying races and ethnicities experience body dissatisfaction similarly.

**Body Image Issues across the Lifespan**

Body image concerns can develop at any age and last throughout a lifetime; therefore considerable research has been dedicated to understanding body dissatisfaction during childhood, adolescence, and adulthood. Work with preadolescents in England, Australia, and the United States have documented girls as young as nine years old choose a thinner ideal figure than their current figure (Hill, Oliver, & Rogers, 1992; Tiggemann & Pennington, 1990; Williamson & Ross, 2000). Australian children (nine and ten years old), adolescents, and adults were presented with silhouette figure drawings and selected their ideal figure and current figure (Tiggemann & Pennington, 1990). Adolescent and adult women expressed body dissatisfaction with a desire to be thinner by selecting a significantly larger current figure than their ideal figure. While adolescent and adult male counterparts demonstrated the lower levels of pressure toward thinness, both boys and girls (nine and ten years old) indicated equal levels of body dissatisfaction, suggesting pre-adolescents of both sexes are aware of the thin-ideal. Another study exploring dieting motivation and body attitudes in nine-year-old and fourteen-year-old girls in the
U.K. found higher scores on the restraint questionnaire was associated with low body esteem and discontent with body shape, weight, and specific body parts (Hill, Oliver, & Rogers, 1992). Furthermore, the body ideal was significantly slimmer than the identified current body shape for both dieters and non-dieters. Similar conclusions were drawn in a sample of 173 pre-adolescents in the United States, with 26% of the pre-adolescents reporting often or always disliking their bodies (Sinton & Birch, 2006). In sum, children as young as nine and ten years of age can have concerns about their weight, appearance, and body shape, which may affect how they view their bodies later in life.

Adolescence is a developmental stage when children transition into adulthood and entails a number of social, biological, and physical changes that can affect one’s body image (Wertheim & Paxton, 2011). Studies of large community samples have reported body dissatisfaction rates from 24-46% in adolescent girls and 12-16% in adolescent boys (Neumark-Sztainer, Story, Hannan, Perry, & Irving, 2002; Presnell, Bearman, & Stice, 2004; Stice & Whiteton, 2002). Ricciardelli and McCabe (2001) noted low body satisfaction among adolescents, with only 12% of girls and 16.6% of boys indicating they were happy with their current body size. Project EAT (Eating Among Teens) was a two part study assessing weight-related concerns and behaviors that documented girls were more likely than boys to use extreme weight loss strategies (e.g., diet pills, vomiting, laxatives) to achieve a thinner figure (Neumark-Sztainer et al., 2002). The follow-up study five years later retained over 2,000 participants revealing that body mass index, socioeconomic status, friend dieting and teasing, self-esteem, and depression were predictors of body dissatisfaction in adolescent girls and boys (Paxton, Eisenberg, & Neumark-Sztainer, 2006). Although research has examined body dissatisfaction among
males and females, females experience unique biological changes that have a greater influence on the development of body dissatisfaction than males. Because research has documented females report higher levels of body dissatisfaction than males, the remainder of this paper will focus only on the development of body dissatisfaction in females.

**Puberty/Menstruation**

Girls’ bodies mature physically during puberty to take a more “womanly” figure; however, puberty can be problematic for girls who are uncomfortable and critical of their changing appearance. Girls may encounter more body-related challenges than boys during puberty due to the nature of their physical changes and cultural standards, e.g., hormone-associated changes during puberty that involve increases in fat deposits to the breast and hips as well as the commencement of menstruation (Wertheim & Paxton, 2011). During puberty, girls’ bodies develop into a curvier shape, which conflicts with Western culture’s preference for a thin, waif-like body. Smolak and Levine (1996) note that the discrepancy between physical changes and cultural standards may account for some of the negative view of puberty by girls and their decrease in self-esteem during adolescence. A literature review by Littleton and Ollendick (2003) noted that body image dissatisfaction peaked during early adolescence, which coincides with the onset of puberty, compared to elementary and high school years. As female adolescents experience physical changes during puberty, increased attention is given to their body image and cultural standards. A U.S. nationally representative sample from the National Longitudinal Study of Adolescent Health explored how perceived breast development was associated with girls’ psychological well-being (Yuan, 2012). The study found that
greater self-perceived breast development was associated with lower self-esteem and higher depressive symptoms for 13-15 year old White girls, lower self-esteem for 13-15 year old African American girls, and higher depressive symptoms for 13-15 year old Hispanic girls. Research has documented that adolescent females report twice the level of body dissatisfaction (Kostanski & Gullone, 1998) and higher levels of stress (Hampel & Petermann, 2006) than adolescent males. Female adolescents are vulnerable to body dissatisfaction during puberty, which puts them at greater risk for developing issues such as low self-esteem, depression, and disordered eating.

**Pregnancy**

Pregnancy is a significant event in a woman’s life that has recently gained attention from researchers who are interested in studying one’s body image during the 40-week period. Women’s mental and physical health during pregnancy has important implications for not only the mother’s well-being, but also that of her unborn child (Franko & Walton, 1993). As women’s body size and shape increase during pregnancy, they are likely to reevaluate their body image (Skouteris, 2011). In 2009, the American Institute of Medicine released recommendations for gestational weight gain during pregnancy, suggesting that women who are underweight (BMI < 18.5) gain 28 to 40 lbs, women who are in the normal weight range (BMI 18.5-24.9) gain 25 to 35 lbs, overweight women (BMI 25.0-29.9) gain 15 to 25 lbs, and women who are in the obese category (BMI ≥ 30) gain 11 to 20 lbs (American Institute of Medicine, 2009). While weight gain is one of the most noticeable changes during pregnancy, there are a number of other physical and psychosocial changes that occur. For instance, women experience hormonal fluctuations, pregnancy-related symptoms, and changes in appearance, as well
as adapting to the new role as a mother (Skouteris, 2011). There have been inconsistent findings on women’s body image during pregnancy. Three studies from the late 1970’s to early 1980’s found that body dissatisfaction increased during the course of pregnancy (Leifer, 1977; Moore, 1978; Strang & Sullivan, 1985). A more recent study by Goodwin et al. (2000) found that body dissatisfaction was significantly greater during early pregnancy than pre-pregnancy and late pregnancy, suggesting that during the early the stages of pregnancy, when women are experiencing physical changes for the first time, they are least satisfied with their body image. In contrast, Boscaglia and colleagues (2003) sampled 71 healthy pregnant Australian women twice (15-22 weeks’ gestation and 23-30 weeks’ gestation) finding that body dissatisfaction decreased or remained stable during the course of pregnancy. More specifically, the study compared the body satisfaction of high exercisers (90 or more minutes per week of moderate intensity exercise) to low exercisers finding that high exercisers were more satisfied with their bodies during pregnancy and postpartum. However, it should be noted that the participants retrospectively reported their pre-pregnancy body satisfaction and estimated their six-month postpartum body satisfaction during late pregnancy, which may not be accurate representations of their body satisfaction at those time points.

Due to the conflicting results, one Australian study aimed to explore body dissatisfaction prospectively during the full 40-week course of pregnancy. Skouteris and colleagues (2005) documented that women experienced the highest levels of body dissatisfaction during their first trimester into the middle of their second trimester, which supports the findings of Goodwin et al. (2000). Another Australian study explored how 158 pregnant women adapted to their changing body size over the course pregnancy (Duncombe, Wertheim, Skouteris, Paxton & Kelly, 2008). While the authors reported women felt significantly “fatter” during early pregnancy compared to their third
trimester, they concluded that a pregnant women’s body image remains relatively stable across the course of pregnancy. More specifically, women who had a positive body image at the onset of pregnancy continued to have positive feelings about their changing figure, and similarly women who held body image concerns early on continued to have feelings of body dissatisfaction throughout pregnancy.

Research indicates inconsistent findings about self-imposed body image standards (e.g., the expectations one holds for one’s body) during pregnancy. Some research suggests women’s body standards are less rigid during pregnancy, because pregnancy is viewed as transient and unique (Davies & Wardle, 1994; Fairburn, Stein, & Jones, 1992); therefore, women are able to adapt to these changes without distress (Richardson, 1990). However, one study documented that pregnancy evoked negative feelings in women compared to their pre-pregnancy body image feelings, which suggested women may feel some level of distress as a result of their changing body (Fairburn & Welch, 1990). In a study of 50 postpartum women, Fairburn and Welch (1990) noted that 40% of women sampled expressed fear of weight gain, 72% expressed concern that they would not return to their pre-pregnancy body weight, and in three cases the women reported dieting during pregnancy to limit weight gain.

A recent two-year longitudinal study explored women’s experiences of pregnancy with 38 women in Melbourne, Australia utilizing a feminist qualitative approach (Nash, 2012). Each woman was interviewed ten times, three interviews per trimester and once after the child’s birth. This study adds narrative data to the literature, which primarily reports quantitative studies on body image and pregnancy. The women shared that during the early stages of pregnancy they were concerned about being mistaken for ‘fat’
since they did not ‘look’ pregnant yet (Nash, 2012, p. 42). For instance, participants said, “People now probably wouldn’t think that I look pregnant. I look just fat, really” (Beth, 12 weeks) and “I just look chubby, not pregnant” (Suzanne, 18 weeks). When asked about body image, some women spoke about weight struggles during adolescence and young adulthood, which caused some participants anxiety about gaining weight during pregnancy (Nash, 2012). Many women spoke about wanting to minimize their pregnancy weight gain, aiming to have the “perfect pregnant body” consisting of large breasts and a tight baby bump, and being concerned about gaining ‘too much’ weight (Nash, 2012, p. 54). One participant stated that “20 kilos (44 lbs) is really too much. I’m not comfortable with that or being enormous” (Charlotte, 15 weeks, p. 54). In sum, research suggests many women experience body dissatisfaction during pregnancy, which may vary according to their trimester. It appears women hold pregnancy ideals, such as attaining the ‘perfect baby bump,’ and have fears about gaining ‘too much’ much weight and not returning to their pre-pregnancy body. When women do not attain their pregnancy ideals or exceed their expected gestational weight, they are likely to feel more dissatisfied with their pregnancy body image. Both quantitative and qualitative studies have noted that women have concerns about weight gain during pregnancy; however, few studies have explored body image during the postpartum period.

**Postpartum**

While pregnancy is often a joyous period of time, postpartum weight loss is viewed as a stressor by many women who are adjusting to new motherhood (Montgomery et al., 2013). Excessive gestational weight gain has been found to be a predictor of long-term obesity later in life (Rooney & Schauberg, 2002). A review of
epidemiological studies revealed 14-20% of women are 11 or more pounds heavier at 6 to 18 months postpartum than their pre-pregnancy weight (Gunderson & Abrams, 2000). After birth many women express a desire to quickly return to their pre-pregnancy shape and weight. Research has noted that women who are dissatisfied with their body shape are less likely to breastfeed (Barnes, Stein, Smith & Pollack, 1997; Walker & Freeland-Graves, 1998) and are at higher risk for psychological distress (Duncombe et al., 2008).

One of the first studies to examine weight-related distress (i.e., psychological suffering as a result of weight gain) during postpartum consisted of 245 postpartum (2.5 to 6 months) women who were primarily Caucasian, had attended college (77%), and had two or more children (52%) (Walker, 1998). While 21% of the women surveyed were satisfied with their postpartum weight, 22% were satisfied but wanted to lose more, 40% were reported being overweight with mild dissatisfaction, and 8% met criteria for weight-related distress. Interestingly, 7% of the women reported postponing weight management due to breastfeeding. Another study asked twenty-four women between the ages of 25 and 35 who had given birth within the last five years, “Please tell me what it was like losing weight after giving birth” (Montgomery et al., 2011, p. 1177). The participants identified time, motivation issues, the need for support, postpartum depression, and low self-esteem as the major challenges they encountered when trying to lose their gestational weight. The women who achieved gestational weight loss (i.e., lost the weight gained during pregnancy) were underweight or normal weight and physically active prior to pregnancy; notably, all the women interviewed mentioned struggling with weight management and balancing the demands of postpartum life when trying to lose their gestational weight (Montgomery et al., 2011). While this study highlighted the challenges women face
when losing gestational weight, this was a small sample of highly educated White women; therefore, the findings are not generalizable to women representing other socioeconomic statuses and race/ethnicities.

It is important to understand how diverse women experience body dissatisfaction because varying cultural standards may influence body satisfaction and body ideals. A recent study by Carter-Edwards and colleagues (2010) examined body dissatisfaction differences by race by sampling 162 overweight women (73 African American and 89 White) at the 6-month postpartum mark. The study asked women to identify their current body image (i.e., shape you look like now), their ideal body image (i.e., shape you would like to look like) and the ideal mother image (i.e., shape that looks most like an ideal mother) with a figure rating scale. After controlling for demographic variables (i.e., age, BMI, income, education level, and marital status), the study concluded that while both African American and White postpartum women reported body dissatisfaction, White women were significantly more dissatisfied with their current postpartum body size as evidenced by the larger discrepancy between their current body size and ideal body size (Carter-Edwards et al., 2010). However, in the context of the mother ideal (i.e. ideal body size for a mother), both African American and White women selected a larger body size compared to their ideal body size. This finding suggests that in the context of motherhood there is greater acceptance of a larger figure size. Walker, Timmerman, Kim, and Sterling (2002) explored body image and depressive symptoms in a tri-ethnic sample of low-income new mothers. At six weeks postpartum, African American women reported only one area of body dissatisfaction (i.e., waist), whereas White women reported eight areas (i.e., waist, muscle tone, weight, hips, back, legs, sleep, and body
build) and Hispanic women reported six areas (i.e., waist, body build, muscle tone, weight, hips, and legs). The study also found body image attitudes were significantly related to depressive symptoms. The limited research exploring body satisfaction in women of varying ethnicities/races suggests there is a difference in expectations regarding postpartum women’s figures, with White and Hispanic women holding unrealistic expectations at six weeks postpartum, which increases their body dissatisfaction and risk for developing depressive symptoms. Postpartum women from as early as six weeks to 18 months have body ideals and body expectations that influence their body image; however, rigid ideals and unrealistic expectations for postpartum figures leads to higher levels of body dissatisfaction.

New mothers experience a number of psychological and physical changes over the first year of postpartum (Romano, Cacciatore, Giordano, & La Rosa, 2010); thus, postpartum body satisfaction often varies during this transitional time. Recently, Rallis and colleagues (2007) explored changes in body dissatisfaction during the first year of postpartum. The sample consisted of 79 postpartum women living in Australia who completed questionnaires about body attitudes and well-being three times (6 weeks, 6 months, 13 months) and had previously participated in a longitudinal study during pregnancy for comparison data. The findings revealed that postpartum women reported higher weight and shape concerns during postpartum than during their third trimester of pregnancy. Moreover, women experienced more body dissatisfaction during the three postpartum testing periods than during pre-pregnancy and late pregnancy, with women reporting feeling “fattest” at 6 months postpartum. While women’s identified current body size, measured by the silhouette rating scale, decreased over time during
postpartum, their ideal figure size remained stable. Rallis and colleagues (2007) also found physical appearance comparisons with others at 6 weeks postpartum predicted feeling fat, strength and fitness, and salience of weight/shape at one year postpartum (Rallis et al., 2007). Notably, women in the study had a tendency to compare their bodies to dissimilar comparisons (e.g., non-postpartum women and media figures).

Moreover, a study of 506 women living in the United States found body dissatisfaction significantly increased from one month postpartum to nine months postpartum even though the majority of women in the study lost an average of ten pounds during the eight month period (Gjerdigen, Fontaine, Crow, McGovern, Center, & Miner, 2009). Body dissatisfaction was associated with overeating or poor appetite, poor mental health, bottle-feeding (v. breastfeeding), being single (v. married), and having fewer children. In sum, these studies document that body dissatisfaction is higher during the postpartum period than pre-pregnancy and pregnancy periods and can be associated with psychological distress, unhealthy eating behaviors, weight retention, and non-breastfeeding status. Many women are focused on losing their gestational weight quickly after giving birth, with some women holding unrealistic body expectations as early as six weeks postpartum, which can affect not only their well-being, but also the relationship with the newborn child. While body concerns can develop at any point throughout the lifespan, there are sociocultural factors that increase the risk for developing body dissatisfaction.

