A Prospective Analysis of the Influence of the Macrosystem, Biological, Psychological, Relational and Behavioral Factors on the Experience of Embodiment, Body Esteem, and Disordered Eating of Mothers during their Transition from Pregnancy to Postpartum

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
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Abstract

This investigation involved a prospective study of women’s experiences with their bodies during advanced pregnancy and at 3 and 6 months postpartum. The predictors included measures related to the macrosystem (Ethnicity, Socioeconomic Status, and Pressures for Thinness), and biological (Weight Difference from Prepregnancy, Fatigue, and Labour and Delivery Control), psychological (Depression, Anxiety, Internalization of the Thin Ideal, Maternal Beliefs about Competence, and Comfort with Breastfeeding), relational (Social Support and Relationship with Partner), and behavioral factors (Physical Activity, Breastfeeding Practice, and Sexual Relationships). In order to enhance the understanding of shifts in body experiences from pregnancy to postpartum, three different measures of women’s
experiences with their bodies were used: Experience of Embodiment, Body Esteem, and Disordered Eating. A sample of 208 women completed these measures online, ages 19-46. Women were found to have more negative embodied experiences, lower body image and a higher rate of disordered eating patterns at postpartum compared with the pregnancy phase. Regression analyses were conducted to predict postpartum adjustment, highlighting the predictive power of pressures for thinness, the internalization of the thin ideal and pregnancy related weight change on women’s embodiment, body image and eating patterns at postpartum. In addition to these three factors, psychological factors, specifically anxiety and depression, appeared to play a stronger role than biological, relational, or behavioral factors or variables related to the macrosystem. Taken together, the results of this investigation highlighted the adverse impact of weight related pressures on women’s experiences with their bodies and the need to address psychological experiences.
Dedication

To my three children, Logan, Alivia and Aiden, my greatest source of inspiration.
My journey through research has always been grounded in my embodied experiences throughout different significant life transitions, including going through adolescence for my Master’s Thesis and having children for this research project. I am amazed by the joy and happiness brought upon by my three children, Logan, Alivia and Aiden, yet, I can honestly say that having these little beings has challenged my perceptions of the societal felt experience of a mother with all its expectations. My transition to motherhood, whether it was for the first or second time with the birth of the twins, brought upon a series of changes that, at times, tested my self-identity. This was an eye-opening experience for me as I noticed the potential for real struggles to occur. It just felt natural and necessary to pursue through my dissertation this important transition in order to understand women’s experiences and factors that serve to protect them from feeling negatively within themselves, whether it be through body esteem, anxiety, low mood or through their relationships.

I am profoundly grateful for the insight that having children has provided me. Specifically, it has allowed me to have a deeper appreciation for my own parents who have shown such great generosity, dedication and relentless love towards their three children. Mom, words could never express the admiration and respect I have for what you did as a mother to three young children with a husband who worked tremendously long hours. Thank you for instilling in us such great values and love. Dad, you inspire me every day through your accomplishments and your dedication. Thank you for being so proud of me as much as I, and your own father, are so proud of you. Beyond parents, you have become the most loving,
caring, generous grandparents one could ask for. Despite the distance, Logan, Alivia and Aiden are amazingly fond of you and you make that easy for them. I love you both very much.

A special thanks to my husband, Brennan, for his daily support and words of encouragement throughout my studies. I am forever grateful to be blessed with such an amazing partner who is by my side supporting me with our kids, schooling, work and life. As a team, we can get through anything. Moreover, a big thank you to both of his parents who have introduced me to the world of Doulas by providing me with this amazing support for both of my births. Having the support of Tammy, my doula, during the birth process, of Anita, my breastfeeding consultant, and of the community, especially Angie and Lori through the World of My Baby (WOMB), has allowed me to feel connected, loved, supported, and understood through the good and difficult moments of the postpartum period. I am grateful for having the opportunity to work at the WOMB where I can also offer support to women through this transition.

I would like to thank my dissertation supervisor, Dr. Niva Piran, for allowing me to explore in a quantitative manner this research topic. I am indebted to you for your thoughtful and gentle guidance, support and encouragement through this process. Your wisdom and knowledge are unparalleled and you have forever changed my outlook on the Experience of Embodiment. I hope you are now able to enjoy your retirement knowing that you have had an amazing impact on your students and the field of the Experience of Embodiment, body image and eating disorders. I would also like to thank Dr. Abby Goldstein and Dr. Cindy-Lee Dennis for taking the time to support me in my process of completing my dissertation and for their thoughtful feedback, and Dr. Deborah Schooler, Dr. Roy Moodley, and Dr. Charles Chen for being part of my committee. I would also like to express my gratitude to the wonderful women
who agreed to take the time to complete the study and for sharing their experiences with me. I
am honoured and privileged to have had the opportunity to delve into your world and shed
light into the protective and risk factors to the spectrum of positive and disrupted embodied
experiences during this important transition.

Finally, a big thank you to Dr. Monique Herbert who generously took time out of her
busy schedule to walk me through my statistical analyses. You are an amazing and caring
professor and statistician. Thank you so much for helping me making sense of what seemed
incomprehensible!

I hope that this research reaches the potential of impacting women, clinicians, and
health care professionals working with these women, and propels this research field to continue
to understand and provide the support needing during these important life moments.
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Introduction

Body esteem is a multifaceted concept (Pruzinsky and Cash, 2002) used interchangeably in the literature with terms such as body image, weight or body satisfaction, size perception accuracy, and appearance evaluation, among others (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). The research literature has proposed two discrete and independent facets of body image: body size distortion and body image disturbance (Garner & Garfinkel, 1981; Keeton, Cash, & Brown, 1990). The former, body size distortion, refers to an individual’s inability to see themselves accurately and a perception of the body and bodily parts as different than they objectively are. The latter categorization, body image disturbance, represents the negative cognitive, affective, or attitudinal attributions or dissatisfactions with one’s own body. Taking both of these facets into account, the concept of body image has encompassed both positive and negative features associated with the internal image or representation, and the thoughts and the feelings regarding one’s physical appearance and body (Cash, 2002; Thompson et al., 1999). Given the overlap between concepts related to these processes, body image and body esteem will be used interchangeably in this paper.

Developmental Theory of Embodiment

In recent years, a broadening of the construct of body esteem has occurred from the perception and evaluation of one’s own physical appearance (Thompson et al., 1999) to include a more comprehensive understanding of the way in which one relates to his or her body. Grounded in Merleau-Ponty’s (1962) philosophical writings and phenomenological position, and emerging from qualitative and quantitative research using a feminist approach (Piran, 1999, Piran, Carter,
the Developmental Theory of Embodiment (Piran, 1999, 2001, 2016; Piran et al., 2002; Piran & Cormier, 2005; Piran & Teall, 2012; Piran & Thompson, 2008; Piran, Thompson, Legge, Carter, Nagasawa, & Teall, 2009) has been established to account for the wide range of experiences often ignored in the study of body image. Conceptualized as the “experience of engagement of the body with the world” (Allan, 2005, p. 177; Piran & Teall, 2012, p. 181), embodiment is shaped by three core pathways: (1) an individual’s experiences in the physical domain categorised as one’s competence and ownership over the body, (2) “experiences in the mental domain” involving exposure to dominant social labels and expectations, and (3) “experiences related to social power” (McVey, Levine, Piran, & Ferguson, 2012, p. 9; Piran & Teall, 2012). The latter is an important facet as it emphasizes the complex relationship of the interaction of one’s body with the social context, including, but not limited to, media exposure, and comments and evaluations from peers, partners, and parents (Herbozo & Thompson, 2006; Keery, van den Berg, & Thompson, 2004; Piran et al., 2002).

Within the body esteem literature, three distinctive groups have delineated the spectrum of women’s lived experiences with their bodies: (1) women with a positive outlook towards their bodies, (2) women with “normative body image discontent,” and (3) women with a negative outlook towards their bodies (Williams, Cash & Santos, 2004). More specifically, women who have a positive relationship with their bodies tend to speak confidently about their physical attributes, accept their bodies as their own, engage in respectful attendance of their body’s needs and protect themselves against negative influences by dismissing the unrealistic thin ideal (Avalos, Tylka, & Wood-Barcalow, 2005). Similarly, the Developmental Theory of Embodiment posited that embodiment ranges from being positive and connected to one that is disrupted. Piran (2016) provided the following research-based definition of positive embodiment: “Positive body
connection and comfort, embodied agency and passion, and attuned self-care” (p. 54). Therefore, women who inhabit their bodies positively described positive experiences of connection to the body, agency and functionality, attuned self-care, experience and expression of desire, and freedom from self-objectification (Piran, 2016; Piran et al., 2002, 2005, 2009, 2010, and 2012).

In contrast, normative discontent with one’s body and having a negative outlook towards the body have been characterized by four fundamental facets: (1) an emphasis on being slim and lean; (2) a fixation on the culturally-established beauty standards; (3) persistent and intense fears of being fat; and (4) a defining of one’s identity based solely upon weight and shape (Levine & Smolak, 2006; Smolak & Levine, 1994, 1996). Within the embodiment literature, Piran (2016) delineated the following research-based definition of negative embodiment: “Disrupted body connection and discomfort, restricted agency and passion, and self-neglect or harm” (p. 47). Hence, women who experienced negative embodiment described discomfort in, and disconnection from, their body, including a host of negative emotions, reduced agency and functionality, challenges to attuned self-care including self-neglect or self-harm, disconnection from bodily desires, and self-objectification (Piran, 2016; Piran et al., 2002, 2005, 2009, 2010, 2012).

The Context of the Experience of Embodiment, Body Esteem and Disordered Eating in Pregnant and Postpartum Women

Because of its reproductive functions, the journey of a women’s body is intertwined with many transitions that have the potential to disrupt or enhance a positive and connected experiment of embodiment. A strong research focus has been placed on the factors that influence the emergence of a girl’s body esteem representation during adolescence. Puberty has been shown to involve coming to terms with a changing physical appearance (e.g., weight gain, body growth, and
acne), the development of secondary sexual characteristics (e.g., breast, the onset of menarche, growth of pubic hair), and psychological changes (e.g., emerging self-awareness, lowered self-esteem among girls with negative pubertal weight perceptions; Ge, Elder, Regnerus, & Cox, 2001). Complicating further this important transition has been the interplay of relational and socially constructed factors (e.g., peer, parental, and media influences, social values and prejudices, and social structures of power and privilege), which have been shown to either promote or protect against the perceived strict beauty ideals.

Within the pubescent transition, studies have suggested a widespread negative appearance evaluation and dissatisfaction with features of physical appearance (Davison, Markey, & Birch 2003; Fear, Bulik, & Sullivan, 1996; Sands & Wardle, 2003; Wardle & Marsland, 1990; Vander Wal & Thelen, 2000). Moreover, longitudinal studies have indicated the emergence of body and weight-based concerns from a young age (e.g., 5-years old) with a persisting and worsening impact as these girls transitioned to adolescence and adulthood (Davison et al., 2003). Furthermore, lower self-esteem, mental health (e.g., depression), and life satisfaction were observed in relation to body image dissatisfaction, disordered eating patterns, greater pressures to be thin, and internalization the thin ideal (Friedman, Schwartz, & Brownell, 1998; Hay, 2003; Stice & Bearman, 2001; Stice, Hayward, Cameron, Killen, & Taylor, 2000). Unfortunately, body altering practices and behaviours following the negative evaluation of one’s physical appearance are normative among adolescent girls and women (Hill, 1993; Polivy & Herman, 1987). Adult women populations have also displayed body esteem concerns (Johnson, Cohen, Kasen, & Brook, 2002; Knez, Munjas, Petrovečki, Paučić-Kirinčić, & Peršić, 2006; Maloney, McGuire, Daniels, & Specker, 1989; Rolland, Farnill, & Griffiths, 1997), which potential lead to serious psychosocial problems, low self-esteem, problematic eating behaviours, such as eating disorders, social anxiety, substance
abuse, and depression (Cash, Thériault, & Annis, 2004; Cooley & Toray, 2001; Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004; Stice, 2002).

It is within the context of one’s embodied experiences during and post puberty that some women venture into yet another significant life transition, which, second to puberty, results in an influx of unique physical, emotional and social changes: pregnancy and the transition to motherhood. For instance, during pregnancy, women physically experience an increase in body fat deposition, extreme tiredness, swelling and tenderness of the breast, nausea, and bloating from constipation in the first trimester, and back and abdomen pain, stretch marks, difficulties sleeping, and swelling of the ankles, fingers and face in the second and third trimesters (Jenkin & Tiggemann, 1997; MedicineNet, Inc., 2014). Moreover, beginning approximately in the twelfth week of pregnancy, women tend to experience a gradual, yet substantial, weight gain, which peaked in the second trimester (Hotchner, 1997).

As pregnancy ends and culminates with labour, women face a series of powerful and intense sensations as they experience contractions that served to open and stretch the cervix. Vaginal birth further entails bodily changes as the newborn is pushed and tissues extend and tear. Post-delivery, the body undergoes more tumultuous changes, including weight loss, sweating of excess fluids, bleeding, loose skin, engorged and sagged breasts, and stretch marks. These changes have the potential to further place women’s bodies away from the culturally desirable form. Many mothers are unprepared for the novelty of the physical and emotional changes and the expectations of the prenatal and postpartum period in conjunction with learning to be a mother and changing lifestyle and relationships (Jordan, Capdevila, & Johnson, 2005; Willis & Rand, 1988).
Given the significant physical, emotional, and psychological changes experienced during pregnancy and the postpartum, the current investigation aimed to understand the processes that connect and disconnect women from their bodies. The current study utilized a longitudinal prospective methodology to examine women’s experiences and to reach a better understanding of the factors involved in shaping the Experience of Embodiment, Body Esteem and Disordered Eating during and after pregnancy. The proposed processes investigated stem from theories and models of the development of body esteem suggesting that a multifactorial, multidimensional and biopsychosocial approach is needed (see Cash, 2002; Thompson et al., 1999). Moreover, this study utilized the lens of the macrosystem (i.e., the broad overarching ideologies of cultural values, beliefs, customs, ideals, and laws related to socioeconomic status, ethnicity, country of origin or religion shared among members of the society and displayed in everyday life through customs and behaviors) to understand how women’s experiences changed across this transition. The current study included variables related to the macrosystem (Ethnicity, Socioeconomic Status, Pressures for Thinness) as well as biological (Weight Difference from Prepregnancy, Fatigue, and Labour and Delivery Control), psychological (Depression, Anxiety, Internalization of the Thin Ideal, Maternal Beliefs about Competence, and Comfort with Breastfeeding), relational (Social Support and Relationship with Partner), and behavioral factors (Physical Activity, Breastfeeding Practice, and Sexual Relationships). No single study has concurrently examined the biological, psychological, relational, and behavioral factors while also considering the macrosystem. Thus, a broad understand of the relative influence of each factor has been lacking. Further, there has been little research that examined the contribution of the macrosystem and the biological, psychological, relational, and behavioral factors to the understanding of the Experience of Embodiment specifically throughout pregnancy and in postpartum. The present study entailed a prospective and
comprehensive investigation of these influences to the development of the Experience of Embodiment, Body Esteem and Disordered Eating for prenatal and postpartum women in hopes of providing a more comprehensive understanding of this important transition in women’s lives, which can then guide clinicians in determining intervention dynamics.
Chapter 1

Literature Review

The literature review is comprised of three main sections: (1) a summary of the empirical literature on Embodiment, Body Esteem and Disordered Eating in pregnant and postpartum women; (2) a description of the theoretical framework for the current investigation, that is Bronfenbrenner’s Bioecological Model; and (3) a review of the literature investigating the proposed processes impacting the Experience of Embodiment, Body Esteem and Disordered Eating during pregnancy and postpartum, including the macrosystem (Ethnicity, Socioeconomic Status, Pressures for Thinness), biological (Weight Difference from Prepregnancy, Fatigue, and Labour and Delivery Control), psychological (Depression, Anxiety, Internalization of the Thin Ideal, Maternal Beliefs about Competence, and Comfort with Breastfeeding), relational (Social Support and Relationship with Partner), and behavioral factors (Physical Activity, Breastfeeding Practice, and Sexual Relationships).

The Experience of Embodiment, Body Esteem and Disordered Eating in Pregnant and Postpartum Women

Pregnancy.

Although pregnancy is a unique, natural, and normative time in women’s lives, it also entails placing the female body at a greater distance from the cultural ideals. Thus, it has been expected that such natural distance away from the ideal would result in lower body image satisfaction. Yet, an unchanged or even improved body image satisfaction in pregnancy has been noted as women may feel liberated and perhaps experience a temporary reprieve from the societal thinness model. Davies and Wardle (1994) examined the experience of body satisfaction (i.e., with
the Body Dissatisfaction, Drive for Thinness and Bulimia subscales of the Eating Disorder Inventory [EDI; Garner, Olmstead & Polivy, 1983] and engagement in dieting practices (i.e., with the Restraint scale of the Dutch Eating Behaviour Questionnaire [DEBQ]; van Strien, Frijters, Bergers, & Defares, 1986) of 76, mostly Caucasian, women pregnant at an average of thirty-three gestational weeks and 97 non-pregnant controls. Seventy-one women also participated in an informal interview with the investigators concerning their attitudes to weight gain in pregnancy. After controlling for body mass index (BMI), pregnant women significantly reported lower scores on the three scales of the EDI as well as lower levels of restraint when compared with the control group. Davies and Wardle (1994) proposed that being pregnant may initiate a stance of being accepting of one’s body. The qualitative inquiry further informed this understanding by revealing variability in the bodily perceptions of pregnant women such that a relaxation of the pressures to maintain the ideal was experienced by some while others expressed confusion, frustration, and ambivalence towards their bodies (Davies & Wardle, 1994, p. 798). Moreover, anxiety towards the postpartum body was apparent with statements reflecting “the fear of how to lose weight after the baby” and the apprehension at “how enormous [they]’ve become” (Davies & Wardle, 1994, p. 798) highlighting the post-birth potential for disrupted embodiment experience.

Expanding upon the cross-sectional research design, Boscaglia, Skouteris and Wertheim (2003) considered the body satisfaction of 71 pregnant women of undisclosed ethnicity by utilizing the Body Cathexis Scale (BCS; Secord & Jourard, 1953) at four different time points: once retrospectively assessing for the six months prepregnancy, twice prospectively between fifteen and twenty-two weeks’ gestation and later between twenty-three and thirty weeks’ gestation and finally, projecting for the postpartum period when the women were between twenty-three and thirty weeks pregnant. The study involved comparing women who exercised at a moderate
intensity at least 90 minutes per week (i.e., high exerciser group) with those who reported no or minimal exercise (i.e., low exerciser group) during their pregnancy. Although the low exerciser group failed to display a change in body satisfaction across the four time points, the high exerciser group experienced greater body satisfaction between fifteen and twenty-two weeks’ gestation than in both prepregnancy and late pregnancy and anticipated that they would experience lower satisfaction in postpartum. As such, the impact of pregnancy related changes on body esteem remained complex and pregnancy was thought to represent a time when women either experienced a higher body satisfaction in early pregnancy while also projecting having difficulties in the postpartum period (high exercise group) or experienced a stable perception of their body (low exercise group).

Building upon previous findings, two prospective longitudinal studies (Duncombe, Wertheim, Skouteris, Paxton, & Kelly, 2008; Skouteris, Carr, Wertheim, Paxton, & Duncombe, 2005) examined the changes in the perception of current and ‘ideal’ shape and size (i.e., with the Contour Drawing Rating Scale [CDRS], Thompson & Gray, 1995), satisfaction with appearance and body size, and experience of strength, fitness, and salience of weight and shape (i.e., with the Body Attitudes Questionnaire [BAQ]; Ben-Tovim & Walker, 1991) of 158 and 128 pregnant women, respectively. Four time points were included, consisting of between sixteen and twenty-three weeks’ gestation, between twenty-four and thirty-one weeks’ gestation and between thirty-two and thirty-nine weeks’ gestation, as well as a retrospective prepregnancy recall. Both studies involved a majority of Australian born women (approximately 88%). With regards to satisfaction with their pregnant bodies, both studies’ results revealed a stable trend whereby women who experienced greater satisfaction at the beginning of their pregnancy tended to maintain satisfaction as gestation progressed whereas those with body image concerns continued to feel dissatisfied
(Duncombe et al., 2008; Skouteris et al., 2005). Furthermore, women reported feeling fatter in prepregnancy and early pregnancy than they did in late pregnancy with small ($\eta^2 = .03$) and moderate ($\eta^2 = .03$) effect sizes, respectively (Duncombe et al., 2008). Finally, weight and shape concerns and feelings of strength and fitness were greater in prepregnancy than during pregnancy (Duncombe et al., 2008). Therefore, an emphasis was placed on the power of individual differences and early pregnancy body image on later body satisfaction in response to adjusting to the pregnancy-related bodily changes and the trend across pregnancy where the importance of weight and shape remained relatively stable.

Finally, a large scale longitudinal study of 995 women who participated in the Project EAT (Loth, Bauer, Wall, Berge, & Neumark-Sztainer, 2011) compared responses on the Body Shape Satisfaction Scale (BSS; Pingitore, Spring, & Garfield, 1997) to the 5- (i.e., Time 2) and 10-year (i.e., Time 3) follow-up surveys of 68 women who were pregnant at Time 3 with 927 non-pregnant women. Their sample was composed of a range of ethnicity, including White (44.3%), Asian (24.5%), African America (20.6%), among others. While controlling for a number of macrosystem factors (e.g., race, socioeconomic status), a multiple linear regression revealed that pregnant women experienced significantly higher body satisfaction since the previous survey than the women who were not currently pregnant. Thus, Loth and colleagues (2011) concluded that pregnant women appeared to navigate the transition by deriving satisfaction with the pregnant body.

Overall, the literature findings thus far (Boscaglia et al., 2003; Davies & Wardle, 1994; Duncombe et al., 2008; Loth et al., 2011; Skouteris et al., 2005) suggested that despite the drastic physical changes accompanying pregnancy, most women responded with unchanged or even
improved perception of and satisfaction with their bodies. Loth and colleagues (2011) posited that this observed pattern may be a product of defining one’s self in terms of reproductive ability instead of emphasizing the cultural ideal of beauty therefore shifting the definition of self-identity to one that emphasizes functionality (e.g., what their bodies can do, Rubin, 2001), respect (e.g., “a newfound… admiration for their bodies”; Bailey, 2001, p. 128) and the journey to becoming a mother (Clark, Skouteris, Wertheim, Paxton, & Milgrom, 2009b). Early qualitative studies have justified the lack of intensification of body image dissatisfaction by describing the adjustment period of pregnancy and the resulting physical changes as “transient” and “unique to the childbearing experience” (Richardson, 1990).

Although the research literature suggested unchanged or even improved perception of and satisfaction with the pregnant body, a range of experiences were also reflected. An early quantitative study conducted by Strang and Sullivan (1985) in western Canada recruited 109 women who had recently given birth. Using the Attitude to Body Image Scale (Jourard & Secord, 1955), participants were asked to retrospectively recall for prepregnancy and late pregnancy (i.e., the last three months) as well as prospectively report at two and six weeks postpartum. Late pregnancy was characterized by more negative feelings towards the body, which Strang and Sullivan (1985) justified by arguing that the final months of pregnancy “[do] not represent a body state of smallness and is rather distant from the ideal female figure” (p. 335). However, such conclusions are hard to validate given that measures of body image satisfaction were obtained retrospectively and failed to assess any other point throughout pregnancy precluding the detection of body image changes between prepregnancy, early, mid or late-pregnancy.
Subsequently, a longitudinal study conducted by Drake, Verhulst, Fawcett, and Barger (1988) in central Canada with 20 participants involved administering the Body Attitude Scale (BAS, Kurtz, 1969) during the third, sixth and ninth month of pregnancy and the first and second months in the postpartum period. During pregnancy, women’s attitudes towards their bodies were stable from the third to the sixth month of gestation; yet, body image satisfaction significantly declined at the ninth month mark supporting the increasingly pessimistic perception of the body as the pregnancy progressed (Strang & Sullivan, 1985).

In order to further provide insight into disordered eating behaviors during pregnancy, Clark and Ogden (1999) utilised a cross-sectional methodology with 50 women between twenty-four and twenty-eight gestational weeks and fifty non-pregnant controls. Their sample was composed of a range of ethnicity, including White (68%), and Black Caribbean and African (21%), among others. The initial findings revealed that pregnant women reported being more satisfied with their body shape and engaged in fewer dietary restraint-eating practices (i.e., using the restraint scale of the DEBQ; van Strien et al., 1986) than their non-pregnant counterparts. Nevertheless, a retrospective assessment of the pregnant women’s prepregnancy restraint behavior further elaborated on the findings by showing that women categorized in prepregnancy as restrained eaters displayed greater levels of overeating and preoccupation with food and weight as well as higher levels of disinhibition and greater body dissatisfaction in pregnancy than the women characterized as unrestrained eaters (Clark & Ogden, 1999). Hence, the impact of prepregnancy restraint on levels of body satisfaction during pregnancy suggested that individual characteristics may play a role in determining how one adapts to the changing body during pregnancy. Clark and Ogden’s (1999) results are consistent with Fairburn and Welch (1990) who demonstrated that women who dieted in the prepregnancy period reported heightened body dissatisfaction than non-dieters in
reaction to the increase in pregnancy weight. Dieters responded to the weight gain by either fearing the increase in weight or displaying a lack of concern by being provided with a “license not to worry about their weight” (Fairburn & Welch, 1990, p. 158). As such, it appears that variability existed with regards to the experience of weight gain and physical changes depending upon whether women are restrained eaters or dieters in the prepregnancy period.

Similar to the Boscaglia and colleagues’ (2003) study discussed above, Goodwin, Astbury, and McMekken (2000) were interested in a sample of 43 primarily Australian born women (84.6%) comparing those who did and did not exercised during pregnancy. They conducted a prospective longitudinal study utilizing the BCS (Secord & Jourard, 1953) collecting data at three different time points: once retrospectively assessing the prepregnancy period and twice prospectively between fourteen and twenty weeks’ gestation and later between twenty-seven and thirty-two weeks’ gestation. Overall, women rated their prepregnancy body satisfaction more positively than in early pregnancy (i.e., between fourteen and twenty weeks’ gestation). In spite of that, women who exercised tended to report more positive ratings as the pregnancy progressed whereas non-exercisers’ scores became more negative. Goodwin and colleagues (2000) tentatively suggested that their results supported the notion that women who exercised may experience a greater appreciation of and satisfaction with their body as the pregnancy progressed in comparison with non-exercisers.

The findings highlighted thus far appeared to suggest that the transition through pregnancy potentially resulted in negative feelings about the body. The abovementioned studies have focused predominantly on quantitative methodologies providing indispensable evidence for the role of pregnancy on how women feel within their bodies. Nonetheless, expending on this knowledge by
using qualitative studies is crucially important in order to fully understand the transition to pregnancy and the language, representations, and social organization which affect women’s bodily experiences. Specifically, qualitative projects have provided researchers with the opportunity to listen directly to the reflections and tales of pregnant women as they undergo this transition and experience the pregnant body. As the voices of pregnant women emerged from their narratives, it shed new light into the variability of thoughts, experiences, feelings, and attitudes that exist.

As such, Nash (2012) conducted a longitudinal prospective analysis using four in-depth interviews with 38 women who described themselves as Anglo-Celtic beginning in early pregnancy (i.e., between ten and twenty weeks’ gestation). Nash (2012) utilized situational analysis to explore the narratives for concepts of corporeality and selfhood. Her analysis of the social and cultural discourses revealed that, in early pregnancy, women exhibited greater sensitivity to their body shape and distorted body image when growth was quite novel and they experienced an “in-betweenness” (i.e., the body is “not visually marked as ‘pregnant’”; Nash, 2012, p. 311). Living in the margins of “in-betweenness” was noted as challenging their emotional, psychological, and physical knowledge of being pregnant. Such findings are consistent with previous research suggesting that navigating a body that is not perceptibly pregnant can lead to thinking: “Do I look pregnant, or fat?” (Rubin, 2005, p. 27). Therefore, the emergence of a visibly pregnant body may represent a milestone when women can re-introduce their bodies to society as pregnant as opposed to just being “fat” (Earle, 2003; Wiles 1994). The in-betweenness experienced may help explain aforementioned trends whereby body image declined in early pregnancy (Goodwin et al., 2000).
Moreover, Nash (2012) suggested that pregnancy body image reflected women’s embodied experiences during and post puberty and in previous dieting attempts. For instance, early adolescent experiences with the contradictory weight messages and the socially inappropriateness of being ‘fat’ were expressed to contribute to the perception of ‘ideal’ pregnancy weight gain. Moreover, consistent with Fairburn and Welch (1990), women expressed feelings of “empowerment” when describing previous weight loss successes, and noted a disruption in their “attempts at ideal feminine [pregnant] performance” (Nash, 2012, p. 315) highlighting the deviation from the cultural ideal. Discourse surrounding pregnancy weight gain often related to a fear of ‘losing’ their prepregnancy ‘normal’ bodies revealing the vital influence of body ideal perceptions on the constructions of pregnant embodied experience.

Utilising a phenomenology and thematic content analysis of interviews (Hsieh & Shannon, 2005; Neuendorf, 2002; Smith, Jarman, & Osborn, 1999) with ten prenatal (i.e., thirty gestational weeks or more) and ten postpartum women (i.e., up to twelve weeks after childbirth) from Australian, Clark and colleagues (2009a) revealed two central themes during pregnancy: (1) “Changed body for baby, but that’s OK”, and (2) “My social functioning - what do others think of me?”. The former theme revealed that 90% of the women adapted to the pregnancy-related changes and expressed body satisfaction; yet, each participant noted areas of dissatisfaction with their body (e.g., breast size, nipple color, facial skin, acne), particularly with regards to their weight (80%). Despite experiencing areas of discontent, women coped and provided meaning and purpose to their changing body by emphasizing their bodies’ functionality and prioritizing the growing fetus. Furthermore, the latter theme highlighted the external gaze experienced regarding their pregnancy “show[ing]” and the excitement voiced when others noticed their pregnancy, which in turn justified their weight gain. Therefore, the narratives highlighted the sense of satisfaction gained
from their bodies when experiencing their physical changes in terms of functionality and reproductive ability and when society perceived them as pregnant as opposed to ‘fat’ (Clark et al., 2009a).

Likewise, a qualitative study taking a deeper look into the gendered experience of pregnancy provided valuable insight into this transition. Bailey (2001) interviewed 30 first-time middle-class Caucasian mothers living in England about their experience of pregnancy. Prevalent themes revolved around changes in women’s sensuality, shape and the social space their body was permitted to occupy. Concerning the perception of the body in terms of sexuality, pregnancy appeared to engender changes in feelings of sexual attractiveness with an apparent difficulty in describing themselves as sexual beings despite a recognition that partners continued to perceive them as “very sensual” (Bailey, 2001, p. 117). For some women, pregnancy allowed a reconceptualization of femininity as they welcomed the reprieve from years of struggling with negative feelings about their shape. Moreover, an appreciation for the pregnant body and the physical changes shifted away from socially driven ideal to one of functionality as their “mothering” representation was fulfilling their transitional roles (Bailey, 2001). However, fright was expressed when thinking about abandoning the norms of slender femininity. Finally, the women’s gendered experience of the pregnant body as being allocated more space by others (e.g., allowing for the bulging stomach or large breast) was contrasted with their prepregnancy experience where they felt obliged to occupy constrained spaces. Space allocation was defined in different ways including as an external perception of them as fragile beings, as a show of respect and as an allowance to have the social space necessary to become a mother. Furthermore, their bodily transformations often seemed to invite others to touch their growing bellies and comment on their shape, an experience that translated in feelings of intrusion of personal space as well as a
welcomed breakdown of social barriers. Overall, Bailey (2001) argued that changes in sexuality, shape and the social space allowed pregnant women to experience femininity as an embodied experience and for some, though not all, it allowed them to redefine the norms of what constituted a feminine and a slender body. As such, women appeared to use their bodies as a negotiating tool for defining their gendered experience of being pregnant.