**Sociocultural Factors**

The thin-ideal is conveyed and reinforced by many social influences, including family, peers, and the beauty industry (Thompson & Stice, 2001). However, the social
force that inundates society with thin-ideal messages is the mass media, which includes magazines, television, billboards, internet, and radio (Groez et al., 2002). Exposure to extremely thin models in the media has been linked to increases in body dissatisfaction, thin-ideal internalization, self-discrepancies, and eating pathology (Harrison, 2001; Harrison & Cantor, 1997). The thin-ideal is constantly emphasized across various media outlets with many of the figures (i.e., actresses, models) who are photographed and/or photoshopped as thinner than the actual female population (Fout & Burggraf, 2000). Over the last few decades, fashion models, movie and television actresses, Playboy centerfolds, Miss America Pageant winners and even cartoon characters have become increasingly thinner (Garner, Garfinkel, Schwartz, & Thompson, 1980; Klein & Shiffman, 2005; Morris, Cooper, & Cooper, 1989; Silverstein et al., 1986; Spitzer, Henderson, & Zivian, 1999). In the classic study by Garner and colleagues (1980), a significant decrease in the weight of Miss America Pageant contestants and Playboy centerfold models was found from 1959 to 1978. Wiseman, Gray, Mosimann, and Ahrens (1992) extended the study from 1979 to 1988 and similarly found a decrease in Miss America contestants’ weight and a continued low body weight for Playboy centerfold models into the late 1980’s. Because thin-ideal messages are widely spread across media outlets, frequent exposure to these messages may affect how one views one’s body image.

Social learning theory with regard to body dissatisfaction (Bandura, 1977; Harrison & Cantor, 1997) proposes that the media influences young women to adhere to the thin-ideal and provides them with motivation to diet and instructions for dieting. Recently, Grabe and colleagues (2008) conducted a meta-analysis of experimental and
correlational studies that examined the association of media exposure and women’s body dissatisfaction, thin-ideal internalization, and eating behaviors and attitudes utilizing 77 studies that yielded 141 effect sizes. The mean effect sizes were small to moderate for women’s body dissatisfaction ($d = -0.28$), thin-ideal internalization ($d = -0.39$), and eating behaviors and attitudes ($d = -0.30$). These findings confirm previous research suggesting that media exposure depicting thin-ideal figures is related to body dissatisfaction and body concerns among women. Using social cognitive theory, Harrison and Cantor (1997) examined the relationship between media use and disordered eating among college women. Results indicated that thin-ideal media exposure predicted disordered eating, with magazine reading acting as a stronger predictor than television exposure.

Brown and Dittmar (2005) explored the role of appearance schema activation, attention level and thin-ideal internalization with 75 college women (27 in the control condition, 23 in low attention condition, and 25 in the high attention condition) after viewing ultra-thin media images. Results indicated exposure to thin models increased body-focused anxiety in both high (10 seconds) and low (150 milliseconds) attention conditions; however, women in the high attention condition experienced more body focused anxiety than the low condition. While the research literature indicates a clear link between exposure to ultra-thin media images and the risk of body dissatisfaction, there are other risk factors that also increase the likelihood of body dissatisfaction.

In addition to media exposure, upward social comparisons are associated with body dissatisfaction and negative self-evaluations that extends beyond body image, such as one’s self-worth and self-esteem (Groez et al., 2002). Social comparison theory posits that people are driven to compare their progress and standing in life to other people
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(Festinger, 1954). There are two types of social comparisons: (1) an upward social comparison when individuals compare themselves with someone they believe to be better; and (2) a downward social comparison when individuals compare themselves with someone worse off than themselves (Festinger, 1954). A number of studies have found that a tendency to make more appearance-related upward social comparisons, particularly with peers, is associated with higher body dissatisfaction among female undergraduates (Engeln-Maddox, 2005) and among adolescent girls and boys (Halliwell & Harvey, 2006). Sociocultural theory posits that body dissatisfaction is a result of individuals not matching the unrealistic standards for attractiveness set by Western society; thus, individuals who experience dissatisfaction with their body image may participate in behaviors (e.g., dieting, exercise, disordered eating) designed to alter their body shape (Thompson et al., 1999). A study with 202 college students at a Midwestern university in the U.S. explored women’s cognitive processing when exposed to print advertisements containing attractive, thin female models. The study concluded that making appearance comparisons to the models in the advertisements was associated with higher levels of body dissatisfaction and thin-ideal internalization (Engeln-Maddox, 2005).

Halliwell and Harvey explored social influences on adolescents’ (250 female and 257 male) eating behaviors and body dissatisfaction by adding social appearance comparisons as a mediator to the sociocultural theoretical model (i.e., sociocultural factors, mediated by social comparisons, influence body dissatisfaction which in turn influences disordered eating). Results revealed that body dissatisfaction was partially mediated by social appearance comparisons when the model was tested with adolescents. The findings from this study support the addition of social appearance comparisons to the
sociocultural theoretical model and provide evidence that social appearance comparisons contribute to body dissatisfaction. In sum, media exposure to thin-ideal messages is mediated by upward social comparisons, which increase body dissatisfaction and the risk of disordered eating. While social comparison has been linked to body dissatisfaction in women, little is known about the social comparisons women make during pregnancy and postpartum as a woman’s body expectations are adapting to her new shape.

**Pregnancy and the Media**

During pregnancy and postpartum a women’s body undergoes a number of changes in weight, shape, and size, which may make her more vulnerable to body dissatisfaction unique to the pregnancy experience. Pregnant and postpartum women experiencing weight and shape changes may look for targets of physical comparison in the media and peer comparisons because their body size and shape are changing in unfamiliar ways (Gow, Lydecker, Lamanna, & Mazzeo, 2012). The media has recently paid a significant amount of attention to celebrities’ experiences of pregnancy and their roles as new mothers (Gow et al., 2012). Because media coverage of pregnant celebrities is readily accessible to the public, pregnant and postpartum women may utilize this information to evaluate and understand their pregnancy experiences, for instance comparing their postpartum weight loss with a celebrity’s weight loss timeline (Gow et al., 2012).

A recent study by Gow and colleagues (2012) aimed to explore and quantify the amount of media coverage regarding celebrities’ pregnancy experiences. The study coded 387 website articles from three popular U.S. entertainment magazines from August 2007 to August 2008. The articles were categorized as either having a focus on pre-
pregnancy (14.2%) pregnancy (50.1%), or postpartum (14.2%). The female celebrities in the articles had a mean age of 32.1 years and were primarily Caucasian. Phrases from articles such as “baby bulge gone” and “baby bounce back” were coded positively, “10 pounds from pre-baby weight” was coded neutrally, and “ballooning to 300 pounds” was coded negatively. Among the pregnancy articles, weight gain (i.e., gestational weight gain) was represented most frequently as negative (44%) or neutral (44%); only one article portrayed pregnancy weight gain in a positive manner. On the other hand, postpartum weight (i.e., a woman’s weight during the postpartum period) was mentioned in the articles more positively (46.7%) than neutrally (40.0%) or negatively (13.3%). Body shape was mentioned in 21.7% of the postpartum articles and 6.2% of the articles noted celebrities were dissatisfied with their postpartum figures. Rather than objectively state pregnancy weight (i.e., current weight), the magazine articles focused more on how much weight was gained during the pregnancy (e.g., 50 pounds gained) and weight lost during postpartum. Notably, the context was not taken into consideration when coding (i.e. how they lost the weight), therefore, a “baby bounce back” that was coded positively might have consisted of unhealthy weight loss behaviors. While these articles chronicled celebrity shape and weight changes, it also provided weight loss timelines that are likely unrealistic for the average reader. Gow and colleagues (2012) suggested that the positive portrayal of postpartum weight loss is the magazines’ implicit endorsement of celebrities’ swift atypical weight loss and return to pre-pregnancy body shape. In sum, magazines are widely accessible to new mothers and provide body size and weight loss comparisons during the pregnancy and postpartum periods. This research suggested the media endorses of notions such as the “perfect baby bump” and quick return to pre-pregnancy
figure. It is unknown how these media endorsements influence new mothers who are at higher risk for body dissatisfaction during postpartum when they are critically evaluating and comparing their changing bodies to other social comparisons.

While many pregnant women may look to the media for social comparisons during their pregnancy and postpartum period, women also frequently make peer-related comparisons. Research has documented that sisters are a likely focus for physical comparisons during childhood (Dunn & Plomin, 1991; Rieves & Cash, 1996). Rieves and Cash (1996) surveyed 152 college-aged women and found that body comparisons between siblings during childhood and adolescence were strongly associated with current body image. Because sisters are often objects of childhood physical comparisons, it is possible they are also comparison targets during the pregnancy and postpartum periods. Nash (2012) noted that many of the participants in her longitudinal study looked towards their sisters to formulate expectations of their pregnancy and postpartum body image, particularly with regard to weight gain. One participant said, “After five years, my sister has only just gotten back to the size she was before she was pregnant. She was smaller than me before… I hope it doesn’t take me that long to lose the weight” (Laura, 25 weeks, p. 47). This study suggested that women may look to their sisters as a reliable indication as to how their own bodies will respond to the pregnancy and postpartum experience (Nash, 2012).

While media and peer comparison targets may guide body ideals, there are a variety of family influences that may also play a role in women’s body satisfaction. A study by Kluck (2010) explored family influence on disordered eating with a sample of 268 college women. The findings supported previous research documenting that a
weight-centric family environment increases the risk for disordered eating and body
dissatisfaction among female children. While mothers and fathers did not differ
significantly in the frequency of teasing comments, mothers’ comments were critical and
encouraged dieting as a way to control their daughter’s weight. Of note, the study found
both criticism and encouragement about weight and body size from mothers and fathers
during childhood were significant predictors of current body dissatisfaction and
disordered eating in college women. While little research has explored family criticism
during the postpartum period, positive extended family support can be very helpful
during the postpartum time of adjustment. For instance, Montgomery et al. (2011)
reported several postpartum women participants felt supported by extended family
members (e.g., mothers, mother-in-laws) because family members offered positive
comments and assisted with exercise, babysitting, and dietary needs. Women’s overall
mental health, including anxiety and depression, has been found to be significantly
predicted by perceived social support from extended family members during the first year
of postpartum (Chaloner & Gjerdingen, 1994). The research suggested that a weight-
centric family environment during childhood has long-lasting effects on body satisfaction
in adulthood; whereas, social support acts as a protective factor during postpartum
increasing body satisfaction and aiding in the transition to the new role as a mother.

In addition to extended family members, partner support is associated with
women’s body satisfaction. Due to the social support and intimacy that characterizes
marriage, partner support is often found to be a protective factor in the physical and
mental health of women (Fincham, 1998). In contrast, negative criticism can be
detrimental to a women’s body image. Pole and colleagues (2004) explored body
dissatisfaction in 77 primarily Caucasian, married women with an average age of 39.8 years. This study explored predictors of body dissatisfaction and found weight status to be the strongest predictor of body dissatisfaction followed by perceived negative family influence from childhood. Of note, perceived negative evaluation by a spouse was significantly associated with body dissatisfaction and accounted for 8.8% of the variance after controlling for weight and perceived negative family history. This study concluded that both previous negative family history and perceived current spousal disapproval of weight significantly influenced body dissatisfaction. Similarly, in a small, qualitative study of immigrant Latina women living in the United States, pregnant and postpartum women identified their husbands as the primary influence on weight related issues and stated they desired to please their husbands by either gaining or losing weight (Thornton et al., 2006). Nash (2012) documented varying reviews from the women in her study; some participants reported receiving supportive comments from their partners, while others reported receiving criticism. More specifically, one woman shared that her partner regularly complimented her pregnant body, which “made [her] pregnancy easier” (Nash, 2012, p. 57). In contrast, another woman shared her husband looked at old photos after she gave birth and commented, “I miss that [her pre-pregnancy figure]” (Nash, 2012, p. 57). In sum, partner support influences how postpartum women feel about their bodies and is identified by postpartum women to be a major contributor to their overall physical and mental health. Media, family, peer, and partner influences have been linked to body dissatisfaction; however, research has not collectively explored these factors in postpartum women, who report higher body dissatisfaction during this time compared to their body dissatisfaction during pre-pregnancy and pregnancy periods.
Tripartite Influence Model

While there are many theoretical approaches for describing the etiology of eating disorders, one model that has been widely researched is the Tripartite Influence Model (Thompson et al., 1999). The Tripartite Influence Model suggests there are three primary sociocultural variables (i.e., peers, parents, and media) that influence (via mediation) the development of body dissatisfaction and disordered eating. A mediation variable is a variable that explains the relationship between the predictor and criterion variables (Baron & Kenny, 1986). There are also two meditational links (internalization of societal ideals of appearance and social comparison) that influence the pathway from the sociocultural variables to body dissatisfaction and disordered eating (Thompson et al., 1999). Researchers have tested the Tripartite Influence Model internationally with a number of different populations using structural equation modeling (SEM). SEM is a statistical approach that goes beyond ordinary regression models to incorporate multiple independent and dependent variables in addition to hypothetical latent constructs represented by clusters of observed variables (Raykov & Marcoulides, 2006). Path analysis, a specific type of SEM that does not contain latent variables, is a widely utilized statistical method that examines a hypothesized causal relationship between predictor and outcome variables (Lleras, 2005). Van de Berg and colleagues (2002) tested the Tripartite Influence Model with 196 college females in the United States and tested a number of model designs using path analysis that varied in their direct and indirect (i.e., mediating variable) pathways to body dissatisfaction. The findings indicated that the best model fit (i.e., model design that best explained the data) was one that did not include any direct pathways from the sociocultural variables to body dissatisfaction, which implied
that the social comparison variable mediated the relationship between the sociocultural variables and body dissatisfaction. Overall, the study provided evidence that social comparison mediates the relationship between sociocultural factors (i.e., family, peers, and media) on body dissatisfaction.

The Tripartite Influence Model has been tested in Eastern Cultures as well. In 2008, Yamamiya and colleagues sampled 289 Japanese female undergraduates on sociocultural variables (family, peer, and media influences) as well as body dissatisfaction, eating disturbances, and self-esteem. Structural equation modeling was utilized revealing a moderate fit (i.e., model fit indices produced acceptable values, RMSEA = 0.07) of the Tripartite Influence Model for the data. The study replicated a previous finding in the U.S. indicating that sociocultural variables influence body image and disordered eating (Keery, van den Berg, & Thompson, 2004; Shroff & Thompson, 2006). A recent study by Rodgers and colleagues (2011) explored the Tripartite Influence Model with 188 female undergraduate students in Australia and 190 female undergraduate students in France to compare risk factors between the Western cultures. The Tripartite Influence Model was a good fit for both the French and Australian data, with Australians scoring higher on body dissatisfaction and eating disturbance. The authors speculated that perhaps these differences were in part a result of the cultural differences. Specifically, they suggested that because the diet industry is less organized in France, there is less social pressure to adhere to the thin-ideal. One notable difference was that the appearance comparison mediated the relationship between peer influences and body dissatisfaction in the Australian model, whereas the relationship was not significant in the French model. While the Tripartite Influence Model has been widely
tested, to date it has been mainly utilized among college-aged women. Research has documented higher levels of body dissatisfaction during the postpartum period compared to pre-pregnancy; therefore, testing the Tripartite Influence Model with new mothers will provide greater understanding for the variables that influence postpartum women’s body dissatisfaction and disordered eating.

In conclusion, the literature testing the Tripartite Influence Model, which links the influence of sociocultural factors to the development of body dissatisfaction and disordered eating has been encouraging and demonstrates the applicability of this model in diverse groups of women. Research has shown sociocultural factors (i.e., media, peer, and family) are mediated by social comparison, which in turn influences body dissatisfaction and the development of other mental illnesses (i.e., eating disorders, depression, and anxiety). To date, the Tripartite Influence Model has never been tested with new mothers who research indicates experience higher levels of body dissatisfaction during postpartum than pre-pregnancy and pregnancy. While this particular model has not been utilized there is evidence suggesting applicability in this population. For instance, research has indicated the media endorses gaining minimal gestational weight and a quick return to pre-pregnancy figure (Gow et al., 2012). Perceived negative evaluation by a spouse has been shown to be significantly associated with body dissatisfaction (Pole et al., 2004); however, this has not been explored exclusively in postpartum women. Moreover, a weight-centric family environment during childhood has long-lasting effects on body satisfaction in adulthood and is likely to influence how a woman experiences her changing body during the postpartum period (Pole et al., 2004). Little is known about the social comparisons women make during postpartum as a
woman’s body expectations are adapting to her new shape and size. Investigations of body dissatisfaction have reliably demonstrated the link between sociocultural influences on body dissatisfaction and disordered eating in women, thus exploring the Tripartite Influence Model in new mothers, who are more vulnerable to body dissatisfaction, would likely yield significant pathways throughout the model.

Much of the existing literature exploring the Tripartite Influence Model utilized samples of adolescents or undergraduate college students. Research has documented that postpartum women feel pressure to lose the weight gained during pregnancy and that a large percentage of new mothers report being dissatisfied with their postpartum figures (Montgomery et al., 2011). The higher rates of body dissatisfaction reported by new mothers provides evidence that utilizing the Tripartite Influence Model in this population may yield stronger links between the sociocultural influences and body dissatisfaction than non-pregnant women. Body dissatisfaction affects not only the new mother, but also her relationship with her newborn child. Women who are dissatisfied with their body shape are less likely to breast-feed (Barnes, Stein, Smith & Pollack, 1997; Walker & Freeland-Graves, 1998) and are at higher risk for psychological distress (Duncombe et al., 2008). Research has consistently documented the strong association between body dissatisfaction and severe mental illnesses (i.e., eating disorders, anxiety, and depression), which can greatly impact a woman’s quality of life and ability to care for her child.

**Implications for Research and Clinical Practice**

The Tripartite Influence Model has not been tested in a sample of postpartum women, but could provide meaningful data regarding potential risk factors for the development of body dissatisfaction in new mothers. The findings of the Tripartite
Influence Model in a Japanese sample of undergraduate women suggested that intervention and prevention programs designed to treat body image-related issues include psychoeducational strategies and media education programs due to the strong effect of the meditational variables (i.e., appearance comparison and internalization of media ideals) found in their model (Yamamiya et al., 2008). The findings from Rodgers and colleagues (2011) suggest there are differences in the levels of thin-ideal internalization and appearance comparison among Australian and French students. This research noted the importance of understanding the cultural setting when examining the risk factors that influence body dissatisfaction and disordered eating. Moreover, the findings suggested tailoring prevention and treatment interventions to particular cultural groups when the empirical data indicate a more salient risk factor (e.g., focusing on family influences in cultures where family is a more prominent influence in body dissatisfaction). Additional research is needed to test the importance of sociocultural influences on new mothers’ body dissatisfaction to not only prevent the development of severe mental illness and optimize their capacity to care for their newborn child, but also to find mechanisms to support new mothers during this joyous time.
CHAPTER TWO:

Exploring the influence of sociocultural factors on body dissatisfaction in postpartum women

Abstract

Pregnancy and childbirth result in dramatic changes in a woman’s body shape and weight, which are often associated with body image concerns. Little is known about the factors that influence body dissatisfaction in postpartum women, or the extent to which this constitutes a time of risk for eating disorders. To bridge this gap, we extended the Tripartite Influence Model among women who had given birth during the last 12 months (N=689) and who completed an online survey. Participants were 30.6 years old (SD=4.8) and 53% were primiparous. Measures included a sociocultural pressures scale modified for the postpartum experience assessing pressure from media, peers, family and partners, and well-established measures of thin-ideal internalization, appearance comparison, body dissatisfaction, and drive for muscularity, and disordered eating. Structural Equation Modeling analyses revealed that the addition of the partner influence variable to the Tripartite Influence Model improved the model fit to the data by 25%; $\chi^2(49) = 220.20$, $p < 0.001$, $RMSEA = .086$, $CFI = .93$. The sociocultural variables (i.e., media, partners, family, peers) explained 59% of the variance in thin-ideal internalization and comparison, with media influences emerging as the strongest ($\beta = .58$). Bootstrapping analyses revealed a significant indirect effect of media, family, peer, and partner pressures on body dissatisfaction, psychological functioning, bulimic symptomatology, drive for thinness, and drive for muscularity, through the thin-ideal internalization and comparison latent variable. Findings suggest that women experience strong sociocultural pressures to attain
an unrealistic body shape and size during the post-pregnancy period. Furthermore, partners may play an important role in reinforcing thin-ideal messages during this vulnerable time.
Exploring the influence of sociocultural factors on body dissatisfaction
in postpartum women

Body dissatisfaction is characterized by subjective unhappiness with some aspect of one’s appearance (Thompson & Stice, 2001) and has a strong association with eating pathology (Polivy & Herman, 2004) and poor psychological adjustment (Cash, 1990). In many Western cultures, slimness is associated with self-control, social attractiveness, grace, and youth (Grogan, 2008; Orbach, 1993), whereas nonconformity to the Western thin body ideal is linked to physical unattractiveness and other negative characteristics (e.g., laziness, lack of willpower). An extensive literature review examining women’s attitudes about their weight and shape concluded that women’s body dissatisfaction is considered “normative” because it is so widely spread in Western culture (Matthiasdottir, Jonsson, & Kristjansson, 2012; Rodin, Silberstein, & Striegel-Moore, 1985).

Individuals with high levels of body dissatisfaction are at risk for developing body image disturbances, which can affect a person perceptually, cognitively, affectively, and behaviorally (Delinsky, 2011). Extreme body image disturbance (i.e., preoccupation and emotional distress over appearance) is a risk factor that can lead to clinical conditions, such as anorexia nervosa, bulimia nervosa, and body dysmorphic disorder (Delinsky, 2011). Eating disorders (e.g., anorexia nervosa, bulimia nervosa) are serious mental health disorders marked by co-occurring medical issues and relapse (Fairburn, Cooper, Doll, Norman, & O’Connor, 2000; Stice, 2002) and have higher levels of treatment seeking, suicide attempts, hospitalizations, and mortality when compared to other psychiatric syndromes (Newman et al., 1996; Stice, 2002).
Eating disorders are associated with comorbid mental health issues, such as anxiety and depression, which have the potential to impair an individual’s functioning. Hudson et al. (2007) reported that eating disorders were found to be positively associated with almost all major DSM-IV disorders (i.e., mood, anxiety, impulse-control, and substance use) after controlling for age, sex, and race/ethnicity. Moreover, a study by Kaye and colleagues (2004) found a 63.5 percent prevalence of at least one lifetime anxiety disorder diagnosis among 741 individuals suffering from eating disorders, with obsessive-compulsive disorder as the most frequent comorbid anxiety diagnosis. A review of literature examining the comorbidity between eating disorders and other mental health diagnoses concluded that the majority of women diagnosed with an eating disorder have previously or will also suffer from an axis I or axis II disorder during their lifetime (Pearlstein, 2002). In sum, comorbidity with other mental health disorders is one reason the development of an eating disorder is concerning.

Research indicates that individuals with eating disorder symptoms are more likely than individuals without eating disorder symptoms to focus on disliked body parts and develop negative emotions and cognitions, leading them to believe that their body is unacceptable (Delinsky, 2011). Negative body image is a risk factor for developing eating pathology as well as a core diagnostic feature of eating disorders and is less likely to resolve with treatment than the unhealthy eating behavior (Delinsky, 2011). Due to the strong link between body dissatisfaction and eating disorders, it is important to understand how prevalent body dissatisfaction is in society.

An extensive meta-analysis comparing gender differences in body image and attractiveness across five decades documented that from the 1950s to 1990s the
difference between men and women’s body dissatisfaction had substantially increased with women endorsing more negative body evaluations than men (Feingold & Mazella, 1998). One recent study measured the prevalence of body dissatisfaction among female undergraduates with a normal body mass index (18.5–24.9 kg/m$^2$) and reported that 87% of participants desired to weigh less and 10% of participants desired to lose enough weight to move them to a body mass index less than 18.5 kg/m$^2$ (Neighbors & Sobal, 2007). Notably, a large nationally representative study exploring the self-perceived weight status in over 15,000 men and women in the United States found 38.3% of women in the normal body mass index range categorized their bodies as overweight, which suggests that over one-third of women in the U.S. who are at a healthy weight are dissatisfied with their bodies and desire to be thinner (Chang & Christakis, 2003).

Research indicates both men and women experience body dissatisfaction; however, evidence suggest that women endorsed more negative body evaluations, which may increase their risk for mental health issues.

Until recently little was known about body dissatisfaction differences among women of different races and/or ethnicities, who may have culturally-bound body ideals that vary from the Western thin-ideal. A meta-analysis by Grabe and Hyde (2006) examining ethnic differences in body dissatisfaction among White, Black, Asian, and Hispanic women, reported a small effect size (d = 0.29) between the White and Black women comparison, suggesting that White women were slightly more dissatisfied with their bodies than Black women. The Black to Hispanic comparison yielded a small effect size (d = -0.18) indicating slightly more body satisfaction among Black women, whereas the White to Asian American and White to Hispanic comparisons did not yield a
significant difference between groups. The Black to Asian American and Asian American to Hispanic comparisons both yielded small effect sizes. A small survey study of 118 college women found similarities between women of difference races: White and Black women who selected smaller ideal body types scored higher on the body dissatisfaction measure (Baugh, Mullis, Mullis, Hicks, & Peterson, 2011). This research does not indicate large differences in body dissatisfaction across ethnic groups; however, more research is needed to better understand how women of varying races and ethnicities experience body dissatisfaction.

**Body Dissatisfaction in Women**

Research has documented that women report higher levels of body dissatisfaction than men, which in part may be due to women’s unique biological changes that influence the development of body dissatisfaction, in addition to sociocultural risk factors. For instance, girls encounter body-related challenges during puberty, such as hormone-associated increases in fat deposits to the breast and hips (Wertheim & Paxton, 2011), which conflict with Western culture’s ideal of a thin, waif-like body. A study utilizing a nationally representative sample of U.S. female adolescents found that greater self-perceived breast development was associated with lower self-esteem and higher depressive symptoms for 13-15 year old White girls, lower self-esteem for 13-15 year old African American girls, and higher depressive symptoms for 13-15 year old Hispanic girls (Yuan, 2012). Moreover, research has documented that adolescent females report twice the level of body dissatisfaction (Kostanski & Gullone, 1998) and higher levels of stress (Hampel & Petermann, 2006) than adolescent males, which puts them at greater risk for developing low self-esteem, depression, and disordered eating. While puberty is
a period when there is increased attention on body image and related cultural standards, puberty is not the only developmental milestone when women are at risk for developing body dissatisfaction.

Pregnancy has recently gained attention from researchers who are interested in studying how body image is experienced during the 40-week period, because women’s mental and physical health during pregnancy has important implications for both the mother’s and unborn child’s well-being (Franko & Walton, 1993). As women’s bodies experience changes during pregnancy, they are likely to reevaluate their body image as their body size and shape increase (Skouteris, 2011); however, findings have been inconsistent regarding women’s body satisfaction during pregnancy. Three studies from the late 1970’s to early 1980’s found that body dissatisfaction increased during the course of pregnancy (Leifer, 1977; Moore, 1978; Strang & Sullivan, 1985). Whereas Goodwin et al. (2000) and Skouteris et al. (2005) found that levels of body dissatisfaction were highest during early pregnancy compared to pre-pregnancy and late pregnancy periods. This finding suggesting that when women are experiencing physical changes for the first time, they are least satisfied with their body image. Boscaglia and colleagues (2003) found that body dissatisfaction decreased or remained stable during the course of pregnancy when comparing the body satisfaction of high exercisers (90 or more minutes per week of moderate intensity exercise) to low exercisers, with high exercisers reporting more body satisfaction during pregnancy and postpartum.

Research also indicates inconsistent findings about self-imposed body image standards (e.g., the expectations one holds for one’s body) during pregnancy. Some research has suggested women view pregnancy as transient and hold less rigid body standards for themselves during pregnancy (Davies & Wardle, 1994; Fairburn, Stein, &
Jones, 1992), resulting in women adapting the changes during pregnancy without distress (Richardson, 1990). However, one study documented that pregnancy evoked negative feelings in women compared to their pre-pregnancy body image feelings, suggesting their changing body evokes some level of distress (Fairburn & Welch, 1990). Specifically, in this study of 50 postpartum women, Fairburn and Welch (1990) noted that 40% of women sampled expressed fear of weight gain, 72% expressed concern that they would not return to their pre-pregnancy body weight, and in three cases the women reported dieting during pregnancy to limit weight gain. In sum, research has indicated inconsistent findings about self-imposed body image standards, which may lead to body dissatisfaction, psychological distress, and weight concerns during pregnancy. While there are inconsistent findings about the varying body dissatisfaction levels during pregnancy, the research consistently indicates increased weight and shape concerns during the postpartum period.

While pregnancy is often a joyous event, many women view postpartum weight loss as a stressor and desire to quickly return to their pre-pregnancy shape and weight (Montgomery et al., 2013). Research has noted that women who are dissatisfied with their postpartum bodies are less likely to breastfeed (Barnes, Stein, Smith & Pollack, 1997; Walker & Freeland-Graves, 1998) and are at higher risk for psychological distress (Duncombe et al., 2008). Walker (1998) examined weight-related distress (i.e., psychological suffering as a result of weight gain) in a sample of 245 postpartum (2.5 to 6 months) women who were primarily Caucasian, had attended college (77%), and had two or more children (52%). Notably, 21% of the women reported being satisfied with their postpartum weight, 22% were satisfied but wanted to lose more, 40% were
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overweight with mild dissatisfaction, 8% met criteria for weight-related distress, and 7% reported postponing weight management due to breastfeeding.

A recent study by Carter-Edwards and colleagues (2010) examined body dissatisfaction differences by race (i.e., African American, White) with 162 overweight women at the 6-month postpartum mark to better understand how women of varying ethnic and racial backgrounds experience body dissatisfaction. After controlling for demographic variables (i.e., age, BMI, income, education level, and marital status), the study concluded that while both African American and White postpartum women reported body dissatisfaction, White women were significantly more dissatisfied with their current postpartum body size. Similarly, a study exploring body image and depressive symptoms in low-income new mothers found that at six weeks postpartum African American women reported only one area of body dissatisfaction (i.e., waist), whereas White women reported eight areas and Hispanic women reported six areas (Walker, Timmerman, Kim, & Sterling, 2002). The limited research exploring body satisfaction in postpartum women of varying ethnicities/races indicates White and Hispanic women report higher levels of body dissatisfaction than African American women; however, more research is needed to better understand this difference. In sum, all postpartum women have body ideals and body expectations that influence their body image; however, women who hold more rigid ideals and unrealistic expectations for their postpartum figures are at risk for higher levels of body dissatisfaction.

**Sociocultural Factors**

Research has documented that women can develop body dissatisfaction at any point throughout their lifetime; however, certain sociocultural factors may increase the
risk for weight and shape concerns. The thin-ideal is conveyed and reinforced by social influences, including family, peers, and the beauty industry; however, the main social force that inundates society with thin-ideal messages is the mass media (Groez et al., 2002; Thompson & Stice, 2001). The thin-ideal is portrayed in media outlets by photographing figures (i.e., actresses, models) who are thinner than the actual female population (Fout & Burggraf, 2000). Furthermore, exposure to the thin-ideal through media representations has been linked to increases in body dissatisfaction, thin-ideal internalization, self-discrepancies, and eating pathology (Harrison, 2001; Harrison & Cantor, 1997). Over the last few decades various studies have documented that fashion models, movie and television actresses, Playboy centerfolds, Miss America Pageant winners and even cartoon characters have become increasingly thinner (Garner, Garfinkel, Schwartz, & Thompson, 1980; Klein & Shiffman, 2005; Morris, Cooper, & Cooper, 1989; Silverstein et al., 1986; Spitzer, Henderson, & Zivian, 1999). Thin-ideal messages are widely spread across media outlets; therefore, frequent exposure to these messages may influence one’s body ideals and expectations.

Harrison and Cantor (1997) examined the relationship between media use and disordered eating among college women and found that thin-ideal media exposure predicted disordered eating, with magazine reading acting as a stronger predictor than television exposure. Grabe and colleagues (2008) conducted a meta-analysis of experimental and correlational studies that examined the association between media exposure and women’s body dissatisfaction, thin-ideal internalization, and eating behaviors. They found the mean effect sizes were small to moderate for women’s body dissatisfaction ($d = -0.28$), thin-ideal internalization ($d = -0.39$), and eating behaviors and
attitudes ($d = -0.30$). These findings confirm previous research suggesting that media exposure depicting thin-ideal figures is related to body dissatisfaction and body concerns among women.