Similar to previous qualitative studies highlighting the experience of pregnancy as somewhat liberating from the constant corporeal scrutiny, Warren and Brewis’ (2004) investigation into the discourse of eleven Caucasian pregnant women revealed that, overall, most women experienced the pregnant body and its capabilities as a source of pride and privilege. For others, having a body undergoing a series of unpredictable and uncontrollable biological transitions was deemed as alienating and conflicting. Moreover, the awareness of the public scrutiny over their growing body and bodily processes (e.g., uncontrollable nausea) led pregnant women to feel frustrated, judged, “gross,” and “the lowest of the low” (p. 224). The impact of the external gaze and comments from outsiders on embodied experience was described as a feeling of “decaying” as oppose to “blossoming” during her pregnancy. Warren and Brewis’ (2004) emphasis of the intersection of the body (e.g., weight gain and growing breast) and its uncontrollable processes (e.g., nausea) with the social gaze brought to light the range of connected (e.g., feeling “awe-inspiring”) and disconnected (e.g., feeling discomfited and disgusted) embodied experiences during pregnancy.

Finally, Johnson, Burrows, and Williamson (2004) examined the discursive construction of the pregnant body with five Caucasian and one British Asian women between thirty-three and thirty-eight weeks’ gestation. Utilising a phenomenological and Foucauldian discourse analysis,
feelings of dissatisfaction with the body were noted among all six women; nonetheless, the decline in satisfaction varied amongst women and changed during the course of the pregnancy. The body satisfaction attenuation was evident in the use of varied terms in reference to their femininity and their body, including feeling “impaired, uncomfortable or restricted” (Johnson et al., 2004, p. 365), “frumpy”, “bloated”, “weird”, less attractive, and experiencing a “paranoid[a] about becoming a really big, fat, pregnant person” (Johnson et al., 2004, p. 366). Johnson and colleagues (2004) explained pregnant women’s internal discourse and the resulting “negative or ambivalent experiences” (p. 371) as a reflection of the perceived discrepancy of the pregnant body with the social ideals of feminine beauty. In the face of this potential deviation from the ideal, women attempted to cope and maintain a positive sense of identity in early pregnancy by justifying their ‘showing’ body to avoid the perception from others of them as ‘fat’. Hence, the six women were sensitive to the sociocultural messages sanctioning thinness and a sense of relief was experienced when their pregnancy was physically apparent and they could legitimize their weight gain, albeit “within acceptable boundaries” (Johnson et al., 2004, p. 367). Furthermore, similar to Bailey (2001), most women experienced a violation of their boundaries and intrusion of their personal space as their bellies “bec[ame] public property” for anyone to touch (Johnson et al., 2004, p. 365).

Overall, both the qualitative and quantitative research literature on the Experience of Embodiment, Body Esteem, and Disordered Eating during pregnancy addressed these phenomena according to two differing perspectives. Some women enjoyed the bodily changes brought upon by the growing fetus and experienced a sense of blossoming and enrichment (Warren & Brewis, 2004). However, others experienced a sense of alienation from their bodies as it transformed (Warren & Brewis, 2004). As such, the physical changes experienced during pregnancy can result in either a worsening in body satisfaction or an increased admiration for the body. While the
quantitative and qualitative studies attempted to shed important light on the lived experiences of pregnant women concerning body satisfaction and embodied experiences, inconsistencies in methodologies across studies preclude the identification of a consistent trend or the appreciation of individual differences. For instance, many studies utilized a retrospective design (Boscaglia et al. 2003; Clark & Ogden, 1999; Duncombe et al., 2008; Fairburn & Welch, 1990; Goodwin et al., 2000; Skouteris et al., 2005; Strang & Sullivan, 1985) to obtain the perspective of the women’s prepregnancy or pregnancy experiences from the vantage point of the present. Therefore, the data gathered relied heavily on the accuracy of the women’s recall of their previous experiences. Memory biases and the way in which research participants filter their memories based on their current beliefs and even undergoing the transition of pregnancy could have affected the recall of previous experiences. Furthermore, while Loth and colleagues (2011) attempted to use a prospective longitudinal design, the time lapse between the two assessments of body shape satisfaction (i.e., 5 years) allowed considerable lived experiences to occur to alter women’s experiences with their bodies. Moreover, some quantitative studies utilized small homogeneous samples (i.e., N ≤ 100; Boscaglia et al., 2003; Clark & Ogden, 1999; Davies & Wardle, 1994; Drake et al., 1988; Fairburn & Welch, 1990; Goodwin et al., 2000) and varied quantitative tools (e.g., Body Attitudes Questionnaire, Body Cathexis Scale, Body Shape Satisfaction Scale, Contour Drawing Rating Scale, Dutch Eating Behaviour Questionnaire, Eating Disorder Inventory). The qualitative studies also displayed variability in the use of interpretative approach (e.g., situational analysis, phenomenology and thematic content analysis, Foucauldian discourse analysis). As such, the varied assessment methodologies prevented the consistent exploration of the complex development of women’s experiences with their bodies throughout pregnancy. Furthermore, while some quantitative studies attempted to obtain a diverse sample (Duncombe et al., 2008; Clark &
Ogden, 1999; Johnson et al., 2004; Loth et al., 2011), the final group was comprised mostly of Caucasian women. The remaining studies either solely involved White-Caucasian women or did not disclose the racial or ethnic background of their participants. As such, diversity in ethnicity and race were generally lacking in previous studies. Therefore, there were no opportunities to investigate the intersection of the aforementioned variables with the development over time of Body Esteem and Disordered Eating or to make inferences to populations differing in ethnicity.

Postpartum.

Following pregnancy and childbirth, women enter the postpartum period, which involves further physical and emotional changes. Many mothers may not be prepared for the novelty of the sensations and expectations of the transition into postpartum, which occur in conjunction with learning to be a mother to a child with its own individualities, and changing lifestyle and relationships (Jordan et al., 2005; Willis & Rand, 1988). Moreover, many women are regretfully under the misguided impression that the birth of their child will result in sudden weight loss. Many studies have attested to the changes in body esteem and disordered eating in the postpartum period with contradictory results. Among the first studies conducted, Hiser (1987) attempted to identify the concerns of 20 primarily Caucasian women in the postpartum period utilising a card sorting technique focused on three domains: family, mother, and infant. Within two weeks of giving birth, most women had negative attitudes towards their bodies with 75% and 70% of participants identifying concerns with their weight (e.g., “flabby figure”) and the eventual “return of [their] figure to normal”, respectively. Hiser (1987) concluded that “the postpartum period may be an excellent time to motivate new mothers, who are tired of feeling fat, towards a change in bad eating habits, and establishing an exercise routine” (p. 201). Such a statement may reflect the societal
ideals for thinness and constituted an assumption that inherently neglected to consider the social context (e.g., the inequality women often experience in balancing their needs with those of their child and family) of the postpartum lives of women.

In her doctoral dissertation, Lombardo (2001) conducted a cross-sectional study with 104 mainly Caucasian women, 34 of which were non-pregnant controls whilst the remaining were first-time mothers characterized as either in their first \((n = 18)\), second \((n = 9)\) or third \((n = 17)\) trimester of pregnancy or within sixteen \((n = 11)\), between seventeen and thirty-two \((n = 10)\) or between thirty-three and forty-four \((n = 5)\) weeks’ postpartum. Participants were administered the Multidimensional Body-Self Relations Questionnaire - Appearance Scales (MBSRQ-AS; Cash, 2000). The early postpartum period was characterized by greater dissatisfaction with appearance and a tendency to label the body as very overweight in comparison with non-pregnant women. Conversely, women beyond the thirty-two-week point (i.e., seventh month) appeared to return to a similar level of body image concern as prepregnancy women. Hence, although heightened body image concerns were prevalent within pregnancy and the first seven months’ post-pregnancy, a shift and return to baseline occurred suggesting a decrease in such concerns over the course of the first year after childbirth.

Similarly, Rallis, Skouteris, Wertheim, and Paxton (2007) were interested in the changes in body image of 79 women who were transitioning through the first year postpartum. In addition to a retrospective prepregnancy and prospective prenatal inquiry, Rallis and colleagues (2007) followed the participants into the postpartum period collecting data on body satisfaction changes at another three time points, that is six weeks, and six and twelve months postpartum. In comparison to prepregnancy and late pregnancy, an increase in feelings of fatness, salience of
weight and shape, and a decrease in experience of strength and fitness occurred in the postpartum period. Furthermore, women demonstrated an improvement in overall body satisfaction from the sixth month to the twelfth months postpartum. Although current size ratings were significantly higher than prepregnancy ratings, the postpartum women’s ratings of the current size of their bodies and the discrepancy between their current and ideal sizes became smaller as the postpartum period progressed. Therefore, similar to Lombardo (2001), a shift, specifically an improvement, in body image satisfaction was observed after six months’ postpartum.

Thus far, an improvement in body image and esteem between the sixth and twelfth months has been observed. Gjerdingen, Fontaine, Crow, McGovern, Center, and Miner’s (2009) results with 506 postpartum women of mixed ethnicity (White = 67%; Black or African American = 17.6%, among others) within one month and at nine months post-delivery displayed a different trend. Specifically, a significant increase in body dissatisfaction (i.e., as measured by the 8-item Body Shape Questionnaire Alternate Form 8B; BSQ; Evans & Dolan, 1993) was observed as the postpartum period progressed. Therefore, it appeared that at nine months postpartum, women continued to experience dissatisfaction and had not yet experienced the improvement noted above; however, the differing results could have reflected the diverse population sampled.

Moreover, the aforementioned study conducted by Strang and Sullivan (1985) prospectively investigated the postpartum experiences of women at two and six weeks postpartum. Their results demonstrated that women experienced feelings towards their bodies that were more negative than in prepregnancy; however, they represented an increase in satisfaction from late pregnancy (Strang & Sullivan, 1985). Furthermore, first-time mothers exhibited more negative body esteem than multipara’s women (Strang & Sullivan, 1985). While the findings suggested that
women experienced continued dissatisfaction, a positive trend was noted with an improvement from pregnancy to postpartum.

Similar to the investigation of prenatal body image and esteem development, expanding on the findings of quantitative studies with indispensable information obtained from qualitative interviews is crucial in order to obtain a deeper and broader understanding. First, the study conducted by Clark and colleagues (2009a) discussed in the previous section also interviewed ten women within twelve weeks of giving birth. Their results revealed that all women reported having a generally positive attitude towards their bodies in pregnancy, which contrasted greatly with their postpartum outlooks. Two themes emerged pertaining to the transition from pregnancy to postpartum: (1) “No more excuses…”, and (2) “What did I expect?”. The former theme paralleled the experience of non-pregnant women reflecting on their body as being noncompliant with social standards and no longer being able to use the pregnancy as a justification for their increased size. The latter theme, “What did I expect?”, focused on the contrast of women’s current postpartum body with the unrealistic expectations they held of the female body after childbirth. At times, the contextual factors of the postpartum lived experiences took priority over their awareness, connection, and satisfaction with the postpartum body (e.g., “Body image stuff has gone down the list of priorities”; Clark et al., 2009a, p. 339). Therefore, women often failed to recognize the transformation that continued to take place within their postpartum bodies and focused instead on the perceived control they “should” have over their socially deviant looking body.

The qualitative study conducted by Bailey (2001) also reflected upon the changes experienced during the postpartum period. Concerning the domain of sexuality, women reported experiencing the postpartum body in terms of fulfilling maternal roles (e.g., breast are “for the
child”, p. 118) and the tension with their “womanliness” (e.g., feeling “frumpy” after the birth, p. 118), which inhibited their ability to regard themselves as experiencing sexual desire. Other woman perceived their enlarged breasts as contributing to a bodily shape that was consistent with the sexualized and cultural portrayal of women. Varied experiences were noted with most narratives being dominated with a discourse of concern with the body’s shapes as an emphasis was placed on getting their bodies “back to normal” (Bailey, 2001, p. 120) and a detailed description of the bodily features they felt needed to change. However, some of her respondents revealed a welcoming of the physical changes attributing them to being signs of motherhood and noted an embodied liberating sense of “womanliness,” and achievement for the bodies’ functionality (e.g., breastfeeding; Bailey, 2001). Therefore, in contrast with the brief freedom from the standards of femininity in pregnancy, the postpartum period involved a regression to the slender imperative.

Similarly, the aforementioned study conducted by Johnson and colleagues (2004) also qualified the experience of body image during the postpartum period. After childbirth, women expressed their discomfort with the postpartum body by relating to the prepregnancy body as “normal” (p. 367). Moreover, postpartum women highlighted the recognized pressure to “get back to normal” from media images of women, who had returned to a “virtually anorexic” shape after the birth of their first child (Johnson et al., 2004, p. 370).

Subsequently, Kline, Martin, and Deyo (1998) conducted focus groups with obstetricians, family practitioners, and 33 mothers who had given birth within the past fifteen months, with 45% and 42% who identified as Black and White, respectively. They focused on identifying the consequences to women’s health and well-being of pregnancy and childbirth during the first year postpartum. Body image was a dominant theme amongst the mothers with the repeated use of the
phrase “I want my body back” (Kline et al., 1998, p. 845), a focus on the physical changes experienced, and the loss of control perceived. However, an interpretation of the bodily changes as an appreciation of the body’s functionality and as an indicator of their maternal capacity to successfully nurture their child was also noted. Moreover, body image concerns were identified as secondary to the physical (e.g., pain, fatigue), psychological (e.g., depression), sexual (e.g., functioning and interest) and social consequences (e.g., confidence in parenting, social and partner relationships; Kline et al., 1998). Furthermore, a consensus among mothers and the health care providers was not obtained in determining what constituted the primary concerns of postpartum health in the lives of new mothers suggesting a need to inform professionals regarding the women’s reported experiences in an attempt to better support women’s connection with their bodies.

In an additional qualitative study, Jordan and colleagues (2005) recruited 20 women who had given birth within the previous three years to participate in a sorting task involving 60 statements about their experience since childbirth according to the extent to which they agreed or disagreed. Dominant themes in the narratives of early motherhood were titled “family centred”, “stressed”, “happy mothers”, “missing personal space”, “supportive family” and “mother/child oriented” (p. 24). Although body satisfaction was revealed as a concern for many women, it appeared to be peripheral to other priorities (e.g., stress) suggesting the importance of context to the embodied experiences in the postpartum.

A recent qualitative study utilizing a diverse sample of postpartum Canadian women ranging from three to 20 months after childbirth continued to emphasize the presence of ongoing negative feelings about the postpartum body while displaying attempts at connection by emphasizing the body’s functionality (Fox & Neiterman, 2015). Such functionality was
highlighted through abiding to the societal expectations of motherhood (e.g., giving birth vaginally or successful breastfeeding initiation and continuation). Worries about appearance were reactivated amidst the transition of returning to work and attempts at bodily changes were rationalized through their apparent responsibility as a mother (Fox & Neiterman, 2015).

As a summary, the transition into motherhood often negatively impacted women’s perceived body shape and size resulting in worries about weight and a worsening body image and esteem (Bailey, 2001; Clark et al., 2009a; Fox & Neiterman, 2015; Hiser, 1987; Johnson et al., 2004; Jordan et al., 2005; Kline et al., 1998; Lombardo, 2001, Rallis et al., 2007; Strang & Sullivan, 1985; Walker et al., 2002). The postpartum period involved negotiating the dichotomy between a body that is no longer pregnant and one that is “not really yours again either” (Upton & Han, 2003, p. 674). For certain women, a recovery in body satisfaction was observed after six to eight months following childbirth (Lombardo, 2001, Rallis et al., 2007; Strang & Sullivan, 1985) suggesting that either the body had returned to its ‘normal prepregnancy’ shape (Johnson et al., 2004) or that women underwent a significant shift in their perception of the body (Lombardo, 2001). Although pregnancy appeared to highlight the functionality of women’s bodies (e.g., being the host of a growing baby), the postpartum body’s important functions (e.g., breastfeeding) were often neglected by the women. (Bailey, 2001; Kline et al., 1998).

Taken as a whole, the research findings highly suggested that Body Esteem and Disordered Eating are important concerns to mothers during and after their pregnancy with the majority of women indicating some dissatisfaction with their bodies and shapes. Yet, concern and dissatisfaction with the pregnant and postpartum body appeared to depend on individual circumstances and experiences. Nonetheless, similar to the pregnancy-related studies, the findings
of the postpartum studies resulted from varying approaches (e.g., 8-item Body Shape Questionnaire, Body Attitudes Questionnaire, Body Cathexis Scale, card sorting, Contour Drawing Rating Scale, Multidimensional Body-Self Relations Questionnaire), data collection (i.e., quantitative and qualitative studies), limited sample sizes (N ≤ 100; Hiser, 1987, Lombardo, 2001; Rallis et al., 2007) and restricted ethnic diversity (Bailey, 2001; Clark et al., 2009a; Hiser, 1987; Johnson et al., 2004; Lombardo, 2001; Rallis et al., 2007). Given the extensive consequences of body esteem disturbances on pregnant and postpartum women, and the consequences of a disconnected and disrupted embodiment (e.g., feelings of disappointment and surprise, reduced feelings of self-worth; depression and eating disturbances; Jenkin & Tiggemann, 1997; Stein & Fairburn, 1996), it is critically important for researchers to reach a better understanding of the factors involved in shaping the Experience of Embodiment, Body Esteem and Disordered Eating during this phase.

**Bronfenbrenner’s Ecological Systems Theory and Bioecological Model**

Several theories allow for an in-depth investigation of the ecological setting during and after pregnancy utilizing a critical lens. Among such theories, Bronfenbrenner’ Ecological Systems Theory (1977, 1979, 1986) and Bioecological Model (Bronfenbrenner & Morris, 1998, 2006) are widely known to acknowledge the connections and relations among the self, other important individuals and the features of the environmental system within which one interacts. The latter and more evolved model is comprised of the four principal elements of *Process, Person, Context and Time* (PPCT, see Figure 1 for summary of features of Bronfenbrenner’s Theory and Model), and the hierarchical organization and the complex interconnectedness between them. The first component, *proximal processes*, involves the mechanism of enduring, reciprocal, and systematic
interactions between a person who is continuously evolving and her environment as defined by immediate and remote influences. The second element involves the person and her biological, cognitive, emotional, and behavioral individualities. The model outlines three types of person characteristics (i.e., demand, resource, and force), which include factors such as age, gender, physical appearance, ethnicity, mental and emotional resources (e.g., intelligence), social and material resources (e.g., educational opportunities), and varying levels of motivation, personality, and resilience in the face of hardship.

Figure 1
Summary of Features of the Bronfenbrenner’s Ecological Systems Theory and Bioecological Model.
The third component of context refers to the four interconnected systems outlined in his original theory: the microsystem, the mesosystem, the exosystem, the macrosystem. The microsystem is the innermost component and involves the woman and her immediate surroundings and direct interactions. Particularly, it emphasizes the bi-directional effects (e.g. a partner influences the woman’s beliefs and behaviors, and vice versa) exerted on the women as she adapts to this transition. Next, the mesosystem is comprised of the relationships or connections between microsystems, such as the links between various settings (e.g., extended family, health care professionals) that can influence women in subtle ways. Within the study of the transition to parenthood, the inclusion of multiple microsystems within a consideration of the mesosystem would allow for an understanding of the complex and interconnected relationships between the family members, partner, and the media on the development and evolvement of women’s experiences with their bodies. Then, the exosystem involves influential forces that are out of the women’s direct control, such as the structures and systems of the larger society implicated in shaping the women’s environment. Despite the lack of control of women on the exosystem, it directly influences women as they actively interpret the forces in her environment therefore establishing the extent to which she integrates the impact of the exosystem into her belief systems (Bronfenbrenner, 1977, 1979). Finally, the macrosystem is the outermost component comprised of the broad overarching ideologies of cultural values, beliefs, customs, ideals, and laws related to socioeconomic status, ethnicity, country of origin or religion shared among members of the society and displayed in everyday life through customs and behaviors. The cultures and subcultures of the macrosystem embed and notably shape the microsystem, the mesosystem, and the exosystem, such as the societal emphasis on ideals for appearance and beauty. Finally, time (i.e., micro, meso and macro chronosystem changes) is of utmost importance as it encompasses the influence of the
passage of time on women transitioning through developmental periods, including pregnancy and the postpartum.

Therefore, the Bioecological Model (Bronfenbrenner & Morris, 1998, 2006) is crucial in looking at the transition to motherhood on embodied experiences as it emphasizes the influence of each system and the embedding of the growth and development of women within the social context. Given the important relational experiences during pregnancy and in the postpartum, the conceptualization of the *macrosystem* and its cascading consequences for women at the level of the *microsystem* and *mesosystem* are critical.

**Proposed Processes Impacting the Experience of Embodiment, Body Esteem and Disordered Eating during Pregnancy and the Postpartum**

**Macrosystem factors.**

Arising from Bronfenbrenner and Morris’ Bioecological Model (1998, 2006), it is evident that the social and cultural context of Canada exerts influence on women’s daily realities and plays a fundamental role in shaping how different aspects of the macrosystem interact to impact the experience of women. Namely, it can be argued that, within the broad overarching westernized beauty ideologies, society is inscribed on the women’s body (Merleau-Ponty, 1962; Shilling, 2003) and that embodiment “is the mode by which human beings practically engage with and apprehend the world” (Turner, 2004, p. 71). As such, an important discussion of the macrosystem is needed to provide the contextual background of the development of the Experience of Embodiment, Body Esteem, and Disordered Eating during and after pregnancy prior to discussing the biological, psychological, social, and behavioral factors involved. Within Bronfenbrenner and Morris (1998,
2006)’s model, three factors representing the macrosystem will be considered, that is, Ethnicity, Socioeconomic Status and Pressures for Thinness.

**Ethnicity and socioeconomic status.**

Few studies in the research literature investigated the influential impact of the macrosystem in shaping women’s experiences of their bodies during and following pregnancy; therefore, the limited findings discussing their impact on the Body Esteem and Disordered Eating will be reviewed. Then, attention will be drawn to known research findings pertaining to the influence of the macrosystem on the variables of interest in the current study, particularly the biological (Weight Difference from Prepregnancy), psychological (Depression), and behavioral factors (Physical Activity and Breastfeeding Practice).

**The experience of embodiment, body esteem and disordered eating.**

A recent study by Neiterman (2013) was particularly interested in highlighting the impact of the macrosystem on the meaning attached to the pregnant body and on the labels of being “privileged” and “underprivileged” when describing the experience of pregnancy with diverse prenatal and postpartum women in terms of age, class, race, and ethnicity. Focusing on the impact of interactions on the construction of the self and on embodied experiences of pregnancy, her results displayed that even pregnant white, middle-class, ‘appropriate-age’ married women depicted as “destined” to be the ideal mother as a result of embodying the characteristics suited for motherhood (Neiterman, 2013) may experience pregnancy stigmatization. Therefore, she concluded that social class and other markers “should not be seen as permanent labels attached to women’s bodies” (Neiterman, 2013, p. 347), but instead “the social value of pregnancy should be seen as fluid and constantly changing” (p. 348). The meaning making process of women attached
to their experience of pregnancy as “good” or “bad” was contextually defined by interactions with others, not solely on determinants of social status.

Furthermore, Boyington, Johnson and Carter-Edwards (2007) explored body image by assessing the perceived preferred, typical, healthy and current size of 77 Black postpartum women from inner city clinics in Washington, D.C. Results showed that approximately seventy-five percent of the participants revealed significant body size discontent; however, given the lack of a comparison group, it is difficult to assess the role of ethnocultural group members in the lived experience of their pregnant body. Two prospective longitudinal studies (Walker, Freeland-Graves, Milani, Hanss-Nuss, George, Sterling et al., 2004; Walker, Timmerman, Kim, & Sterling, 2002) with ethnically diverse (i.e., Anglo, African American and Hispanic) postpartum working class women shed some light into Boyington and colleagues’ (2007) findings. Walker and colleagues (2002) considered body image attitudes dissimilarities amongst the three ethnic groups revealing that, shortly after giving birth, Anglo women reported greater areas of bodily concern, followed by African American and Hispanic women. However, when reassessed at six months’ postpartum, dissatisfaction with bodily features had increased for Anglo and Hispanic women, but decreased for African-American women. In a follow-up study with a similar design, Walker and colleagues (2004) noted that White and Hispanic postpartum women within the first year of giving birth had an overall higher and increasing body image dissatisfaction across the first year compared while African American women displayed a decrease in dissatisfaction over the same timeframe. Despite these findings related to ethnicity, Walker and colleagues (2002, 2004) cautioned that a culturally appropriate approach is required to understand the individual expectations related to body weight and shape given that their results also highlighted that these changes occur
contemporaneously with shifts in several areas of women’s lives (e.g., physical activity, depressive symptoms).

Moreover, Carter-Edwards and colleagues (2010) investigated the impact of race on body image satisfaction amongst a diverse sample of 162 overweight African American and White women six months after childbirth. After controlling for age, BMI, education, income, and marital status, body image satisfaction was significantly higher amongst the African American women in comparison with their White counterparts. As such, the postpartum period may be characterised by differing trajectories of body dissatisfaction depending upon ethnic background. Therefore, although limited findings are available, it appears that Ethnicity (i.e., African American, Hispanic, and White) and Socioeconomic Status (working vs. high classes) may have affected how women experienced the changes in their bodies during pregnancy and in the postpartum. However, the trajectory of body image satisfaction across pregnancy and in postpartum amongst diverse samples requires further investigation, particularly with respect to Ethnicity (e.g., broader classification) and Socioeconomic Status (e.g., comparing working, middle and higher classes) given that the current research offered some variability in how women perceived their bodies and highlighted the fluidity of women’s experiences within the context of other facets of their lives. Therefore, ethnicity and social class may not be the only determinants in guiding how women experience the changes in their bodies during this transition and it may be a simplistic view to conclude that, for example, women from lower socioeconomic status have a more negative view of their bodies. For instance, the studies discussed above (Carter-Edwards et al., 2010; Boyington et al., 2007; Walker et al., 2002, 2004) were conducted in the United States where disparities in ethnicity and social class also represent larger inequalities in societal dimensions such that multiple social statuses and social roles intertwine to affect overall health (Williams, Mohammed, Leavell, & Collins, 2010).
Weight difference in prenatal and postpartum women from prepregnancy.

The study of macrosystem variables associated with pregnancy weight gain has received some attention. For instance, Socioeconomic Status appeared to play a role in higher pregnancy weight gain as a function of nutritional intake whereby those of lower economic status tended to have diets with lower nutritional values (De Irala-Estevez, Groth, Johansson, Oltersdorf, Prattala, & Martínez-González, 2000; Giskets, Turrell, Patterson, & Newman, 2002; Hulshof, Brussaard, Kruizinga, Telman, & Lowik, 2003; Johansson, Thelle, Solvoll, Bjørneboe, & Drevon, 1999). Furthermore, a longitudinal study by Shrewsbury, Robb, Power, and Wardle (2009) across the prenatal and postpartum period demonstrated that, despite similar weight gains across Socioeconomic Status in pregnancy, women of lower and middle class tended to have higher prepregnancy and postpartum BMIs and to retain significantly more weight postpartum. This pattern may reflect the greater access to personal and environmental resources for women of higher Socioeconomic Status towards focusing on their bodies.

Moreover, Groth, Morrison-Beedy, and Meng (2012) conducted three focus groups with 26 women of working class African American descent in order to understand how participants viewed pregnancy weight gain. Overall, women’s perceptions focused on having a healthy offspring, seeing weight gain and retention as a natural outcome of being pregnant, perceiving weight gain as problematic only if it impacted their appearance and activities, and the adoption of a “watching and waiting” attitude towards controlling their weight.

Furthermore, Siega-Riz and colleagues (2010) investigated the socio-contextual factors associated with weight retention at three and twelve months postpartum amongst a diverse sample. At twelve months’ postpartum, married and educated women more than 25 years of age, belonging
to an ethnic majority and with a higher income status were associated with lower levels of weight retention (Siega-Riz et al., 2010). Therefore, the context of women’s pregnancy and postpartum experience in terms of macrosystem characteristics appeared to play a role in weight gain and retention during and after pregnancy, respectively.

**Depression.**

Several macrosystem characteristics have been associated with the experience of depression during the transition to motherhood. For instance, a large cross-sectional study of 810 pregnant women revealed that depressed women tended to be younger, less educated, of lower socioeconomic status, and unmarried (Field, Hernandez-Reif, & Diego, 2006). In the postpartum, a meta-analysis of risk factors revealed that social status represented a small, yet significant, predictor (O’Hara & Swain, 1996). Specifically, women with fewer financial resources (e.g., lower family income) and lower occupational status were identified as being at an increased risk of experiencing disruptions in their emotional well-being in postpartum as a result of the perceived heightened levels of stress (O’Hara & Swain, 1996).

Qualitative studies have also begun to highlight the influential impact of class and race on depression where shame with regards to ethnicity and socioeconomic status appeared to contribute to feelings of depression (Mauthner, 2003). As such, it is important to take note of these macrosystem characteristics.

**Physical activity.**

Krans and Chang (2011) sought to understand the barriers and facilitators to physical activity by conducting six focus groups with 34 African American pregnant women who were
predominantly single and of low education. Their narratives revealed an overwhelming agreement that physical activity had the potential to benefit both the baby and mother-to-be; however, barriers to engagement included characteristics related to the individual (e.g., fatigue, time restraints), information (e.g., inappropriate guidance from health care providers), resource (e.g., financial means, lack of access), and socio-cultural context (e.g., the availability of fried food, history of obesity and inactivity). In contrast, women also described several facilitators, including accessibility of both group exercise classes and safe, low-cost facilities within their communities with childcare. Therefore, social circumstances can have a significant impact on whether women have time, access and proper guidance for physical activity.

*Breastfeeding practice.*

With regards to breastfeeding intentions, pregnant women who are older, of higher socioeconomic status, more educated, and a first-time mother are associated with higher intentions (Barnes, Stein, Smith, & Pollock, 1997; Foster, Slade, & Wilson, 1996; Huang, Wang, & Chen, 2004; Nommsen-Rivers, Mastergeorge, Hansen, Cullum, & Dewey, 2009). Within Canada, Health Canada (2011) revealed no differences in breastfeeding practice (e.g., percentage of women who exclusively breastfeed until the age of six months) among Canadian women of differing marital statuses and income; however, younger women, women with less than secondary education and those living in rural areas were less likely to continue to exclusively breastfeed. The research literature investigating women’s intentions to exclusively breastfeed and termination of breastfeeding suggested an association with differing social and cultural expectations and government policies as well as lower formal education, being younger, and with the additional factor of having to return early to the labour market (DiGirolamo, Thompson, Martorell, Fein, &

The impact of the macrosystem on the embodiment, Body Esteem and Disordered Eating, biological (e.g., Weight Difference from Prepregnancy), psychological (Depression), and behavioral factors (Physical Activity and Breastfeeding Practice) is evident, albeit limited. Therefore, situating women’s pregnancy and postpartum experiences in the macrosystem can help to elucidate important factors affecting women’s journey to motherhood and to explore the variability in women’s experiences. The current study considered the impact of Ethnicity and Socioeconomic Status on the Experience of Embodiment, Body Esteem and Disordered Eating and therefore aimed to obtain a diverse sample.

*Pressures for thinness.*

The sociocultural theory of body image and esteem posited that perceived external pressures from diverse sources within the macrosystem concerning the broad overarching and appropriate standards and beliefs of femininity and the ‘ideal’ female body led to body esteem disturbances and eating disorders (Thompson et al., 1999). Canadian women are exposed to an overwhelming amount of information from the proliferating, influential mass media, which portrays messages such as “Everyone can be thin”, “Only thin women’s bodies are beautiful and sexually desirable”, “If you’re thin you will be confident, successful, healthy and happy” and “You can’t and shouldn’t be happy with yourself unless your body looks exactly like the thin ideal” (National Eating Disorder Information Centre, 2014). Stemming from exposures to socially sanctioned messages are maladaptive, yet normative, media-driven schemas regarding gender and
attractiveness based on assumptions such as (1) women are “naturally” invested and immersed into the development of their “beauty assets”, (2) women must maintain a slender, attractive and youthful image in order to please men and demonstrate a sense of control over their bodies to other women, and (3) women are the object of a masculine gaze (Levine & Harrison, 2004; Smolak & Levine, 1994, 1996; Smolak & Murnen, 2004). The body therefore becomes “something that should be worked on and accomplished through the use of varied consumer products and/or regimens” (Shilling, 2003, p. 4; see also Brumberg, 1997). During pregnancy and in the postpartum period, this cultural setting can have an important impact on women’s attempts to reconceptualise their transforming bodies.