In addition to media exposure, upward social comparisons are associated with body dissatisfaction and negative self-evaluations that extend beyond body image, including one’s self-worth and self-esteem (Groez et al., 2002). An upward social comparison is when one compares him or herself with someone they believe to be better (Festinger, 1954). Research indicates that a tendency to make more appearance-related upward social comparisons, particularly with one’s peers, is associated with higher body dissatisfaction among female undergraduates (Engeln-Maddox, 2005) as well as adolescent girls and boys (Halliwell & Harvey, 2006). Sociocultural theory posits that body dissatisfaction is a result of individuals not matching Western culture’s unrealistic standards for attractiveness; thus, individuals who experience body dissatisfaction may participate in behaviors (e.g., dieting, exercise, disordered eating) designed to alter their body shape (Thompson et al., 1999). A study with female undergraduates exploring cognitive processing when exposed to advertisements containing attractive, thin female models concluded that making upward social comparisons to the models in the advertisements was associated with higher levels of body dissatisfaction and thin-ideal internalization (Engeln-Maddox, 2005).

As aforementioned, during pregnancy and postpartum a women’s body undergoes a number of physical changes, which may make her more vulnerable to body dissatisfaction unique to the pregnancy period. During this transitional period, women may look for targets of physical comparison in the media (e.g., pregnant celebrities) and
peer comparisons because their body size and shape are changing in unfamiliar ways (Gow, Lydecker, Lamanna, & Mazzeo, 2012). The media has recently paid a significant amount of attention to celebrities’ experiences of pregnancy and their roles as new mothers, which is readily accessible to pregnant and postpartum women (Gow et al., 2012). Women may utilize the media information (e.g., celebrity due dates, gestational weight gain, postpartum weight loss) to compare and evaluate their pregnancy and postpartum weight loss experiences (Gow et al., 2012). Gow and colleagues (2012) explored and quantified the amount of on-line magazine media coverage about celebrities’ pregnancy experiences, noting that pregnancy weight gain was most frequently represented as negative (44%) or neutral (44%), with only one article portraying pregnancy weight gain in a positive light. On the other hand, postpartum weight (i.e., a woman’s weight during the postpartum period) was mentioned in the articles more positively (46.7%) than neutrally (40.0%) or negatively (13.3%), which the authors suggested was the implicit endorsement by the magazines of celebrities’ swift atypical weight loss and return to pre-pregnancy body shape. However, it is unknown how or whether these media endorsements influence postpartum women who are at heightened risk for body dissatisfaction and who may be critically evaluating their changing bodies in relation to other social comparison figures.

While many women may look to the media for social comparisons during their pregnancy and postpartum period, research has documented that sisters are a likely focus for physical comparison (Nash, 2012). In a two year qualitative study of Australian women, many participants looked towards their sisters to formulate expectations of their pregnancy and postpartum body image, particularly with regard to weight gain (Nash,
In a study of 38 women, one participant said, “After five years, my sister has only just gotten back to the size she was before she was pregnant. She was smaller than me before… I hope it doesn’t take me that long to lose the weight” (Laura, 25 weeks, p. 47). This study suggested that postpartum women are looking towards their sisters as an indicator to how their own bodies will respond to the pregnancy and postpartum experience.

In addition to sisters, other family members can influence women’s body satisfaction and body expectations. A study by Kluck (2010) explored family influence on disordered eating with a sample of female undergraduates and concluded that a weight-centric family environment during childhood increased the risk for disordered eating and body dissatisfaction. Of note, the study found both criticism and encouragement about weight and body size, from either parent, were significant predictors of current body dissatisfaction and disordered eating. Little research has explored family criticism during the postpartum period; however, research has documented that positive extended family support is beneficial during postpartum. For instance, Montgomery et al. (2011) explored postpartum weight loss challenges and body dissatisfaction with 24 postpartum women who reported they felt supported by extended family members (e.g., mothers, mother-in-laws) when they received positive comments and assistance with exercise, babysitting, and dietary needs. In conclusion, some research has suggested that a weight-centric family environment during childhood has long-lasting effects on body satisfaction in adulthood, whereas social support can act as a protective factor during postpartum and aid in the transition to the new role as a mother.
In addition to extended family members, partner support is associated with women’s body satisfaction and often found to be a protective factor in the physical and mental health of women (Fincham, 1998). Pole and colleagues (2004) explored body dissatisfaction in 77 primarily Caucasian married women and found weight status to be the strongest predictor of body dissatisfaction, followed by perceived negative family influence from childhood. After controlling for weight and perceived negative family influence, perceived negative evaluation by a spouse accounted for 8.8% of the body dissatisfaction variance. Similarly, a small, qualitative study of immigrant Latina pregnant and postpartum women living in the United States identified their husbands as the primary influence of their weight-related issues and reported they desired to please their husbands by either gaining or losing weight (Thornton et al., 2006). Nash (2012) documented varying reviews from the women in her longitudinal study; some participants reported receiving supportive compliments from their partners about their bodies, while others reported receiving criticism about postpartum figures. In sum, research has documented that partners have an influence on how postpartum women feel about their bodies. Moreover, postpartum women have identified their partners to be a major contributor to their overall physical and mental health. While media, family, and partner influences are associated with body dissatisfaction, research has not collectively explored these factors in postpartum women, who report higher levels body dissatisfaction compared to pre-pregnancy and pregnancy.

**Tripartite Influence Model**

The Tripartite Influence Model has been widely researched and posits that there are three primary sociocultural variables (i.e., peers, parents, and media) that influence
the development of body dissatisfaction and disordered eating (Thompson et al., 1999). The Tripartite Influence Model also contains two meditational links (i.e., internalization of societal ideals of appearance and social comparison) that influence the pathway from the sociocultural variables to body dissatisfaction and disordered eating (Thompson et al., 1999). Researchers have tested the Tripartite Influence Model internationally with a number of different populations, including adolescents and college-aged samples. Van de Berg and colleagues (2002) tested the Tripartite Influence Model with 196 college women in the United States and utilized a number of model designs using path analysis that varied in their direct and indirect (i.e., mediating variable) pathways to body dissatisfaction. The authors concluded that the best model fit (i.e., model design that best explained the data) was one that did not include any direct pathways from the sociocultural variables to body dissatisfaction, which provided evidence that social comparison mediated the relationship between sociocultural factors (i.e., family, peers, and media) on body dissatisfaction, justifying the use of an indirect pathway. Moreover, of the three sociocultural variables, the media variable had the strongest pathway to the appearance comparison variable, which supports previous research that indicated social comparison is a strong predictor of body dissatisfaction. Notably, the peer influence variable was only correlated with restrictive eating, and not directly or indirectly associated with body dissatisfaction. The final model found significant pathways from body dissatisfaction to restrictive eating and bulimic behaviors; however, the authors noted the nonsignificant pathway from restrictive eating to bulimia was contradictory to previous research.
As aforementioned, the Tripartite Influence Model has been tested internationally. In 2008, Yamamiya and colleagues sampled 289 Japanese female undergraduates on sociocultural variables (family, peer, and media influences), body dissatisfaction, eating disturbances, and self-esteem and found a moderate fit (i.e., model fit indices produced acceptable values, RMSEA = 0.07) of the Tripartite Influence Model for the data. The final model had several significant direct and meditational pathways to the outcome variables of body dissatisfaction, self-esteem, restrictive eating, and bulimia. While Van de Berg et al. (2002) did not find a pathway from peer influence to body dissatisfaction, Yamamiya and colleagues (2008) found the peer influence variable was significantly associated with body dissatisfaction and was fully mediated by appearance comparison. Notably, there was a direct pathway from the media influence variable to internalization, which then led to body dissatisfaction and restrictive eating in the model. Yamamiya et al. (2008) successfully replicated previous results found in the U.S. indicating that the Tripartite Influence Model is applicable to Japanese women (Keery, van den Berg, & Thompson, 2004; Shroff & Thompson, 2006).

Rodgers and colleagues (2011) utilized the Tripartite Influence Model with female undergraduate students in Australia and France to compare risk factors between the Western cultures. The authors found significant differences between the Australian and French samples. More specifically, Australian participants reported higher levels of body mass index, more perceived peer and media influence, higher appearance comparison and internalization of thin-ideals, and lower levels of self-esteem compared to the French participants. Among the Australian data, the model accounted for 39% of variance in body dissatisfaction, 43% of variance in drive for thinness, and 43% of
variance in bulimic symptoms; however, notably parental influence had a direct influence on drive for thinness. The hypothesized model with the French data was adjusted after it revealed an adequate fit by adding a direct pathway between peer influence to body dissatisfaction and bulimic symptoms. This revised model resulted in an excellent fit and explained 29% of variance in body dissatisfaction, 47% of variance in drive for thinness, and 21% of variance in of bulimic symptoms. While the Tripartite Influence Model has been tested internationally, it has been mainly utilized among college-aged women.

To date, the Tripartite Influence Model has never been tested with new mothers, who report higher levels of body dissatisfaction during postpartum than pre-pregnancy and pregnancy; however, there is evidence suggesting applicability in this population. For instance, research has indicated that (1) the media endorses gaining minimal gestational weight and a quick return to pre-pregnancy figure (Gow et al., 2012); (2) a perceived negative evaluation by a partner is significantly associated with body dissatisfaction (Pole et al., 2004); (3) a perceived weight-centric family environment during childhood is associated with body dissatisfaction in adulthood (Pole et al., 2004); and (4) perceived appearance-related criticisms from peers and appearance comparisons with peers is associated with body dissatisfaction (Engeln-Maddox, 2005). It is likely that the media, partners, family, and peers influence how a woman experiences her changing body during the postpartum period. This study aims to add to the Tripartite Influence Model by including a fourth sociocultural influence factor, the partner influence variable. Investigations of body satisfaction have reliably demonstrated the link between sociocultural influences on body dissatisfaction and disordered eating in women; therefore, exploring the Tripartite Influence Model with new mothers would
likely yield significant direct and indirect pathways from sociocultural influence variables to the outcome variables of body dissatisfaction, self-esteem, bulimia, drive for thinness, drive for muscularity, and depression. In conclusion, given the evidence that sociocultural factors are partially or fully mediated by the internalization and social comparison variables, and influence body dissatisfaction and eating behaviors, the Tripartite Influence Model allows for the generation of a number of hypotheses centering on specific relationships between the variables of the model.

**Hypotheses**

This study examined how various sociocultural factors (i.e., media, family, peers, and partner) influenced body dissatisfaction, disordered eating, and depression in a diverse sample of adult postpartum women with no prior history of an eating disorder. The hypotheses, listed below, assume body mass index (BMI) will be controlled for in the analyses.

1. The addition of the partner influence variable to the Tripartite Influence Model will improve the fit of the model to the data compared to the original Tripartite Influence Model.

2. Modified sociocultural influence questions geared towards postpartum weight and shape will improve the fit of the model to the data.

3. Media, family, peer, and partner variables will significantly predict social appearance comparison and thin-ideal internalization.

4. Body dissatisfaction will significantly predict the outcome variables of bulimic symptoms, drive for thinness, drive for muscularity, self-esteem, and depression.
5. Internalization of the thin-ideal will mediate the relationship between the sociocultural influence variables (i.e., media, family, peers, and partner) and body dissatisfaction, bulimic symptoms, drive for thinness, drive for muscularity, self-esteem, and depression.

6. The variable of appearance comparison will mediate the relationship between the sociocultural influence variables (i.e., media, family, peers, and partner) and body dissatisfaction, bulimic symptoms, drive for thinness, drive for muscularity, self-esteem, and depression.

7. The strength of overall factors and model fit will differ in women of varying racial/ethnic backgrounds.

8. The strength of overall factors and model fit will differ for women in the early postpartum (0-6 months) period compared to the late postpartum (7-12 months) period.

Method

Participants

Adult female participants (ages 18 to 50) were recruited via on-line postings on social media (i.e., Facebook, mother blogs, town mother association websites) and flyers posted and handed out in the Boston area community (e.g., grocery store, coffee shops, gym) and clinical (e.g., OB/GYN offices) settings at the Joseph M. Smith Community Health Center in Waltham and Allston, MA, where permission was obtained through the Mt. Auburn Institutional Review Board. This study aimed to collect a diverse sample of women for participation by posting flyers in neighborhoods with diverse communities and health clinics that serve a patient population of varying race, ethnicity, sexual
orientation, and socioeconomic status. All U.S. state directors of the Women, Infant, and Children (WIC) programs were contacted via email regarding study recruitment. While many directors declined to share the recruitment information, the directors of Ohio, Hawaii, New Hampshire, Arizona, and Oklahoma posted the survey flyer in waiting rooms across their state and shared the survey link on their WIC Facebook page. In order to participate in the study, participants need to have given birth within the previous twelve months, be literate in English, and be willing to complete an on-line survey via Qualtrics. Participants completed the informed consent on-line prior to starting the survey. Study exclusion criteria for this study were inability to read and understand English, self-reported current or previous diagnosis of an eating disorder, and being pregnant. It was estimated that a sample size of 300 cases would be required to ensure ample power and to meet statistical assumptions.

**Procedure**

Interested new mothers scanned a QR code from posted flyers that connected them directly to the survey website or emailed the author expressing their interest to receive the website link in an email. The website link was also posted on social media sites allowing new mothers to directly access the survey. For instance, the ‘New Mothers Group’ on Facebook featured the link that connected interested women to the survey. Once potential participants were directed to the advertised website, they read the consent form, indicated consent, and responded to a series of questions to determine study eligibility. Eligible participants then continued on to a series of demographic questions as well as several psychological questionnaires. Upon completion of the study, participants had the opportunity to submit their email address to be entered into a raffle to
win one of three $100 Visa gift cards. Three raffle winners were randomly selected using a random number generator website and matching it to participant ID numbers. Three participants were contacted via email and given the option of receiving a $100 Visa gift card by mail or $100 sent to them via PayPal. Two participants requested gift cards that were mailed to them and one preferred a transfer of $100 via PayPal.

**Measures**

*Demographics*

Participants were asked to complete demographic questions regarding their age, race/ethnicity, socioeconomic status, marital status, sexual orientation, educational level, and employment. Additional questions were geared towards pregnancy and the postpartum period, including questions about breastfeeding, childbirth, diet and exercise. See Appendix A for a complete list of demographic items.

*Sociocultural Attitudes Towards Appearance Questionnaire 3*

The Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3) is comprised of 4 subscales that measure internalization-general, internalization-athletic, pressures, and information about sociocultural influences. The original SATAQ consisted of 14 items with a reported Cronbach alpha coefficient of .88 (Heinberg, Thompson, & Stormer, 1995). The SATAQ-2 was revised to include 21 items assessing awareness and internalization of sociocultural ideals with a reported Cronbach alpha coefficient of .89 (Cusumano & Thompson, 1997). The SATAQ-3 is a 30-item questionnaire that assesses internalization (general and athlete), pressures, and information. In this study, only the internalization-general and pressures subscales were administered. Participants respond to the items on a 5-point scale ranging from 1
(definitely disagree) to 5 (definitely agree). The SATAQ-3 has been utilized in the general population and clinical samples. The internalization of media ideals (e.g., endorsement of the thin-ideal promoted by the media) was measured utilizing the 9-item internalization-general subscale of the SATAQ-3 in this study. An example item is “I would like my body to look like the people who are in the movies.” This scale produced a Cronbach alpha coefficient of .96 in a sample of female undergraduates (Thompson et al., 2004) and a Cronbach alpha coefficient of .93 in a sample of adult women ages 18 to 35 (Paxton, McLean, Gollings, Faulkner, & Wertheim, 2007). The 7-item pressures subscale assesses the influence of the media (i.e., media pressure) to obtain the thin-ideal with a reported Cronbach alpha coefficient of .94 (Thompson, van de Berg, Roehrig, Guarda, & Heinberg, 2004). Both the pressures subscale and a modified pressures subscale, targeting pressure to lose baby weight, were administered to participants. The original two items from the SATAQ-3 pressures general scale were: “I’ve felt pressure from TV or magazines to lose weight” and “I’ve felt pressure from TV or magazines to have a perfect body.” The two items were modified to “I’ve felt pressure from TV or magazines to lose my baby weight” and “I’ve felt pressure from TV or magazines to have the perfect post-pregnancy body.” Both the original items and the two modified items were administered to all participants. The current sample of postpartum women provided excellent Cronbach alpha coefficients, specifically for the SATAQ-3 pressures original subscale (α = .92), for the SATAQ-3 pressures modified subscale (α = .92), and for the SATAQ-3 internalization-general subscale (α = .93).