During pregnancy, the media-driven messages and assumptions are compounded by the comparison with the unrealistic thin ideal portrayed in the mass media that is directed towards their non-pregnant counterparts (Grabe & Hyde, 2006; Sypeck, Gray, & Ahrens, 2004). For instance, when pregnant women compared themselves to the cultural ideal as they appeared in fashion magazines, they tended to become abnormally sensitive to their own body size including a focus on their abdomen early in pregnancy (i.e., sixteen weeks) with the addition of concerns regarding their overall increase in body size as the pregnancy progresses (i.e., thirty-two weeks; Sumner, Waller, Killick, and Elstein, 1993). Therefore, women may continue to be vulnerable to the media-portrayals of the non-pregnant female body while being pregnant themselves.

In addition to the societal Pressures for Thinness related to non-pregnant women, pregnant ideals have also emerged in the media. In the twentieth century, seldom were photographs of pregnant women publicized (Matthews & Wexler, 2000). However, in the last 25 years, the societal Pressures for Thinness and attractiveness during pregnancy have augmented through an
obsessive documentation and depiction of celebrity pregnant bodies and bellies in magazines and tabloids. For instance, publications of pregnant bodies, such as the naked depiction of Demi Moore on the front cover of Vanity Fair in 1991 as well as beautiful and slim pregnant celebrities, such as Kate Middleton on various magazine covers have become increasingly common. Such representations allow women to be seen “as an object of the gaze packaged to create and play on the desires of the view” (Matthews & Wexler, 2000, p. 201). Moreover, they have the potential of being comparison targets of the culturally defined desirable pregnant body against which pregnant women measure the appearance of their own bodies. Consequently, such criteria can be conflicting and discouraging given that the idealized and unrealistic depictions of pregnancy involved women who are as dazzling and fit as they were prepregnancy (Deziel, 2006). Strikingly, further pregnancy-specific messages have been uncovered in the written media materials. For instance, Rubin and Steinberg (2011) encountered an article entitled “the perfect little bump” (Abraham, 2004) in which “the new pregnancy ideal” was discussed and defined as “a belly on two sticks” (p. 22-23). This portrayal represented an unrealistic prenatal body as a growing pregnant belly in the absence of additional body fat or curves.

Within the constraint of the culturally sanctioned standards of femininity and weight, pregnant celebrities are both scrutinized to maintain their slenderness and glorified as being sexy and desirable. Nash (2006) described the phenomenon of the glamorization of celebrity pregnancies as the need for women to embody the ethos of “yummy mummy.” In pregnancy, the societal pressures to maintain the standards of appearance impacted body image and esteem, specifically women’s sense of attractiveness, fatness, shape, and weight (Skouteris et al., 2005). Moreover, exposure to objectifying images of pregnant celebrities significantly increased self-objectification (Hopper & Aubrey, 2011). In the postpartum period, the depiction of celebrities
undergoing unrealistic weight loss was frequently discussed as resulting in feelings of anger, frustration and “post-baby body blues” (Gow, Lydecker, Lamanna, & Mazzeo, 2012; Mapes, 2008). In fact, a negative correlation has been revealed between the extent of exposure to media materials and self-esteem during the postpartum period (Heaton, 2011).

In addition to media-based transmissions of the societal ideals, friends, family and significant others can exert Pressures for Thinness on pregnant and postpartum women. Although the impact of friends and family members is clear with adolescents (Blume & Blume, 2003; Davis, Shuster, Blackmore, & Fox, 2004; Haworth-Hoeppner, 2000; Hill & Franklin, 1998; Laliberté, Boland, & Leichner, 1999; Leung, Schwartzman & Steiger, 1996; Matsumoto, Kumano, & Sakano, 1999; Stice, 1998; Smolak & Levine, 1996; Thompson, Coovvert, Richards, Johnson & Cattarin, 1995; Young, Clopton, & Bleckley, 2004), studies in pregnant and postpartum women are scarce. Prospective longitudinal studies in pregnancy (Skouteris et al., 2005) and cross-sectional approaches in postpartum (Welsh, 2010) have revealed that the Pressures for Thinness from media, family members, partners, and friends can have an impact on body satisfaction, specifically on women’s sense of attractiveness, fatness and their shape and weight; however, the measure used limited the ability to ascertain the pressure from each individual source. Despite the limited number of studies investigating the impact of societal Pressures for Thinness in pregnant and postpartum women, the emphasis on the depiction of pregnant and postpartum celebrities warrants a better understanding of how these media-driven portrayals influence pregnant and postpartum women. Furthermore, as society continues to portray the unrealistic pregnant and postpartum body ideals, friends, family members, and significant others may increasingly reinforce these messages.
Biological factors.

The act of being pregnant involves “having a baby… developing inside the body” (Merriam-Webster, Inc., 2014). Therefore, the core features of pregnancy can be observed or experienced physiologically. Prenatally, substantial physical changes occur, including fetus-related weight gain and enlarging maternal fluid and soft tissue (Lederman, Paxton, Heymsfield, Wang, Thorton, & Pierson, 1997). Furthermore, many women undergo an array of experiences, consisting of, but not limited to, extreme tiredness, swelling and tenderness of the breast, nausea, and bloating in the first trimester, and back and abdomen pain, stretch marks, difficulties sleeping, and swelling of the ankles, fingers and face in the second and third trimesters (MedicineNet, Inc., 2014). Three of the most prominent biological or physical factors impacting embodied experience during pregnancy and in the postpartum will be discussed, including Weight Difference from Prepregnancy, Fatigue, and Labour and Deliver.

Weight differences from prepregnancy to prenatal and postpartum.

Weight gain is an inevitable and common aspect of pregnancy. Recommendations outlined for singleton pregnancies vary according to women’s prepregnancy BMI (Public Health Agency of Canada, 2012). As such, recommendations range from 28 to 40 pounds for women with low BMI (< 18.5) to at least 15 pounds for women considered obese (BMI > 30). When comparing the gestational weight gain of Canadian women to the suggested ranges, approximately one third of women gained within the range specified by the guidelines (Kowal, Kuk, & Tamim, 2012). Additionally, 18.7% and 48.7% gained a lesser or greater amount, respectively, than suggested (Kowal et al., 2012).
Despite attempts to provide specific recommendations regarding weight gain, concerns exist regarding their usefulness and impact. For instance, most women failed to identify with the clinical BMI category assigned to them based on their weight and height (Keenan & Stepleton, 2010) reflecting the problematic definition of the BMI categories and the changing characterizations of overweight and obese. Furthermore, the guidelines assumed that women chose and controlled the impact of the pregnancy on their body and ignored the social context and related lifestyles (e.g., cultural, racial and socioeconomic disparities) rendering the recommendations irrelevant and at times, impossible (Jette & Rail, 2012).

Providers also played a role in guiding the weight management of women as weigh-ins are often a requisite of prenatal visits (Brown & Avery, 2012). Despite the focus on weight, findings indicated that health care providers offer few and often confusing and contradictory weight management and diet advice (Brown & Avery, 2012). Weight discussions in prenatal and postpartum were often perceived as sensitive (Heslehurst, Lang, Rankin, Wilkinson, & Summerbell, 2007) or used as an attempt to “motivate women to lose weight… in crude, blame-inducing, highly insensitive [ways], and had the ultimate effect of hardening and disenfranchising the women as opposed to encouraging them to lose weight” (p. 416).

Beyond these perceptions of weight gain, the social acceptability of women’s “fatness” during pregnancy and the awareness of the transitory nature of pregnancy have further swayed the assessment of their shape and weight and influenced their weight watching (or disregarding) behaviors (Wiles, 1994). Prepregnancy body ideals appeared to impact weight gain whereby women who preferred a thinner body ideal in prepregnancy were more likely to gain beyond the recommendations (Bagheri, Dorosty, Sadrzadeh-Yeganeh, Eshraghian, Amiri, and Khamoush-
Greater than recommended weight gains were also observed in women with body dissatisfaction and thin ideal body size preference in prepregnancy and those having a higher pregravid BMI (Mehta, Siega-Riz, and Herring, 2011). Confounding results suggested that average or underweight women at prepregnancy may experience a relaxation of the thin ideal in pregnancy whereas overweight and obese women may experience an increased vigilance because of the higher initial weight (Mehta et al., 2011). Therefore, women with greater body dissatisfaction and culturally biased attitudes towards weight (e.g., preference for thinness) before or at the onset of the pregnancy may be at an increased risk for greater gestational weight gain (Bagheri et al., 2013; Mehta et al., 2011).

In the postpartum period, weight retention averages have been noted to range from 14% to 20% of the extra weight gained during pregnancy (Walker, 2007). With regards to the consequences of weight-related distress in postpartum, Walker (1998) revealed that women most often described themselves as overweight with mild dissatisfaction (40%), followed by satisfied but wanting to lose weight (22%), satisfied (21%), experiencing weight-related distress (8%), postponing weight management due to breastfeeding (7%), and finally, underweight (1%). Walker (1998) also observed that postpartum bodily dissatisfaction was associated with greater prepregnancy BMI, gestational weight gain, postpartum BMI, and fewer healthy lifestyle choices (i.e., diet, substance use and smoking, physical activity, relaxation, safety, and health promotion). Therefore, although postpartum weight retention is normative, women tended to express a disapproving view of their weight. Such change in emphasis allowed for the impact of the macrosystem to be exposed as women discuss their changed body under the lens of the biased cultural preference for thinness. Moreover, the cultural idealization of thinness may have represented a challenge that is not always achievable, feasible, or even desirable for women who
could learn to appreciate the functionality of their postpartum body (Jenkin & Tiggemann, 1997). Additionally, several changes and disruptions in routine and mealtime may enhance women’s difficulties to engage in regular healthy patterns (Stein & Fairburn, 1996). As the postpartum period lengthens within the context of unrealistic expectations, body attitudes may continue to worsen, as the women can no longer rely on explaining the lingering weight gain on recently having had a baby (Rallis et al., 2007).

To consolidate the research literature on weight gain, Phillips and colleagues (2012, 2013, 2014) proposed a model identifying key physical, socio-contextual, lifestyle, medical, psychological and behavioral factors associated with postpartum weight retention. They suggested that the presence of psychological difficulties (e.g., depression, anxiety, stress, body dissatisfaction) would mediate the influence of physiological (e.g., weight-related factors and fatigue) and social factors (social support, demographics, pregnancy-related medical factors) on the behaviors of postpartum women, which would then predict how much weight women retained after childbirth (see Figure 2). Phillips and colleagues (2013, 2014) have conducted longitudinal studies following women during and after pregnancy investigating the mediating pathways. The results of a prospective hierarchical regression revealed that higher gestational weight gain, breastfeeding for less than six months, and body image dissatisfaction predicted higher postpartum weight retention six months after childbirth. In contrast, the psychological factors of stress, depression, and anxiety were minimal contributors to weight retention (Phillips et al., 2013). A subsequent study emphasized the importance of gestational weight gain to postpartum weight retention in both prospective and cross-sectional hierarchical regressions (Phillips et al., 2014).
Figure 2

*Phillips, King and Skouteris' (2012) Conceptual Model of Psychological Predictors of PWR.*

Overall, research linked weight gain in the prenatal period with higher postpartum weight retention, greater difficulties to lose weight in postpartum (Carter, Baker, & Brownell, 2000; Gunderson, Abrams, & Selvin, 2000; Nohr, Vaeth, Baker, Sorensen, Olsen, & Rasmussen, 2008, Phillips et al., 2013, 2014), and an increased risk of obesity in later life (Linne, Dye, Barkeling, & Rossner, 2003, 2004; Rooney, Schaubberger, & Mathiason, 2005), all of which may put women at risk of greater body dissatisfaction. However, the use of prenatal weight gain and postpartum weight retention as the final units of interest in model conceptualization (e.g., Phillips et al., 2012, 2013, 2014) can be problematic. First, it ignores the physiological changes that occur during and
after pregnancy resulting in a body that is naturally further away from the women’s prepregnancy weight status. Second, it suggests that women should strive to return to the prepregnancy physical shape and places negative connotations surrounding weight retention. In doing such, these models could be seen as supporting the viewpoint that women’s experiences should be defined by their weight. Hence, such suggestions place a burden on women who may not desire to or cannot achieve such goals and who could instead learn to appreciate the strength and propriety that the appearance and functionality of their body can bring to their lived experiences. Therefore, throughout the prenatal and postpartum period and within a culture that idealizes regaining prepregnancy bodies, women may experience strong feelings of failure and disembodiment as their bodies are further away from the cultural ideal. Moreover, the conceptualization of weight gain in pregnancy occurs within the framework of the “growth of the baby” which is positively connoted and contrasted with “growth for self,” the latter of which is socially considered “unacceptable” (Rubin, 1984, p. 71). After childbirth, “a woman fully expects that all the growth in size and weight added to her body during pregnancy will be shed with delivery. Any residual weight or size after childbirth is rejected as fat, flabby, or useless” (Rubin, 1984, p. 71). Consequently, it is important to focus on the relationships between weight gain in pregnancy and retention in postpartum on the Experience of Embodiment, Body Esteem, and Disordered Eating as the final units of analysis.

**Fatigue.**

Fatigue is one of the most common symptoms of pregnancy and has been show to affect how women feel physically and emotionally (Chou, Lin, Cooney, Walker, & Riggs, 2003). Prenatal fatigue stems from a variety of sources, including physical changes, nausea, altered hormone levels, and disturbances in sleep quality caused by increased body size and frequent
Typically, women experience fluctuating levels of fatigue with the first and third trimesters characterised by greater fatigue (Affonso, Lovett, Paul, & Sheptak, 1990; Elek, Hudson, & Fleck, 1997; Fawcett & York, 1986). Heightened levels of fatigue have been associated with higher body image concerns (Price, 1996) and depression (Koniak-Griffin, 1994) as well as lower self-esteem (Koniak-Griffin, 1994; Wallace, Boyer, Dan, & Holm, 1986), and weaker sense of strength and fitness (Kamysheva, Skouteris, Wertheim, Paxton, & Milgrom, 2008).

In the postpartum period, fatigue has been shown to play a significant role for new mothers and to be a normal consequence of the recuperation from the delivery process, the lack of uninterrupted sleep, and the coping with a variety of changes (e.g., relationships with partner and child) which could strain new mothers’ levels of resources. In fact, in a survey of stressors for 60 women six weeks after childbirth, physical distress, such as sleep disturbances, fatigue, and postpartum recovery, ranked first, before the second concern: weight (Affonso & Mayberry, 1990). As the postpartum period extended, most women continued to experience sleep deprivation and fatigue as they engaged in both daytime and nighttime infant care (Gress, Chambers, Ong, Tikotzky, Okada, & Manber, 2010). For instance, at ten weeks postpartum, infant caretaking at night continued to result in sleep interruptions (e.g. waking an average of 2.2 times per night) and reduced subjective sleep quality (Gress et al., 2010). Moreover, women experienced lower body image satisfaction and feelings of dependence within the context of prolonged periods of low energy (Rubin, 1984). As discussed in other sections, fatigue can have an overarching impact on desire and engagement in physical activity, levels of depression, anxiety as well as relationships with partner and sexual relationships. Therefore, it is an important factor to consider in the
development of the Experience of Embodiment, Body Esteem, and Disordered Eating during the transition to motherhood.

**Labour and delivery.**

Labour is a stage in pregnancy that has been shown to cause significant fear and anxiety in women and yet has the potential to be transformative and powerful (Davis-Floyd, 2003; Dwinell, 1992). Messages about normal (or expected) labour experiences have been disseminated in various ways, including medical professionals, television, books, friends and relatives, and the internet (Kennedy, Nardini, McLeod-Waldo, & Ennis, 2009). Media (e.g., magazines and books) often recommends that women maintain a stringent discipline of their bodies to meet the physical demands of pregnancy and labour (Dworkin & Wachs, 2004). As such, the onus (or blame) for negative pregnancy outcomes (e.g., difficult labours, fetal abnormalities) has frequently been placed on women, as it is often socially insinuated that she dictated her prenatal care (Marshall & Woollett, 2000) and birth experience (Layne, 2003).

The social construction and social discourses or stereotypes about birth involve a devaluation of women’s active engagement and strengths in the process of birth. For example, research has shown that reality-based programs depicting the “actual birth” process tended to dramatize childbirth presenting it as much riskier than it is in reality (Morris, & McInerney, 2010, p. 134). Furthermore, women’s empowerment appeared devalued with a discourse of inferiority and a portrayal of women as needing constant surveillance, relying heavily on technology and medical professionals instead of their personal resources (Morris, & McInerney, 2010).
Similarly, in books, a discourse involving fear, the loss of control of one’s body and the
depiction of birth as a risky or dangerous event frequently abdicated women’s decision-making
power during labour and delivery (Kennedy et al., 2009). The lack of focus on women’s strengths
and abilities in the process of birth have been suggested to further heighten the existing feelings
of anxiety or helplessness about childbirth (Areskog, Uddenberg, & Kjessler, 1984; Zar, Wijma,
& Wijma, 2001) and a view of the body as “ugly and/or incapable” (Kennedy et al., 2009, p. 320).
It is therefore not surprising that women experienced anxiety when approaching childbirth and that
approximately 18% of women experienced some symptoms of posttraumatic stress “with reference
to their childbirth experience” (Declercq, Sakala, Corry, & Applebaum, 2008, p. 21).

A small number of books have been written to provide women with the supportive
viewpoint of “an agent for herself” with a capable body and as an advocate for her authority in the
birth process (Kennedy et al., 2009, p. 321). To cover the gap in the literature and to change the
cultural discourse surrounding pregnancy and birth, Zeldes and Norsigian (2008) discussed the
writing of a book entitled “Our Bodies, Ourselves: Pregnancy and Birth” (Norsigian, 2008). The
book examined the multidimensional factors shaping childbirth choices and inspired women in
being educated thereby promoting a positive and satisfying pregnancy and birthing experience.
Feedback received from women regarding the book reflected that “in contrast to other books that
scared them unnecessarily, [Our Bodies, Ourselves: Pregnancy and Birth] felt much more positive

In recent years, the supportive presence of midwives and doulas during delivery in
providing a caring and empowering experience has increasingly become more popular in Western
countries’ context medicalized and technological births (Waldenstrom, 1993). Midwives and
doulas have been highlighted as emotionally, physically, spiritually and psychologically present with the labouring mother (Hunter, 2002) assisting women in recognizing and developing her awareness of her own bodily signals to cope with her bodily pain (Lundgren, 2004). Midwives and doulas understand that entering motherhood involves encountering the unknown for mothers in terms of pain, emotional stress, vulnerability, and responsibility (Simkin, 1992). Unlike other healthcare professionals present during the birthing process, midwives and doulas aimed to gain an understanding of the individual woman to understand her needs for support and control during the birthing process (Lundgren, 2004). Furthermore, these birth professionals were anchored as companions with an understanding that giving birth allows for the presence of both strength and suffering (Lundgren, 2004).

The process and context of labour and delivery can therefore relate to women’s body experiences during and following childbirth. However, no studies to date have focused on the impact of labour and delivery on women’s Experience of Embodiment, Body Esteem and Disordered Eating.

**Psychological factors.**

As implied by its definition, body esteem involves the perception of body size distortion and the resulting body image disturbances, both of which are inherently psychologically orientated phenomenon. Pregnancy, birth, and motherhood are major life transitions associated with a range of positive (e.g., joy, sense of accomplishment) and negative feelings (e.g., anxiety, loss of control, depression; Johnston-Robledo & Barnack, 2004). An array of psychological factors has been associated with the development and evolution of experiences with the body during this transition,
including Depression, Anxiety, Internalization of the Thin Ideal, Maternal Beliefs about Competence, and women’s Comfort with Breastfeeding.

**Depression.**

Feelings of happiness, serenity, and satisfaction often characterized the glamorized societal ideals of how women should behave and look as a mother (Mauthner, 2013). Moreover, a high value has been placed on mothering and the abilities to be “perfect mothers” (Mauthner, 2013). Therefore, self-perceptions that are further away from the social ideal have been conflictual for women who understood the unrealistic nature of the expectations, yet experienced a sense of personal failure and inadequacy when they were unable to achieve them (Mauthner, 2013). As such, when considering postpartum difficulties prevalent in Western societies, such as depression, a social mask that fails to acknowledge the difficulties and vulnerability of women has been noted (Mauthner, 2013). Therefore, it is not surprising that women of childbearing age represented a population at a greater risk of suffering from depression and the transition through pregnancy increased this risk (Gaynes, Gavin, Meltzer-Brody, Lohr, Swinson, Gartlehner, et al., 2005). Among Canadian women, the twelve months and thirty-day prevalence rates of Major Depressive Disorder have been reported as 5.0% and 1.4%, respectively (Patten, Wang, Williams, Currie, Beck, Maxwell, & el-Guebaly, 2006). Period prevalence of prenatal depression, that is the percentage of the population suffering from depression over a specific timeframe, were 7.4%, 12.8% and 12.0% during the first, second, and third trimesters, respectively (Bennett, Einarson, Taddio, Koren, & Einarson, 2004). During the first three months’ postpartum, the period prevalence of minor and major depression has been as high as 19.2% with 7.1%, respectively (Gavin, Bradley, Gaynes, Lohr, Meltzer-Brody, Gartlhner et al., 2005). Furthermore, the presence
of depression in the prenatal period has been identified as the greatest risk factor for postpartum depression (Beck, 2001) and has been shown to have the potential to impact the health of the baby as manifested by an association with lower birth weight, shorter gestation times, and preterm deliveries (Neggers, Goldenberg, Cliver, & Hauth, 2006; Yonkers, Wisner, Steward, Oberlander, Dell, Stotland et al., 2009).

Research linking depressive symptoms to women’s experiences with their bodies during pregnancy and in the postpartum is limited; however, two studies conducted thus far (Clark et al., 2009b; Skouteris et al., 2005) shed important light on this link. First, the aforementioned prospective longitudinal study conducted by Skouteris and colleagues (2005) revealed that during pregnancy, depressive symptoms measured between sixteen and twenty-three weeks’ gestation had an overarching impact on body attitudes, specifically on women’s sense of strength, fitness, attractiveness and fatness assessed between thirty-two and thirty-nine weeks’ gestation (Skouteris et al., 2005). Subsequently, Clark and colleagues (2009b) conducted a prospective longitudinal study following 116 women questioning them twice in pregnancy and three times in postpartum. Between thirty-two and thirty-five weeks’ gestation, symptoms of depression were greater than at any other time point, with one year postpartum marking the lowest level of depressive symptoms. Correlational analyses revealed a positive correlation between symptoms of depression and the Feeling Fat and Salience subscales of the BAQ as well as a negative correlation with the Attractiveness, and Strength and Fitness subscales. The strength of the association was greatest in the postpartum period perhaps because of women’s tendency to experience greater dissatisfaction in the postpartum. Finally, concerning depressive symptoms predicting later body dissatisfaction, the results revealed that symptoms of depression assessed between thirty-two and thirty-five weeks’ gestation predicted increased feelings of fatness for all three postpartum assessments.
Furthermore, Downs and colleagues (2008) conducted a longitudinal prospective analysis of depressive symptoms, body image satisfaction, and exercise behavior in the first, second and third trimesters as well as six weeks postpartum with 230 women. Their results revealed that, for each trimester, depressive symptoms negatively correlated with body satisfaction. Furthermore, hierarchical regression modelling examined the contribution of depressive symptoms, body image satisfaction, and exercise behaviors in predicting depressive symptoms across all assessments measurements. Their results revealed a trend whereby body image satisfaction for each assessments period predicted depressive symptoms at the subsequent period. Correlational and regression analyses conducted by two additional longitudinal studies (Rauff & Downs, 2011; Walker et al., 2002) revealed similar patterns of results during pregnancy as well as with working class women, respectively, such that body dissatisfaction was related to depressive symptoms.

Moreover, a qualitative study conducted by Clark and colleagues (2009a), discussed in the ‘Body Esteem and Embodiment in Pregnant and Postpartum Women’ section above, highlighted another trend between body attitudes and depressive symptoms. During both pregnancy and the postpartum period, women reported mood lability and feelings of dysphoria, though, the postpartum period was characterised by more stable affect and fewer experiences of intense negative mood. Prenatal mixed affective states were attributed to hormonal changes, fatigue, changes in role definition, bodily changes, and societal perceptions of their body (e.g., “show[ing]” and being “larger” than expected according to their gestational period). Similar to the prenatal period, participants attributed mood lability in the postpartum period to hormonal changes and fatigue. Concerning the contribution of body perception to mood, eight of the ten participants noted that their experiences with their bodies resulted in either a positive or neutral mood despite being dissatisfied. Such lack of association may reflect the peripheral nature of body concerns among all
the difficulties salient during the postpartum. However, the two participants for who their bodily changes affected their mood, the detrimental events reported focused on the impact of the external gaze and negative comments pertaining to their body, particularly their weight.

A second qualitative study discussed and contextualized depression by emphasizing the impact of the external gaze and societal influences with a focus on the gendered expectations of motherhood (Mauthner, 2013). Women expressed difficulties with voicing their true feelings and concerns regarding their body due to the shame and fear of the repercussions. As such, when faced with difficulties and challenges, women at odds with the social ideals of motherhood felt silenced (e.g., attempts to avoid judgments: “I can appear okay to the rest of the world even though I feel terrible inside”; p. 89). Moreover, mothers highlighted the aspect of “loss” of the former self, specifically appearance and identity, on the contribution to postpartum depression and sadness (Nicolson, 2003). Postpartum narratives were associated with terms such as “gaunt,” “haggard,” and a “reduc[tion in] the ability to pay attention to appearance” (Nicolson, 2003, p. 120) and revealed that bodily changes affected women’s sense of femininity resulting in anxiety and depression. Therefore, loss surrounding the body was a recurrent theme contributing to their feelings of depression.

Taken as a whole, it is clear that depressive symptoms and body esteem coexist during pregnancy and in the postpartum period. In fact, recent critical reviews of the role of body image during this period on depression suggested a consistent association between body dissatisfaction and the onset of depression during this transition period (see Fuller-Tyszkiewicz, Skouteris, Watson & Hill, 2012 and Silveira, Ertel, Dole & Chasan-Taber, 2015 for reviews). However, many studies and reviews investigated the impact of body satisfaction on depression whereas we are
interested in the reverse relationship. More importantly, as a result of the correlational nature of most studies, further research is needed to investigate the impact of depressive symptoms on the onset of dissatisfactions with the Experience of Embodiment and Body Esteem and increases in Disordered Eating, particularly in the postpartum period.

**Anxiety.**

Although most women adapt well to the array of physiological, psychological, and social changes accompanying pregnancy, a significant subsample (approximately 25%) have been shown to experience heightened levels of stress (Lobel, 1998; Yali & Lobel, 1999). Pregnancy related stress differed from general stress in that it related to pregnancy-specific experiences and events (Mulder, Robles de Medinca, Huizink, Van den Bergh, Buitelaar, & Visser, 2002). Green, Kafetsios, Statham, and Snowdon (2003) devised a scale entitled the Cambridge Worry Scale to assess pregnancy-specific worries. Four domains of worries accounted for 57% of the total variance, including socio-medical (e.g., giving birth, having internal examinations and coping with the new baby), socio-economic (e.g., finances, housing and employment), health-related (e.g., possibility of miscarriage, the health of the embryo and fetus and their own health) and relationship worries (e.g., with friends, family and partner). The experience of stress during pregnancy has been associated with adverse birth outcomes, such as spontaneous preterm birth (Copper, Goldenberg, Das, Elder, Swain, Norman et al., 1996; Glynn, Schetter, Hobel, & Sandman, 2008; Latendresse, 2009), low birth weights (Rice, Harold, Boivin, Van den Bree, Hay, & Thapar, 2010; Copper et al., 1996), increased fetal morbidity (Rossi, Avveduti, Rizzo, & Lorusso, 1989; Groome, Swiber, Bentz, Holland, & Atterbury, 1995; Zuckerman, Bauchner, Parker, & Cabral, 1990), among others.
Similar to the study conducted by Green and colleagues (2003) discussed above, a recent study revised the Postpartum Worry Scale regarding worries relevant to the postpartum period (Moran, Polanin, & Wenzel, 2014). Their final model also revealed four domains of worries entitled Relationships (e.g., with partner, friends, in-laws and family members), Household (e.g., household duties and cleanliness of house), Time allocations (e.g., obtaining new employment or schooling, having free time and balancing responsibilities), and Health and development (e.g., baby’s appearance, development and health and own health). Therefore, the challenging new role demands (e.g., incorporating the baby into one’s life) in combination with changes in social support, maternal self-esteem and identity, and perceived capabilities as a mother can lead to worries and anxieties (Amankwaa, 2003; Dennis, 2003; Hardy & Hardy, 1988; Lombardo, 2001). Moreover, women with postpartum depression can also experience severe anxieties (American Psychiatric Association, 2013).

Da Costa and colleagues (2000) aimed to delineate the longitudinal impact of stress, coping styles, personal resources and perceived social support during pregnancy with symptoms of depression in postpartum. Their findings revealed that the associated adverse psychological consequences of higher scores on anxiety measures for the mother include postnatal depression (Da Costa et al., 2000). Furthermore, in a prospectively longitudinal analysis of maternal BMI, eating attitudes, and the presence of symptoms of anxiety and depression, Carter and associates (2000) followed 64 women during their pregnancy and in to the postpartum (i.e., four and fourteen months postpartum). Although their results demonstrated that there were no significant correlations between anxiety and eating attitudes during pregnancy, such a correlation was present at fourteen months postpartum. Overall, only one study to date has examined the impact of anxiety
on Disordered Eating in the prenatal and postpartum period. Nonetheless, given the significant impact of such a construct on women, it is important to include it in the current study.

**Internalization of the thin ideal.**

One psychological factor potentially having a strong impact on one’s Experience of Embodiment, Body Esteem, and Disordered Eating is the internalization of the thin ideal, which refers to the extent to which women believe they should meet the culturally prescribed standards of beauty and thinness (Thompson et al., 1999). According to this definition, the internalization of the thin ideal requires both the awareness and the cognitive adopting of the societal thinness standards. The standards for women portrayed in the Western culture are not within the normal weight range for women. In fact, the media portrayal of the ideal body is typically 15% smaller in weight than the normative female body and is characterized by the unrealistic features of being tall, having long legs with thin thighs and narrow hips (Hawkins, Richards, Granley, & Stein, 2004; Johnson, Tobin, & Steinberg, 1989). Consequently, women who expect to reach the biogenetically difficult ideal understandably feel disappointed with their body’s inability to achieve it. Non-pregnant samples have consistently demonstrated a relationship between the internalization of the ideal and greater eating disturbances, dieting behavior and body dissatisfaction (Mintz & Betz, 1988; Stice, 2002; Stice & Agras, 1998; Stice, Mazotti, Krebs, & Martin, 1998).

Given the presence of the overarching Pressures for Thinness, it is unclear whether the thin internalization present in non-pregnant samples persists in pregnancy and postpartum or whether a new internalization of a maternal ideal exists. To date, only a few studies have investigated this phenomenon. Employing an inductive qualitative approach, Johnson and colleagues (2004)
indicated that women during pregnancy have an awareness and internalization of the thin ideal. Specifically, during the first trimester, women attempted to cope and maintain a positive sense of identity with their bodies, which naturally became further away from the thin cultural ideal, by using their pregnancy to justify their “showing” to avoid the perception from others of them as ‘fat’ (Johnson et al., 2004). Therefore, an awareness and sensitivity to the sociocultural messages sanctioning thinness was expressed, which was followed by relief when their pregnancy was physical apparent and they could legitimize their weight gain, albeit “within acceptable boundaries” (Johnson et al., 2004, p. 367). Moreover, the participants indicated that they expected to strive to approach the cultural standards in the postpartum period and utilized the terminology of “get[ting] back to ‘normal’” (p. 370).

After childbirth, Welsh (2010) investigated the relationship between internalization of the thin ideal and body dissatisfaction with women at an average of 6.63 months postpartum by utilizing a correlation field design. The results revealed that the internalization of the cultural ideal continued in postpartum. Given that women’s bodies were naturally further away from this ideal after childbirth, it was no surprise that the relationship between internalization of the thin ideal and body dissatisfaction and disordered eating revealed a medium and large positive correlations, respectively. Furthermore, two separate hierarchical regression models revealed that internalization of the thin ideal was a significant predictor of both body dissatisfaction and disordered eating among postpartum women. Finally, Welsh (2010) tested mediation models and noted that the internalization of the thin ideal was a partial mediator of both the effect of changes in shape and weight on body dissatisfaction and disordered eating. Such findings have recently been qualitatively investigated with a diverse postpartum population in Mexico indicating that this phenomenon is not restricted to highly Westernized societies (Bojorquez-Chapela, Unikel,
Mendoza, & de Lachica, 2014). However, no studies have examined prospectively and quantitatively the internalization of the thin ideal longitudinally over the course of both pregnancy and into the postpartum period with a focus on the impact on the Experience of Embodiment, Body Esteem and Disordered Eating.

**Maternal Beliefs about Competence.**

Pregnancy is a time when feelings of elation are intertwined with confusion and anxiety concerning the redefining of the women’s sense of themselves and their responsibilities. Pregnant women often develop a maternal identity and bond with their unborn child soon after conception (Leifer, 1980), which continues to deepen as the pregnancy progresses (Pruzinsky & Cash, 1990). Often the first parenting task takes the form of learning the “rights” and “wrongs” of pregnancy, for instance, how to eat and exercise “right” (Copelton, 2010; Marshall & Woollett, 2000). Additionally, parenting-related distress may commence as women consider how the presence of a child alters their professional, social, and familial roles (Kohen, 2000). As they approach the birth, the ambiguity about the unknown components of labour and mothering can result in a mixture of emotions about their maternal identity (Gooding, 2013). As a result, women often engaged in fantasies about the baby and their mothering as they prepared for motherhood and imagined how to maintain continuity in their identity by integrating their new role (Ammaniti, Baumgartner, Candelori, Perucchini, Pola, Tambelli, et al., 1992; George & Solomon, 1996, 2008; Gooding, 2013; Innamorati, Sarracino, & Dazzi, 2010; Stern, 1991, 1995; Vizziello, Antonioli, Cocci, & Invernizzi, 1993; Zeanah, Benoit, Barton, & Regan, 1993). In the general population, research has consistently demonstrated a direct relationship between decreased self-esteem and the negative evaluation of one’s physical attractiveness (Rudman & Glick, 2008). Additionally, studies also
showed that pregnant women who experienced lower levels of self-esteem were associated with body attitudes characterized by higher ratings of feeling fat, greater salience of weight and shape, and lower perceived attractiveness (Kamysheva et al., 2008).

Upon the arrival of the baby, the initial stages of parenting were often described as enjoyable, and a source of fulfillment and pride with the satisfaction arising from “caring for their children and having them around because they loved them so much” (Phoenix et al., 1991, p. 239). Adjusting to the process of becoming a parent and to the routine needs of infant care varied substantially depending upon individual circumstances, resources, availability of emotional support, and the quality of the partner relationship, the interaction with the routine of infant care, their self-esteem, and belief in their competence (Green & Kafetsios, 1997; Leung, Arthur, & Martinson, 2005). Becoming a mother evolved over time as mutual adjustment, mastery of new skills and learning occurred for parents (Beck, 2003; Hung, 2007; Roman, Gardiner, Lindsay, Moore, Luo, Baer et al., 2009) and as parental attachment to the infant was established (Stern, 2004). How new mothers define their maternal identity and their attitudinal approach to parenting has been associated with their postpartum adaptation (Anderson, Flemming, & Steiner, 1994; Blumberg, 1980; Carver & Gaines, 1987; Davids & Holden, 1970) and their adjustment to their child (Shereshefsky & Yarrow, 1973).

Often the dilemma faced in the postpartum period is the recognition of the normative expectation of a mother as being “attuned to other’s needs” and exhibiting selflessness (Beauboeuf-Lafontant, 2007), which often placed a strain on mother’s ability to care for themselves and be attuned to her own level of fatigue and need for relaxation. Tension arose because of the dichotomy between real life and the “perfect mother” who devotes all her time,
energy, and resources to the upbringing of her children (Mauthner, 2003, p. 95). Moreover, mothers exhibited a tendency to question their parenting skills and to compare their perceived abilities with those of other mothers (Beck, 2003; Hung, 2007; Roman et al., 2009) or to the high standards associated with the cultural ideal of a “serene and calm mother and baby” (Mauthner, 2003, p. 93). Without the social validation and approval for their maternal efforts, some mothers experienced a diminished sense of “moral worth” as they strived to be an “exceptional mother” with an “exceptional child” (Mauthner, 2003, p. 95). The cultural ideal of a good mother was exacerbated when women tried to excel at all roles and facets of their identity (e.g., being a mother, partner, employee, income earner).

While new mothers tried to build their maternal identity, and redefined themselves within the context of the macrosystem, the consequences of the societal value placed on thinness and good mothering, and the resulting realities experienced may be at odds with the value placed on mothering (Stern & Kruckman, 1983). Hence, maternal identity can be associated with a sense of loss of their prepregnancy self, work, social life and autonomy (Patel, Lee, Wheatcroft, Barnes, & Stein, 2005). Given the contextual nature of the development of maternal identity and the lack of research on its impact on the Experience of Embodiment, Body Esteem and Disordered Eating, maternal identity is important to consider.

**Comfort with breastfeeding.**

Women’s decision to begin breastfeeding and comfort with the act of publicly breastfeeding are influence by the macrosystem. For instance, the sexualisation of the breast in Western cultures (Rodriguez-Garcia & Frazier, 1995; Ussher, 1989; Young, 2003) has rendered the act of publicly breastfeeding at times unacceptable and it is often frowned upon or reproached
(Forbes, Adams-Curtis, Hamm, & White, 2003; Morse, 1990; Yalom, 1997). The qualitative study by Bailey (2001) highlighted the experience of breasts as fulfilling maternal roles (e.g., breasts are “for the child” and “they’re just practical”) and the tension with their “womanliness” (e.g., feeling “frumpy” after the birth), which conflicted with their ability to regard themselves as experiencing sexual desire. The tension with sexuality of the breast and breastfeeding was evident from Earle (2002) who stated, “breastfeeding creates tension between the sexual objectification of women’s bodies for pleasure and their role as an organic and natural method of infant feeding” (p. 212). Furthermore, the breast milk itself, as a bodily fluid, has been culturally described as “dirty” (Morse, 1990), “disgusting” (Fallon & Rozin, 1983), and “yucky” (Miller, 2005).

Johnston-Robledo and colleagues (2007, 2008) investigated the impact of the broader cultural context within which women made decisions regarding the infant feeding practices. In particular, they were interested in how the extent to which the concerns regarding breastfeeding as embarrassing, the impact of breastfeeding on breast shape, and the appropriateness of public breastfeeding within the societal context where women’s breasts are objectified as sexual objects could impact future breastfeeding practice. The results of both studies with non-pregnant and pregnant women revealed that an increased focus on self-objectification (e.g., body shame, surveillance) did not correlate with decreased breastfeeding intentions or negative breastfeeding attitudes suggesting that the mothering role may supersede the appearance-related aspects of feminine identity (Johnston-Robledo et al., 2007, 2008). Nonetheless, higher scores on self-objectification measures were positively correlated with greater concerns regarding breastfeeding practice on their bodies and sexuality, and with heightened levels of uncomfortableness with breastfeeding in public (Johnston-Robledo et al., 2007, 2008). Therefore, it is evident from previous findings that women who perceived breastfeeding as embarrassing and who engaged in
self-objectification tended to have concerns regarding their level of comfort with their body and sexuality, which then impacted their comfort with breastfeeding in public (Johnston-Robledo et al., 2007, 2008). However, no studies have investigated women’s comfort with public acts of breastfeeding (i.e., breastfeeding in the presence of others who are not their partner) and its relationship to Experience of Embodiment, Body Esteem and Disordered Eating.

**Relational factors.**

**Social support.**

The research into the role of close others, including partner, family and friends, whether it is supportive, critical or unconcerned, on women’s body esteem during and following pregnancy is scares. In fact, no studies to date have investigated the impact of social support on body image or esteem during pregnancy. Nonetheless, some empirical literature focused on the impact of social support on women’s ability to cope with changes in postpartum. For instance, greater assistance for “baby care” has been associated with women with positive attitudes towards the body, feeling more valued and placing less emphasis on her body (Erbil, Şenkul, Başara, Sağlam, & Gezer, 2012). However, confounding variables included the tendency for these women to have university education, be civil servant workers, regularly engage in physical activity, and have husbands with positive attitudes towards the women’s body size (Erbil et al., 2012). Therefore, the relationship between positive body image and social support in postpartum may have reflected an overall positive context as opposed to a direct link between social support with body image.

Mauthner (2003) highlighted the context of the postpartum period describing it as feeling “imprisoned in [your] own prison” (Mauthner, 2003, p. 100). From analysis of interviews with postpartum women, she noted that the postpartum period could involve an important loss of
freedom, a reduced ability to confide in others, a sense of loneliness and isolation, a lack of understanding from partners and friends who cannot empathize with their situation, and an overwhelming sense of all-consuming responsibility towards the child (Mauthner, 2003). Furthermore, the narratives of the women revealed that even with the presence of social supports, the societal ideals of a good mother and the fear of judgment, criticism, and rejection could affect women’s ability to disclose their true feelings and concerns resulting in a disconnected embodiment experience.

Although few studies investigate the impact of social support on body esteem, the presence of close others has been linked with a variety of postpartum-related factors. For instance, the presence of social support, particularly intimate and community supports, has been shown to impact levels of perceived stress (Underwood, 2000) and moderate the impact of stress on parenting satisfaction and parent-child relationships (Crinic, Greenberg, Ragozin, Robinson, and Basham, 1983). Moreover, the investigation into the postpartum period also involved looking at the link between social support and the presence of depressive symptoms. Within the context of a strong association between recent life stress and depression symptomatology, diminished marital relationships and social supports also negatively correlated with depression (Paykel, Emms, Fletcher, & and Rassaby, 1980). Moreover, the presence of two or more friends or family members during the postpartum period has been associated with fewer depressive symptoms (Surkan, Peterson, Hughes, & Gottlieb, 2006). However, it is unclear whether the presence of partners and strong social supports continues as the transition progresses from pregnancy to postpartum and how the presence of social support impacts the Experience of Embodiment, Body Esteem and Disordered Eating during this transition.
Relationship with partner.

As evident from the literature thus far, the transition of pregnancy and its macrosystem, biological and psychological components affect mostly women, as opposed to their male counterparts. For that reason, it is not surprising that the experience of men during the transition to fatherhood has comparatively rarely been study. Amongst the few studies conducted, Draper (2002a, 2002b, 2003) highlighted the desire of men during pregnancy to be “involved”, but also spoke of the difficulties experienced when trying to engage with the reality of their partner’s physiological transformation resulting in a sense of “disembod[i]ment” and distance from the pregnancy (Draper, 2003). Interestingly, Draper (2003) portrayed pregnancy, birth and the process of breastfeeding as a time of shifting power where women were perceived as “strong” and men as “weak” and “disempowered” (p. 750). However, certain pregnancy-related moments (e.g., the pregnancy test, ultrasounds, baby’s movements, and birth) assisted men in confirming the pregnancy and entering this unfamiliar territory (Draper, 2003).

A study investigating the transition to parenthood (e.g., Condon, Boyce, & Corkindale, 2004) demonstrated that man’s ratings related to the quality of their relationship with their partner revealed a significant deterioration from pregnancy to six months and one year postpartum. This finding was supported and extended by a previous longitudinal study demonstrating that both partners’ marital satisfaction continued to decline well into the second year postpartum (Cowan, Cowan, Hemin, Garrett, Cosh, Curtis-Boles, & Boles, 1985). Feelings of jealousy and exclusion on the part of the father were reported culprits of the decline in partner relationship (Ahlborg & Strandmark, 2001, 2006; Olsson, Robertson, Björklund, & Nissen, 2010), especially when mothers were breastfeeding or when the fathers’ work hours interfered with being involved with the daily
activities of childcare (Fägerskiöld, 2008). Moreover, the distribution of tasks within the partnership changed from an equal sharing to a more traditional, gender-specific arrangement with women performing most childcare duties once couples had children (Cowan et al., 1985). It is therefore not surprising that the couples’ satisfaction with their roles declined when they became parents, with the greatest decline shown for mothers (Cowan et al., 1985).

Furthermore, partners and the spousal relationship represented an important “looking glass” (Cooley, 1992, p.194) in the development of new mothers’ definition of themselves in postpartum. For instance, Ogle, Tyner, and Schofield-Tomschin (2011) interviewed heterosexual married couples with regards to the important postpartum context on the negotiation of the bodily concerns and the redefining of women’s bodies and selves. Within the context of the women’s current body being considered “transitory” (Ogle et al., 2011, p. 40), the bias towards “reclaiming their prepregnancy body” (Ogle et al., 2011, p. 41) was confirmed and echoed by some husbands who expressed their preference for their wife to “[get] back in the same shape she was in [before the pregnancy]”. For most husbands, their acceptance of their wives’ pregnancy and postpartum bodies hinged upon its transience and noted that they would feel “bothered” if attempts were not made by their wives to “reform her postpartum body” in terms of “attractiveness” and “physical fit[ness]” (Ogle et al., 2011, p. 41). Yet, husbands chose to not discuss these weight-related concerns with their wives, because of the perception of such concerns as being “painful, embarrassing, or humiliating” (Ogle et al., 2011, p. 41) and an unfamiliarity with the body’s ability to transform in the postpartum period.

Women also engaged in the “looking glass” process by initiating discussions with their husbands pertaining to bodily worries, which could be perceived as affirming and supportive. Such
findings were consistent with research demonstrating that women whose partners had positive attitudes about their female partners’ body in the postpartum period tended to have more positive attitudes towards their bodies (Erbil et al., 2012). Overall, Ogle and colleagues’ (2011) exploration of the lived experiences of wives and husbands revealed that there is (1) a commitment, yet some compassion from male partners, towards the process of “regaining their appearance”, (2) an uncertainty pertaining to the time involved in this process, (3) a frustrating ambivalence surrounding bodily issues, and (4) an array of positive and negative outlook towards the women’s bodies (Ogle et al., 2011). Therefore, husbands play an important role in contributing to the perception that women should strive to reclaim their body and in supporting the new mothers in embodying the pregnancy-related changes.

The relationship with the women’s partner could also reinforce the patriarchal views and expectations of women as needing to be exceptional mothers and homemakers. Although society and women have attempted to socialize male partners to the roles of women, frustrations have arisen at the inequality and gendered distribution of tasks and involvement within the household and with childcare influencing both the couple’s relationship and the connected embodiment experiences of mothers. Furthermore, women who experienced a close relationship with their partners continued to comment on the difficulties in expressing concerns and doubts with their partners fearing that their husband would judge them as weak or a failure (Mauthner, 2003). Therefore, it is evident that within the relationship with their partner, there are factors at play that have the potential to significantly influence the embodied experience of women during the transition from pregnancy into postpartum. However, few studies have investigated the impact of spousal relationships on pregnant and postpartum women’s definition of the Experience of
Embodiment, Body Esteem and Disordered Eating throughout this transition, specifically during pregnancy.

**Behavioral factors.**

Three behavioral factors, Physical Activity, Breastfeeding Practice, and Sexual Relationships, have been found to affect the transition from pregnancy to the postpartum period.

**Physical activity.**

Guidelines regarding physical activity during pregnancy state that, “in the absence of either medical or obstetric complications, 30 min[utes] or more a day on most, if not all, days of the week is recommended” (ACOG Committee on Obstetric Practice, 2002, p. 171). Many pregnant and postpartum women do not engage in physical activity. This is not surprising given that this is a trend that begins at a young age with continued drastic reduction in engagement in physical activities between adolescents and women between 18 and 29 and between 30 and 44 years of age from 43.6% to 10.8% and 14.9%, respectively (Pratt, Macera, & Blanton, 1999). Such a drop is of ongoing concern as medical experts have long emphasized that “there is no drug in current or prospective use that holds as much promise for sustained health as a lifetime program of regular physical activity” (Bortz, 1982, p. 1203).

Among the women who were physically active in the prepregnancy period, levels of physical activity throughout pregnancy tended to decline (Evenson, Savitz, & Huston, 2004). Lower levels of physical activity during pregnancy have been associated with the vicious cycle of inactivity, high gestational weight gain, and obesity (Hauger, Gibbons, Vik, & Belizán, 2008). Additionally, physical activity has been stated to be vital for the health of the mother and baby.
where lower exercise levels have been associated with obstetrical complications (USDHHS, 2008), gestational diabetes (Dempsey, Butler, Sorensen, Lee, Thompson, Miller et al., 2004; Oken, Ning, Rifas-Shiman, Radesky, Rich-Edwards, & Gillman, 2006) and preterm delivery (Evenson, Siega-Riz, Savitz, Leiferman, & Thorp, 2002). Despite physical activity recommendations, health care providers provide little advice or offer conservative guidance regarding physical activity during pregnancy (Ferrari, Siega-Riz, Evenson, Moos, Melvin, & Herring, 2010). It is perhaps no surprise then that relatively few pregnant women meet the physical activity recommendations (Olson, Strawderman, Hinton, & Pearson, 2003; Taffel & Keppel, 1986; Taffel, Keppel, & Jones, 1993), that trends point to a decrease in activity as the pregnancy progresses (Borodulin, Evenson, Wen, Herring, & Benson, 2008; Olson et al., 2003; Siega-Riz, Adair, & Hobel, 1994; Taffel et al., 1993), and that in comparison with their non-pregnant counterparts, pregnant women and new mothers exercise significantly less (Nomaguchi & Bianchi, 2004; Sternfeld, Ainsworth, & Queensbury, 1999). In the study by Boscaglia and colleagues (2003), an assessment of physical activity in early pregnancy was significantly positively associated with greater bodily satisfaction during both pregnancy assessments (Boscaglia et al., 2003). Moreover, Abraham, Taylor, and Conti (2001) stated that participation in low intensity levels of physical activity as an aid to control weight and shape during pregnancy was the only variable associated with reduced postpartum distress (Abraham et al., 2001).

In the postpartum period, Erbil and colleagues (2012) demonstrated a significant positive correlation between body image satisfaction and level of physical activity whereby women who exercised regularly tended to have more positive attitudes towards their bodies (Erbil et al., 2012). Furthermore, Norman, Sherburn, Osborne, & Galea (2010) demonstrated that participating in a Mother and Baby program involving one hour of physical therapy exercise with their babies and
thirty minutes of education with a health care professional per week for eight weeks resulted in greater improvements in well-being (i.e., as measured by the Positive Affect Balance Scale; Bradburn, 1969) and lower depressive symptoms (i.e., as measured by the EPDS; Cox, Holden & Sagovsky, 1987) when compared with new mothers in the Education Only group who received mailed material once a week for eight weeks. Furthermore, a quasi-experimental one-group pretest-post-test study demonstrated that engaging in a Yoga and Pilates exercise program once a week over a three months’ period within the first six months’ postpartum resulted in improved physical (i.e., reduction in body weight) and mental health (e.g., symptoms of depression; Ko, Yang, Fang, Lee, & Lin, 2013). Although, the lack of control group precludes the generalization of the findings, such improvements could indicate the value of a moderate, body attuned way of enjoying physical activity (Ko et al., 2013).

With regards to barriers to physical activity, the presence or absence of other pregnancy-related physiological factors (e.g., pain, nausea, fatigue and increased weight) and psychological factors (e.g., motivation, unfounded concerns for fetal growth or the pregnancy, depression and anxiety) have also been shown to be contributors to determining the level of exercise behavior (Bennett et al., 2004; Dennis, Ross, & Grigoriadis, 2007; Evenson et al., 2002, 2004; Gadsby, Barnie-Adshead, & Jagger, 1993; Krans & Chang, 2011; Rauff & Downs, 2011). Additionally, the media-driven messages that one would need to exercise “in order to gain cultural power or privilege as mothers” (Nash, 2011, p. 50) have further pressured women into engaging in physical activity. Conversely, having a supportive network of friends and families has been an important motivator to staying committed to a postpartum exercise programs (Setse, Grogan, Cooper, Strobino, Powe, & Nicholson, 2008). For instance, having female friends with who to exercise acted as an influential force in the decision to initiate and to continue engaging in physical activity.
(Eyler, Baker, Cromer, King, Brownson, & Donatelle, 1998; Keller, Allan, & Tinkle, 2006; Thornton, Kieffer, Salabarría-Peña, Odoms-Young, Willis, Kim et al., 2006).

Overall, it appears that physical activity within the context of the macrosystem and other biological and psychological factors is a relevant component to women’s experiences with their bodies and well-being during pregnancy and postpartum. Therefore, it is important to understand the impact of participating in physical activity on the Experience of Embodiment, Body Esteem and Disordered Eating in the context of enjoying the process of engagement in physical activity instead of the societal pressure to utilize such activities as harsh weight-control measures.

**Breastfeeding practice.**

Infant feeding practices and recommendations have fluctuated over the last century alternating between breastfeeding and formula. For instance, from the mid-1940s to early 1970s, most infants were bottle fed due to the development of formula (Meyer, 1958; Martinez & Nalizienski, 1979), an increase in mobility and a society in which women needed to return to work early in the postpartum period (Brack, 1975). Ever since, breastfeeding has gradually and increasingly become mothers’ infant feeding method of choice (Martinez & Nalizienski, 1979; Ryan, Wenjun, & Acosta, 2002) with campaigns supporting the practice of breastfeeding (e.g., “Brest is Best”; Stanway & Stanway, 1978). Internationally, it is evident that breastfeeding is the optimal method of infant feeding given its benefits for infant growth, immunity, intelligence and cognitive development (Kramer, Aboud, Mironova, Vanilovich, Platt, Matush et al., 2008; Kramer, Chalmers, Hodnett, Sevkovskaya, Dzikovich, Shapiro et al., 2001; Kramer & Kakuma, 2004; Lucas, Morley, Cole, Lister, & Leeson-Payne, 1992). Moreover, it has also been shown to allow mothers to form a close connection with their newborn, with more interactive behaviors
(e.g., hugging, kissing) observed among breastfeed than bottle-fed infants with their mothers (Mercer, Ferketich, May, DeJoseph, & Sollid, 1988; Müller, 1996; Shiau, Chang, Hung, & Yu, 1994).

Expert guidelines suggest that newborns be breastfeed exclusively for the first six months and at least into the second year of life (World Health Organization, 2014). Reasons for termination included a new pregnancy, return to work, infant health difficulties, cultural expectations, shame, embarrassment and their experience with breastfeeding (Earle, 2002; Guttman & Zimmerman, 2000; Hannon et al., 2000; Harrison, Zaghloul, Galal, & Gabr, 1993; Marandi, Afzali, & Hossaini, 1993; Martinés, Ashworth, & Kirkwood, 1989). With regards to disordered eating behaviors, the introduction of formula from either birth or after a short duration of breastfeeding were associated with restrained and external eating behaviors (Brown, 2014).

Moreover, data from two separate cross-sectional studies (Barnes et al., 1997; Foster et al., 1996) indicated that psychological and relational factors are associated deterrents to breastfeeding. For instance, univariate analyses in both studies revealed that women with concerns about weight and shape (i.e., as measured by the Weight Concern and Shape Concern subscales of the Eating Disorder Examination Questionnaire [EDE]; Fairburn & Beglin, 1994) were less likely to indicate that they intended to breastfeed their child. Additional criteria associated with breastfeeding intention as a feeding method included a positive relationship with the unborn child, being a first-time mother and a non-smoker (Barnes et al., 1997; Foster et al., 1996; Huang et al., 2004; Nommsen-Rivers et al., 2009).

Nevertheless, research findings obtained from women in the postpartum period suggests that measurements of body image in the last trimester were not associated with women who are
successful in breastfeeding versus those who were not (Hughes, 1984) or with breastfeeding duration (McCarthy, 1999). However, women who breastfeed for longer durations negatively correlated with body image satisfaction (Erbil et al., 2012). Clarifying the impact of infant feeding method practices in postpartum on the Experience of Embodiment, Body Esteem and Disordered Eating is important.

**Sexual relationships.**

Cross-sectional studies assessing women’s sexual functioning, behaviors and comfort during sexual activity have demonstrated a positive relationship with body image (Ackard, Kearney-Cooke, & Peterson, 2000; Pujols, Meston, & Seal, 2010). In the prenatal and postpartum period, a woman’s definition of her sexual identity is often intertwined with having a body that is further removed from the socially sanctioned ideals of thinness. In addition, the biological and physiological changes incurred through pregnancy can include anatomic changes to the pelvic floor resulting in urinary incontinence or pain during intercourse (Rogers & Leeman, 2007). As a result of biological, physiological and body image changes, many women thought that their partners viewed them as less attractive during pregnancy (Chang, Chao, & Kenney, 2006). Nonetheless, a small sample reported an intact sexual identity because of the positive reaction from their husband towards their bodies. Such findings have been replicated in a study by Radoš, Vraneš, and Šunjić (2014) who demonstrated that body image self-consciousness was shown to be an important contributor to sexual satisfaction in pregnancy; however, sexual frequency and satisfaction were better predicted by relationship dynamics (e.g., communication) and the fear associated with the perceived harmful impact of sexual intercourse on the fetus.
The relationship of sexual functioning and body self-consciousness was further elaborated in a prospectively longitudinal study during the first and third trimesters as well as six months’ postpartum (Pauls, Occhino, & Dryfhout, 2008). Despite a stable level of sexual desire during and after pregnancy, sexual functioning and satisfaction declined during pregnancy and this deterioration was not recovered by six months’ postpartum (Pauls et al., 2008). The stability of sexual desire with a decline in sexual functioning and activity has also been demonstrated in a cross-sectional study of pregnant women in each of the three trimesters (Chang, Chen, Lin, & Yu, 2011) as well as in retrospective recalls of postpartum women for prepregnancy and for each trimester (Pauleta, Pereira, & Grace, 2010). During early pregnancy, sexual functioning positively correlated with body image; however, in the postpartum period, sexual functioning only negatively correlated with urinary symptom distress with no relationship to body image (Pauls et al., 2008).

The latter finding differs from a cross-sectional study where assessments at four and twelve months postpartum revealed that both mothers (50-55%) and fathers (40-45%) reported maternal body image as a concern, which had an impact on the couple’s sexuality (Pastore, Owens, & Raymond, 2007). After the delivery of an infant, the sexual functioning of women may be impacted by a variety of biological factors, including pain, fatigue, low sexual desire or libido, residual effects of the delivery methods and obstetric perineal damage, breastfeeding, and hormonal and mood changes (Barrett, Pendry, Peacock, Victor, Thakar, & Manyonda, 2000; Erol, Sanli, Korkmaz, Seyhan, Akman, & Kadioglu, 2007; Hipp, Kane Low, & van Anders, 2012; Pauls et al., 2008; Pastore et al., 2007). Additional concerns for postpartum women at twelve months postpartum included the physical recovery from labour and delivery, deciding when sexual intercourse can resume and frequency, and the impact of child rearing on timing of sexual activities. For male partners, their concerns included the presence of maternal mood swings,
resuming intercourse, and the use of birth control (Pastore et al., 2007). Furthermore, cross-sectional studies of psychological factors, including the experience of depressive and anxiety symptoms (Chivers, Pittini, Grigoriadis, Villegas, & Ross, 2011; Hipp et al., 2012), have been linked to decreased sexual desire.

Moreover, the macrosystem’s societal ideals of a “good” mother and partner can affect postpartum women’s sexual functioning. For instance, Trice-Black and Foster (2011) suggested that new mothers had to contend with the culturally constructed view of a mother who “ha[s] it all together” (p. 96), including a great body, a loving relationship with her partner, and a devoted relationship with her children in addition to an active and successful social and professional life. Woolhouse, McDonald, and Brown (2012) conducted in depth interviews with 18 Australian women concerning their postpartum sexual health and intimate relationships. The circumstances surrounding being a new mother (e.g., tiredness, loss of spontaneity and freedom, decreased time as a couple and by oneself, resentment over division of household responsibilities, the emotional connection with their child taking precedence over the intimate partner relationship, and loss of libido) were highlighted in the women’s narratives as factors that hindered the engagement in sexual activities with their partners (Woolhouse et al., 2012). Additionally, body image concerns and feelings of guilt and failure also impacted sexual functioning. The former was prominent in the women’s narratives as associated with feelings of unattractiveness and self-consciousness regarding their body. Moreover, women experienced feelings of guilt and failure as a result of the contrast between their current levels of sexual interest and their stated “obligation,” “duty” and expectations of themselves as sexual partners (Woolhouse et al., 2012, p. 188). Therefore, discrepancies between their perceived current and expected sexual intimacy levels could leave
women feeling unattractive and self-conscious about their bodies increasing their vulnerability and restricting their desire to engage in sexual contact (Woolhouse et al., 2012).

In contrast, Woolhouse and colleagues (2012) discussed several facilitators of sexual intimacy in the women’s narratives during the postpartum period. First, an approach to childrearing and household decisions and tasks as a team with shared responsibilities allowed women to feel physically and emotionally closer to their partner (Woolhouse et al., 2012). Additionally, despite its practical challenges, increasing the time spent as a couple also helped. Furthermore, postpartum mothers thought it was important for both partners to discuss their postpartum priorities (e.g., sex, sleep, or caring for their infant).

Overall, a relationship exists between sexual relationships and body image satisfaction during and after pregnancy. Furthermore, communication between partners regarding the priority of sexual relationships within the context of other demands (e.g., child care) and factors (e.g., fatigue in both pregnancy and postpartum), the impact of the macrosystem’s definition of the “good” mother who “has it all” (Trice-Black and Foster, 2011; Woolhouse et al., 2012), and feelings of empowerment on the mother’s behalf regarding the functionality of their bodies may also contribute to the embodied experience. Therefore, Sexual Relationships between partners is an important facet to explore.

**Rationale and Objectives of the Present Study**

The experience of positive connections with the body is related to well-being and pregnancy may shift women’s experiences of their bodies. While some quantitative research studies have found positive (Boscaglia et al., 2003; Davies & Wardle, 1994, Loth et al., 2011) or
neutral (Boscaglia et al., 2003; Duncombe et al., 2008; Skouteris et al., 2005) shifts during pregnancy, research, particularly prospectively longitudinal studies (Clark & Ogden, 1999; Drake et al., 1988; Duncombe et al., 2008; Fairburn & Welch, 1990; Goodwin et al., 2000; Lombardo, 2001; Skouteris et al., 2005; Strang & Sullivan, 1985) and qualitative inquiries (Bailey, 2001; Clark et al., 2009a; Fox & Neiterman, 2015; Johnson et al., 2004; Nash, 2012; Warren & Brewis, 2004) often pointed at negative changes to the Experience of Embodiment, Body Esteem and Disordered Eating. For example, prospective longitudinal studies during pregnancy found that body image and esteem either remained stable from early pregnancy (i.e., week 16) into late pregnancy (i.e., until week 39; Duncombe et al., 2008; Skouteris et al., 2005) or worsened as the pregnancy progressed (i.e., a decline from the 6th month to the 9th month; Drake et al., 1988).

Similarly, the postpartum period was also marked by significant shifts in women’s experiences. Unlike the research into pregnancy, the postpartum period was reliably marked with initial body image dissatisfaction (Bailey, 2001; Clark et al., 2009a; Fox & Neiterman, 2015; Hiser, 1987, Johnson et al., 2004; Jordan et al., 2005; Kline et al., 1998; Lombardo, 2001; Rallis et al., 2007; Strang & Sullivan, 1985; Walker et al., 2002) and with a decrease in such concerns throughout the first-year post-baby (Lombardo, 2001, Rallis et al., 2006).