Perceived Sociocultural Pressure Scale
The Perceived Sociocultural Pressure Scale (PSPS) measures pressure participants perceive from their family, friends, partners, and media to be thin (Stice & Bearman, 2001). The PSPS is a 10-item scale and participants respond on a 5-point scale from 1 (none) to 5 (a lot). All 10 items were administered to assess sociocultural influence in the hypothesized model. The two items from the scale that assess the media’s influence are: “I’ve felt pressure from the media (e.g., TV, magazines) to lose weight” and “I’ve noticed a strong message from the media to have a thin body.” Three items pertaining to family influence were utilized to measure this variable. An example item is “I’ve felt pressure from my family to lose weight.” Three items pertaining to peer influence were administered to measure this variable. An example item is “I’ve felt pressure from my friends to lose weight.” Two items pertaining to partner influence were administered to measure this variable. An example item is “I’ve felt pressure from my partner to lose weight.” Additionally, a third partner item was created to parallel the family and friend question of “my family/friends tease me about my weight or body shape” resulting in the item “my partner teases me about my weight or body shape.” Items from the media, family, peer, and partner subscales were also modified to assess pressures related the post-pregnancy body, resulting in 11 additional items. In total, 11 items were administered to measure pressure to lose weight and 11 items were modified to assess pressure to lose postpartum weight. Thus, both original and modified items were administered to all participants. The PSPS has demonstrated excellent internal consistency (Cronbach alpha coefficient = .88) and test-retest reliability ($r = .93$) with previous samples. With the current sample of postpartum women, both the original PSPS ($\alpha = .85$) and the modified PSPS ($\alpha = .87$) demonstrated good internal consistency.
Family Influence Scale

The Mother Influence Scale was originally a 3-item scale assessing participants’ perceptions of his or her mother’s influence on weight and appearance. When utilized in a sample of sixth to eighth grade girls, the scale had a Cronbach alpha coefficient of .80 (Levine et al., 1994). Keery, van de Berg, and Thompson (2004) modified the Mother Influence Scale to reflect both maternal and paternal influence and created a 6-item Family Influence Scale. In a sample of adolescent girls, the Family Influence Scale demonstrated a Cronbach alpha coefficient of .74 (Keery et al., 2004). The Family Influence Scale has been primarily utilized with adolescents, aiming to gather information about their family of origin. The Family Influence Scale was administered in this study to assess both maternal and paternal influences during the postpartum period. Participants responded on a 6-point scale from 1 (never) to 6 (all the time), with the option of “not applicable” for participants who might not have a mother and/or father living or involved in their life. The Family Influence Scale demonstrated good internal consistency (α = .78) in the current sample of postpartum women.

Media Influence Scale

The Media Influence Scale was created to parallel the Mother Influence Scale (Levine, Smolak, & Hayden, 1994) to assess the media’s influence on weight and appearance. In a sample of adolescent girls, the Media Influence Scale had a Cronbach alpha coefficient of .74 (Keery, van de Berg, & Thompson, 2004). A sample item is “The magazines I read and TV shows I watch emphasize that is it important to be thin.” Participants responded on a 6-point scale from 1 (never) to 6 (all the time). In this
sample, the Media Influence Scale demonstrated excellent internal consistency with a Cronbach alpha of .95.

**Perceived Family Preoccupation with Weight and Dieting Scale**

The Perceived Family Preoccupation with Weight and Dieting Scale was designed to assess the frequency of behaviors that are related to preoccupation with weight and dieting (Schutz, Paxton, & Wertheim, 2002). The 9-item scale has produced a Cronbach alpha coefficient of .87 in a sample of girls 12-16 years old (Schutz et al., 2002) and has been primarily used in adolescent samples. Participants respond on a 5-point scale from 1 (*never*) to 5 (*always*). The Perceived Family Preoccupation with Weight and Diet Scale demonstrated good internal consistency in the current sample with a Cronbach alpha of .87.

**Perceived Friend Preoccupation with Weight and Dieting Scale**

The Perceived Friend Preoccupation with Weight and Dieting Scale was designed to assess the frequency of behaviors linked to preoccupation with weight and dieting (Schutz et al., 2002). In a sample of adolescent girls, the 9-item scale produced a Cronbach alpha coefficient of .87 and a three week test-retest reliability of $r = .81$ (Schutz et al., 2002). Participants responded on a 5-point scale from 1 (*never*) to 5 (*always*). The Perceived Friend Preoccupation with Weight and Diet Scale demonstrated excellent internal consistency in the current sample with a Cronbach alpha of .91.

**Peer Influence Scale**

The Peer Influence Scale is a parallel 3-item measure to the Family Influence Scale and Media Influence Scale (Levine et al., 1994). The scale was designed to assess participants’ perception of peer influence on weight and appearance. An example
question is “How important is it for your friends to be thin?” In a sample of 6th to 8th grade girls, the Cronbach alpha coefficient was .73 (Levine et al., 1994). Participants responded on a 6-point scale from 1 (never) to 6 (all the time). In this postpartum sample, the Peer Influence Scale demonstrated good internal consistency with a Cronbach alpha of .78.

**Partner Influence Scale**

The Partner Influence Scale is a parallel 3-item measure to the Family, Media, and Peer Influence Scales (Levine et al., 1994). This scale was specifically developed for this study to assess participants’ perception of their partner’s influence on weight and appearance. An example item is “How often is your partner on a diet to lose weight?” Participants responded on a 6-point scale from 1 (never) to 6 (all the time). In this postpartum sample, the Partner Influence Scale demonstrated acceptable internal consistency with a Cronbach alpha of .68.

**Perceived Partner Preoccupation with Weight and Dieting Scale**

The Perceived Partner Preoccupation with Weight and Dieting Scale was adapted for this study from the Perceived Friend Preoccupation with Weight and Dieting Scale to assess the frequency of behaviors linked to preoccupation with weight and dieting (Schutz et al., 2002). Participants respond on a 5-point scale from 1 (never) to 5 (always). The Perceived Partner Preoccupation with Weight and Diet Scale demonstrated good internal consistency in the current sample with a Cronbach alpha of .86.

**Physical Appearance Comparison Scale**

The Physical Appearance Comparison Scale (PACS) is a 5-item scale designed to assess the tendency to compare one’s physical appearance to different aspects of others’
appearance (Thompson, Heinberg, & Tantleff-Dunn, 1991). An example item is “At parties and other social events, I compare my physical appearance to the physical appearance of others.” Participants responded to items on a 5-point scale ranging from 1 (never) to 5 (always), with higher scores indicating a greater tendency to compare one’s physical appearance to others. This scale is widely utilized and has demonstrated adequate reliability with Cronbach alpha coefficients ranging from .70 to .78 (Rodgers, Chabrol, & Paxton, 2011; van de Berg, Thompson, Obremski-Brandon, & Coovert, 2002). In a recent study with adult women ages 18 to 35 the PACS produced an acceptable Cronbach alpha coefficient of .64 (Paxton, McLean, Gollings, Faulkner, & Wertheim, 2007). The PACS demonstrated good internal consistency in this sample of postpartum women with a Cronbach alpha of .73.

*Eating Disorder Inventory-2- Body Dissatisfaction Subscale*

The Body Dissatisfaction subscale of the Eating Disorder Inventory-2 (EDI-2-BD) is a 7-item scale designed to assess overall appearance satisfaction with the body (Garner, Olmstead, & Polivy, 1983). The EDI-2-BD is widely utilized in research and has demonstrated good reliability. Cronbach alpha coefficients ranged from .90 to .93 in samples of college women (Rodgers et al., 2011; Spillane, Boerner, Anderson, & Smith, 2004) and .83 to .93 in samples of adult women (Broussard, 2011; Tylka, 2004). An example item from the EDI-2-BD is “I think that my thighs are too large.” Participants responded to items on a 6-point scale ranging from 1 (never) to 6 (always), with higher scores indicating greater levels of body dissatisfaction. The EDI-2-BD demonstrated excellent internal consistency in the sample of postpartum women with a Cronbach alpha of .91.
Eating Disorder Inventory-2 Drive for Thinness Subscale

The Drive for Thinness subscale of the Eating Disorder Inventory-2 (EDI-2-DT) is a 7-item scale designed to assess preoccupation with thinness, dieting, and fear of gaining weight (Garner et al., 1983). An example item is “I feel extremely guilty after overeating.” Participants responded to items on a 6-point scale ranging from 1 (never) to 6 (always), with greater scores indicating higher levels of drive for thinness. The EDI-2-DT has produced good internal reliability in a sample of female undergraduates with a Cronbach alpha coefficient of .91 (Spillane et al., 2004) and in a sample of adult women with a Cronbach alpha coefficient of .88 (Keel, Baxter, Heatherton, & Joiner, 2007). The EDI-2-DT demonstrated good internal consistency in this sample of postpartum women with a Cronbach alpha of .88.

Eating Disorder Inventory-2 Bulimia Subscale

The Bulimia subscale of the Eating Disorder Inventory-2 (EDI-2-BU) is an 8-item scale designed to assess the frequency of bulimic symptoms (Garner et al., 1983). An example item is “I have gone on eating binges where I felt that I could not stop.” Participants responded to items on a 6-point scale ranging from 1 (never) to 6 (always), with higher scores indicating greater frequency of bulimic symptoms. In a sample of adult women, this scale demonstrated a Cronbach alpha coefficient of .80 (Keel et al., 2007). The EDI-2-BU demonstrated good internal consistency in this sample of postpartum women with a Cronbach alpha of .87.

Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale is a 10-item questionnaire designed to assess general self-esteem (Rosenberg, 1965). An example item is “I wish I could have more
respect for myself.” Participants responded to items on a 4-point scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). The scale has demonstrated adequate reliability (test-retest = .85) and correlated with other measures of self-esteem (Demo, 1985). The Rosenberg Self-Esteem Scale demonstrated excellent internal consistency in the sample of postpartum women with a Cronbach alpha of .90.

*Center for Epidemiological Studies Depression Scale*

The Center for Epidemiological Studies Depression Scale (CES-D) is a 20-item scale designed to measure depressive thoughts, feelings, and behaviors during the previous week (Radloff, 1977). An example item is “I felt lonely.” The scale is widely utilized and has demonstrated acceptable convergent and divergent validity, internal consistency, and test-retest reliability (Radloff, 1977). The CES-D has demonstrated high internal consistency in diverse populations including female college students (α = .94; van de Berg et al., 2002), Chinese American women (α = .86; Li & Hicks, 2009), and Jordanian women (α = .90; Al-Modallal, 2010). The CES-D scale demonstrated excellent internal consistency in the sample of postpartum women with a Cronbach alpha of .90.

*Muscularity for Women Scale*

A questionnaire was developed for this study because currently there is no known scale measuring drive for muscularity in women. The Muscularity for Women Scale was developed based on the widely utilized Drive for Muscularity Scale (McCreary & Sasse, 2000) that has demonstrated high levels of validity and reliability when administered to men. One study found that the Drive for Muscularity Scale was a useful tool when assessing muscularity in women who had an occupation that involved gaining muscle, such as weight training or body building (Robert, Munroe-Chandler, & Gammage, 2009).
Given that many women do not have a desire to gain more muscle mass, the Drive for Muscularity Scale (McCreary & Sasse, 2000) may not adequately capture women’s desire for muscularity. The 22-item Muscularity for Women Scale was therefore designed to assess women’s drive for muscularity that centers on the desire to be toned, firm, and fit rather than the desire to gain more muscle mass. Participants responded to questions about their drive for muscularity on a six-point scale from 1 (always) to 6 (never). The questionnaire was developed by a Ph.D. level faculty member and this author. Two personal fitness trainers reviewed the questionnaire items and provided recommendations for wording and content. The questionnaire was piloted with college-aged women to assess the psychometric properties of the measure and demonstrated good internal reliability. The Drive for Muscularity Scale demonstrated excellent internal consistency in the sample of postpartum women with a Cronbach alpha of .91. Please see Appendix A for all measures and grouping by variable.

**Data Analysis**

One thousand sixty one women initially consented to the survey; however, 359 cases were removed from the dataset because participants discontinued the survey while answering the initial demographic questions; therefore no questionnaire data were gathered. Of the women who did not complete the survey, the majority were Caucasian (85.7%), with some women identifying as ethnic minorities including Asian (4.3%), Native American (3.6%), African American / Black (2.1%), Latina (1.4%) and biracial / other (2.8%). Participants who did not provide sufficient data to be included in the study were similar to the study sample in terms of age ($M = 30.99, SD = 4.81$), pre-pregnancy weight ($M = 157.79$ lbs., $SD = 38.67$), weight during pregnancy ($M = 191.21$ lbs., $SD =$
35.72), current weight ($M = 165.42$ lbs., $SD = 38.61$), and goal weight ($M = 146.03$ lbs., $SD = 26.84$). The remaining 702 women participated in the on-line survey with varying degrees of survey completion. For instance, the first questionnaire in the testing battery, the SATAQ-3 internalization scale, resulted in 702 responses while the last questionnaire, Family Influences, had 533 complete responses. After cleaning the data, the final set of data consisted of 474 cases.

All data were cleaned and missing data were replaced with the mean of the participant’s responses when less than 20% of the data were missing. Individual construct measures (e.g., CES-D, BDI-BD, SATAQ) were analyzed independently for completion. If a participant had missing items for a construct measure, calculations were run to determine if the case met 80% completion (i.e., 80% of the survey items were answered on a given scale). For example, the Rosenberg Self-Esteem Scale is comprised of 10 items. If a participant completed 8 out of 10 items, the case met the 80% completion and data were imputed for the two missing items by averaging the 8 completed items. On the other hand, if a participant only answered 7 or less items, data were not imputed and the case was excluded from the composite scale calculations for that particular questionnaire. Across the 19 composite scales and subscales, 62 missing cases, out of 702, met the 80% rule and were imputed to address missing data. The software used here for structural equation modeling, SPSS Amos, required that there are no missing data. In order to meet this assumption, all cases with missing responses after data imputation were removed from the data set. This resulted in a full data set of 474 cases for the structural equation modeling (SEM) analyses. All individual questionnaires were scored according to scoring instructions, resulting in 19 variables, including composite scales and subscales.
The Tripartite Influence Model was tested using structural equation modeling (SEM) with SPSS Amos statistical software (Blunch, 2013). The SPSS Amos software has the ability to design theoretical models based on hypothesized relationships with observed and latent variables. Finally, SPSS Amos has the ability to run multiple regressions at the same time, which reduces the amount of error in the model as opposed to running multiple regressions independently.

SEM is a powerful extension of the general linear model and the following assumptions were taken into consideration and met prior to running analyses. The first assumption is that there must be a reasonable sample size and the basic rule of thumb is 15 cases per measured variable (Stevens, 1996). After cleaning the data, this study resulted in 474 cases with complete data, thereby meeting the first assumption (19 variables x 15 = 285). Furthermore, SEM assumes that the dependent and mediating variables are continuous and normally distributed. Even though many of the items from measures administered in this study were measured on a Likert scale, the underlying construct (e.g., self-esteem) has a distribution that is continuous; therefore, the current measures were able to be utilized with SEM. Model variables were checked for the assumption of normality using a histogram to assess their distribution. The following variables were not normally distributed and therefore a square root analysis was utilized to transform the variables: body dissatisfaction (EDI-BD), drive for thinness (EDI-DT), bulimia (EDI-BU), self-esteem (Rosenberg Self-esteem), perceived sociocultural pressures (PSPS), and depression (CES-D). Histogram plots demonstrated that transforming the aforementioned variables improved their distribution.
Another assumption of SEM is model identification, which refers to there being a unique solution for every estimate (Stevens, 1996). Prior to running SEM, correlational analyses were conducted to examine bivariate relationships between all the variables in the model. SEM programs require an adequate number of known correlations or covariances as input in order to generate results that are logical. This assumption was met by incorporating known correlations into the SEM model. For example, sociocultural pressures from the media, family, partner, and peers were all correlated with each other, which suggests known meaningful relationships between the variables. Finally, the last assumption is that there is a theoretical basis for model specification and causality. Given that the Tripartite Influence Model is a widely researched model based on empirical evidence, this assumption was met.