Nonetheless, to date, research about the Experience of Embodiment, Body Esteem and Disordered Eating during and following pregnancy has been limited in specific ways. First, findings have highlighted the impact of single or a small number of factors related to women’s experiences with their bodies. The current research literature pointed to relevant variables of the macrosystem including factors such as Ethnicity (Boyington et al., 2007; Carter-Edwards et al., 2010; Groth et al., 2012; Krans & Chang, 2011; Mauthner, 2003; Neiterman, 2013; Siega-Riz et
al., 2010; Walker et al., 2002, 2004). Socioeconomic Status (e.g., Groth et al., 2012; Field et al., 2006; Health Canada, 2011; Mauthner, 2003; O’Hara & Swain, 1996; Shrewsbury et al., 2009; Siega-Riz et al., 2010; Walker et al., 2002, 2004), and Pressures for Thinness (Hopper & Aubrey, 2011; Skouteris et al., 2005; Sumner et al., 1993; Welsh, 2010). Other relevant variables included biological factors, such as Weight Gain from Prepregnancy (Bagheri et al., 2013; Fairburn & Welch, 1990; Mehta et al., 2011; Phillips et al., 2012, 2013, 2014; Walker, 1998), Fatigue (Affonso & Mayberry, 1990; Price, 1996; Rubin, 1984), and Labour and Delivery Control. Psychological variables related to Depression (Clark et al., 2009a, 2009b; Downs et al., 2008; Mauthner, 2013; Nicolson, 2003; Skouteris et al, 2005), Anxiety (Beddoe & Lee, 2008; Carter et al., 2000; Green et al., 2003; Moran et al., 2014), the Internalization of the Thin Ideal (Johnson et al., 2004; Welsh, 2010), and Maternal Beliefs about Competence (Kamysheva et al., 2008) were also found to affect body image and embodiment during pregnancy and postpartum. Moreover, relational variables, including Social Support (Crinic et al., 1983; Erbil et al., 2012; Mauthner, 2003; Paykel et al., 1980; Surkan et al., 2006) and Relationship with Partner (Condon et al., 2004; Cowan et al., 1985; Draper, 2002a, 2002b, 2003; Erbil et al., 2012; Ogle et al., 2011) were correlated with body image and embodiment. Similarly, relevant behavioral variables included Physical Activity (Abraham et al., 2001; Boscaglia et al., 2003; Erbil et al., 2012; Norman et al., 2010), Breastfeeding Practice (Bailey, 2001; Barnes et al., 1997; Erbil et al., 2012; Foster et al., 1996; Johnston-Robledo et al., 2007, 2008), and Sexual Relationships (Chang et al., 2006, 2011; Pauls et al., 2008; Pastore et al., 2007; Trice-Black & Foster, 2011; Woolhouse et al., 2012).

Examining concurrently the myriad of factors that seemed to shape women’s experiences with their bodies during and following pregnancy may enhance the understanding of shifts during this important transition. In turn, this can lead to enhanced education and interventions supporting
women and their partners through these changes. The present study aimed to include factors from all the domains that research highlighted as relevant to pregnant and postpartum women’s Experience of Embodiment, Body Esteem and Disordered Eating, and to combine them into a model.

Most research to date on the factors that shape body experiences of pregnant and postpartum women have utilized a cross sectional research methodology, rather than a prospective methodology that allows for inferences regarding causality. For example, only the studies of the role of Ethnicity (Walker et al., 2002, 2004), Socioeconomic Status (Shrewsbury et al., 2009), Pressures for Thinness (Skouteris et al., 2005), Weight Gain from Prepregnancy (Mehta et al., 2011), Relationship with Partner (Cowan et al., 1985; Draper, 2002a, 2002b, 2003), Depression (Clark et al, 2009b; Downs et al., 2008; Phillips, 2013, 2014; Rauff & Downs, 2011; Skouteris et al., 2005; Walker et al., 2002), Anxiety (Carter et al., 2000; Da Costa et al., 2000), and Sexual Relationships (Pauls et al., 2008) followed a prospective methodology, albeit during different timeframes in the course of pregnancy and the postpartum period. The present study aimed to utilize a prospective methodology in examining a myriad of variables.

Furthermore, the current study proposed to examine body experiences at three different prospective time points during this transition period: once in pregnancy and twice during the postpartum period. To date, some studies (Carter et al., 2000; Clark et al., 2009b; Cowan et al., 1985; Da Costa et al., 2000; Downs et al., 2008; Draper, 2002a, 2002b, 2003; Mehta et al., 2011; Pauls et al., 2008; Phillips, 2013, 2014) have used a three or more time point prospective methodology throughout pregnancy and the postpartum. However, these studies focused on a limited number of factors on the Experience of Embodiment, Body Esteem and Disordered Eating.
The current research literature showed that measurements of body image and esteem during pregnancy were conducted at different points in time, all the way from the 14th gestational week to the 9th month of pregnancy (Boscaglia et al., 2003; Baker, Carter, Cohen, & Brownell, 1999; Clark et al., 1999a, 2009; Davies & Wardle, 1994; Drake et al., 1988; Duncombe et al., 2008; Goodwin et al., 2000; Mehta et al., 2011; Rauff & Downs, 2011; Skouteris et al., 2005). Given the inconsistencies in the timing of questionnaire administration during this period and the general consensus that body image changes during pregnancy are either unchanged, improved (Boscaglia et al., 2003; Davies & Wardle, 1994; Duncombe et al., 2008; Loth et al., 2011; Skouteris et al., 2005) or at their lowest in late pregnancy (Drake et al., 1988; Goodwin et al., 2000; Strang & Sullivan, 1985), the current study aimed to select a prenatal period that reflected the consensus of measurement and body image and esteem trends, specifically: late pregnancy after the twenty-sixth week of gestation (i.e., representing from the sixth month of pregnancy and the last trimester) when body image tended to be at its pregnancy lowest (Drake et al., 1988; Goodwin et al., 2000; Strang & Sullivan, 1985). Further, measurements of body image taken in postpartum also ranged from the second week to the twelfth month postpartum (Clark et al., 2009a; Hiser, 1987; Gjerdingen et al., 2009; Lombardo, 2001; Rallis et al., 2007; Strang & Sullivan, 1985) with the research findings highlighted that an improvement in body satisfaction is observed after the 6th to 8th month following childbirth (Lombardo, 2001, Rallis et al., 2007; Strang & Sullivan, 1985). Given the wide range of measurement time points and the observed change in postpartum body satisfaction between the sixth and eight months, two postpartum periods were selected: between weeks thirteen and seventeen and between weeks twenty-eight and thirty-two postpartum (i.e., around the third and sixth months’ postpartum markers, respectively).
Other limitations of previous research involved sample sizes and definitions of body experiences. Only the studies of the Body Esteem and Disordered Eating (Clark et al., 2009a; Davies & Wardle, 1994; Duncombe et al., 2009, Loth et al., 2011; Skouteris et al., 2005; Strang & Sullivan, 1985; Walker et al., 2002), Ethnicity and Socioeconomic Status (Field et al., 2006; Health Canada, 2011; Walker et al., 2002, 2004), the Pressures for Thinness (Hopper & Aubrey, 2011; Skouteris et al., 2005; Welsh, 2010), Weight Gain from Prepregnancy (Bagheri et al., 2013; Mehta et al., 2011; Phillips et al., 2013, 2014; Walker, 1998), Social Support (Erbil et al., 2012; Paykel et al., 1980), Relationship with Partner (Erbil et al., 2012), Depression (Clark et al., 2009b; Downs et al., 2008), the Internalization of the Thin Ideal (Welsh, 2010), Maternal Beliefs about Competence (Kamysheva et al., 2008), Physical Activity (Erbil et al., 2012), Breastfeeding Practice (Erbil et al., 2012), and Sexual Relationships (Chang et al., 2011; Pastore et al., 2007) used samples larger than 100 participants.

In terms of women’s experiences of their bodies, a variety of measures have been used, including the Body Attitudes Questionnaire (Duncombe et al., 2008; Phillips et al., 2012, 2013; Rallis et al., 2007; Skouteris et al., 2005), the Body Cathexis Scale (Boscaglia et al., 2003; Goodwin et al., 2000; Strang & Sullivan, 1985; Walker, 1998), the Body Shape Satisfaction Scale (Loth et al., 2011), the 8-item Body Shape Questionnaire (Gjerdingen et al., 2009), the Contour Drawing Rating Scale (Duncombe et al., 2008; Rallis et al., 2007; Skouteris et al., 2005), the Eating Disorder Inventory (Davies & Wardle, 1994), the Dutch Eating Behaviour Questionnaire (Clark & Ogden, 1999; Davies & Wardle, 1994), and the Multidimensional Body-Self Relations Questionnaire (Lombardo, 2001). However, these measures most often involved the ranking of satisfaction with specific body parts, and may, therefore, have not addressed important dimensions of the way in which women experience living in their bodies. For this reason, this study employed
three different outcome measures to assess women’s experiences of inhabiting their bodies: the Experience of Embodiment (Piran, 2016; utilizing the Experience of Embodiment Scale of the Embodiment Scale for Women; Piran & Teall, 2006), Body Esteem (using the Body Esteem Scale for Adolescents and Adults [BESAA]; Mendelson et al., 2001) and a composite measure of Disordered Eating (i.e., assessing restraint, dieting, bingeing and the use of unhealthy and extreme weight control behaviors). The Experience of Embodiment Scale, anchored in women’s research narratives, includes the dimensions of positive connection with the body, agency and functionality, body attunement and self-care, experiences and expression of sexual desire, a subjective versus objective lens in inhabiting the body, and the experience of the body as a disruptive site to social adjustment. Moreover, measures of Body Esteem, and Disordered Eating were included to represent and assess the multiple factors within these traditional constructs.

Towards enhancing the understanding of women’s body experiences during and following pregnancy using the theoretical framework of Bronfenbrenner and Morris’ Bioecological Model (1998, 2006) and grounded in the aforementioned empirical research, this study proposed to: (1) examine concurrently the role that the macrosystem (Ethnicity, Socioeconomic Status, and Pressures for Thinness) as well as biological (Weight Difference from Prepregnancy, Fatigue, and Labour and Delivery Control), psychological (Depression, Anxiety, Internalization of the Thin Ideal, Maternal Beliefs about Competence, and Comfort with Breastfeeding), relational (Social Support and Relationship with Partner), and behavioral factors (Physical Activity, Breastfeeding Practice, and Sexual Relationships) play in women’s body experiences during the transition period from pregnancy and into the postpartum; (2) use a three time point prospective methodology: Time 1 after the twenty-sixth week of gestation, Time 2 between weeks eleven and fourteen postpartum, and Time 3 between weeks twenty-four and twenty-eight postpartum; (3) include a final sample
of 250 participants; (4) use a broader range of measures of embodiment experience, body experiences and disordered eating. The objectives and research hypotheses of the present study are:

Objective 1: To investigate the shifts in women’s experiences with their bodies longitudinally across the pregnancy into the postpartum transition period.

Hypothesis for Objective 1: It was hypothesized that a decline in positive Experience of Embodiment and Body Esteem and an increase in Disordered Eating would be observed in early postpartum (Time 2) and late postpartum (Time 3) in comparison with the pregnancy measurements (Time 1). Given that previous research studies have demonstrated an improvement in body image satisfaction between the 6th and 8th month postpartum (Lombardo, 2001; Rallis et al., 2006), the present study does not expect to observe an improvement in the Experience of Embodiment and Body Esteem or a reduction in engagement in Disordered Eating between early (Time 2) and late postpartum (Time 3).

Objective 2: To investigate cross-sectionally the patterns of relationships as well as to examine the contribution of each of the macrosystem, biological, psychological, relational, and behavioral factors in women’s Experience of Embodiment, Body Esteem and Disordered Eating in pregnancy and at two postpartum transition time points.

Objective 3: To investigate prospectively the patterns of relationships as well as to examine the contribution of each of the macrosystem, biological, psychological, relational, and behavioral factors in pregnancy (Time 1) and early postpartum (Time 2) which serve to foster, as well as hinder, women’s Experience of Embodiment, Body Esteem and
Disordered Eating during the early (Time 2) and late postpartum (Time 3) period measurements. Three models are proposed, that is the investigation of how the Time 1 predictor factors predict Time 2 (T1-T2 Model) and Time 3 outcome measures (T1-T3 Model), and how the Time 2 predictor factors predict the Time 3 outcome measures (T2-T3 Model).

Hypotheses for Objectives 2 and 3: It was hypothesized that each predictor variable would have a specific relationship with the outcome variables whether cross-sectionally or prospectively such that, a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns would be associated with (2a) women of ethnic minority (i.e., non-Caucasian women; Ethnicity variable), (2b) women of lower socioeconomic status (Socioeconomic Status variable), (2c) women who perceived fewer pressures to be thin from family, friends, dating partners and the media (Pressures for Thinness variable), (2d) women with a lower weight gain in pregnancy or weight difference in postpartum (Weight Difference from Prepregnancy variable), (2e) women who experienced fewer symptoms of fatigue (Fatigue variable), (2f) women who expressed greater feelings of control over themselves and their environment during their labour and birth (Time 2; Labour and Delivery Control variable), (2g) women who reported fewer depressive symptoms (Depression variable), (2h) women who reported experiencing fewer symptoms of anxiety (Anxiety variable), (2i) women who reported lower levels of internalization and awareness of the multidimensional impact of sociocultural pressures (Internalization of the Thin Ideal variable), (2j) women who reported greater maternal confidence and efficacy (Times 2 and 3, Maternal Beliefs about Competence variable), (2k) women who reported fewer feelings of discomfort with breastfeeding in public (Times
2 and 3, Comfort with Breastfeeding variable), (2l) women who indicated greater social support from family, friends, and a significant other (Social Support variable), (2m) women with greater relationship satisfaction with their partner (Relationship with Partner variable), (2n) women who reported greater engagement in exercise (Physical Activity variable), (2o) women who were not breastfeeding (Breastfeeding Practice variable), and (2p) women who experienced greater sexual satisfaction (Sexual Relationships variable).

With regards to these hypotheses, little or no research has been conducted investigated the relationship of these constructs with the concept of embodiment, particularly as it is measured in this study; therefore, the hypotheses are formulated based on the available research with body esteem and disordered eating. Moreover, the hypotheses related to ethnic minority (i.e., non-Caucasian women; Ethnicity variable) and socioeconomic status (Socioeconomic Status variable) are grounded on the limited and conflicting results and are therefore made with the understanding that ethnicity and socioeconomic status may be influenced by other contextual factors. The hypothesis with regards to Breastfeeding Practice was made with caution given that it was based on only one study which suggested that greater breastfeeding duration negatively correlated with body image satisfaction (Erbil et al., 2012).
Chapter 2
Methodology

The purpose of the current research study was to explore the influence of the biological, psychological, relational, and behavioral factors on women’s Experience of Embodiment, Body Esteem and Disordered Eating during pregnancy and into the postpartum within the context of the macrosystem in order to understand which factors serve to foster, as well as hinder, women’s satisfaction with their bodies. To meet the goals of the current study, a prospective longitudinal approach to quantitative inquiry was used whereby women completed questionnaires at three time points: around the twenty-sixth week of gestation and at approximately three- and six-months postpartum.

Procedure

Participants were recruited through advertisements (Appendices A-B) posted where advertising was permitted in the Greater Toronto Area communities (e.g., University of Toronto bulletin boards), childbirth and prenatal agencies (e.g., obstetrician/gynecologist physicians’ offices, doula services, prenatal exercise classes), on online forums (e.g., Kijiji, Craiglist, Facebook, message boards and chat rooms located in new mother support websites such as www.babycenter.ca), and at baby expos (i.e., Bump, Baby & Toddler Expo). The advertisement provided possible participants with the link to the online screening questionnaire (Appendix C) where they answered five brief questions and provided their email address. Based on these questions, the investigator determined eligibility, sent the participant a follow-up email regarding their eligibility (Appendix D), and if eligible, at the appropriate times during the pregnancy and postpartum (i.e., Time 1 after the twenty-sixth week of gestation, Time 2 between weeks eleven
and fifteen postpartum, and Time 3 between weeks twenty-four and twenty-eight postpartum), provided them with a link by email directing them to an online questionnaire. The links for the Times 2 and 3 online questionnaires were sent at eleven and twenty-four weeks postpartum, respectively, according to the participants’ due date obtained during the completion of Time 1 online questionnaires. The online link allowed participants to read about the study, consent to participate (Appendices E-G) and confidentially complete the survey encompassing demographic information, prenatal and postpartum questions (Appendices H-, respectively), outcome measures (the Experience of Embodiment, Body Esteem and Disordered Eating), as well as the predictor factors of macrosystem (Ethnicity, Socioeconomic Status, and Pressures for Thinness), biological (Weight Difference from Prepregnancy, Fatigue, and Labour and Delivery Control), psychological (Depression, Anxiety, Internalization of the Thin Ideal, Maternal Beliefs about Competence, and Comfort with Breastfeeding), relational (Social Support and Relationship with Partner), and behavioral factors (Physical Activity, Breastfeeding Practice, and Sexual Relationships). Upon completing each survey, the participants were directed to a page providing them with information and resources regarding emotional difficulties during this transition (Appendix K). Additionally, a thank you note was included at the end of each of the screening and three questionnaires informing participants of the following steps in the data collection process (i.e., timing of subsequent follow-up or end of study; Appendices L-O). The online survey also allowed participants to indicate whether they wished to receive compensation at Times 1 and 3 (Appendices P-Q) and information about the results of the study upon completion (Appendices Q). Participants were informed in the advertisement and during each data collection time points of two incentives to participate: 1) participants received a $10 e-gift certificate (e.g., Toys R Us, Chapters Indigo or Amazon.ca) after completing the initial questionnaire; and 2) they also had the potential of winning
one of five $200 e-gift certificates to Toys R Us, Chapters Indigo, or Amazon.ca if they completed all three study questionnaires. The winners of the five lottery prizes were selected at random upon completion of data collection and were contacted by email to obtain their preferred vendor.

**Ethical Considerations**

Human subject’s consideration and clearance was reviewed and approved by the University of Toronto Research Ethics Board. To ensure confidentiality, each questionnaire links sent at Times 1, 2, and 3 were individually customized to each participant to prevent participant identification and tracked through the online survey database. A database with the participants’ email address and their research identification numbers was kept separately on a secure computer accessible only to the investigators. FluidSurveys, a Canadian survey software complying with Canadian privacy policies, hosted the online questionnaires and allowed the data to be safely and securely collected. Moreover, given that the measure of depression used in this study (i.e., the Edinburgh Postnatal Depression Scale) included an item related to the thought of harming oneself, participants who responded positively to this question (i.e., a response of Hardly Ever, Sometimes, and Yes, quite Often) were emailed additional information and resources regarding emotional difficulties during this transition (Appendix K).

**Participants**

**Determination of the Sample Size.**

According to Green (1991), a minimum acceptable sample size of $50 + 8k$ (where $k$ is the number of predictors) is required for an overall fit of a regression model. Furthermore, in order to assess individual predictors within the model, Green (1991) recommended a minimum sample size
of 104 + \( k \). Therefore, given that the current study included a potential of 16 measures (i.e., \( k \)) to assess the predictors of macrosystem, and the biological, psychological, relational, and behavioral factors, the minimum sample size to meet the two above stated requirements by Green (1991) was 178 and 120, respectively. Additionally, Stevens (2009) proposed a more conservative formula to determine sample size (i.e., 15\( k \)) for regression equations in social sciences resulting in a proposed sample of 240. The current study therefore aimed to obtain a final sample 250 women to satisfy all these three requirements. However, to account for attrition (i.e., loss to follow-up), a greater initial sample was required. Of the studies discussed in the literature review utilizing a three or more time point prospective methodology throughout pregnancy and the postpartum (Carter et al., 2000; Clark et al., 2009b; Cowan et al., 1985; Da Costa et al., 2000; Downs et al., 2008; Draper, 2002a, 2002b, 2003; Mehta et al., 2011; Pauls et al., 2008; Phillips, 2013, 2014), all but one (Carter et al., 2000) reported attrition rates, which ranged from 3\% to 41\% (\( M = 20.5, SD = 13.31, Mdn = 19.5 \)). Therefore, a loss to follow-up rate of 20\% was utilized resulting in an overall target sample size of 300 for completion of the first questionnaire.

**Description of Participant Exclusion and Attrition**

Participants initially completed an online screening questionnaire which assessed whether interested women met the inclusion criteria and (a) resided in Canada, (b) were of 18 years of age or older, (c) were able to complete the questionnaire after twenty-six weeks of gestation or more, (d) were able to read English, (e) had access to a computer for the duration of the study, and (f) provided a valid email address. A total of 424 participants accessed the online screening questionnaire. Thirteen interested participants were excluded for being ineligible to participate in the study after completing the screening questionnaire as a result of living outside of Canada (\( n = \)
and an incomplete email address \((n = 1)\). Of these remaining 411 participants, 292 women completed the first questionnaire administered during the prenatal period. One hundred and nineteen participants were excluded from the first questionnaire as a result of failing to complete the first questionnaire within one month of receiving the email invitation \((n = 108)\), giving birth prior to receiving the email invitation \((n = 2)\), miscarrying \((n = 3)\), requesting to withdraw from the study \((n = 3)\), and unknown reasons \((n = 3)\). Of these remaining 292 participants, 234 women completed the second questionnaire administered approximately three months’ postpartum. Fifty-eight participants were excluded after the second questionnaire as a result of failing to complete the second questionnaire within one month of receiving the email invitation \((n = 50)\), questionable responding \((n = 6)\), and requesting to withdraw from the study \((n = 2)\). Of these remaining 234 participants, 208 women completed the third and final questionnaire administered approximately six months’ postpartum. Twenty-six participants were excluded after the third questionnaire as a result of failing to complete the third questionnaire within one month of receiving the email invitation. Therefore, of the original 424 participants, 208 women completed the study in entirety.

Comparisons were conducted to examine differences in some of the demographic variables between the sample who completed the entire study \((n = 208)\) and the participants described who were excluded from the study after either the screening questionnaire or one of the three study questionnaires \((n = 216)\), as well as between those who completed the entire study \((n = 208)\) and those who were excluded from either the second or third questionnaire \((n = 84)\). For the first pairing, the only available variable from the screening questionnaire for comparison was Age. For
the second pairing, the comparisons were completed for Age and Socioeconomic Status\(^1\), and two categorical variables, Marital Status and Size of Population center. Independent samples \(t\)-tests were used for continuous demographic variables, and chi square tests were done for categorical demographic variables. In terms of comparing those who completed the entire study and those who were excluded, those who completed were significantly older (completed sample: \(M = 30.52, SD = 4.29\); excluded sample: \(M = 28.65, SD = 4.73\)), \(t(418) = -4.26, p < .001\). In terms of comparing those who completed the entire study and those who were excluded after completing the first questionnaire, those who completed were significantly older (completed sample: 30.52, \(SD = 4.29\); excluded sample: \(M = 28.69, SD = 4.61\)), \(t(289) = -3.22, p = .001\), and of higher socioeconomic status (completed sample: \(M = 12.15, SD = 2.50\); excluded sample: \(M = 11.39, SD = 3.05\)), \(t(269) = -2.12, p = .035\); however, there were no differences in terms of marital status \(\chi^2(1, N = 292) = 1.43, p = .233\) and size of population center \(\chi^2(2, N = 292) = 0.48, p = .787\).

**Final Sample Description.**

*Pregnancy.*

The final sample\(^2\) was comprised of 208 women, ages 19-46 (\(M = 30.52, SD = 4.29\)).

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\(^1\) The operationalization of demographic information described in this section can be found in Appendix H. The operationalization of the measure for Socioeconomic Status can be found under the heading of Socioeconomic Status under Outcome Measures in the Measures section.

\(^2\) The operationalization of demographic information described in this section can be found in Appendix H. The operationalization of the measure for Socioeconomic Status can be found under the heading of Socioeconomic Status under Outcome Measures in the Measures section.
pregnancy (Time 1) measures were administered between 26 and 41 weeks’ gestation ($M = 29.70$, $SD = 3.82$). Specifically, 120 women were between 26 and 29 weeks’ gestation, 47 were between 30 and 33 weeks’ gestation, 32 were between 34 and 37 weeks’ gestation, and 9 were between 38 and 41 weeks’ gestation. Most participants were first time mothers (65.4%) with others already having one child (26.4%), two (5.8%) or three or more (2.4%) children. Most participants were carrying a single baby (98.1%) while two participants reported carrying twins. Participants’ description of their pregnancy history, including current pregnancy, as defined as completing 24 or more gestational weeks prior to a live or still birth revealed that this was the first pregnancy for most women (53.8%). Other participants reported one (23.1%), two (16.3%), or three or more (6.7%) previous pregnancies. The current pregnancy was planned for most participants (78.8%) and fertility treatments were required to assist in the conception process in 7.7% of participants. Fertility treatments included prescribed medication in addition to assisted conception (2.9%), intrauterine insemination (IUI; 2.4%), surgery (1.9%), prescribed medication only (1%), in vitro fertilization (IVF; 0.5%), intracytoplasmic sperm injection (ICSI; 0.5%), and alternative treatments (e.g., acupuncture, fertility yoga, Chinese medicine; 0.5%). Participant’s ease of pregnancy was described as average (50%), easy (39.9%), and difficult (10.1%). With regards to ethno-cultural background, 82.7% identified themselves as Western European, 14.4% as Eastern European, 4.8% as North American Aboriginal, 2.4% as Chinese, 1.9% as Caribbean Region, 1.4% as Japanese, 1.4% as Latin American, 1% as Southeast Asian, 0.5% as West Asian, 0.5% as Korean, 0.5% as South Asian, 0.5% as Australian or New Zealander, 0.5% as Indian Caribbean, and 0.5% as Northern African. Most participants were Canadian born (93.3%). Of the fourteen participants who immigrated to Canada, average length of time in Canada ranged from 0 to 25 years ($M = 9.50$, $SD = 7.17$) and their country of origin included England ($n = 2$), United States ($n$
= 2), Argentina \((n = 1)\), Belgium \((n = 1)\), Brazil \((n = 1)\), China \((n = 1)\), Croatia \((n = 1)\), Germany \((n = 1)\), Iran \((n = 1)\), Jamaica \((n = 1)\), Japan \((n = 1)\), and South Africa \((n = 1)\). The primary language spoken at home was English \((96.2\%)\), followed by French \((3.4\%)\) and Persian \((0.5\%)\). Prior to becoming pregnant, participants rated their general health as very good \((44.7\%)\), followed by good \((28.8\%)\), excellent \((24\%)\) and fair \((2.4\%)\). Body Mass Index calculation based on prenatal height in inches \((M = 65.59, SD = 2.8)\) and weight in pounds \((M = 153.89, SD = 37.02)\) revealed that most women were in the normal range \((56.7\%)\) followed by overweight \((22.6\%)\), obese \((16.3\%)\) and underweight \((4.3\%)\). In terms of highest education level, most participants finished a university degree or higher \((65.9\%)\) followed by completion of post-secondary studies \((25.5\%)\) and completion of high school \((7.2\%)\). Two participants had not completed their high school education. Most women were in professional positions \((55.8\%)\) while others were employed as service or sales workers \((15.9\%)\), clerks \((12.5\%)\), corporate managers or senior officials \((6.3\%)\), general labourers \((2.9\%)\), small business owners \((2.9\%)\), craft or trade workers \((1.4\%)\), or skilled agricultural or fishery workers \((0.5\%)\). Two participants had never worked outside of the home for pay. Prior to becoming pregnant, most participants worked full-time \((73.1\%)\) or part-time \((12.5\%)\). The remaining participants were unemployed \((9.1\%)\), full-time students \((2.9\%)\) or on maternity leave \((1.9\%)\). Most the participants were working at the time of the prenatal questionnaire \((82.2\%)\) while the rest were currently taking a leave of absence granted to expectant parents. Most participants rated their financial wellbeing as average \((51.9\%)\) followed by somewhat well-off \((30.8\%)\), not very well-off \((8.2\%)\), very well-off \((7.7\%)\), and not at all well-off \((1.4\%)\). Most participants resided in a large population centers \((63.9\%)\) followed by small population centers \((21.2\%)\) and medium population centers \((14.9\%)\).
With regards to relationships, most women described their sexual orientation as heterosexual (88.9%) with some participants describing themselves as bisexual (3.8%) and flexible (e.g., “Kinsey 2”; 1%). Most participants were co-habiting, married or remarried (96.2%) while the rest were single, separated or divorced. Among the participants who identified as being in a relationship, their relationship length ranged from 1 to 22 years ($M = 7.11, SD = 3.77$). Most partners had finished a university degree or higher (41.3%) or a post-secondary education (35.6%) while others had completed their high school diploma (15.4%). Six partners had not completed their high school education. Most partners were in professional positions (31.7%) while others were employed as craft or trade workers (18.3%), service or sales workers (11.1%), corporate managers or senior officials (10.6%), small business owners (8.7%), general labourers (7.7%), plant or machine operators (2.9%), clerks (2.9%), or skilled agricultural or fishery workers (1.4%). One partner had never worked outside of the home for pay. Prior to becoming pregnant, most partners worked full-time (84.1%) or part-time (5.8%). The remaining participants were unemployed (3.4%) or were full-time students (2.9%). Most the partners were working at the time of the prenatal questionnaire (97.6%) while two partners were currently taking a leave of absence granted to expectant parents.

With regards to familial support, 95.7% of participants had family living in Canada with 18.8% of them living nearby. Family members living nearby were available to participants for support, including emotional (72.6%), childcare (62.5%), household help (52.9%), and financial (49%). A small subsample of the participants with family living nearby indicated that family members were unavailable for support (5.3%).
Early Postpartum.

At the time of the early postpartum questionnaire (Time 2), the measures were administered between 9 and 18 weeks’ gestation ($M = 29.70$, $SD = 3.82$). Specifically, 138 women were between 9 and 12 weeks’ postpartum, 67 women were between 13 and 16 weeks’ postpartum, and 3 women were either 17 or 18 weeks’ postpartum. Most the participants were on a maternity leave of absence granted to expectant parents (79.3%), while some were working part-time (4.8%) or full-time (1.4%). Other participants considered themselves homemakers (10.6%), unemployed (2.9%) or a student (0.5%). Relationship status changed slightly with 96.6% of participants describing themselves in a relationship (i.e., co-habiting, married, or remarried), a 0.4% increase. Partners were described as working full-time (82.2%), part-time (5.3%), on a paternity leave of absence granted to expectant parents (3.4%), student (2.4%) or unemployed (2.4%). Gestational week at the time of the baby’s birth ranged from 33 to 42 ($M = 39.29$, $SD = 1.71$). Babies, including the two sets of twins, were predominantly males (52.9%) weighing between 1424 and 4763 kilograms ($M = 3462.43$, $SD = 532.23$) and measuring between 19 and 94 centimeters in length ($M = 50.83$, $SD = 6.21$). Childbirth deliveries were predominantly vaginal spontaneous (66.3%) followed by Caesarean Section (22.1%) and vaginal with the assisted use of forceps and/or vacuum (10.6%). Among the participants who required a Caesarean Section, two thirds of them were unplanned. Reasons for elective or unplanned Caesarean Section included failure to make progress in labour (37.0%), fetal position (e.g., breech; 32.6%), emergency (15.2%), elective (8.7%) and

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3 The operationalization of demographic information described in this section can be found in Appendix I.
having undergone a previous C-Section (6.5%). Labour and delivery were described by participants as about what they expected (35.6%), easier than expected (33.2%) and more difficult than they expected (30.8%). Physical, emotional, informational or advocacy support was provided to 12% and 34.1% of participants by a certified doula or midwife, respectively.

**Late Postpartum.**

At the time of the late postpartum questionnaire (Time 3), the measures were administered between 19 and 31 weeks’ gestation ($M = 25.00, SD = 2.14$). Specifically, 22 women were between 19 and 22 weeks’ postpartum, 141 women were between 23 and 26 weeks’ postpartum, and 46 women were between 27 and 31 weeks’ postpartum. Most the participants continued to be on a maternity leave of absence granted to expectant parents (76.0%), while some were working part-time (6.3%) or full-time (3.4%). Other participants considered themselves homemakers (10.6%), unemployed (1.9%) or a student (1%). Relationship status changed slightly with an additional 0.5% increase to 97.1% of participants describing themselves in a relationship (i.e., co-habiting, married, or remarried). Partners were described as working full-time (84.1%), part-time (5.3%), on a paternity leave of absence granted to expectant parents (2.9%), student (1.4%) or unemployed (1.9%).