Given that there were four latent sociocultural pressure variables in the model (i.e., media, family, peer, and partner) and each was comprised of three observed variables, there were many parameters in the model to be estimated. Too many parameter estimates in a model can reduce the model fit and result in the data not being accurately represented. In order to address this issue, a single composite observed variable was calculated to represent the sociocultural variables. Because all variables were measured using different Likert scale variations, a z-score \[ z = \frac{(x - \text{mean})}{\text{standard deviation}} \] was calculated to form a composite variable. For example, the latent media variable was comprised of three observed variables, the Perceived Sociocultural Pressures Scale (PSPS), Sociocultural Attitudes Towards Appearance Questionnaire-Pressures subscale (SATAQ-P), and Media Influence Scale (MIS). A z-score was computed for each scale (i.e., PSPS, SATAQ-P, and MIS) using SPSS by creating a new variable with the
calculation $z = (x - \text{mean}) / \text{standard deviation}$. Next, using the computation function in
SPSS, the three $z$-scores were summed to form a composite observed media influence
variable. This same procedure was repeated for the family, peer, and partner influence
variables as well, resulting in four composite influence variables and a reduction in
parameter estimates.

When testing all hypotheses, the model fit was examined using fit indices. The
Comparative Fit Index (CFI) is considered good when $\text{CFI} > 0.9$ and the Root Mean
Square Error of Approximation (RMSEA) is considered acceptable when $\text{RMSEA} < 0.08$
and excellent when $\text{RMSEA} < 0.05$ (Byrne, 2001). This study utilized the model fit
indices and evaluated competing models by using the likelihood ratio chi-square test for
comparison. For the first hypothesis, the model was run with and without the partner
influence variable to explore whether the addition of the partner variable improved the fit
of the model to the data. This was explored by comparing the Akaike Information
Criterion (AIC) for both models and calculating a ratio (AIC with partner/ AIC without
partner) to examine model differences. To test hypothesis 2, the model was run replacing
the original items with the modified items and then the model fit was compared using the
CFI and RMSEA fit indices. For example, an original item from the SATAQ-presures
subscale “I’ve felt pressure from TV or magazines to lose weight” was replaced with the
modified item “I’ve felt pressure from TV or magazines to lose my baby weight.” This
study examined model fit indices and parameter estimates to test hypotheses 3 and 4 and
evaluate the magnitude of the relationships between different variables in the model. In
order to test mediation for hypotheses 5 and 6, bootstrapping was conducted to confirm
the mediation effect. Bootstrapping is a resampling method that creates a sampling
distribution to estimate standard errors, create confidence intervals, and assess the stability of parameter estimates. The bootstrapping procedure has more accurate type 1 error rates and provides greater statistical power than single sample methods because it does not assume a normal distribution. Finally, hypotheses 7 (i.e., exploring ethnic/racial difference) and 8 (i.e., exploring postpartum month differences) were explored by testing model invariance, designed to test the presence of significant variations in the model fit and parameters between different samples. Two data sets were created to run model comparison analyses to explore these differences.

Qualitative data were explored by first reading all of the statements and identifying common themes. Next, qualitative statements were categorized by common themes (e.g., body dissatisfaction, drive for muscularity, pressure from the media). Responses were associated with multiple categorizations if there were rich qualitative data captured in the quotation (i.e., a response highlighting more than one theme). Once categorized, responses were reviewed a second time and quotations were selected that best represented the theme captured in the qualitative data.

**Results**

**Descriptive Statistics**

Participants reported they had heard about this study via social media (70.5%), from a friend or family member (9.5%), at a doctor’s office (2.5%), from an advertisement in the community (2.7%), or another means (14.8%; e.g., WIC center, listserv email).

The average age of participants was 30.9 years ($SD = 4.5$) ranging from 18 to 44 years old. BMI ranged from 16.7 to 52.0 with a mean of 26.6 ($SD = 6.4$). Almost exactly
half of the women surveyed (49%; N = 232) reported they were in the first six months of their postpartum period. Almost half of the participants reported they were primiparous (53%; N = 249), had experienced single births (98.1%), and the majority were currently breastfeeding or pumping breast milk (70.9%). The majority of participants (68.6%) delivered naturally, while 30.2% reported they had a cesarean section. The majority of women identified as heterosexual (94.9%) and married (86.5%) or living with a partner (10.1%). Over thirty percent (31.6%) had obtained a Bachelor’s degree and 38.4% reported they earned a Master’s degree or higher. Over twenty-five percent (26.7%) of participants reported an annual household income of less than $50,000; 31% reported $50,000 to less than $100,000; 20.3% reported $100,000 to less than $150,000; and 22% reported an income of over $150,000. Participant employment status included homemaker (31.2%), student (3.6%), unemployed (3.2%), employed part-time (14.8%), employed but on maternity leave (11.4%), or employed full-time (35.9%).

The average pre-pregnancy weight was 152.93 lbs. ($SD = 39; BMI = 25.4; range: 94 to 320 lbs.). Women reported that their highest weight during pregnancy was $M = 186.6$ lbs. ($SD = 38.5; BMI = 31; range: 115 – 375 lbs.) and current weight during postpartum was $M = 159$ lbs. ($SD = 40.2; BMI = 26.5; range: 96 – 321 lbs.). Participants’ average goal weight was 141.03 lbs. ($SD = 26.9; BMI = 23.9; range: 100 – 280 lbs.). The mean difference between pre-pregnancy and goal weight was $M = 11.9$ lbs. ($SD = 19.2$), with most women reporting that their target weight goal was to weigh 12 lbs. less than pre-pregnancy weight. While only 38.2% of women reported they had changed their diet since giving birth for weight and shape reasons, almost half of the women surveyed (45.7%) reported they were actively trying to lose weight.
Participants were asked to report how often they exercised or played a sport for at least 30 minutes per week prior to pregnancy, during pregnancy, and currently during postpartum. Women reported being very active prior to pregnancy and exercising 1-2 times per week (37.3%), 3 to 4 times (30.8%), 5 to 6 times (15.4%), and even daily (2.3%). Only 14.1% of participants reported never exercising prior to pregnancy. During pregnancy, levels of physical activity decreased overall with 27.9% reported never exercising, 44.4% 1 to 2 times per week, 20.9% 3 to 4 times per week, and 6.7% 5 or more times per week. During postpartum, 32.6% reported never exercising, 35.9% 1 to 2 times per week, 19.9% 3 to 4 times per week, and 11.6% 5 or more times per week.

**Bivariate Correlations**

A correlational analysis was conducted to explore the bivariate relationships between the variables in the SEM model. Table 1 represents the correlations between the variables with and without controlling for BMI. All variables demonstrated patterns of association that were consistent with the Tripartite Influence Model. After controlling for BMI, all the sociocultural influence variables, media, family, peers, and partner, were positively correlated with each other ranging from $r = .26$ to .48. Consistent with previous research, internalization of the thin-ideal and appearance comparison were positively correlated, $r = .57$. Body dissatisfaction was strongly, positively correlated with drive for thinness ($r = .59$) and drive for muscularity ($r = .44$) and strongly, negatively correlated with self-esteem ($r = -.46$). Body dissatisfaction was correlated with bulimic symptoms ($r = .39$) and exhibited a weak, positive correlation with depression ($r = .29$).

**Evaluation of the Model**
First, the data were explored using the original hypothesized model (Figure 1). A latent variable to represent the thin-ideal was created because the bivariate correlation analysis yielded a strong positive relationship ($p = .57$) between appearance comparison (PACS) and internalization of the thin-ideal (SATAQ-Internalization). Similarly, a latent variable to represent psychological functioning was created because there was strong, negative correlation ($p = -.60$) between self-esteem (Rosenberg Self-Esteem) and depression (CES-D). Figure 2 illustrates the revised hypothetical model with the addition of the composite sociocultural influences (i.e., composite media, composite family, composite peer, and composite partner) and latent variables (i.e., thin-ideal and psychological functioning). Next, this hypothesized model (Figure 2) was tested using Amos software. The hypothesized model did not reveal a good fit to the data and therefore was rejected ($\chi^2 (52) = 408.42, p < 0.001, RMSEA = .12, CFI = .855$). Following this, modification indices and pathway significances were examined to explore the possibility of adding additional pathways to the model. Three additional pathways were added to improve the model fit to the data: family influence to drive for thinness; thin-ideal to drive for muscularity; and thin-ideal to drive for thinness. Figure 3 represents the final model with additional pathways. The hypothesized model with the addition of three pathways revealed an acceptable fit to the data ($\chi^2 (42) = 215.403, p < 0.001, RMSEA = .093, CFI = .926$).

**Hypothesis 1.** It was predicted that the addition of the partner influence variable to the Tripartite Influence Model would improve the fit of the data compared to the original Tripartite Influence Model, which contains only three sociocultural factors (i.e., media, peer, family influences). The hypothesized model (Figure 3) was explored with
and without the addition of the partner variable. Model differences (i.e., model with partner influence and model without partner influence) were explored using AIC values. An AIC ratio was calculated (AIC with partner/ AIC without partner) to explore the difference between the two models (Mazerolle, 2015). The AIC ratio (304.20/404.62) = .75 demonstrated the presence of a difference in fit between the two models. This calculation revealed that the model with the addition of the partner variable improved the model fit to the data by 25%. The hypothesized model with the partner influence variable revealed a good fit to the data ($\chi^2 (49) = 220.20, p < 0.001, RMSEA = .086, CFI = .93$), which suggests that including the partner variable in the model was beneficial for improving the model fit for the data, thus confirming hypothesis 1. The following hypotheses were examined using this final model that includes the addition of the partner variable.

**Hypothesis 2.** It was hypothesized that the modified sociocultural influence questions geared towards postpartum weight and shape would improve the fit to the data. The final model was tested using the original questionnaire variables and the modified questionnaire variables for sociocultural influences. Model comparisons were explored by comparing the CFI, RMSEA, and AIC fit indices. The model with original variables revealed a good fit to the data ($\chi^2 (49) = 220.20, p < 0.001, RMSEA = .086, CFI = .93$). Similarly, the model with modified variables revealed a good fit to the data ($\chi^2 (49) = 218.02, p < 0.001, RMSEA = .085, CFI = .93$). Model differences were explored by calculating an AIC ratio (AIC modified scales/ AIC original scales). The AIC ratio (302.02/304.20) = .99 did not demonstrate a meaningful difference between the two models. This calculation revealed that the model with the modified scales improved the
model fit to the data by 1%. This finding suggests that the models represent similar fits to the data; therefore, the modified postpartum scales did not significantly improve the fit of the data above and beyond the original sociocultural influence questions, thus hypothesis 2 was not confirmed.

**Hypothesis 3.** It was posited that the media, family, peer, and partner variables would significantly predict the social appearance comparison (PACS) and thin-ideal internalization variables (SATAQ-Internalization subscale). As aforementioned, due to shared variance between the social appearance comparison and internalization variables, a latent variable (i.e., thin-ideal) was incorporated into the model. The final model (Figure 3) was tested using both the original (i.e., questions about weight loss) and modified (i.e., questions about baby weight loss) sociocultural influence variables to explore whether these variables significantly predicted the thin-ideal variable. The media, partner, and peer variables, both original and modified sociocultural variables, significantly predicted the thin-ideal variable, $p’s < 0.001$. The direct effect from media influence to thin-ideal was $\beta = .58$ (original scale) and $\beta = .59$ (modified scale). The direct effect from partner influence to thin-ideal was $\beta = .17$ (original scale) and $\beta = .19$ (modified scale). The direct effect from peer influence to thin-ideal was $\beta = .17$ (original scale) and $\beta = .15$ (modified scale). The sociocultural variables (i.e., media, family, peer, and partner) explained 59% of the variance in the thin-ideal variable. This finding was true for both models containing data from the original pressures scales and the modified pressure scales. Notably, in both models the pathway from family influence to thin-ideal was not significant, as indicated by the direct effect ($\beta = .04$ for the original scale and $\beta = .05$ for the modified scale). However, there was a significant pathway from family
influence to drive for thinness (BDI-DT), where the direct effect was $\beta = .17$ for both the original and modified scales. Figure 4 and 5 illustrate path coefficients for the final model utilizing data from the original and modified scales, respectively, thus hypothesis 3 was confirmed.

**Hypothesis 4.** It was predicted that body dissatisfaction would significantly predict the outcome variables of bulimic symptomatology, drive for thinness, drive for muscularity, self-esteem, and depression. As aforementioned, a latent variable was created to represent psychological functioning comprised of self-esteem (Rosenberg Self-Esteem) and depression (CES-D). In the final model, body dissatisfaction directly influenced psychological functioning, drive for thinness, and drive for muscularity, represented by significant parameter estimates, $p’s < 0.001$. Notably, in this sample, body dissatisfaction was not directly related to bulimic symptoms. The model utilizing original scale data explained 52% of the variance in body dissatisfaction, 44% of the variance in bulimic symptoms, 49% of the variance in depression, 75% of the variance in self-esteem, 57% of the variance in drive for thinness, and 38% of the variance in drive for muscularity. The model utilizing modified scale data explained the same amount of variance in variables of body dissatisfaction, bulimic symptomatology, depression, self-esteem, drive for thinness, and slightly more variance in drive for muscularity (40%). Hypothesis 4 was confirmed.

**Hypotheses 5 and 6.** It was predicted that the variable of internalization would mediate the relationship between sociocultural influence variables (i.e., media, family, peers, and partner) and body dissatisfaction, bulimic symptomatology, drive for thinness, drive for muscularity, self-esteem, and depression (Hypothesis 5). Similarly, it was
predicted that the variable of appearance comparison would mediate the relationship between sociocultural influence variables (i.e., media, family, peers, and partner) and body dissatisfaction, bulimic symptomatology, drive for thinness, drive for muscularity, self-esteem, and depression (Hypothesis 6). Given that the final model contained a thin-ideal latent variable comprised of appearance comparison (PACS) and thin-ideal internalization (SATAQ- Internalization subscale), the hypothesis was revised to predict that the thin-ideal variable would mediate the relationship between sociocultural influence variables and outcome variables. To explore this hypothesis, the model was tested with each sociocultural influence variable to measure the indirect effect of the thin-ideal on the outcome variables.

Bootstrapping analyses (BS = 500) revealed a significant indirect effect of media pressures on body dissatisfaction, $\beta = .378$, 95% CI [.315-.443], $p = 0.004$; psychological functioning ($\beta = .197$, 95% CI [.15-.246], $p = 0.004$); bulimic symptomatology ($\beta = .272$, 95% CI [.217-.310], $p = 0.007$); drive for thinness ($\beta = .461$, 95% CI [.399-.513], $p = 0.005$) and drive for muscularity ($\beta = .441$, 95% CI [.385-.494], $p = 0.004$), through the thin-ideal variable.

Next, the indirect effects of family pressure on the various outcome variables through the thin-ideal were tested. Bootstrapping analyses (BS = 500) revealed a significant indirect effect of family pressures on body dissatisfaction, $\beta = .262$, 95% CI [.197-.336], $p = 0.003$; psychological functioning ($\beta = .137$, 95% CI [.100-.189], $p = 0.003$); bulimic symptomatology ($\beta = .192$, 95% CI [.146-.248], $p = 0.003$); drive for thinness ($\beta = .331$, 95% CI [.253-.402], $p = 0.005$) and drive for muscularity ($\beta = .304$, 95% CI [.242-.373], $p = 0.003$), through the thin-ideal variable.
Bootstrapping analyses (BS = 500) revealed a significant indirect effect of friend pressures on body dissatisfaction, $\beta = .303$, 95% CI [.249-.364], $p = 0.004$; psychological functioning ($\beta = .158$, 95% CI [.123-.206], $p = 0.004$); bulimic symptomatology ($\beta = .220$, 95% CI [.172-.263], $p = 0.007$); drive for thinness ($\beta = .378$, 95% CI [.311-.438], $p = 0.006$) and drive for muscularity ($\beta = .348$, 95% CI [.293-.403], $p = 0.005$), through the thin-ideal variable.