**Measures**

The operationalization of questions included in the screening questionnaire (Appendix C)

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4 The operationalization of demographic information described in this section can be found in Appendix J.
as well as the demographic (Appendix H), prenatal (Appendix I) and postpartum (Appendix J) are addressed in their respective appendices. Below is a description of the outcome measures (the Experience of Embodiment, Body Esteem and Disordered Eating), as well as the predictor factors of macrosystem (Ethnicity, Socioeconomic Status, Pressures for Thinness), biological (Weight Difference from Prepregnancy, Fatigue, Labour and Delivery Control), psychological (Depression, Anxiety, Internalization of the Thin Ideal, Maternal Beliefs about Competence, and Comfort with Breastfeeding), relational (Social Support and Relationship with Partner) and behavioral factors (Physical Activity, Comfort with Breastfeeding and Sexual Relationships). Table 1 outlines the measures administered at each of the three time points. In this manuscript, the constructs representing the factors of interest as operationalized below were capitalized (e.g., Pressures for Thinness).

Table 1
List of Measures Administered at each of the Three Time Points.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Factors</th>
<th>Construct</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
<td>Experience of Embodiment</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Body Esteem</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Disordered Eating</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Predictor</td>
<td>Macrosystem</td>
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<td>X</td>
<td>X (as assessed</td>
<td>X (as assessed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>at Time 1)</td>
<td>at Time 1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Socioeconomic Status</td>
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<td>X (as assessed</td>
<td>X (as assessed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>at Time 1)</td>
<td>at Time 1)</td>
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<tr>
<td>Category</td>
<td>Construct</td>
<td>T1</td>
<td>T2</td>
<td>T3</td>
<td></td>
</tr>
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<td>------------------------------------------------</td>
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<td>----</td>
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<td></td>
</tr>
<tr>
<td>Biological</td>
<td>Pressures for Thinness</td>
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<td>X</td>
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<tr>
<td>Biological</td>
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<td>X</td>
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<tr>
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<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Labour and Delivery Control</td>
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<td></td>
<td></td>
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<tr>
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<td>Depression</td>
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<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Psychological</td>
<td>Anxiety</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Internalization of the Thin Ideal</td>
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<td>X</td>
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<tr>
<td>Maternal Beliefs about Competence</td>
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<td></td>
<td></td>
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<tr>
<td>Comfort with Breastfeeding</td>
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<td>X</td>
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<tr>
<td>Relational</td>
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<td>Breastfeeding Practice</td>
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<tr>
<td>Behavioral</td>
<td>Sexual Relationships</td>
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<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Note. X indicates that the construct was measured at the corresponding time point.
Outcome measures.

Experience of embodiment.

The concept of the Experience of Embodiment was assessed using the Experience of Embodiment scale (EE) of the Embodiment Scale for Women (Piran & Teall, 2006). This scale represents the “experience of engagement of the body with the world” (Allan, 2005, p.177) and is comprised of six subscales entitled Positive Connection with the Body (7 items; e.g., “I feel in tune with my body”), Body Disrupted Adjustment (6 items; e.g., “I feel depressed/anxious/scared in/about my body”), Agency, Expression, and Functionality (6 items; e.g., “I find it hard to express my emotions”), Experience and Expression of Sexual Desire (4 items; e.g., “I am comfortable with my sexual feelings/desires”), Body Attunement and Self Care vs. Harm and Neglect (7 items; e.g., “I am aware of my needs”), and Subjective Lens vs. Self Objectification (4 items; e.g., “I care more about how my body feels than about how it looks”). The 38 items explored the experiences of both positive and connected embodiment (e.g., “I feel at one with my body”, “I consider myself to be a powerful woman”, “I am comfortable taking space in public”) and disrupted embodiment (e.g., “It is hard for me to read/identify my feelings”, “I feel ‘detached’ and separate from my body”). Scores for the total scale was calculated by summing up corresponding items whilst reversing scores for negatively phrased items. Higher scores indicated more embodiment and connection with the body. In their initial publication, Piran & Teall (2012) revealed a Cronbach’s Alpha of .93 for the total scale, a range from .78 to .91 for the individual subscales, and significant correlations with measures of understanding, processing and describing emotions (Toronto Alexithymia Scale; Bagby, Parker, & Taylor, 1994; \( r = -.55 \)), of body esteem (BESAA; Mendelson, Mendelson, & White, 2001; \( r = .78 \)), and of unhealthy eating and body image-related cognitions and behaviors (Eating Attitudes Test-26; Garner, Olmsted, Bohr, & Garfinkel, 1982; \( r \))
For this study, the Cronbach’s alpha coefficient of the Experience of Embodiment scale was .91 at Time 1, .90 at Time 2, and .92 at Time 3.

**Body Esteem.**

In this study, the interchangeable concepts of body image and body esteem (BE) were assessed using the Body Esteem Scale for Adolescents and Adults (BESAA; Mendelson et al., 2001), which is a 23-items measure designed to assess the general satisfaction and view about the body. The measure is comprised of three subscales: Appearance (BE-Appearance; 10 items), Attribution (BE-Attribution; 5 items), and Weight (BE-weight satisfaction; 8 items). A 5-point Likert scale, ranging from 0 “Never” to 4 “Always”, was used, and a total scale score was calculated by averaging the corresponding items with negative items reverse scored. Higher scores indicated a positive value judgment of one’s body. The BESAA has high internal consistency in a Canadian normative study (Cronbach alpha = .93 for the BE-Appearance; Cronbach alpha = .81 for the BE-Attribution; Cronbach alpha = .95 for the BE-weight satisfaction; Mendelson *et al*., 2001), test-retest reliability (r = .83 to .89), and convergent validity in a sample of high school, college and university students with two measures of self-esteem (Mendelson *et al*., 2001); however, it has not been used within the context of a prenatal and postpartum study. For this study, the Cronbach’s alpha coefficient of the total BESAA score was .95 at Time 1, .97 at Time 2, and .99 at Time 3.

**Disordered eating.**

The 'Disordered Eating' (DE) construct was comprised of the scores of the following four measures (see Eisenberg & Neumark-Sztainer, 2010): a) the Eating Restraint of the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994); b) the reported
frequency of dieting; c) the reported frequency of bingeing; and d) the reported use of unhealthy and extreme weight control behaviors.

The first score was computed from the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994), a self-report instrument designed to assess behavioral and cognitive symptoms of disordered eating over the past 28 days. The EDE-Q consists of four subscales: Eating Restraint (e.g., “On how many days out of the past 28 days have you tried to exclude from your diet any food that you like in order to influence your shape or weight?”), Eating Concerns (e.g., “On how many days out of the past 28 days have you been afraid of losing control over eating?”), Weight Concerns (e.g., “On how many days out of the past 28 days have you had a strong desire to lose weight?”), and Shape Concerns (e.g., “On how many days out of the past 28 days have you definitely wanted your stomach to be flat?”). A 7-point Likert scale, ranging from 0 “No days” to 6 “Every day”, was used. For this study, only the five items of the Eating Restraint subscale were utilized and the subscale score was calculated by summing the corresponding item scores. The EDE-Q Eating Restraint subscale has high internal consistency (Cronbach Alpha = .84-.85) and test-retest reliability (Pearson r = .81; Luce & Crowther, 1999). Moreover, the EDE-Q has demonstrated good validity in assessing eating disturbances in the general population (Mond, Hay, Rodgers, Owen, & Beumont, 2004); however, no studies to date have used this tool with pregnant or postpartum populations. For this study, the Cronbach’s alpha coefficient of the EDE-Q Eating Restraint subscale score was .73 at Time 1, .76 at Time 2, and .80 at Time 3.

The final three scores (i.e., reported frequency of dieting, reported frequency of bingeing, and reported use of unhealthy weight control behaviors) were operationalized according to the questions from the Project EAT-II Survey for Young Adults (Larson, Neumark-Sztainer, Story, &
Burgess-Champoux, 2010; Neumark-Sztainer, Wall, Guo, Story, Haines & Eisenberg, 2006, Neumark-Sztainer, Wall, Haines, Story, Sherwood, & van den Berg, 2007, see Appendix R). A total score was obtained by summing the number of corresponding coded responses of these three questions with the score of the EDI-Q.

**Predictor measures.**

**Macrosystem factors.**

Three factors assessed the influence of the macrosystem, including Ethnicity, Socioeconomic Status, and Pressures for Thinness.

**Ethnicity.**

The participants’ ethnic identity was assessed by the following query, “What are the ethnic or cultural origins of your ancestors? Please indicate which of the groups you feel most accurately describe you.” The response options are found in Appendix H. This was queried during the demographic section of the questionnaire and the response was used in the analyses for Times 1, 2, and 3. As a result of the lack of variability in response options, the variable of Ethnicity was recoded into a dichotomous categorical variable 0 = European Descent (n = 191) and 1 = Non-European Descent (n = 17).

**Socioeconomic status.**

Studies completed during the prenatal and postpartum period have used a variety of ways to operationalize socioeconomic status, including education level (Shrewsbury et al., 2009), self-identification into low, middle, or upper class (Neiterman, 2013), and according to women’s need to access services in centers that cater primarily to low-income women (Groth et al., 2012).
Increasingly, recent papers discussing the limitations to the measurement of the construct of socioeconomic status, particularly within the context of familial studies, have highlighted that traditional conceptualization may not adequately address the increasing variability in the nature of family and household configurations (Dickinson & Adelson, 2014; Entwisle & Astone, 1994). In fact, Dickinson and Adelson (2014) argued that participants categorized into low SES using a single variable (e.g., using free/reduced lunch status for students) may not be labelled as such using a composite measure. Therefore, to capture the multiple dimensions involved in establishing familial socioeconomic status for this transition period that typical occurs within the context of having a partner and/or other children, the participants’ Socioeconomic Status (SES) was assessed by computing a single index from five variables (all queried during the demographic section of the questionnaire, see Appendix H). This composite score utilised principal component analysis and the following formula: 
\[ SES_i = a_{partied} + a_2{partned} + a_3{partie} + a_4{partne} + a_5{hompos} + a_6{finan} \] (see Caro & Cortés, 2012), where \( i \) represents the SES score for each participant, \( partied \) the participant’s education, \( partned \) the partner’s education, \( partie \) the participant’s occupational status, \( partnei \) the partner’s occupational status, \( hompos \) the home possessions available to students in the home and \( finan \) the family’s subjective financial status. This formula assesses the home possessions of youth in the household; however, given that the current study did not include student-aged children and that the importance of home possessions is negligible in wealthy countries such as Canada as a result of the accessibility to computers, study desks, and mobile phones (Caros & Cortés, 2012), the item was entered as a constant (Caro & Cortés, 2012). Average weights, \( \alpha_s \), obtained from Caro and Cortés (2012; see Table S1 in Appendix S) according to province or national average, were imputed into the equation to calculate participants’ SES index score according to their geographical location calculated from their postal
code. Response options are detailed in Appendix S for education (see Table S2), occupational status (see Table S3), and subjective financial status (see Table S4). This total SES score was used in the analysis for Time 1, 2, and 3.

**Pressures for thinness.**

The 8-item Perceived Sociocultural Pressure Scale (Stice, Ziemba, Margolis, & Flick, 1996) assessed the perceived pressures to be thin from family, friends, dating partners and the media. For example, the items regarding family pressures are: “I’ve felt pressure from my family to lose weight” and “I’ve noticed a strong message from my family to have a thin body”. This measure was administered both prenatally and at postpartum. For that reason, the wording of the prenatal questions was altered as suggested by Skouteris and colleagues (2005) to reflect the differing focus on weight during pregnancy. For example, the prenatal items regarding family pressures were transformed to “I’ve felt pressure from my family to not put on too much weight during my pregnancy” and “I’ve noticed a strong message from my family to not look heavy during my pregnancy”, respectively. Participants answered each question using a 5-point Likert scale, ranging from 1, “None” to 5, “A lot”. A composite score was calculated by averaging the responses to each corresponding item. Stice & Agras (1998) reported good internal consistency reliabilities ($\alpha = .88$), test-retest reliability ($r = .93$) and predictive validity. In a sample of pregnant women utilising the modified version of the scale, good internal consistency was reported ($\alpha = .89$; Skouteris et al., 2005). For this study, the Cronbach’s alpha coefficient of the composite scale for prenatal and postpartum periods were .88 at Time 1, .85 at Time 2, and .84 at Time 3, respectively.
Biological factors.

The biological and physical factors investigated in this study included Weight Difference from Prepregnancy, Fatigue, and Labour and Delivery Control.

Weight Difference from Prepregnancy.

The participants’ Weight Difference from Prepregnancy was assessed by responding to the following item: “What is your current weight?” This was queried during the prenatal and postpartum inquiry sections of the questionnaire. Using the response to this item, the participants’ Weight Difference from Prepregnancy in pounds (lbs) was calculated by subtracting the response to the prepregnancy weight item inquired during the initial demographic inquiry from their reported current weight.

Fatigue.

The Multidimensional Assessment of Fatigue scale (MAF; Belza, 1990) is a 16-item questionnaire designed to assess four dimensions of Fatigue (severity, 2 items; distress, 1 item; degree of interference in activities of daily living, 11 items; and timing of the fatigue, 2 items). Given that the final item is excluded from the Global Fatigue Index (GFI), it was excluded from this study’s questionnaire. Items 1 thru 14 were assessed on a 10-point Likert scale tailed to each item. The response options for item 15 included (1) “Hardly any days”, (2) “Occasionally, but not most days,” (3) Most, but not all days,” and (4) “Every day.” The GFI was calculated by summing (1) the two items of the severity scale, (2) the one item of the distress scales, (3) the mean of the eleven items of the interference scale, and (4) the converted score of the timing scale calculated by multiplying the participants’ response by 2.5. The overall score ranged from 1 (no fatigue) to 50 (severe fatigue). The GFI had good internal consistency (Cronbach’s alpha = .93-.96), was
reported to be sensitive to changes experienced within the two weeks postpartum (Fairbrother, Hutton, Stoll, Hall, & Kluka, 2008; Hall, Clauson, Carty, Janssen, & Saunders, 2006) and has demonstrated convergent validity with the Pittsburgh Sleep Quality Index (Fairbrother et al., 2008). Furthermore, the GFI is valid for use in pregnant and postpartum women (Fairbrother et al., 2008). For this study, the Cronbach’s alpha coefficient was .93 at Time 1, .91 at Time 2, and .93 at Time 3.

*Labour and delivery.*

The participants’ perception and experience of the level of control they had over themselves and their environment during their labour and birth was assessed at Time 2 by the 10-item Labour Agentry Scale (LAS-10; Hodnett & Simmons-Tropea, 1987). Each item was rated on a 7-point Likert scale ranging from 1, “Never, or almost never”, to 7, “Almost always”, and a scale score was obtained by summing the responses to each corresponding item while reversing the scores to the negatively worded items. Total scores ranged from 11 (representing feeling rarely in control) to 77 (representing feeling almost always in control). The LAS-10 has had good internal consistency (Cronbach’s alpha = .97) as well as construct validity through factor analysis and dual scaling procedures (Hodnett & Simmons-Tropea, 1987). For this study, the Cronbach’s alpha coefficient was .82 at Time 2.

*Psychological factors.*

The psychological factors investigated in this study included Depression, Anxiety, Internalization of the Thin Ideal, Maternal Beliefs about Competence, and Comfort with Breastfeeding.
Depression.

The 10-item Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987) is a user-friendly self-report questionnaire used to screen for depressive symptoms. This instrument excludes symptoms that are typically associated with this transition period in expectant and new mother’s life, such as fatigue. Participants responded to each item using a 4-point Likert scale ranging from 0 to 3 with response options tailored to each item. Total scale scores were calculated by summing the corresponding items whilst reverse coding the negatively worded items for a range of score between 0 and 30. This instrument was validated and considered reliable with pregnant (Murray & Cox, 1990), postpartum (Cox et al., 1987), and non-pregnant women (Cox, Chapman, Murray, & Jones, 1996). For this study, the Cronbach’s alpha coefficient of EPDS was .87 at Times 1 and 2, and .86 at Time 3.

Anxiety.

The 20-item State form of the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) is a self-evaluation questionnaire used to tap state anxiety, that is, the extent to which the participant experiences anxiety “right now… at this moment.” Participants responded to each item using a 4-point scale (1 = not at all, 3 = very much so), and total scale scores were calculated by summing the corresponding items whilst reverse coding the negatively worded items. The STAI has been shown to be a good measure of stress during both pregnancy (e.g., Rizzardo, Magni, Cremonese, Rossi, & Cosentino, 1988) and the postpartum period (e.g., Aktan, 2010). For this study, the Cronbach’s alpha coefficient of the STAI-Y was .95 at Times 1, 2, and 3.
**Internalization of the thin ideal.**

The Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3; Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004) is a 30-item questionnaire designed to measure levels of internalization and awareness of the multidimensional impact of sociocultural pressures along four dimensions (Information, nine items; Pressure, seven items; Internalization-General, nine items; and Internalization-Athlete, five items). For the purpose of this study, only the nine items of the Internalization-General subscale were utilized. A 5-point Likert scale, ranging from 1, “Definitely Disagree”, to 6, “Definitely Agree”, was used, and the total subscale score was calculated by summing the corresponding items. In a sample of 175 female undergraduate students, the SATAQ-3’s Internalization-General subscale demonstrated high internal consistency (Cronbach’s alpha = .96; Thompson et al., 2004). Moreover, the SATAQ-3 has demonstrated excellent construct validity as evident from analyses of the convergent correlations, predictive validity and discriminant validity in both a sample of 175 female undergraduates (Thompson et al., 2004) as well as 100 adult women (Madanat, Hawks, & Brown, 2006). For this study, the Cronbach’s alpha coefficient of the total SATAQ-3’s Internalization-General subscale score was .93 at all three time points.

**Maternal Beliefs about Competence.**

Among the several measures of parental beliefs and maternal identity, the Parenting Sense of Competence (PSOC; Gibaud-Wallston & Wandersman, 1978) has been identified as the most commonly used (Pritchett, Kemp, Wilson, Minnis, Bryce, & Gillberg, 2011). The PSOC is a 16-item measure used to assess the mothers’ sense of confidence and satisfaction with her parenting by responding to both positive (e.g., “Being a mother is manageable, and any problems are easily
solved”) and negative (e.g., “My mother was better prepared to be a good mother than I am”) statements using a 6-point Likert scale, ranging from 1, “Strongly agree” to 6, “Strongly disagree”.

The PSOC was only administered during the postpartum inquiry and the term “mother” replaced the term “parent” in the questionnaire items. A total score was calculated by summing the responses to each corresponding item while reversing the scores to the positively worded items. Higher total scores were indicative of greater satisfaction and efficacy. Prior research indicated a satisfactory internal consistency of .79 for the total scale (Johnston & Mash, 1989). For this study, the Cronbach’s alpha coefficient was .87 at Time 2 and .88 at Time 3.

**Comfort with breastfeeding.**

The participants’ level of Comfort with Breastfeeding was assessed by responding to the following item adapted from Stuebe and Bonuck (2011): “Please indicate how comfortable you would be breastfeeding in front of others who are not your partner:” within three scenarios: “Among close women friends”, “Among close male friends”, and “In public”. Participants responded to each scenario using a 5-point Likert scale, ranging from 1, “Really uncomfortable” to 5, “Really comfortable”. A Comfort with Breastfeeding score was calculated by averaging the response to the three scenarios.

**Relational factors.**

The relational factors investigated in this study included Social Support and Relationship with Partner.
**Social support.**

The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) assessed the participants’ source of support from family (4 items), friends (4 items) and a significant other (4 items). Each participant responded to each item using a 7-point Likert scale, ranging from 1, “Very strongly disagree” to 7, “Very strongly agree”. A composite score was calculated by summing the responses. Higher total scores were indicative of greater perceived social support. Zimet and colleagues (1988) reported good internal consistency reliabilities and constructive validity. In samples of pregnant women, Cronbach’s alphas ranging .90-.92 have been reported (Moss, Skouteris, Wertheim, Paxton, & Milgrom, 2009, Skouteris, Wertheim, Rallis, Milgrom, & Paxton, 2009; Zimet, Powell, Farley, Werkman, & Berkoff, 1990). For this study, the Cronbach’s alpha coefficient of the composite scale was .95 at Time 1, .97 at Time 2, and .95 at Time 3.

**Relationship with partner.**

The Dyadic Adjustment Scale (Spanier, 1976) is a 32-item questionnaire most commonly used to assess the quality of the participants’ marital relations (Pritchett et al., 2011). This scale consists of four subscales: (1) consensus on matters of importance to dyadic functioning; (2) dyadic satisfaction; (3) dyadic cohesion, and (4) affectional expression. Response options to most of the items consist of a Likert-type scale. Total scores for this questionnaire were computed by summing responses to all items and range from 0 to 151 whereby higher scores indicated greater marital satisfaction. Given that the psychometric properties of the four subscales has been questioned (e.g., Crane, Busby, & Larson, 1991), only the total score was used as a measure of marital satisfaction. With pregnant populations, the internal consistency of the total score ranges
from .92-.96 (Kershaw, Murphy, Divney, Magriples, Niccolai, & Gordon, 2013; Zelkowitz, Schinazi, Katofsky, Saucier, Valenzuela, Westreich et al., 2004) and the scale has shown good validity (Kershaw, Arnold, Gordon, Magriples, & Niccolai, 2012). For this study, the Cronbach’s alpha coefficient was .999 at Time 1, .92 at Time 2, and .998 at Time 3.

Behavioral factors.

The behavioral factors investigated in this study included Physical Activity, Breastfeeding Practice, and Sexual Relationships.

Physical activity.

A series of questions intending to assess the participants’ level of current physical activity were adapted from DiNallo (2012). Consistent with DiNallo’s (2012) dissertation, physical activity referred to engaging in 30 minutes or more of moderate-intensity (e.g., brisk walking) to strenuous (e.g., running) activity (ACSM, 2000). This clarification was provided in the instructions. First, participants indicated with a “Yes” or a “No” response if they were currently exercising according to the aforementioned description of physical activity. Next, participants were queried about the number of days per week they exercised and were asked to indicated the average amount of time per day in minutes they exercised. Using these responses, the total number of minutes per week of exercise was calculated by multiplying their average amount of time per day they exercised by the number of days per week they exercised.

Breastfeeding practice.

The participants’ actual Breastfeeding Practice and infant feeding outcomes was adapted from Dennis and McQueen (2007). During the two postpartum inquiries, participants were queried
about their infant feeding method in the past week using the following question: “In the past week, how were you feeding your baby?” Response options included (1) exclusive breastfeeding (breast milk only), (2) almost exclusive breastfeeding (breast milk and other fluids but not formula, e.g., vitamins), (3) high breastfeeding (less than one bottle of formula per day), (4) partial breastfeeding (at least one bottle of formula per day), (5) token breastfeeding (breast given to comfort baby but not for nutrition, and (6) bottle-feeding (no breast milk at all; Dennis & McQueen, 2007; Labbok & Krasovec, 1990). For the purpose of the analyses, this variable was recoded into three ordinal categories to reflect an increased departure from breastfeeding only. The three levels were, 1 = Exclusively Breastfeeding (i.e., sum of responses to (1) exclusive breastfeeding and (2) almost exclusive breastfeeding), 2 = Combination of breastfeeding and formula (i.e., sum of responses to (3) high breastfeeding, (4) partial breastfeeding, (5) token breastfeeding), and 3 = Exclusively Formula (i.e., responses to (6) bottle-feeding).

Sexual relationships.

The participants’ sexual relationships were first assessed with two items pertaining to intimacy (e.g., sexual and nonsexual acts) satisfaction and frequency of intimacy by responding to the following questions adapted from Mickelson and Joseph (2012): “How satisfied are you with the amount of displays of physical affection in your relationship (i.e. kissing, hugging, holding hands)?” and “How satisfied are you with the frequency and quality of sex in your relationship?”. Participants responded using a 10-point Likert scale, ranging from 1, “Not at all satisfied” to 10, “Very satisfied”. For female respondents, the internal consistency was .74 (Mickelson & Joseph, 2012).
Additionally, the participants’ perception of intimacy rejection was assessed by responding to the following two questions adapted from Mickelson and Joseph (2012): “How often does your partner reject your advances for affection or physical closeness?” and “How often does your partner let you know that they are not interested in your sexual advances?”. Similarly, the participants’ rejection of partner intimacy advances was assessed by responding to the following two questions adapted from Mickelson and Joseph (2012): “How often do you reject your partner’s advances for affection or physical closeness?” and “How often do you let your partner know that you are not interested in their sexual advances?”. Participants responded using a 5-point Likert scale, ranging from 1, “Never” to 5, “Very often”. For female and male respondents, the internal consistency was .65 and .86, respectively (Mickelson & Joseph, 2012). Total scores were calculated by obtaining the sum of the six sexual relationships items whilst reverse coding the first two items with scores ranging from 6 to 40 where greater score represents greater sexual dissatisfaction.

**Data Analysis**

The data analysis involved four steps: 1) data cleaning and organization, 2) conducting one-way repeated measures Analysis of Variance (ANOVA) for each outcome variable across the three time points during and after pregnancy 1, 3) completing cross-sectional correlation and regression analyses, and 4) completing prospective correlation and regression analyses.

**Data cleaning and organization.**

Following data collection, the data was imported into IBM SPSS Statistics (SPSS; IBM Corp., 2016) from FluidSurveys. Then, the data points were recoded to reflect the Likert scale value for each response options and to allow for computation of scale scores according to the
guidelines for each scale while reserve coding necessary items. Preliminary cleaning and
organization also involved correcting any typed text responses, searching for missing data,
identifying inconsistent or questionable responding, and eliminating participants. As described in
the Participant section above, participants were eliminated if they did not fulfill the inclusion
criterion from the screening questionnaire, they failed to complete the questionnaires within one
month of receiving the email invitation, they gave birth, miscarried or lost the baby prior to
receiving the email invitation, they requested to withdraw, and they displayed inconsistent or
questionable responding.

**Missing data.**

Then, a missing data analysis was completed and revealed minimal missing data whereby
1.69% of all possible data points were incomplete. More specifically, a missing value analysis
revealed the completion rate (i.e., the percentage of values completed across all participants) for
each outcome and predictor measures ranged between 81.73%-100.00% (see Table T1 in
Appendix T). The missing value analysis according to the completion rates revealed slightly more
missing data for Physical Activity, perhaps due to participant’s confusion regarding the definition
of Physical Activity (e.g., activity referred to engaging in 30 minutes or more of moderate-intensity
(e.g., brisk walking) to strenuous (e.g., running)). Total scores for each outcome and predictor
measures were computed only for participants without missing data on that measure; therefore, if
missing data was present, the total score for that measure was not available. The number of
participants with missing measures is reported in Table T2 in Appendix T. Given that 54.3% of
the sample had one or more measures with missing total scores, the final sample of 208 participants
included values for each outcome and predictor measures derived using the expectation
maximization imputation of missing data in SPSS. Non-imputed and imputed means and standard deviations are reported for Times 1, 2, and 3 in Tables U1-U3 in Appendix U, respectively, and no significant changes post-imputation were observed.

**Analysis of Hypothesis 1 for Objective 1.**

Once the data preparation and organization were finalized, three separate Repeated Measures ANOVA were performed to examine Hypothesis 1, that is, how (1) EE, (2) BE and (3) DE differed between Time 1 after the twenty-sixth week of gestation, Time 2 between weeks eleven and fourteen postpartum, and Time 3 between weeks twenty-four and twenty-eight postpartum. The data was examined to ensure assumptions of Repeated Measures ANOVA were met, including normality and sphericity. Descriptive statistics (Appendix V) for the measures of (1) the EE, (2) BE and (3) DE across the pregnancy and two postpartum transition points revealed that the outcome measures were normally distributed apart from DE at Times 1 and 3. Nonetheless, given the large sample size (N = 208), the repeated measures ANOVA may yield a reasonably accurate p value even when this normality assumption is violated. The Mauchly’s test of assumption of sphericity was violated for EE ($\chi^2(2) = 7.05, p = .029$), BE ($\chi^2(2) = 12.84, p = .002$), and DE ($\chi^2(2) = 12.77, p = .002$), therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ($\varepsilon = 0.97$, $\varepsilon = 0.94$, $\varepsilon = 0.94$, respectively).

**Correlation and regression analyses for Hypotheses 2 for Objectives 2 and 3.**

Exploratory correlation and regression analyses were performed for Objective 2, that is to determine which predictor variables cross-sectionally correlated with and predicted each of the three outcome measures, that is (1) EE, (2) BE and (3) DE, at each of the three time points (i.e.,
Time1, Time 2, and Time 3), and to test Objective 3, that is to determine which predictor variables prospectively correlated with and predicted each of the three outcome measures, that is (1) EE, (2) BE and (3) DE, for three separate models (i.e., Time 1 to Time 2, Time 1 to Time 3, and Time 2 to Time 3). Both objectives were tested using correlation and regression techniques.

First, a series of bivariate correlations were conducted using the non-parametric Spearman’s correlation coefficient, which is appropriate for both continuous and discrete variables, including ordinal. Then, a total of nine separate multiple regressions were performed for each of the Hypotheses to examine how well the macrosystem (Ethnicity, Socioeconomic Status, Pressures for Thinness) and the biological (Weight Difference from Prepregnancy, Fatigue, and Labour and Delivery Control), psychological (Depression, Anxiety, Internalization of the Thin Ideal, Maternal Beliefs about Competence, and Comfort with Breastfeeding), relational (Social Support, Relationship with Partner), and behavioral variables (Physical Activity, Breastfeeding Practice, and Sexual Relationships) predict (1) EE, (2) BE and (3) DE cross-sectionally at each of the three time points for Objective 2 and prospectively for the three separate models (i.e., Time 1 to Time 2, Time 1 to Time 3, and Time 2 to Time 3) for Objective 3 in order to specify the unique contributions of each predictor. In accordance with the exploratory nature of these analyses and the lack of theoretical predictions with regards to which factor will be a stronger predictor cross-sectionally or prospectively, variables of the macrosystem as well as the biological, psychological, relational, and behavioral factors were entered simultaneously in the model. Descriptive statistics for the continuous (Table W1) and discrete (Table W2) predictor measures used in this study are presented in Appendix W. Since the focus of this study is on the transition from pregnancy to early and late postpartum, results of the comparison of means for continuous data is also provided in
Table WI, that is through Repeated Measures ANOVA when three time points are available and through paired sample t-tests when two time points are available.

Prior to interpreting the results of the multiple linear regression analyses, several assumptions were tested: linearity, normality, homoscedasticity, multicollinearity as well as outlier analyses. Examination of the histograms and normal probability plots supported the assumption of normality and the residual scatter plot supported the assumption of homoscedasticity for all hierarchical multiple regression analyses except for the models using DE as the outcome variable for the cross-sectional models at Times 1, 2 and 3 and for the prospective models of Time 1 to Time 2, Time 1 to Time 3, and Time 2 to Time 3. The multicollinearity assumption was satisfied according to the Tolerance (Time 1 variables as predictors: .388-.943; Time 2 variables as predictors: .320-.956; Time 3 variables as predictors: .276-.919) and VIF (Time 1 variables as predictors: 1.061-2.577; Time 2 variables as predictors: 1.045-3.130; Time 3 variables as predictors: 1.088-3.618) statistics. Based on these analyses we were confident when interpreting the results of the hierarchical linear regressions using EE and BE as the outcome variables. Assumptions of linearity, normality and homoscedascity were not met for the three cross-sectional and three prospective models using DE as the outcome variable. In such cases, bootstrapping was used to derive robust estimates of parametric estimates.
Chapter 3
Results

Repeated Measures ANOVA testing the Hypothesis for Objective 1

The three separate Repeated Measures ANOVA revealed a significant main effect of the transition from pregnancy to early and late postpartum for EE, $F(1.94, 400.53) = 8.400, p < .001$, partial $\eta^2 = .04$, BE, $F(1.89, 390.41) = 13.13, p < .001$, partial $\eta^2 = .06$, and DE, $F(1.89, 390.53) = 32.91, p < .001$, partial $\eta^2 = .14$. Means, standard deviations, and results of the post hoc LSD tests are presented in Table 2 for the three outcomes. The post hoc LSD tests indicated that EE, BE, and DE did not differ significantly between the early and the late postpartum period measurements; however, the pregnancy measurements differed significantly from both the early and late postpartum period measurements.

Table 2
Descriptive Statistics and ANOVA Results for the Outcome Measures across the Three Time Points.

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE</td>
<td>131.03 (17.28)</td>
<td>127.41 (18.86)$^a$</td>
<td>128.94 (19.03)$^c$</td>
</tr>
<tr>
<td>BE</td>
<td>2.24 (0.64)</td>
<td>2.10 (0.67)$^a$</td>
<td>2.14 (0.77)$^b$</td>
</tr>
<tr>
<td>DE</td>
<td>4.05 (4.79)</td>
<td>6.97 (7.06)$^a$</td>
<td>7.16 (7.85)$^b$</td>
</tr>
</tbody>
</table>

Note. Means are presented with standard deviations in parentheses. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct. $^a$ A post hoc LSD test indicating significant difference at $p< .005$ between Time 1 and Time 2. $^b$ A post hoc LSD test indicating significant difference at $p< .005$ between Time 1 and Time 3. $^c$ A post hoc LSD test indicating significant difference at $p< .05$ between Time 1 and Time 3.
Cross-sectional correlations and regressions testing the Hypotheses for Objective 2

A summary of the cross-sectional correlation analysis and simultaneous entry regression analyses predicting the measure of EE, BE, and DE for Times 1, 2, and 3, including t-scores, significance, and beta coefficients, are found in Tables 3, 4, 5, and 6, respectively. At Time 1, the results of the three regression analyses indicated that the twelve predictors accounted for a significant amount of EE, $R^2 = .475$, $F(12, 195) = 14.69$, $p < .001$, BE, $R^2 = .240$, $F(12, 195) = 5.12$, $p < .001$, and DE scores, $R^2 = .175$, $F(12, 195) = 3.449$, $p < .001$. At Time 2, the results of the three regression analyses indicated that the sixteen predictors accounted for a significant amount of EE, $R^2 = .572$, $F(16, 191) = 15.924$, $p < .001$, BE, $R^2 = .415$, $F(16, 191) = 8.456$, $p < .001$, and DE scores, $R^2 = .273$, $F(16, 191) = 4.481$, $p < .001$. At Time 3, the results of the three regression analyses indicated that the fifteen predictors accounted for a significant amount of EE, $R^2 = .617$, $F(15, 192) = 20.630$, $p < .001$, BE, $R^2 = .456$, $F(15, 192) = 10.717$, $p < .001$, and DE scores, $R^2 = .288$, $F(15, 192) = 5.188$.

**Table 3**

*Spearman’s Correlation Coefficient between each Predictor Variable at Times 1, 2 and 3 with each Outcome Variable, that is, 1) Embodiment, 2) Body Esteem, and 3) Disordered Eating.*

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>EE</th>
<th>BE</th>
<th>DE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T1</td>
<td>T2</td>
<td>T3</td>
</tr>
<tr>
<td>Macrosystem Ethnicity</td>
<td>-.053</td>
<td>-.015</td>
<td>-.092</td>
</tr>
<tr>
<td>Socioeconomic Status</td>
<td>.105</td>
<td>.075</td>
<td>.074</td>
</tr>
<tr>
<td>Pressures for Thinness</td>
<td>-.254***</td>
<td>-.394***</td>
<td>-.399***</td>
</tr>
<tr>
<td>Biological</td>
<td>Weight Difference from Pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>-0.284*** -0.270*** -0.352*** -0.192'' -0.175' -0.273*** 0.014 0.151' 0.154''</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labour and Delivery Control</td>
<td>.255*** .221***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td>Depression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>-0.493*** -0.464*** -0.591*** -0.324*** -0.310*** -0.386*** 0.121 0.286*** 0.278***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalization of the Thin Ideal</td>
<td>-0.439*** -0.507*** -0.509*** -0.344*** -0.394*** -0.460*** 0.356*** 0.388*** 0.462***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Beliefs about Competence</td>
<td>.445*** .468***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comfort with Breastfeeding</td>
<td>.257*** .245*** .196'' .162'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relational</td>
<td>Social Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship with Partner</td>
<td>.340*** .379*** .388*** .173' .305*** .247*** -0.050 -0.148' -0.109</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral</td>
<td>Physical Activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breastfeeding Practice</td>
<td>.068 .096 .110 .066 .044 .021 .022 .156' .062</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Relationships</td>
<td>-0.348*** -0.300*** -0.354*** -0.130 -0.213*** -0.126 -0.070 -0.159' .056</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct. T1 = Time 1. T2 = Time 2. T3 = Time 3.

* p < 0.05, ** p < 0.01, *** p < 0.005
### Table 4

**Summary of the Cross-Sectional Simultaneous Entry Regression Analyses Predicting the Prenatal (Time 1) Outcome Measures of Experience of Embodiment, Body Esteem and Disordered Eating using the Prenatal (Time 1) Predictor Variables.**

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EE</td>
<td>BE</td>
<td>DE&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;em&gt;t&lt;/em&gt;</td>
<td>&lt;em&gt;β&lt;/em&gt;</td>
<td>&lt;em&gt;t&lt;/em&gt;</td>
<td>&lt;em&gt;β&lt;/em&gt;</td>
<td>&lt;em&gt;t&lt;/em&gt;</td>
</tr>
<tr>
<td><strong>Macrosystem</strong></td>
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<td></td>
</tr>
<tr>
<td>Ethnicity</td>
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<td>-.027</td>
<td>.354</td>
<td>.023</td>
<td>.078</td>
</tr>
<tr>
<td>Socioeconomic Status</td>
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<td>-.036</td>
<td>-.051</td>
<td>-.003</td>
<td>.497</td>
</tr>
<tr>
<td>Pressures for Thinness</td>
<td>-.422</td>
<td>-.024</td>
<td>-1.160</td>
<td>-.080</td>
<td>2.123</td>
</tr>
<tr>
<td><strong>Biological</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight Difference from pregnancy</td>
<td>-.038</td>
<td>-.002</td>
<td>-.954</td>
<td>-.062</td>
<td>.177</td>
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<td>Fatigue</td>
<td>-.693</td>
<td>-.041</td>
<td>.184</td>
<td>.013</td>
<td>-.335</td>
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<tr>
<td><strong>Psychological</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-2.956***</td>
<td>-.239</td>
<td>-2.084*</td>
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<td>-.307</td>
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<td>Anxiety</td>
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<td>-.165</td>
<td>-1.138</td>
<td>-.114</td>
<td>.411</td>
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<tr>
<td>Internalization of the Thin Ideal</td>
<td>-6.125***</td>
<td>-.346</td>
<td>-3.902***</td>
<td>-.265</td>
<td>4.019***</td>
</tr>
<tr>
<td><strong>Relational</strong></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Social Support</td>
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<td>.039</td>
<td>.647</td>
<td>.044</td>
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<tr>
<td>Relationship with Partner</td>
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<td>-.395</td>
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<td><strong>Behavioral</strong></td>
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<tr>
<td>Physical Activity</td>
<td>.410</td>
<td>.022</td>
<td>.478</td>
<td>.031</td>
<td>.010</td>
</tr>
<tr>
<td>Sexual Relationships</td>
<td>-2.890***</td>
<td>-.183</td>
<td>-.574</td>
<td>-.044</td>
<td>-2.596*</td>
</tr>
</tbody>
</table>

<sup>a</sup> Given the assumptions of linearity, normality and homoscedascity were not met, bootstrapping was used to derive robust estimates of parametric estimates.

Note: EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; DE = Disordered Eating construct; <em>t</em> = <em>t</em>-value; and <em>β</em> = standardized beta coefficient value.

* <em>p</em> < 0.05, ** <em>p</em> < 0.01, *** <em>p</em> < 0.005
Table 5
Summary of the Cross-Sectional Simultaneous Entry Regression Analyses Predicting the Early Postpartum (Time 2) Outcome Measures of Experience of Embodiment, Body Esteem and Disordered Eating using the Early Postpartum (Time 2) Predictor Variables.

<table>
<thead>
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<th>Predictor Variables</th>
<th>EE</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
<td>β</td>
<td>t</td>
<td>β</td>
<td>t</td>
<td>β</td>
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<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td>.244</td>
<td>.012</td>
<td>2.287*</td>
<td>.129</td>
<td>.003</td>
<td>.000</td>
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<td>Socioeconomic Status</td>
<td>1.750</td>
<td>.091</td>
<td>.278</td>
<td>.017</td>
<td>-.554</td>
<td>-.038</td>
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<tr>
<td>Pressures for thinness</td>
<td>-2.155*</td>
<td>-.127</td>
<td>-2.876***</td>
<td>-.199</td>
<td>2.440*</td>
<td>.188</td>
</tr>
<tr>
<td>Biological</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight Difference from Pregnancy</td>
<td>-3.287***</td>
<td>-.162</td>
<td>-3.740***</td>
<td>-.215</td>
<td>2.087</td>
<td>.134</td>
</tr>
<tr>
<td>Fatigue</td>
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<td>.053</td>
<td>.636</td>
<td>.043</td>
<td>-.104</td>
<td>-.008</td>
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<tr>
<td>Labour and Delivery Control</td>
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<td>.053</td>
<td>1.373</td>
<td>.087</td>
<td>-1.641</td>
<td>-.115</td>
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<tr>
<td>Depression</td>
<td>-.359</td>
<td>-.030</td>
<td>.453</td>
<td>.044</td>
<td>1.459</td>
<td>.159</td>
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<td>Anxiety</td>
<td>-3.493***</td>
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<td>-2.621**</td>
<td>-.250</td>
<td>-1.052</td>
<td>-.112</td>
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<td>Internalization of the Thin Ideal</td>
<td>-4.710***</td>
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<td>-2.985***</td>
<td>-.203</td>
<td>2.848**</td>
<td>.216</td>
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<td>Maternal Beliefs about Competence</td>
<td>2.186*</td>
<td>.147</td>
<td>-.164</td>
<td>-.013</td>
<td>.236</td>
<td>.021</td>
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<td>Comfort with Breastfeeding</td>
<td>-.117</td>
<td>-.006</td>
<td>.442</td>
<td>.028</td>
<td>.682</td>
<td>.049</td>
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<td>Social</td>
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</tr>
<tr>
<td>Social Support</td>
<td>2.854**</td>
<td>.149</td>
<td>3.714***</td>
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<td>-.047</td>
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<td>.038</td>
<td>-1.366</td>
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<td>.212</td>
<td>.017</td>
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<td>Behavioral</td>
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<tr>
<td>Physical Activity</td>
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<td>.019</td>
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Breastfeeding Practice  
<p>| | | | | |</p>
<table>
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</thead>
<tbody>
<tr>
<td></td>
<td>-.333</td>
<td>-.018</td>
<td>-1.232</td>
<td>-.078</td>
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</table>

Sexual Relationships  
<p>| | | | | |</p>
<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>-1.193</td>
<td>-.071</td>
<td>-1.284</td>
<td>-.089</td>
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</table>

Note. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; DE = Disordered Eating construct; \( t = t \)-value; and \( \beta = \) standardized beta coefficient value.

a Given the assumptions of linearity, normality and homoscedascity were not met, bootstrapping was used to derive robust estimates of parametric estimates.

* \( p < 0.05 \), ** \( p < 0.01 \), *** \( p < 0.005 \)
Table 6
Summary of the Cross-Sectional Simultaneous Entry Regression Analyses Predicting the Late Postpartum (Time 3) Outcome Measures of Experience of Embodiment, Body Esteem and Disordered Eating using the Late Postpartum (Time 3) Predictor Variables.

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>$EE$</th>
<th>$BE$</th>
<th>$DE^{a}$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$t$</td>
<td>$\beta$</td>
<td>$t$</td>
</tr>
<tr>
<td>Macrosystem</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-1.667</td>
<td>.078</td>
<td>1.142</td>
</tr>
<tr>
<td>Socioeconomic Status</td>
<td>1.321</td>
<td>.064</td>
<td>.245</td>
</tr>
<tr>
<td>Pressures for Thinness</td>
<td>-.914</td>
<td>-.049</td>
<td>-1.899</td>
</tr>
<tr>
<td>Biological</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight Difference from Pregnancy</td>
<td>-3.193***</td>
<td>-.153</td>
<td>-5.063***</td>
</tr>
<tr>
<td>Fatigue</td>
<td>.749</td>
<td>.040</td>
<td>-.944</td>
</tr>
<tr>
<td>Psychological</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-1.998*</td>
<td>-.161</td>
<td>-1.352</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-1.770</td>
<td>-.150</td>
<td>-1.115</td>
</tr>
<tr>
<td>Internalization of the Thin Ideal</td>
<td>-6.522***</td>
<td>-.342</td>
<td>-5.032***</td>
</tr>
<tr>
<td>Maternal Beliefs about Competence</td>
<td>3.744***</td>
<td>.219</td>
<td>-.994</td>
</tr>
<tr>
<td>Comfort with Breastfeeding</td>
<td>.628</td>
<td>.031</td>
<td>.987</td>
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<tr>
<td>Relational</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>2.365*</td>
<td>.126</td>
<td>2.382*</td>
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<td>Relationship with Partner</td>
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<td>Behavioral</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Physical Activity</td>
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<td>.079</td>
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</tr>
<tr>
<td>Breastfeeding Practice</td>
<td>-.353</td>
<td>-.018</td>
<td>-2.95</td>
</tr>
</tbody>
</table>

$EE$: Experience of Embodiment
$BE$: Body Esteem
$DE^{a}$: Disordered Eating
Sexual Relationships

Note. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; DE = Disordered Eating construct; t = t-value; and \( \beta \) = standardized beta coefficient value.

a Given the assumptions of linearity, normality and homoscedasticity were not met, bootstrapping was used to derive robust estimates of parametric estimates.

* \( p < 0.05 \), ** \( p < 0.01 \), *** \( p < 0.005 \)

Macrosystem.

Ethnicity.

The correlation analyses revealed no significant relationships of Ethnicity with EE, BE, or DE at any of the three time points; however, cross-sectional regression analyses revealed that Ethnicity was a significant predictor of BE at Time 2.

Socioeconomic status.

The cross-sectional correlation and regression analyses revealed that Socioeconomic Status had no significant relationships nor did it act as a predictor for EE, BE, or DE at Times 1, 2 or 3.

Pressures for thinness.

Correlation analyses revealed that Pressures for Thinness had a moderate negative relationship with BE at Time 3, a weak negative relationship with EE at Times 1, 2, and 3, and BE at T2, and a very weak negative relationship with BE at Time 1. Moreover, Pressures for Thinness had a weak positive correlation with DE at Times 1, 2, and 3. These relationships suggested that fewer perceived pressures to be thin were associated with a more positive EE, higher BE, and fewer reported DE behaviors. Cross-sectional regression analyses revealed that Pressures for Thinness was a significant predictor of EE, BE, and DE at Time 2 as well as of DE at Time 3.
Biological.

*Weight difference from prepregnancy.*

Correlation analyses revealed that Weight Difference from Prepregnancy had a weak negative relationship with EE and BE at Times 2 and 3, and a very weak positive relationship with DE at Times 2, and 3. These relationships suggested that lower weight retention from prepregnancy was associated with a positive EE, higher BE, and fewer reported DE behaviors. Cross-sectional regression analyses revealed that Weight Difference from Prepregnancy was a significant predictor of EE and BE at Times 2 and 3.

*Fatigue.*

Correlation analyses revealed that Fatigue had a weak negative relationship with EE at Times 1, 2, and 3, and BE at Time 3, a very weak negative relationship with BE at Times 1 and 2, and a very weak positive relationship with DE at Times 2 and 3. These relationships suggested that fewer symptoms of fatigue were associated with a positive EE, higher BE, and fewer reported DE behaviors. However, cross-sectional regression analyses revealed that Fatigue was not a significant predictor of EE, BE or DE at any of the time points.

*Labour and delivery.*

Correlation analyses revealed that Labour and Delivery Control had a weak positive relationship with EE and BE at Time 2, and a very weak negative relationship with DE at Time 2. These relationships suggested that greater feelings of control during labour and delivery were associated with a more positive EE, higher BE, and fewer reported DE behaviors. However, cross-
sectional regression analyses revealed that Labour and Delivery Control was not a significant predictor of EE, BE or DE at any of the time points.

**Psychological.**

**Depression.**

Correlation analyses revealed that Depression had a moderate negative relationship with EE at Times 1, 2, and 3, a weak negative relationship with BE at Times 1, 2, and 3, and a weak positive relationship with DE at Times 2 and 3. These relationships suggested that fewer symptoms of depression were associated with a more positive EE, higher BE, and fewer reported DE behaviors. Cross-sectional regression analyses revealed that Depression was a significant predictor of EE at Times 1 and 3, and BE at Time 1.

**Anxiety.**

Correlation analyses revealed that Anxiety had a strong negative relationship with EE at Time 3, a moderate negative relationship with EE at Times 1 and 2, a weak negative relationship with BE at Times 1, 2, and 3, and a weak positive relationship with DE at Times 2 and 3. These relationships suggested that fewer symptoms of anxiety were associated with a more positive EE, higher BE, and fewer reported DE behaviors. Cross-sectional regression analyses revealed that Anxiety was a significant predictor of EE and BE at Time 2.

**Internalization of the thin ideal.**

Correlation analyses revealed that Internalization of the Thin Ideal had a moderate negative relationship with EE at Times 1, 2, and 3, and BE at Time 3, and a weak negative relationship with BE at Times 1 and 2. Moreover, a moderate positive relationship was observed with DE at Time
3, and a weak positive relationship with DE at Times 1 and 2. These relationships suggested that lower levels of internalization of the thin ideal were associated with a more positive EE, higher BE, and fewer reported DE behaviors. Cross-sectional regression analyses revealed that Internalization of the Thin Ideal was a significant predictor of EE, BE, and DE at Times 1, 2, and 3.

**Maternal Beliefs about Competence.**

Correlation analyses revealed that Maternal Beliefs about Competence had a moderate positive relationship with EE at Times 1 and 2, a weak positive relationship with BE at Time 2, and a very weak positive relationship with BE at Time 3. Moreover, a weak negative relationship was revealed with DE at Time 2. These relationships suggested that higher levels of satisfaction and efficacy as a mother were associated with a more positive EE, higher BE, and fewer reported DE behaviors. Cross-sectional regression analyses revealed that Maternal Beliefs about Competence was a significant predictor of EE at Times 2 and 3.

**Comfort with breastfeeding.**

Correlation analyses revealed that Comfort with Breastfeeding had a weak positive relationship with EE at Times 2 and 3, and a very weak positive relationship with BE at Times 2 and 3. Moreover, a very weak negative relationship was revealed with DE at Time 2. These relationships suggested that greater comfort with breastfeeding was associated with a more positive EE, higher BE, and fewer reported DE behaviors. However, cross-sectional regression analyses revealed that Comfort with Breastfeeding was not a significant predictor of EE, BE or DE at any of the time points.
Relational.

Social support.

Correlation analyses revealed that Social Support had a weak positive relationship with EE at Times 1, 2, and 3, and BE at Times 2 and 3, and a very weak positive relationship with BE at Time 1. Moreover, a very weak negative relationship was revealed with DE at Time 2. These relationships suggested that greater availability of social support was associated with a more positive EE, higher BE, and fewer reported DE behaviors. Cross-sectional regression analyses revealed that Social Support was a significant predictor of EE and BE at Times 2 and 3.

Relationship with partner.

Correlation analyses revealed that Relationship with Partner had a weak positive relationship with EE at Times 1, 2, and 3, and a very weak positive relationship with BE at Time 2. These relationships suggested that greater relationship satisfaction was associated with a more positive EE and higher BE. However, cross-sectional regression analyses revealed that Relationship with Partner was not a significant predictor of EE, BE or DE at any of the time points.

Behavioral.

Physical activity.

Correlation analyses revealed that Physical Activity had a very weak positive relationship with DE at Time 2. This relationship suggested that less engagement in physical activity was associated with fewer reported DE behaviors. However, cross-sectional regression analyses revealed that Physical Activity was not a significant predictor of EE, BE or DE at any of the time points.
Breastfeeding practice.

Correlation analyses revealed that Breastfeeding Practice had a very weak negative relationship with EE at Time 2, and BE at Times 2 and 3. Moreover, a weak positive relationship was revealed with DE at Times 2 and 3. These relationships suggested that a greater tendency to breastfeed was associated with a more positive EE, higher BE, and fewer reported DE behaviors. Cross-sectional regression analyses revealed that Breastfeeding Practice was a significant predictor of DE at Time 2.

Sexual relationships.

Correlation analyses revealed that Sexual Relationships had a weak negative relationship with EE at Times 1, 2 and 3, and BE at Time 2, and a very weak negative relationship with DE at Time 2. These relationships suggested that greater sexual satisfaction was associated with a more positive EE, higher BE, and greater reported DE behaviors. Cross-sectional regression analyses revealed that Sexual Relationships was a significant predictor of EE and DE at Time 1.

Prospective correlation and regression analyses testing the Hypotheses for Objective 3

A summary of the prospective correlation analyses (Table 7) and simultaneous entry regression analyses predicting the measure of EE, BE, and DE for Time 2 from Time 1 (T1-T2 Model), Time 3 from Time 1 (T1-T3 Model) and Time 3 from Time 2 (T2-T3 Model), including t-scores, significance, and beta coefficients, are found in Tables 8, 9, and 10, respectively. For the prospective analyses of Time 2 outcomes measures from Time 1 predictor variables, the results of the three regression analyses indicated that the twelve predictors accounted for a significant amount of EE, $R^2 = .356$, $F(12, 195) = 8.977$, $p < .001$, BE, $.196$, $F(12, 195) = 3.967$, $p < .001$, and DE scores, $R^2 = .119$, $F(12, 195) = 2.188$, $p = .014$. For the prospective analyses of Time 3
outcome measures from Time 1 predictor variables, the results of the three regression analyses indicated that the twelve predictors accounted for a significant amount of EE, $R^2 = .304$, $F(12, 195) = 7.099$, $p < .001$, BE, $R^2 = .158$, $F(12, 195) = 3.044$, $p = .001$, and DE scores, $R^2 = .169$, $F(12, 195) = 3.316$, $p < .001$. For the prospective analyses of Time 3 outcome measures from Time 2 predictor variables, the results of the three regression analyses indicated that the sixteen predictors accounted for a significant amount of EE, $R^2 = .462$, $F(16, 191) = 10.242$, $p < .001$, BE, $R^2 = .346$, $F(16, 191) = 6.316$, $p < .001$, $p = .001$, and DE scores, $R^2 = .287$, $F(16, 191) = 4.810$, $p < .001$. 
Table 7
Spearman’s Correlation Coefficient between each Predictor Variable with each Outcome Variable, that is, 1) Embodiment, 2) Body Esteem, and 3) Disordered Eating from Time 1 to Times 2 and 3, and from Time 2 to Time 3.

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Outcome Variable</th>
<th>T2</th>
<th>T3</th>
<th>T2</th>
<th>T3</th>
<th>T2</th>
<th>T3</th>
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<td></td>
</tr>
<tr>
<td>Ethnicity</td>
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<td>-0.092</td>
<td>0.074</td>
<td>-0.015</td>
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Note. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct. T2 = Time 2. T3 = Time 3.
* p < 0.05, ** p < 0.01, *** p < 0.005
Table 8
Summary of the Prospective Simultaneous Entry Regression Analyses Predicting the Early Postpartum (Time 2) Outcome Measures of Experience of Embodiment, Body Esteem and Disordered Eating using the Pregnancy (Time 1) Predictor Variables (T1-T2 Model).

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Note. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; DE = Disordered Eating construct; \( t \) = \( t \)-value; and \( \beta \) = standardized beta coefficient value.

a Given the assumptions of linearity, normality and homoscedasity were not met, bootstrapping was used to derive robust estimates of parametric estimates.

* \( p < 0.05 \), ** \( p < 0.01 \), *** \( p < 0.005 \)
Table 9  
*Summary of the Prospective Simultaneous Entry Regression Analyses Predicting the Late Postpartum (Time 3) Outcome Measures of Experience of Embodiment, Body Esteem and Disordered Eating using the Pregnancy (Time 1) Predictor Variables (T1-T3 Model).*

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*Note:* EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; DE = Disordered Eating construct; <sup>t</sup> = t-value; and <sup>β</sup> = standardized beta coefficient value.  
* <sup>p</sup> < 0.05, ** <sup>p</sup> < 0.01, *** <sup>p</sup> < 0.005
Table 10
Summary of the Prospective Simultaneous Entry Regression Analyses Predicting the Late Postpartum (Time 3) Outcome Measures of Experience of Embodiment, Body Esteem and Disordered Eating using the Early Postpartum (Time 2) Predictor Variables (T2-T3 Model).

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Sexual Relationships

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*Note. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; DE = Disordered Eating construct; t = t-value; and β = standardized beta coefficient value.

a Given the assumptions of linearity, normality and homoscedascity were not met, bootstrapping was used to derive robust estimates of parametric estimates.

* p < 0.05, ** p < 0.01, *** p < 0.005

Macrosystem.

Ethnicity.

The prospective correlation analyses revealed no significant relationships for Ethnicity with EE, BE, or DE for any of the three models; however, prospective regression analyses revealed that Ethnicity was a significant predictor of EE for the T2-T3 Model.

Socioeconomic status.

The prospective correlation and regression analyses revealed that Socioeconomic Status had no significant relationships nor did it act as a predictor for EE, BE, or DE for any of the three models.

Pressures for thinness.

Prospective correlation analyses revealed that pregnancy measurements (Time 1) of Pressures for Thinness had a weak negative relationship with EE and BE at Time 2 (T1-T2 Model) and EE Time 3 (T1-T3 Model), a weak positive relationship with DE at Time 3 (T1-T3 Model), a very weak negative relationship with BE at Time 3 (T1-T3 Model), and a very weak positive relationship with DE at Time 2 (T1-T2 Model). Moreover, the early postpartum measurements
(Time 2) of Pressures for Thinness had a weak negative relationship with EE and BE at Time 3 (T2-T3 Model) and a weak positive relationship with DE at Time 3 (T2-T3 Model). These relationships suggested that fewer perceived pressures to be thin were associated with a more positive EE, higher BE, and fewer reported DE behaviors. Prospective regression analyses revealed that Pressures for Thinness was a significant predictor of Body Esteem at Time 3 (T2-T3 Model) and DE at Time 3 (i.e., both the T1-T3 and T2-T3 Models).

**Biological.**

**Weight difference from prepregnancy.**

With regards to Weight Difference from Prepregnancy, prospective correlation analyses revealed that pregnancy measurements (Time 1) had a very weak positive relationship with DE at Time 3 (T1-T3 Model). Moreover, the early postpartum measurements (Time 2) of Weight Difference from Prepregnancy had a weak negative relationship with BE at Time 3 (T2-T3 Model), a weak positive relationship with DE at Time 3 (T2-T3 Model), and a very weak negative relationship with EE at Time 3 (T2-T3 Model). These relationships suggested that lower weight retention from prepregnancy was associated with a more positive EE, higher BE, and fewer reported DE behaviors. Prospective regression analyses revealed that Weight Difference from Prepregnancy was a significant predictor of EE, BE, and DE at Time 3 (T2-T3 Models).

**Fatigue.**

With regards to Fatigue, prospective correlation analyses revealed that pregnancy measurements (Time 1) had a weak negative relationship with EE at Times 2 and 3 (T1-T2 and T1-T3 Models), a very weak negative relationship with BE at Time 2 (T1-T2 Model), and a very
weak positive relationship with DE at Times 2 and 3 (T1-T2 and T1-T3 Models). Moreover, the early postpartum measurements (Time 2) of Fatigue had a weak negative relationship with EE at Time 3 (T2-T3 Model), and a very weak negative relationship with BE at Time 3 (T2-T3 Model). These relationships suggested that fewer symptoms of fatigue were associated with a more positive EE, higher BE, and fewer reported DE behaviors. However, prospective regression analyses revealed that Fatigue was not a significant predictor of EE, BE, and DE for any of the models.

**Labour and delivery.**

With regards to Labour and Delivery Control, the early postpartum measurements (Time 2) had a weak positive relationship with EE and BE at Time 3 (T2-T3 Models), and a very weak negative relationship with DE at Time 3 (T2-T3 Model). These relationships suggested that greater feelings of control during labour and delivery were associated with a more positive EE, higher BE, and fewer reported DE behaviors. However, prospective regression analyses revealed that Labour and Delivery Control was not a significant predictor of EE, BE, and DE for any of the models.

**Psychological.**

**Depression.**

With regards to Depression, prospective correlation analyses revealed that pregnancy measurements (Time 1) had a moderate negative relationship with EE at Time 3 (T1-T3 Model), a weak negative relationship with EE and BE at Time 2 (T1-T2 Models) and BE at Time 3 (T1-T3 Model), and a weak positive relationship with DE at Times 2 and 3 (T1-T2 and T1-T3 Models). Moreover, the early postpartum measurements (Time 2) of Depression had a moderate negative relationship with EE at Time 3 (T2-T3 Model), a weak negative relationship with BE at Time 3
(T2-T3 Model), and a weak positive relationship with DE at Time 3 (T2-T3 Model). These relationships suggested that fewer symptoms of depression were associated with a more positive EE, higher BE, and fewer reported DE behaviors. Prospective regression analyses revealed that Depression was a significant predictor of EE and BE at Time 2 (T1-T2 Models), and of EE at Time 3 (T1-T3 Model).

**Anxiety.**

With regards to Anxiety, prospective correlation analyses revealed that pregnancy measurements (Time 1) had a weak negative relationship with EE and BE at Times 2 and 3 (T1-T2 and T1-T3 Models), a weak positive relationship with DE at Time 2 (T1-T2 Models), and a very weak positive relationship with DE at Time 3 (T1-T3 Models). Moreover, the early postpartum measurements (Time 2) of Anxiety had a moderate negative relationship with EE at Time 3 (T2-T3 Model), a weak negative relationship with BE at Time 3 (T2-T3 Model), and a weak positive relationship with DE at Time 3 (T2-T3 Model). These relationships suggested that fewer symptoms of anxiety were associated with a more positive EE, higher BE, and fewer reported DE behaviors. Prospective regression analyses revealed that Anxiety was a significant predictor of EE and BE at Time 3 (T2-T3 Models).

**Internalization of the thin ideal.**

With regards to Internalization of the Thin Ideal, prospective correlation analyses revealed that pregnancy measurements (Time 1) had a moderate negative relationship with EE at Time 2 (T1-T2 Model), a weak negative relationship with BE at Time 2 (T1-T2 Model), and EE and BE at Time 3 (T1-T3 Models), and a weak positive relationship with DE at Times 2 and 3 (T1-T2 and T1-T3 Models). Moreover, the early postpartum measurements (Time 2) of Internalization of the
Thin Ideal had a moderate negative relationship with EE at Time 3 (T2-T3 Model), a weak negative relationship with BE at Time 3 (T2-T3 Model), and a weak positive relationship with DE at Time 3 (T2-T3 Model). These relationships suggested that lower levels of internalization of the thin ideal were associated with a more positive EE, higher BE, and fewer reported DE behaviors. Prospective regression analyses revealed that Internalization of the Thin Ideal was a significant predictor of for all models, that is EE, BE and DE at Time 2 (T1-T2 Models) and Time 3 (T1-T3 and T2-T3 Models).

**Maternal Beliefs about Competence.**

With regards to Maternal Beliefs about Competence, prospective correlation analyses revealed that early postpartum measurements (Time 2) had a moderate positive relationship with EE at Time 3 (T2-T3 Model), a weak positive relationship with BE at Time 3 (T2-T3 Model), a very weak negative relationship with DE at Time 3 (T2-T3 Model). These relationships suggested that higher levels of satisfaction and efficacy as a mother were associated with a more positive EE, higher BE, and fewer reported DE behaviors. Prospective regression analyses revealed that Maternal Beliefs about Competence was a significant predictor of EE at Time 3 (T2-T3 Model).

**Comfort with breastfeeding.**

With regards to Comfort with Breastfeeding, prospective correlation analyses revealed that early postpartum measurements (Time 2) had a weak positive relationship with EE and BE at Time 3 (T2-T3 Models), and a very weak negative relationship with DE at Time 3 (T2-T3 Model). These relationships suggested that greater comfort with breastfeeding was associated with a more positive EE, higher BE, and fewer reported DE behaviors. However, prospective regression
analyses revealed that Comfort with Breastfeeding was not a significant predictor of EE, BE and DE for any of the models.