Lastly, bootstrapping analyses (BS = 500) were utilized to explore indirect effects of partner pressures on the outcome variables. Bootstrapping analyses revealed a significant indirect effect of partner pressures on body dissatisfaction, $\beta = .217$, 95% CI [.169-.276], $p = 0.002$; psychological functioning ($\beta = .113$, 95% CI [.086-.155], $p = 0.002$); bulimic symptomatology ($\beta = .159$, 95% CI [.122-.20], $p = 0.003$); drive for thinness ($\beta = .272$, 95% CI [.213-.333], $p = 0.004$) and drive for muscularity ($\beta = .258$, 95% CI [.198-.315], $p = 0.004$), through the thin-ideal variable. The model utilizing original scale data explained 59% of the variance in thin-ideal internalization and 57% of the variance in appearance comparison. The model utilizing modified scale data explained 58% of the variance in thin-ideal internalization and 57% of the variance in appearance comparison, thus this hypothesis was partially confirmed.

**Hypothesis 7.** It was predicted that the strength of overall factors and model fit would differ in women of varying racial/ethnic backgrounds. The sample of postpartum women who participated in the survey primarily identified as White. A small portion of the sample identified as ethnic minorities (17.3%), specifically as Native American (N = 9), Asian (N = 25), African American / Black (N = 11), Latina (N = 21), Pacific Islander (N = 1), Biracial (N = 8), and other (N = 7). Given the underrepresentation of women
from diverse ethnic / racial backgrounds, a SEM model invariance analysis could not be run to test this hypothesis. It was therefore hypothesized that measures of thin-ideal internalization, appearance comparison, body dissatisfaction, depression, drive for thinness, drive for muscularity, self-esteem, and bulimic symptomatology would differ related to women’s ethnic / racial identity. Merging all the participants who self-identified as an ethnic minority created two groups that were designated as White or non-White. Because thin-ideal internalization, appearance comparison, body dissatisfaction, depression, drive for thinness, drive for muscularity, self-esteem, and bulimic symptoms were moderate to highly correlated, a multivariate analysis of covariance (MANCOVA), controlling for BMI, was conducted. Results from this MANCOVA demonstrated a significant multivariate effect for ethnicity / race, Wilks’ Lambda = .956, $F(8, 464) = 2.669, p = 0.007$, indicating a difference between White and non-White postpartum women. The univariate $F$ tests showed there was a significant difference between White ($M = 26.7, SD = 8.7$) and non-White ($M = 23.8, SD = 8.9$) women in levels of thin-ideal internalization; $F = 7.355, df = (1, 471), p = 0.007$. The $F$ test for body dissatisfaction was close to significant with $F = 2.83, df = (1, 471), p = 0.093$, which suggests a trend towards differences in levels of body dissatisfaction between White ($M = 34.1, SD = 10.6$) and non-White ($M = 33.4, SD = 10.3$) postpartum women. However, the univariate $F$ tests for other outcome variables were not significant, specifically; appearance comparison $F = 2.08, df = (1, 471), p = 0.15$, drive for thinness $F = .55, df = (1, 471), p = .46$, bulimic symptomatology $F = .603, df = (1, 471), p = 0.44$, drive for muscularity $F = 0.001, df = (1, 471), p = 0.98$, depression $F = .755, df = (1, 471), p = 0.85$, and self-esteem $F = 1.28, df = (1, 471), p = 0.26$. Thus, this hypothesis was not confirmed.
Hypothesis 8. It was predicted that the strength of overall factors and model fit would differ for women in the early postpartum period (0-6 months) compared to later stages of the postpartum period (7-12 months). A test of multiple group comparisons conducted in Amos revealed no significant difference between the two models, $\chi^2(6) = 3.43$, $p = .752$. Notably, there were differences in parameter estimates in the models. Similar to the full set of data, there were no significant direct pathways found between the family variable to thin-ideal or body dissatisfaction to bulimic symptomatology in either the 0-6 months and 7-12 months postpartum models. Notably, in the 7-12 months postpartum model the pathway from friend influence to thin-ideal was no longer significant, with a direct effect of $\beta = .11$. The 0-6 months postpartum model accounted for 53% of the variance in thin-ideal internalization, 52% of the variance in appearance comparison, 43% of the variance in depression, 68% of the variance in self-esteem, 63% of the variance in drive for thinness, 43% of the variance in bulimic symptomatology, 47% of the variance in body dissatisfaction, and 35% of the variance in drive for muscularity. The 7-12 months postpartum model accounted for 68% of the variance in thin-ideal internalization, 62% of the variance in appearance comparison, 53% of the variance in depression, 81% of the variance in self-esteem, 51% of the variance in drive for thinness, 46% of the variance in bulimic symptomatology, 57% of the variance in body dissatisfaction, and 41% of the variance in drive for muscularity. Hypothesis 8 was not confirmed. Figures 6 and 7 illustrate the hypothesized models including parameter estimates.

Qualitative Data
At the end of the survey questionnaire, participants were asked, “We would like to hear about your postpartum experiences in relation to weight, eating, body image, and exercise.” Participants provided many responses that were consistent with the quantitative findings and expanded upon their postpartum experience in greater detail.

Many participants shared how they felt influenced by the media, family, and peers to return to their pre-pregnancy shape. A 37-year-old White woman who was 12 months postpartum shared:

I did feel pressure to lose the baby weight. It was more difficult to lose the weight with the second child. Once I lost the weight, I felt guilty around friends who had not. Even though I'm at my pre-pregnancy weight, I'm still dissatisfied with my body, (i.e. stomach and overall flabbiness). I do feel the media influences how I feel. I also experience people telling me I look too thin. It seems they do not realize it is insulting.

Similarly, a 37-year-old White woman who was 5 months postpartum commented:

One relative made a comment about how big my stomach was just a few days after giving birth--she obviously didn't remember that it takes some time for the stomach to go back down. I felt really offended, and my husband was equally outraged for me which helped me feel very supported and positive that everything would be fine.

These responses highlight how comments about weight and shape during the postpartum period can be perceived as hurtful and critical. A 27-year-old White woman who was 10 months postpartum commented about media pressure contributing to her own body dissatisfaction:
My biggest concerns with my body postpartum are related to my lower abdomen and ‘love handles.’ I constantly am aware of those areas and feeling flabby. I also feel pressure from the media to have perfect skin and in those areas I have a moderate amount of shallow stretch marks. These intensify my awareness and feelings of inadequacy associated with my lower abdomen and hips. I am also often concerned with not having perky breasts although I am not totally unsatisfied with mine. Though the media makes me feel like natural breasts are not as desirable as having breast implants.

Despite the frequent endorsement of media, family, and peer pressure to obtain a thin, post-pregnancy body, many women spoke to how their partner’s support helped mitigate other sociocultural pressures related to their weight and shape. A 28-year-old White woman who was 5 months postpartum stated:

My husband is the most loving, supportive guy I could have, and he loves my body as it is, no matter what I look like. He just wants me to be and feel healthy. That helps me feel secure in how I look. He has been my strongest influence in countering the emphasis on weight that exists in my mother and sisters.

Similarly, a 24-year-old White woman who was 10 months postpartum stated, “I'm definitely more jiggly, but my husband still loves me and I have much more important things to worry about every day than my muffin top and thighs!” While many women endorsed feeling sociocultural pressures to return to their pre-pregnancy figure, support from a partner appears to help alleviate some of this pressure.

Notably, an additional sociocultural pressure that was not captured by the quantitative data was highlighted in the women’s responses. A number of new mothers
spoke to feeling pressure from their occupations to lose their baby weight and return to their pre-pregnancy figures. A 29-year-old White woman who was 10 months postpartum commented, “I'm in the military and there is a weight standard so I have no choice but to be fit. I have had no problems losing baby weight. I exercise 3-4 times per week, eat healthy (but don't diet), and I breastfeed.” Similarly, a 34-year-old White woman who was 11 months postpartum stated, “As a fitness coach, it was important to me to stay active during my pregnancy and get back in shape and weight right afterward.” Additionally, expectations from co-workers also seem to have an impact on new mothers, “There is some pressure from co-workers who discuss baby weight to be lost within the first 6 months” (31 years old, White woman, 6 months postpartum). These findings suggest that occupations that emphasize appearance, weight, shape, and fitness (e.g., military, modeling, fitness instructors, sales representative) may be a source of sociocultural pressure that warrants further exploration.

Many women (70.9%) reported they were currently breastfeeding and they similarly spoke to this in their qualitative responses. Many new mothers attributed breastfeeding to aiding in gestational weight loss. Notably, some women reported utilizing breastfeeding as their main strategy for losing pregnancy weight. For example, “I lost all my baby weight almost immediately, probably due to me exclusively breastfeeding. I didn't take any extra measures to lose the weight” (27 year old Asian woman, 4 months postpartum) and “I am still nursing and pumping for my second child. I always lose a lot of weight while doing this. I don’t have to do anything more” (30 year old White woman, 5 months postpartum). On the other hand, some women spoke about feeling too thin as a result of breastfeeding:
For me it is the opposite, I don’t worry about losing weight, I worry about gaining weight. I am naturally thin and gaining weight is hard. I am breastfeeding so that burns a lot of calories and I wish I had kept some of the baby weight. However, my number one goal is to be healthy. It is annoying when people say comments like "you're going to disappear," but I've grown use to them. I am taking martial arts class, not to lose weight but to stay fit (27 years old Latina woman, 9 months postpartum).

Similarly, another mother commented, “I believe breastfeeding has helped but maybe a little more than I wanted. My goal was to stay at 110 but I am now at 100” (20 years old White woman, 2 months postpartum). Additionally, some women had adverse experiences related to breastfeeding. For instance, “Breastfeeding and trying to eat healthy were how I lost my baby weight. Breastfeeding led to a hormonal imbalance for me I believe. I had crazy mood swings and anxiety until I stopped breastfeeding” (35 years old South Asian woman, 8 months postpartum). It appears new mothers had a range of experiences related to breastfeeding and weight loss.

Themes of body dissatisfaction, drive for thinness, drive for muscularity, and low self-esteem were evident in many of the participants’ responses. Many women spoke to feeling dissatisfied with their bodies and appearance as a result of physical changes after giving birth, such as caesarean section scars, wider hips, cellulite, excessive or ‘flabby’ skin, ‘saggy’ breasts, and an untoned stomach. For instance, one 30-year-old White woman who was 10 months postpartum highlighted how she felt she has lost muscle strength:
I lost all my baby weight and more, but I do not necessarily feel in shape because I've lost strength. I used to be able to do 5 sets of 10 pull ups pretty easily, and I'm struggling to do 5 without assistance now. That is frustrating, and without the positive reinforcement of feeling strong it is difficult for me to remain motivated to work out.

A 30-year-old White woman who was 6 months postpartum commented how she feels dissatisfied with her appearance despite losing weight and associated it with feelings of low self-esteem:

What upsets me the most about my body isn't what the scale says but instead the firmness. My skin just hangs and I am not sure if that has more to do with weight gain and losses over the past few pregnancies or if it has more to do with the fact that I am aging and my skin doesn't bounce back the way it used to. I would love to find time to work out to make myself feel better but I need to find the time. If I were working out and doing my best, I am sure I would be more confident.

Many women spoke about striving to be toned and muscular rather than thin. A 37-year-old White woman who was 6 months postpartum stated:

Even though I have lost all of the weight I gained, my shape is different from before (wider in the hips/thighs), and I'm not sure whether it will stay this way or go back down over the next year. I am hoping to exercise more when baby is a little older and can be left for longer stretches of time (he is exclusively breastfed right now), and perhaps this will help me feel more positive about my shape and the tone of my muscles.

Another new mother highlighted her tendency to frequently compare her figure to others:
I lost weight quickly after giving birth, but have had little time to exercise to tone my body. Though I am at a lower weight than before I was pregnant, I feel dissatisfied with my body because I feel I am out of shape. I am constantly comparing myself to others and take note of their appearance. My body image is struggling, but I feel like I have very little time/energy to do anything about it (29 years old White woman, 11 months postpartum).

In sum, many participants’ responses endorsed experiencing sociocultural pressures to attain the thin-ideal, feelings of body dissatisfaction, striving for a more toned and muscular figure, and desiring to return to a pre-pregnancy figure. Notably, many participants reported that even after attaining their pre-pregnancy weight they continued to feel dissatisfied with their bodies. Some responses highlighted occupational pressure to attain a pre-pregnancy figure was an additional sociocultural pressure. Lastly, it appears women had a range of experiences related to breastfeeding, with many women breastfeeding as a method to lose gestational weight.

**Discussion**

This study explored a widely researched theoretical model, the Tripartite Influence Model, in a sample of new mothers to explore how sociocultural pressures influenced body dissatisfaction and other psychological health vulnerability factors. A brief summary of the eight hypotheses is outlined below as well as interpretations of the findings, limitations of the study, and directions for future research.

There are many physical and psychological changes that occur during the postpartum period, such as dramatic changes in weight and shape, which contribute to increased vulnerability related to appearance satisfaction. One study highlighted how new
mothers encounter many challenges such as time, motivation issues, the need for support, postpartum depression, and low self-esteem when trying to lose their gestational weight (Montgomery et al., 2011). Similarly, postpartum women in this study spoke to these challenges, for example “I just wish I had the time to devote to my own diet and exercise. It is important to me to eat well, be healthy and in shape but caring for a baby gets in the way of that especially since I am at home with her with little to no help.” Often women feel a great deal of pressure to quickly return to their pre-pregnancy figure and have difficulty losing their baby weight. Gestational weight retention increases a woman’s risk for long-term obesity later in life and is associated with a number of adverse health issues (e.g., diabetes, heart disease; Rooney & Schauberg, 2002).

Many women expressed a desire to quickly return to their pre-pregnancy figure; however, this was not always easily achieved. One review of epidemiological studies revealed that 14-20% of women were 11 or more pounds heavier at 6 to 18 months postpartum than their pre-pregnancy weight (Gunderson & Abrams, 2000). As a result, many new mothers felt dissatisfied with their weight, shape, and appearance. A study with a large sample of postpartum women found that 21% of the women surveyed were satisfied with their postpartum weight, 22% were satisfied but wanted to lose more, 40% were reported being overweight with mild dissatisfaction, and 8% met criteria for weight-related distress (Walker, 1998). Similarly, participants in the current study shared their difficulty losing gestational weight, “I struggle with my body image and I think it was harder while pregnant to see the number go so high. I definitely don't like how I look now but I'm determined to continue to lose the weight.” Research has highlighted that women who are dissatisfied with their body shape are less likely to breastfeed (Barnes, Stein,
Smith & Pollack, 1997; Walker & Freeland-Graves, 1998) and are at higher risk for psychological distress (Duncombe et al., 2008). Similarly, our findings support that body dissatisfaction was associated with symptoms of depression and low self-esteem in postpartum women. The postpartum period is a vulnerable time for many women who are adapting to their new role as a mother, adjusting to physical and psychological changes, as well as trying to maintain a healthy lifestyle for themselves and their new baby.

The Tripartite Influence Model, which has been widely tested and supported by researchers with diverse samples of women, posits that three primary sociocultural variables (i.e., media, peers, and family) contribute to the development of body dissatisfaction and disordered eating (Keery et al., 2004; Rodgers et al., 2011; Yamamiya et al., 2008). However, the family influence variable typically represents the degree to which parents and siblings may influence disordered eating and body dissatisfaction. While a woman’s family of origin can have a long-term effect on thin-ideal internalization, it is also important to capture any pressure a woman may receive from her partner, especially given that many cohabitate (i.e., 96.6% in this study). Research has highlighted how partner support can act as a protective factor for physical and mental health and that it is associated with women’s body satisfaction (Fincham, 1998).

Additionally, research has also documented that perceived negative evaluation by a spouse is predictive of body dissatisfaction (Pole et al., 2004).

One aim of this study was to incorporate a fourth sociocultural influence variable into the Tripartite Influence Model to test whether partners influenced body dissatisfaction and disordered eating in postpartum women. As anticipated, the addition of the partner variable made a meaningful contribution to the model, with a significant
direct pathway from partner influence to the thin-ideal (i.e., PACS and SATAQ-Internalization) variable and significant indirect pathways to the outcome variables mediated by the thin-ideal variable. Findings suggest that pressures from the media, peers, and partners were strongly associated with thin-ideal internalization and body dissatisfaction. Given that 94.9% of participants identified as heterosexual, these results are consistent with existing research that has highlighted the significance of male partner’s influence on the body image of heterosexual women (Halliwell & Dittmar, 2006; Huxley, Halliwell, & Clark, 2014).

The second hypothesis predicted that the modified sociocultural influence questions geared towards postpartum weight and shape would contribute to the model by better capturing the postpartum experience. The results revealed that the original and modified models were not significantly different, meaning that postpartum women responded to items pertaining to weight loss and baby weight loss in a similar manner. These findings suggest that postpartum women are experiencing a great deal of sociocultural pressure to lose weight and attain a thin-ideal. Notably, it appears women felt a similar amount of pressure to lose both baby weight and general weight loss. One participant highlighted the desire to attain a thin figure stating, “I was hopeful that breastfeeding would help me lose my pregnancy weight, and maybe even a little extra.” Participants reported their target weight was on average 12 lbs. less than their pre-pregnancy weight; thus it appears many women were striving to return to a postpartum figure that includes losing more than just gestational weight. Given many participants were aiming to lose more than just baby weight, this may account for the similar response pattern for questions related to weight loss and baby weight loss.
As hypothesized, the direct pathways from the media, partner, and peer variables significantly predicted the latent thin-ideal variable (i.e., internalization of the thin-ideal and appearance comparison). Not surprisingly, the pathway between the media pressures variable to the thin-ideal variable was the strongest of the four pathways. Notably, family influence did not have a significant, direct pathway to the thin-ideal internalization variable regardless of the addition of the partner variable or modified pressure scales to the models. This finding suggests that when controlling for BMI and the other sociocultural pressures (media, peer, partner), family pressure did not influence internalization of the thin-ideal or appearance comparison during the postpartum period. This may be a result of postpartum women having varying levels of contact with their family of origin (e.g., geographical restrictions, strained family relationships). On the other hand, women may experience increased positive support from family members during the postpartum period, such as childcare and positive comments related to appearance and health, which may explain why family pressure did not contribute to thin-ideal internalization. Existing research has found that perceived social support from extended family members during the first year of postpartum was associated with women’s overall mental health (Chaloner & Gjerdingen, 1994). The sociocultural influences explained 59% of the variance in thin-ideal internalization (i.e., PACS and SATAQ- Internalization subscale) in both the original and modified pressure models. Interestingly, family influence did have a significant, direct pathway to drive for thinness, which is consistent with previous research suggesting that a weight-centric family environment is predictive of current body dissatisfaction and disordered eating in college women (Kluck, 2010). This finding suggests that new mothers who have a weight-centric
family of origin (e.g., family members often diet, family members care a great deal about their weight and shape) may report higher levels of the drive for thinness during the postpartum period, which highlights how much family members influence each other’s eating and dieting behaviors. Women with a high level of drive for thinness may believe that once they have given birth they no longer have an ‘excuse’ to be out of shape or heavier, thus resulting in body dissatisfaction, disordered eating, and negative psychological functioning (Clark et al., 2009; Rallis et al., 2007).

The fourth hypothesis posited that body dissatisfaction would significantly predict bulimic symptoms, drive for thinness, drive for muscularity, self-esteem, and depression. In the final model, body dissatisfaction directly influenced psychological functioning (i.e., self-esteem, depression), drive for thinness, and drive for muscularity in both models (original and modified pressure variables). The model utilizing both original and modified questionnaire data explained a substantial amount of variance in body dissatisfaction, bulimic symptomatology, depression, self-esteem, drive for thinness, and drive for muscularity. Contrary to the prediction, body dissatisfaction was not directly related to bulimic symptoms. This may be a result of new mothers experiencing transitory body dissatisfaction due to dramatic changes in weight and shape; therefore, it is not associated with more extreme disordered behaviors, such as purging. The majority of new mothers in this sample scored low on the EDI-BU subscale, endorsing minimal symptoms consistent with bulimia. Consistent with previous research, a strong association was found between body dissatisfaction and symptoms of depression during the postpartum period (Clark et al., 2009). In sum, our findings suggest that new mothers are feeling pressure from numerous sociocultural influences to lose weight, especially
baby weight, which is contributing to the development of body dissatisfaction and negative psychological functioning.

Hypotheses five and six predicted that the variables of thin-ideal internalization and appearance comparison would mediate the relationship between sociocultural influence variables (i.e., media, family, peers, and partner) and body dissatisfaction, bulimic symptoms, drive for thinness, drive for muscularity, self-esteem, and depression. In accordance with the prediction, thin-ideal internalization and appearance comparison did mediate sociocultural pressures on body dissatisfaction, negative psychological functioning, and disordered eating. This highlights that postpartum women who believe it is important to be thin and are frequently making appearance comparisons are more vulnerable to sociocultural pressures to attain a thin-ideal, which may lead to the develop body dissatisfaction. For example, one participant spoke to feeling body conscious due to sociocultural pressures stating:

I have felt that almost everyone else has been more observant of how I look after having a baby. I feel as if now after having a baby there is more pressure from society to be in shape and that people will immediately look at my body and midsection when seeing me after having a baby. I think people look at and analyze my body now more so then they ever did before (31 year old White woman, 7 months postpartum).

These findings, consistent with the hypothetical model, provide evidence for the validity and usefulness of the Tripartite Influence Model among postpartum women living in the United States.
The seventh hypothesis predicted that the strength of overall factors and model fit would differ in women of varying racial/ethnic backgrounds. Analyses exploring group differences between White and non-White women revealed a significant difference in levels of thin-ideal internalization and a trend towards differences in levels of body dissatisfaction, with White postpartum women reporting higher levels of thin-ideal internalization and body dissatisfaction. This finding is not surprising as the majority of women portrayed in Western media are White women; therefore, women of varying ethnicities and racial backgrounds might not as easily identify with these thin-ideal media messages. A recent survey found that 82% of women portrayed on the covers of U.S. magazines are White women despite the recent 2012 census data indicating 63% of Americans identify as non-Hispanic/Latino White (Iniguez, 2013). The lack of significant findings across the other outcome variables suggests that non-White postpartum women experienced similar levels of appearance comparison, depression, drive for thinness, drive for muscul arity, self-esteem, and bulimic symptoms as their White counterparts. This indicates that while non-White women endorsed lower levels of thin-ideal internalization, they are still experiencing sociocultural pressures that are contributing to body dissatisfaction, negative psychological functioning, and disordered eating. Research indicates that women of different cultural backgrounds have body ideals that may differ from the traditional slender figure and are more accepting of a curvy body (Bordo, 2003; Grogan, 2008). However, a fuller, curvier figure is presented as acceptable if toned and firm with body ideals such as Jennifer Lopez and Beyonce Knowles (Bordo, 2003). Varying body ideals could have contributed to the difference in thin-ideal internalization levels between White and non-White women, while the pressures to attain the body ideal
for each culture resulted in similar levels in body dissatisfaction, negative psychological functioning, and disordered eating.

The final hypothesis predicted that the strength of overall factors and model fit would differ for women in early postpartum (0-6 months) compared to late postpartum (7-12 months). Findings revealed no significant difference between the two models, suggesting that the model was a good fit for both the first six months postpartum as well as the last six months postpartum. However, there were differences in parameter estimates between the two models; specifically, the pathway from friend influence to thin-ideal was no longer significant in the 7-12 months postpartum model. While model comparison analyses found no significant difference between the two models, the 7-12 months postpartum model accounted for more variance in body dissatisfaction, thin-ideal internalization, appearance comparison, drive for muscularity, depression, and self-esteem. This finding suggests that women 7-12 months postpartum may be even more vulnerable to the influence of sociocultural pressures, which contributes to higher levels of body image issues, psychological functioning, and disordered eating. This finding is consistent with research by Gjerdigen et al. (2009) highlighting that new mother’s body dissatisfaction significantly increased from one month to nine months postpartum.

Gjerdigen and colleagues (2009) found that on average postpartum women in their study weighed 5.4 lbs. more than their pre-pregnancy weight. This study found that 7-12 months postpartum women reported a greater target weight loss of $M = 12.7$ lbs. than their pre-pregnancy figure compared to their 0-6 months postpartum counterparts ($M = 11.5$ lbs.), despite having similar current weights. As new mothers transition into later
stages of postpartum, it appears they are more influenced by societal thinness standards and experience more pressure to achieve a slender body.

Overall, this study found that new mothers were experiencing a great deal of pressure from the media, family, peers, and partners that contributed to higher levels of body dissatisfaction, drive for thinness, drive for musculature and negative psychological functioning. While the original Tripartite Influence Model was a good fit to the data, this study supports the addition of the partner influence variable to the model. This finding is consistent with previous research that has found partner comments (positive and negative) predictive of the development of body dissatisfaction in women (Mclaren, Kuh, Hardy, & Gauvin, 2004; Pole et al., 2004). The addition of the partner influence variable greatly enhanced the model fit to the data and improves our understanding of how sociocultural pressures contribute to the development of body image disturbance, disordered eating, and psychological functioning in postpartum women. As such, it may be beneficial to include a partner influence variable in the Tripartite Influence Model when evaluating sociocultural pressures on the development of body dissatisfaction, especially in samples of women who likely have a partner.

Additionally, a notable finding was that postpartum women experienced a great deal of sociocultural pressure to lose weight and attain a thin-ideal, resulting in body dissatisfaction, depression, drive for thinness, drive for musculature, and lower self-esteem. As the Tripartite Influence Model has never been utilized in a postpartum sample, this study provides validity for utilizing this model to understand the development of body image disturbance, disordered eating, and psychological functioning in new mothers. It is important to understand risk factors for body
dissatisfaction as research has highlighted that body dissatisfaction is predictive of negative mental health outcomes for women. Sweeny and Fingerhut (2013) recently found that body dissatisfaction during the third trimester was predictive of postpartum depression. In addition to psychological consequences, such as depression and low self-esteem, body dissatisfaction during postpartum has been associated with negative physical health and social outcomes. In another recent study, gestational weight gain, short breastfeeding duration (6 months or less) and postpartum body dissatisfaction were predictive of postpartum weight retention at 9 months, which is associated with obesity later in life (Phillips, King, & Skouteris, 2014). Additionally, gestational weight retention has been found to be a major factor in the development and maintenance of body dissatisfaction and psychological distress during the postpartum period (Clark, Skouteris, Wertheim, Paxton, & Milgrom, 2009). Understanding sociocultural influences contributing to the development of body dissatisfaction is the first step in reducing the risk of many negative physical and mental health outcomes that impact a new mother and her ability to care for her new baby.

Consistent with previous research in samples of college-aged women (Rodgers et al., 2011; Van de Berg et al., 2002; Yamamiya et al., 2008), the media was found to have the strongest influence on the internalization of the thin-ideal in this sample of postpartum women and appears to be a major source of sociocultural pressure across the lifespan. A recent study explored how interest in celebrities’ post-baby bodies was related to body image disturbance in a large sample of postpartum Korean women (Chae, 2014). More specifically, Chae (2014) found that social comparison mediated the effect of interest in celebrity post-partum bodies on body dissatisfaction and drive for thinness.
Chae (2014) posited that an interest in celebrities’ post-baby bodies implied that the individual viewed the celebrity as a social standard for postpartum beauty. Similarly, our findings suggest that if a new mother values being thin and slender, she is more vulnerable to experiencing pressure from the media and at greater risk for developing body dissatisfaction. Postpartum women in the current study reported reading magazines and viewing websites related to diet, exercise, and pop culture with varying levels of readership, less than once per month (20.5%), once a month (12%), 2-3 times a month (11.2%), weekly (4.2%), 2-3 times a week (2.1%), daily (1.5%), or never (48.5%). The findings from Chae (2014) and our study highlight that media pressure to attain a swift baby weight loss is prevalent in many cultures, not just Western societies.

This study found few differences among women of varying backgrounds on measures of body image disturbance and psychological functioning. Similarly, research has not found large differences in body dissatisfaction across ethnic groups (Baugh et al., 2011; Grabe & Hyde, 2006). The findings from this study did suggest White women experience slightly higher levels of thin-ideal internalization compared to their non-White counterparts, which may be a result of varying cultural body ideals (e.g., a thin body v. toned curvy body). However, there is a caveat to these findings; women of diverse backgrounds were merged into a non-White group given the small sample size of ethnic minorities. Thus, more exploration is needed to better understand the validity of the Tripartite Influence Model among a sample of ethnically and racially diverse postpartum women.

There are several limitations to this study worth mentioning. First, the sample of new mothers who participated in this study was very homogenous in nature, with the
majority of them being highly educated White women in their thirties. Moreover, as the survey was only available in English, women who were not proficient in English were unable to participate in the survey. As a result, this may have excluded many women of diverse backgrounds from participating in the survey. With respect to ethnicity, racial/ethnic minority women were placed into a single non-White group for analyses, which resulted in a loss of information regarding the differences between women of varying cultural backgrounds. Therefore, the findings from this study are not generalizable to ethnically and racially diverse postpartum women and more research is necessary to understand their individual experiences.

Two additional limitations are methodological in nature. One, while interested participants from the Joseph M. Smith Community Health Center who did not have computer access could fill out a hardcopy survey or contact the primary investigator for a copy, no data were collected via paper and pencil surveys. All data were gathered through the Qualtrics website link, which may have restricted women without computer access from participating in the survey. Two, this study utilized the Center for Epidemiological Studies Depression Scale (CES-D) to measure depressive symptomatology during the postpartum period. It may have been beneficial to utilize a questionnaire geared towards measuring postpartum depression, such as the Postpartum Depression Predictors Inventory–Revised (PDPI-R; Beck, 2002). Research highlights that clinical scales used in the normal population focus on somatic symptoms that are typical experiences, rather than signs of depression, during the postpartum period (Walker, Timmerman, Kim, & Sterling, 2002). As a result, depression symptomatology may have been inflated due to a lack of sensitivity in capturing true signs of depression during the postpartum experience.
Despite the aforementioned limitations, the findings from this study contribute to the literature by supporting the use of the Tripartite Influence Model in a sample of postpartum women. Moreover, the partner influence variable provides a meaningful enhancement to the Tripartite Influence Model when exploring sociocultural pressures on the development of body dissatisfaction and disordered eating in postpartum women. Future studies might consider including the partner influence variable when exploring sociocultural pressures contributing to the development of body image disturbance, psychological functioning, and disordered eating in various populations of women who are likely to have a partner. Given the small number of ethnically diverse women in this sample, a future study should specifically recruit postpartum ethnic minority women to explore the validity of the Tripartite Influence Model in women of diverse groups.

Finally, many women in the study were eager to qualitatively describe their postpartum experiences and thus it appears new mothers are interested in discussing pressures they feel related to weight, shape, and body image. Given this interest, future research endeavors might include interviews and/or focus groups with new mothers to gather rich qualitative data to better understand postpartum women’s experiences. Nash (2012) documented how in-home interviews enabled new Australian mothers to participate in research while balancing the responsibilities of motherhood.

These findings have important research and clinical implications. Women are experiencing a great deal of pressure from the media, peers, family members, and partners to attain a quick return to a pre-pregnancy figure, which is resulting in body dissatisfaction, disordered eating, and negative psychological functioning. Given these results, it is important for health professionals to consider implementing interventions
during pregnancy and postpartum to help mitigate the risk of body dissatisfaction in new mothers. Currently, Skouteris and colleagues (2012) are conducting a longitudinal study exploring the effectiveness of a specialized health coaching intervention during pregnancy and its impact on weight management, anxiety, depression, and body dissatisfaction during the postpartum period. Novel, empirically validated interventions such as this could prove beneficial for mitigating the risk of body dissatisfaction and are potentially adoptable by health care professionals.

Late pregnancy is an opportune time to screen for body dissatisfaction and depression as well as intervene prior to the postpartum period (Clark et al., 2009), as women and often their partners are attending regular appointments with their obstetrician. Clark and colleagues (2009) suggested providing education to women during late pregnancy about natural, physical changes to the body after birth (e.g., stomach does not immediately lose its round shape) and challenging maladaptive weight and appearance related cognitions (e.g., gestational weight loss is necessary to be attractive). As partner support has proven to be a valuable resource, future health coaching interventions might include partners to provide both future parents with psychoeducational resources and realistic expectations about weight, shape, dieting, and body image during the postpartum experience. In sum, testing and modifying theoretical models in unique samples of women not only adds to the literature, but also enhances our understanding of factors that contribute to the development of disordered eating, body image disturbances, and psychological functioning. Based on this study, we have a much richer understanding of the influences on body image and disordered eating for postpartum women.
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TRIPARTITE INFLUENCE MODEL AND BODY DISSATISFACTION