**Relational.**

**Social support.**

With regards to Social Support, prospective correlation analyses revealed that pregnancy measurements (Time 1) had a weak positive relationship with EE at Times 2 and 3 (T1-T2 and T2-T3 Models). Moreover, the early postpartum measurements (Time 2) of Social Support had a weak positive relationship with EE and BE at Time 3 (T2-T3 Models), and a very weak negative relationship with DE at Time 3 (T2-T3 Model). These relationships suggested that greater availability of social supports was associated with more positive EE, higher BE, and fewer reported DE. Prospective regression analyses revealed that Social Support was a significant predictor of BE at Time 3 (T2-T3 Model).

**Relationship with partner.**

With regards to Relationship with Partner, prospective correlation analyses revealed that pregnancy measurements (Time 1) had a weak positive relationship with EE at Times 2 and 3 (T1-T2 and T1-T3 Models), and a very weak positive relationship with BE at Time 2 (T1-T2 Model). Moreover, the early postpartum measurements (Time 2) of Relationship with Partner had a weak positive relationship with EE at Time 3 (T2-T3 Model). These relationships suggested that relationship satisfaction was associated with a more positive EE and higher BE. However, prospective regression analyses revealed that Relationship with Partner was not a significant predictor EE, BE and DE for any of the models.
Behavioral.

Physical activity.

The prospective correlation and regression analyses revealed that Physical Activity had no significant relationships nor did it act as a predictor for EE, BE, or DE for any of the three models.

Breastfeeding practice.

With regards to Breastfeeding Practice, prospective correlation analyses revealed that early postpartum measurements (Time 2) had a weak negative relationship with BE at Time 3 (T2-T3 Model), and a weak positive relationship with DE at Time 3 (T2-T3 Model). These relationships suggested that a greater tendency to breastfeed was associated with higher BE and fewer reported DE behaviors. Prospective regression analyses revealed that Breastfeeding Practice was a significant predictor of DE at Time 3 (T2-T3 Model).

Sexual relationships.

With regards to Sexual Relationships, prospective correlation analyses revealed that pregnancy measurements (Time 1) had a weak negative relationship with EE at Times 2 and 3 (T1-T2 and T1-T3 Models). Moreover, the early postpartum measurements (Time 2) of Sexual Relationships had a weak negative relationship with EE at Time 3 (T2-T3 Model), and a very weak negative relationship with BE at Time 3 (T2-T3 Model). These relationships suggested that greater sexual satisfaction was associated with a more positive EE and higher BE. Prospective regression analyses revealed that a significant predictor of EE at Time 3 (T2-T3 Model).
Chapter 4
Discussion

The current study prospectively examined the experiences of 208 women at three time points throughout the pregnancy and postpartum period and concurrently investigated a myriad of predictor factors that may shape women’s bodily experiences. Three different outcome measures were used that assessed the Experience of Embodiment, Body Esteem, and Disordered Eating in order to enhance the understanding of shifts in body experiences during this important transition. Moreover, this study utilized a prospective approach to study which factors in pregnancy predicted women’s body satisfaction during postpartum. This could also help identify pregnant women at risk for later difficulties with their bodily experiences. The objectives of the present study were threefold and included investigating (1) the shifts in women’s experiences with their bodies longitudinally from pregnancy into the postpartum, (2) the cross-sectional patterns of relationships as well as the contribution of each of the macrosystem, biological, psychological, relational, and behavioral factors to women’s Experience of Embodiment, Body Esteem, and Disordered Eating in pregnancy, and early and late postpartum transition time points, and (3) the prospective patterns of relationships as well as to the contribution of each of the macrosystem, biological, psychological, relational, and behavioral factors in pregnancy (Time 1) and early postpartum (Time 2) which serve to foster, as well as hinder, women’s Experience of Embodiment, Body Esteem, and Disordered Eating during the early (Time 2) and late postpartum (Time 3) period measurements. Based on these objectives, the discussion begins by examining the hypotheses, summarizing the corresponding results, and creating an understanding and explanation of the findings within the current research literature. Following the concluding summaries, the strengths
and limitations to the present study, recommendations for areas of future research and clinical implications are also highlighted and discussed.

**Shifts in women’s experience of embodiment, body esteem and disordered eating across pregnancy and postpartum transition period.**

Based on the first objective it was hypothesized that a decline in the Experience of Embodiment and Body Esteem and an increase in Disordered Eating would be observed in early postpartum (Time 2) and late postpartum (Time 3) in comparison with the pregnancy measurements (Time 1). The findings of the current study utilizing the three different constructs supported the quantitatively observed marked and significant negative shift experienced by women from pregnancy into postpartum in previous studies using a range of measures of body image and esteem, such as the Body Attitudes Questionnaire (Clark et al., 2009a; Rallis et al., 2007), card sorting techniques (Hiser, 1987; Jordan et al., 2005), the Attitude to Body Image Scale (Strang & Sullivan, 1985), the Body Cathexis Scale (Walker et al., 2002), and the Body Areas Satisfaction Scale and the Multidimensional Body-Self Relations Questionnaire (Lombardo, 2001). Moreover, the first hypothesis also stated that an improvement in the Experience of Embodiment and Body Esteem or a reduction in engagement in Disordered Eating between early (Time 2) and late postpartum (Time 3) would not be observed. Supporting this claim, the current study did not find a significant improvement by the sixth month postpartum in any of the outcome measures, suggesting that if a positive shift occurs as suggested by Lombardo (2001) and Rallis and colleagues (2007), it happens beyond the sixth month postpartum. In fact, Lombardo (2001) recognized that the significant positive changes in women’s perceptions of their bodies using the Body Areas Satisfaction Scale and the Multidimensional Body-Self Relations Questionnaire
occurred between the 8\textsuperscript{th} and 12\textsuperscript{th} months’ postpartum while Rallis and colleagues (2007) noted an improvement in the Salience and Feeling Fat subscales of the Body Attitudes Questionnaire (Ben-Tovim & Walker, 1991) between the 6\textsuperscript{th} and 12\textsuperscript{th} months’ postpartum.

The present investigation added to these previous studies by including measures that addressed an assessment of satisfaction with one’s weight and body parts as well as the way women experience their bodies. The embodiment measure assessed the degree of connection with the body, as well as experiences of body functionality, attuned self-care, comfort with the body and its desires, and freedom from holding an objectified lens towards one’s body. The present investigation therefore suggested that the shift from pregnancy to postpartum may involve an increase in the frequency of disordered eating patterns, and disruptions in both body esteem as well as embodied comfort, agency, and attuned self-care. The use of the Experience of Embodiment scale (EE) of the Embodiment Scale for Women (Piran & Teall, 2006) during this transition period is novel. The original psychometric data obtained with a general sample of women ages between 19 and 55 (SD = 9.7; Teall, 2006) revealed a mean Experience of Embodiment score of 132.03 (SD = 26.90). Therefore, the mean Experience of Embodiment scores during the prenatal (Time 1: $M = 131.03, SD = 17.28$) and postpartum periods (Time 2: $M = 127.41, SD = 18.86$; Time 3: $M = 128.94, SD = 19.03$) of the current study appeared to represent a shift towards disrupted body connection, reduced agency, and self-neglect or harm.

Altogether, the study confirms that the shift from pregnancy to postpartum comprised a challenging transition for women and highlighted the importance of studying the cross-sectional and prospective factors that contributed to this shift. Therefore, the following sections turn to a
discussion of how the macrosystem, biological, psychological, relational, and behavioral factors correlated and predicted cross-sectionally and prospectively the different measures.

**Cross-sectional and prospective correlates and predictors of women’s experience of embodiment, body esteem and disordered eating.**

The second and third objectives were investigated by including a (1) cross-sectional inquiry across the pregnancy and two postpartum transition time points and a (2) prospective inquiry from pregnancy (Time 1) and early postpartum (Time 2) measurements of predictors to determine which factors serve to foster, as well as hinder, women’s Experience of Embodiment, Body Esteem, and Disordered Eating during the early (Time 2) and late postpartum (Time 3) period. The hypotheses for each predictor variable will be discussed below under their corresponding headings along with a summary and understanding of the study’s cross-sectional and prospective findings.

**Macrosystem factors**

*Ethnicity*

Based on the research literature, it was hypothesized that women of ethnic minority (i.e., non-Caucasian women) would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Although the correlation analyses failed to support this hypothesis, Ethnicity was a significant cross-sectional predictor of Body Esteem at Time 2 whereby a more negative body esteem was observed in early postpartum for women of European Descent. This result was in line with Walker and colleagues (2002) who, using the Body Cathexis Scale (Secord & Jourard, 1953) at post-delivery and at 6 weeks’ postpartum, noted that women described as Anglo (e.g., Caucasian) reported a greater number of areas of bodily concern, followed by African American and Hispanic women.
The prospective analysis revealed that Ethnicity was a significant predictor of the Experience of Embodiment within the T2-T3 Model. However, this result was in the opposite direction than the previously discussed cross-sectional finding such that women of European Descent at Time 2 predicted a more positive embodiment at Time 3. There are no current studies to date investigating the impact of Ethnicity on the experience of body functionality, attuned self-care, comfort with the body and its desires, and freedom from holding an objectified lens towards one’s body. Further, the present investigation is limited by the lack of diversity in the sample (191 women of European Descent and 17 women of Non-European Descent). In addition to the lack of diversity in this sample, the lack of significant findings for Ethnicity was not surprising considering the inconsistent findings in the literature regarding body esteem and ethnicity, as well as possible differences in body esteem between different ethnic groups (see O’Neil, 2003, Roberts, Feingold, Cash, & Johnson, 2006, Wildes & Emery, 2001 for reviews). In fact, in general adolescent populations, body satisfaction has been shown to either be strong and significant across most ethnic or racial backgrounds (e.g., van den Berg, Mond, Eisenberg, Ackard, Neumark-Sztainer, 2010) or to be better predicted by other variables, such as media use, ethnic identity, and acculturation level (e.g., Schooler, 2008; Schooler & Trinh, 2011; Schooler, Ward, Merriwether, & Caruthers, 2004). Therefore, this variable, albeit important, requires further research to understand the intersection of ethnicity with other variables involved during this transition.

**Socioeconomic Status**

Based on the research literature, it was hypothesized that women of lower socioeconomic status would experience higher body esteem and fewer reported disordered eating patterns, though there is scant quantitative research in this domain and available studies were conducted in the US
where socioeconomic status may be confounded with race/ethno-cultural group membership. In the present investigation, no correlational or regression findings supported this hypothesis cross-sectionally or prospectively. Research into the impact of Socioeconomic Status during this transition has consisted mostly of qualitative studies that suggested that certain classifications (e.g., being white, middle-class, ‘appropriate-age’) were generally described as ‘more suited’ for motherhood than others (Neiterman, 2013). Further, these studies focused primarily on the impact of the socioeconomic status of women on weight gain and retention as the final unit of analysis (Groth et al., 2012; Shrewsbury et al., 2009). Few studies indicated significant associations between higher socioeconomic status and reduced rates of obesity in samples of women (Drewnowski, 2009; Ljungvall & Zimmerman, 2012; Pudrovksa, Reither, Logan, & Sherman-Wilkins, 2014) as well as with an increased rate of weight-related disordered behaviors (e.g. restraint and the pursuit of the societal ideals of beauty and appearance; Sobal & Stunkard, 1989; Wardle & Marsland, 1990). However, these studies were not conducted among women at pregnancy and postpartum, and may therefore not generalize to this group.

Moreover, within this transition, the limited studies thus far looking at Socioeconomic Status used a variety of ways to operationalize socioeconomic status, including education level (Shrewsbury et al., 2009), self-identification into low, middle, or upper class (Neiterman, 2013), and according to their need to access services in centers that cater primarily to low-income women (Groth et al., 2012). Arguments in support of these ways of operationalizing socioeconomic status contended that women’s experiences were shaped by their own perception of their social classification, instead of the objective assessment of financial resources, especially during this transition period where income may be vulnerable to change (Shrewsbury et al., 2009). However, the present investigation utilized a composite index. This index included both partners’ education
levels and occupational statuses, as well as the women’s self-evaluation of their family socioeconomic status, thereby offering a more comprehensive view of their socioeconomic status. Despite utilizing this composite index, the current sample did not show diversity with respect to the components of this construct. In this sample, most participants and their partners finished their post-secondary studies (e.g., college or university) or higher (91.4% and 76.9%, respectively), were categorized in the three highest scores for occupational status (i.e., professionals, corporate managers or senior official, or small business owners as per Table S3 in Appendix S, 65% and 51%, respectively) or had participants’ rating of their financial wellbeing as average or above (90.4%). Moreover, as described in the Participant section above, an independent samples t-test revealed that the final sample differed from the group of women excluded after the initial questionnaire (Time 1) in that it represented women of higher socioeconomic status. It is likely that women of higher socioeconomic status can have the financial means and conditions that allow ongoing participation in a study that requires the time to respond to a large number of measures.

Therefore, as a result of the lack of diversity in this final sample, this study could not adequately test the impact of two variables of the macrosystem: ethnicity and socioeconomic status on the Experience of Embodiment, Body Esteem, and Disordered Eating. Consequently, future studies should continue to use single or composite measures of socioeconomic status to determine how the familial context assists in situating women’s pregnant and postpartum experiences within the larger social context. This would allow to further elucidate important factors affecting women’s journey to motherhood and to explore the variability in women’s bodily experiences. Doing so will require a specific recruitment process that aims to target lower income women and those of ethnic minorities as even attempts made in this study with broad online and in person reach and compensation failed to accomplish this goal.
**Pressures for Thinness**

Based on the research literature, it was hypothesized that women who perceived fewer pressures to be thin from family, friends, dating partners and the media would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Perceived pressures to be thin were assessed using the Perceived Sociocultural Pressure Scale (Stice et al., 1996) and the wording was altered for the pregnancy questionnaire to reflect the differing focus on weight during pregnancy. Cross-sectional correlation analyses confirmed this hypothesis for all possible associations with strengths of relationships ranging from moderate to very weak. Moreover, Pressures for Thinness was a significant cross-sectional predictor for all outcome variables at Time 2 and Disordered Eating at Time 3. First, it is interesting to note that the cross-sectional data suggested that while the pressures for thinness variable was not a predictor of women’s experiences with their bodies in pregnancy, it appears to play a role in postpartum. No studies to date have investigated cross-sectionally the impact of the pressures for thinness in pregnancy or with postpartum women and therefore, these findings are novel. However, one study looking specifically at the period of pregnancy noted that measurements of perceived sociocultural pressures for thinness in early pregnancy (i.e., between 16 and 23 weeks of gestation) predicted feelings of attractiveness, fatness, and salience of weight and shape late pregnancy (i.e., between 32 and 39 weeks’ gestation) as measured by the Body Attitudes Questionnaire (Ben-Tovim & Walker, 1991). Taking into consideration the findings of Skouteris and colleagues (2005), the results of the present investigation may have highlighted that as pregnancy progresses, women’s perception of the pressures for thinness may lessen. The descriptive statistics and comparisons across the three time points for this variable (See Table W1 in Appendix W) suggested that women perceived fewer pressures to be thin from family, friends, dating partners and the media in
pregnancy than in both postpartum measurements, perhaps supporting the aforementioned studies that suggested a reprieve from the societal standards of thinness during pregnancy as demonstrated by their unchanged or improved experiences with the body during pregnancy (Boscaglia et al., 2003; Davies & Wardle, 1994; Duncombe et al., 2008; Loth et al., 2011; Skouteris et al., 2005).

With regards to prospective results, correlational analyses were significant for all possible associations and Pressures for Thinness served as a prospective predictor of Body Esteem at Time 3 (T2-T3 Model) and Disordered Eating at Time 3 (i.e., both the T1-T3 and T2-T3 Models). No studies to date have investigated this variable prospectively across this transition period; however, the results highlighted the importance of looking at postpartum pressures for thinness given the extensive findings in the research literature, particularly qualitative methodologies, highlighting a discourse of ‘getting back to normal’ after pregnancy (Johnson et al., 2004). Moreover, given the perceived deviation of the postpartum body from the depiction of media driven portrayals of celebrities and expectations during this transition, it is no surprise that the perceived societal pressures for thinness are significant contributors in postpartum. Given the continued and increasing societal focus on the portrayal of the unrealistic postpartum body and more recently on a standard for pregnant women, Pressures for Thinness during and after pregnancy are important to consider given that they may reinforce the need to attain and the internalization of the established body ideals from the media, friends, family members, and significant others.

**Biological factors**

**Weight difference from prepregnancy**

Based on the research literature, it was hypothesized that women with lower weight gains in pregnancy or weight retention in postpartum would experience a more positive embodiment,
higher body esteem, and fewer reported disordered eating patterns. Correlational analyses revealed weak to very weak cross-sectional relationships of Weight Difference from Prepregnancy with Experience of Embodiment, Body Esteem and Disordered Eating at Time 2. In cross-sectional models, regression analyses revealed that Weight Difference from Prepregnancy was a significant predictor of the Experience of Embodiment and Body Esteem at Times 2 and 3. Cross-sectional investigations of the impact of weight gain and retention on women’s experiences with their bodies during pregnancy or in the postpartum are limited (Gjerdingen et al., 2009; Gonçalves, Freitas, Freitas-Rosa and Machado, 2015). During the third trimester of pregnancy, one study (Gonçalves et al., 2015) looked at disordered eating patterns using the Eating Disorders Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994) and the results suggested that during the third trimester of pregnancy, greater weight gains were associated with dysfunctional eating behaviors. The results of this current study failed to support their findings, which highlighted the importance of using a variety of constructs to assess the experiences of women with their bodies. The cross-sectional findings of this study with regards to pregnancy experiences may be in line with previous retrospective and prospective studies demonstrating that, in comparison with prepregnancy, pregnant women experienced higher body satisfaction perhaps suggesting that pregnancy represented a transition whereby, despite weight gain and physical changes, a positive perspective of the body could be adopted (Boscaglia et al., 2003; Clark & Ogden, 1999; Fairburn & Welch, 1990; Loth et al., 2011).

Moreover, the results of the current investigation for embodiment and body esteem in both early and late postpartum are supported and in line with previous cross-sectional research findings demonstrating that higher postpartum weight retentions were associated with greater body dissatisfaction in late postpartum, that is an average of 6.63 (Welsh, 2010), 7.48 (Erbil et al., 2012)
and 8.9 months postpartum (Gjerdingen et al., 2009). Clearly, pressures on women to regain their pre-pregnancy body weight and shape lead to disrupted body experiences among women who retain more weight postpartum within a culture that emphasizes thinness as an indicator of beauty.

The current study’s prospective correlational analyses revealed weak to very weak relationships for all T2-T3 Models. In predictive models, regression analyses revealed that Weight Difference from Prepregnancy was a significant predictor of all three outcome measures at Time 3 (i.e., the T2-T3 Models). No studies to date have investigated prospectively the variable of weight gain during pregnancy and retention into the postpartum in relation to body esteem and disordered eating. Rather, most studies focused primarily on postpartum weight retention as the outcome measure (e.g., Phillips et al., 2012, 2013, 2014; Shrewsbury et al., 2009) as well as on the impact of body image on weight gain and retention (e.g., Bagheri et al., 2013; Hill, Skouteris, McCabe, & Fuller-Tyszkiewicz, 2012; Mehta et al., 2011; Rauff et al., 2011). As previously mentioned in the Weight Difference from Prepregnancy section in the literature review, the use of prenatal weight gain and postpartum weight retention as the final units of interest in model conceptualization can be problematic. Such models not only neglect the physiological changes that occur during and after pregnancy, but also reinforced the need to abide to the strict societal standards of physical shape by placing negative connotations surrounding weight gain and retention during a time when women’s bodies are naturally further away from their own prepregnancy and societal ideal weight statuses. Moreover, predictive models that emphasize weight gain neglected the impact and burden placed on women to achieve such goals without emphasizing and appreciating the strength and functionality of pregnant and postpartum bodies. Therefore, throughout the postpartum period and within a culture that idealizes regaining prepregnancy bodies, women in this study experienced a more negative embodiment and body
esteem when their bodies were further away from the cultural ideal as defined by their weight. Further studies need to be conducted to fully understand the impact of weight gain and retention on women’s experiences during this transition within the context of societal pressures and the internalization of the female bodily ideal.

Fatigue

Based on the research literature, it was hypothesized that women who experienced fewer symptoms of fatigue as well as less distressing and interfering levels of tiredness would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Cross-sectional correlational analyses revealed that Fatigue had weak to very weak relationships with all outcome measures and time points, except Disordered Eating at Time 1; however, Fatigue was not identified as a cross-sectional predictor for any of the regression models at any of the time points. Despite the overarching impact of fatigue in pregnancy and postpartum (Affonso & Mayberry, 1990; Chou et al., 2003), the research literature included only one study which explored the cross-sectional relationship between pregnancy body attitudes and sleep quality as measured by the Pittsburgh Sleep Quality Index. In their study, Kamysheva and colleagues (2008), noted that fatigue was associated with feeling less strong and fit with women between 15 and 25 weeks’ gestation. However, their analysis also revealed that this effect was mediated by self-esteem.

With regards to prospective results, correlational analyses revealed that Fatigue had weak to very weak relationships with all outcome measures and models, except Body Esteem at Time 3 (i.e., the T1-T3 Model) and Disordered Eating at Time 3 (i.e., T2-T3 Model); however, similar to the cross-sectional inquiry, Fatigue was not identified as a cross-sectional or prospective predictor at any of the regression models at any of the time points. The experience of fatigue during this
transition has not been investigated prospectively in previous studies. Therefore, given the overall limited number of studies investigating this construct as the primary predictor variable of interest during and after pregnancy, further systematic explorations are required to investigate whether, in addition to correlational relationships, fatigue has predictive abilities with regards to Experience of Embodiment, Body Esteem or Disordered Eating or whether the impact of Fatigue is mediated by other variables such as self-esteem (Kamysheva et al., 2008), depression (see Hunter, Rychnovský, & Yount, 2009 for a review), desire to and engagement in physical activity (see Poudevigne & O’Connor, 2006 for a review in pregnancy), or sexual satisfaction (Ahlborg, Strandmark, & Dahlöf, 2000; Ahlborg, Dahlöf, & Hallberg, 2005; Fischman, Rankin, Soeken, & Lenz, 1986).

**Labour and delivery**

Based on the research literature, it was hypothesized that women who expressed greater feelings of control over themselves and their environment during their labour and birth would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Correlational analyses revealed that Labour and Delivery Control had weak to very weak cross-sectional relationships with all outcome measures at Time 2 and for all T2-T3 Models; however, Labour and Delivery Control was not identified as a cross-sectional or prospective predictor at Times 2 or 3, or for the T2-T3 Models.

Given that the process and context of labour and delivery relates strongly to women’s experiences with their bodies, it is no surprise that correlational relationships exist. This is the first research study to date to cross-sectionally or prospectively examine the impact of labour and delivery on women’s Experience of Embodiment, Body Esteem and Disordered Eating. Similar to
the discussion of Fatigue, the limited number of studies investigating this construct as a variable of interest after pregnancy suggested that further explorations are required. It is possible that reduced agency during labour and birth may impact women’s experiences with their bodies through other pathways. For instance, satisfaction and feelings of control during labour and birth have been associated with breastfeeding self-efficacy (Dennis 2006, Hinic, 2015). Hinic (2015) suggested that both Dennis’ (1999) assertion that “positive interpretations of arousal, such as excitement or satisfaction, enhance self-efficacy…” (p. 197) and Bandura’s (1997) proposition that “self-efficacy gained through enactive mastery in one domain [e.g., labour and delivery] to impact upon self-efficacy in another related area [e.g., breastfeeding self-efficacy]” could be applied to this relationship (Hinic, 2015, p.124). Therefore, perhaps the same could be true about the bolstering impact of labour and delivery on women’s experiences with their bodies, particularly in the early postpartum due to the recency of the birth experience and prior to gaining a sense of mastery in other domains (e.g., such as breastfeeding or confidence in their own mothering abilities).

In addition to breastfeeding self-efficacy, poor perceived control and confidence during the labour and delivery could impact their satisfaction with their birth performance (Goodman, Mackey, & Tavakoli, 2004), their feelings of inadequacy as a mother (Baker, Choi, Henshaw, & T.R.E.E., 2005) or difficulties establishing mother-infant attachment (Ballard, Stanley, & Brockington, 1995). Given the lack of inclusion of this construct in the experiences of women with their bodies, further studies are required.
**Psychological factors**

**Depression**

Based on the research literature, it was hypothesized that women who reported fewer depressive symptoms, as assessed by the Edinburgh Postnatal Depression Scale, would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Cross-sectionally, correlational analyses revealed moderate to weak relationships for all time points, except for Disordered Eating at Time 1. In terms of correlations, several studies looking at trimester-specific and postpartum relationships between body image satisfaction and depressive symptoms have noted significant results. For instance, during the first, second and third trimesters and at 6-weeks postpartum, the degree of depressive feelings and behaviors experienced by women correlated positively with the degree of dissatisfaction with specific body parts (Downs et al., 2008). Similarly, Clark and colleagues (2009) observed this correlational relationship in pregnancy (i.e., between 17 and 21 and between 32 and 35 weeks’ gestation) and in postpartum (i.e., at six weeks and six months’ postpartum); however, these relationships were stronger during postpartum than in pregnancy. Walker and colleagues (2002) further investigated the cross-sectional relationships between body image attitudes and depressive symptoms utilizing an ethnically diverse sample defined as either Anglo, African-American or Hispanic at post-delivery and six weeks postpartum. Correlational analysis revealed a relationship amongst these variables at both times points except for the African-American group at 6 weeks postpartum (Walker et al., 2002).

Cross-sectional regression analyses revealed that Depression was a significant predictor of the Experience of Embodiment (Times 1 and 3) and Body Esteem (Time 1); however, it was not identified to be a predictor of Disordered Eating at any of the time points. Clark and colleagues
(2009) also noted that when looking only at body attitudes and depression in cross-sectional predictive models, depression was a significant predictor of the feeling fat, strength and fitness, salience of weight and shape, and attractive subscales of the Body Attitudes Questionnaire in late pregnancy (i.e., between 32 and 35 weeks’ gestation), but not in postpartum (i.e., six weeks and six months postpartum), supporting the current study’s cross-sectional correlational and regression findings.

Prospectively, correlational analyses revealed moderate to weak relationships for all models. Regression analyses revealed that Depression was a significant predictor of the Experience of Embodiment (T1-T2 and T1-T3 Models) and Body Esteem (T1-T2 Model); however, it was not identified to be a predictor of Disordered Eating for any of the models. In pregnancy, longitudinal research has highlighted that when multiple factors are considered in prospective regressions, depression may not emerge as a predictor of body esteem even when it is a significant predictor on its own. For instance, when Skouteris and colleagues (2005) looked at whether the combined variables of depressive symptoms, social comparisons with others, perceived societal pressures for thinness, weight related teasing and public self-consciousness assessed between 16 and 23 weeks of pregnancy predicted late pregnancy’s (i.e., between 32 and 39 weeks’ gestation) body attitudes, depression only predicted the subscales of strength and fitness. Therefore, they concluded that the predictive contribution of depression may be smaller when other variables are taken into consideration. The results of the current study are also in line with the findings of Clark and colleagues (2009) who demonstrated that in a predictive model looking at depressive symptoms as the only variable of interested in late pregnancy (i.e., between 32 and 35 weeks’ gestation), depression predicted feeling fatter at six and twelve months postpartum.
Therefore, although depression significantly correlated cross-sectionally and prospectively with the outcome variables across the time points and models, it was not a significant predictor in all regression models. This is likely due to the shared variance with other predictor variables. In fact, amongst its most significant relationships (see Tables X1, X2 and X3 in Appendix X), Depression appeared to be strongly positively correlated with Anxiety at Times 1, 2, and 3, moderately positively correlated with Fatigue at Times 1, 2 and 3, and Sexual Relationships at Time 3, and moderately negatively correlated with Maternal Beliefs about Competence at Times 2 and 3. Therefore, its impact may be smaller in the context of the other variables included in this study (as seen in Skouteris et al., 2005) and future research should attempt to delineate and separate the relationships amongst these highly interrelated factors and their impact on women’s experiences with their bodies.

**Anxiety**

Based on the research literature, it was hypothesized that women who reported experiencing fewer symptoms of anxiety would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Cross-sectional correlational analyses revealed strong to weak relationships for all time points, except for Disordered Eating at Time 1. Regression analyses revealed that Anxiety was only a predictor of the Experience of Embodiment and Body Esteem cross-sectionally at Time 2. Only one study to date has examined the cross-sectional relationship between anxiety and eating attitudes (Carter et al., 2000) during pregnancy, and at 4-months and 14-months postpartum. Unlike the study’s current results, their findings revealed that eating attitudes did not correlate with anxiety in pregnancy or at 4-months postpartum; however, an association was found at 14-months postpartum.
Prospective correlational analyses revealed moderate to weak relationships for all models. Moreover, prospective regression analyses revealed that Anxiety was a predictor of the Experience of Embodiment and Body Esteem for the T2-T3 Model. There are no current studies to confirm or refute the prospective results of the current study. Nonetheless, the results of this inquiry suggested that Anxiety during the early postpartum period played a significant role in determining whether women in late postpartum would experience difficulties with their bodies. The identification of Anxiety in early postpartum is critically important given that this period is known to both create new anxiety or exacerbate existing difficulties (Ross & McLean, 2006), which can have considerable effects on mother-infant attachment and child development (Arteche, Joormann, Harvey, Craske, Gotlib, Lehtonen et al., 2011; Keim, Daniels, Dole Herring, Siega-Riz, & Scheidt, 2011).

Moreover, anxiety has been demonstrated to be a prevalent difficulty amongst this population. Dennis, Coghlan, and Vigod (2013) examined the stability of the experience of anxiety in new mothers from childbirth to 8 weeks postpartum. They noted that, using a cut-off of > 40 on the STAI to denote the presence of postpartum anxiety (Spielberger et al., 1983), 22.6%, 17.2% and 14.8% of mothers at 1, 4, and 8 weeks postpartum experienced clinically significant anxiety. Moreover, significant correlations were observed between the 1-week assessment of Anxiety and both the 4- ($r = 0.68, p < 0.001$) and 8-weeks ($r = 0.64, p < 0.001$) assessments. Interestingly, a post-analysis investigation into the current study’s measure of Anxiety also displayed a trend in women reporting clinically elevated anxiety using the same criteria (i.e., a cut-off of > 40 on the STAI) whereby an increase can be observed between the pregnancy (Time 1), and early (Time 2) and late (Time 3) postpartum measurement (i.e., 23.4%, 25.5% and 32.2%, respectively); however, unlike previous research, the pattern of anxiety in this sample appears to increase throughout the
transition and in postpartum, instead of decrease as Dennis and colleagues (2003) had noted. Moreover, correlations between reported Anxiety levels at pregnancy (Time 1) with both early (Time 2; $r = 0.49$, $p < 0.001$) and late (Time 3; $r = 0.46$, $p < 0.001$) postpartum period were significant. This suggested that anxiety is an important factor to take into consideration when studying the experiences of pregnant and postpartum women.

Given the lack of agreement between the result of Carter and colleagues (2000) and the current study, the lack of previous prospective studies, the broad range of possible sources of anxiety during and after pregnancy (see Green, Kafetsios, Statham, & Snowdon, 2003 and Moran, Polanin, & Wenzel, 2014 for a summary), and the high number of women scoring greater than 40 on the STAI, further research is needed to clarify the patterns of relationships and to further provide insight into the potential impact of anxiety on women’s experiences with their bodies.

*Internalization of the thin ideal*

Based on the research literature, it was hypothesized that women who reported lower levels of internalization of cultural pressures for thinness would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Cross-sectional correlation and regression analyses revealed that Internalization of the Thin Ideal had moderate to weak relationships and was a predictor with all outcomes measures across the three times. In pregnancy, women have qualitatively described this internalization of the societal idealization thinness particularly in early pregnancy when growth is novel and the “showing” of the belly required justification in order to avoid being confused with being “fat” (Johnson et al., 2004). However, contrary to Johnson and colleagues (2004), the internalization for thinness in the present study was associated with lower Experience of Embodiment and Body Esteem as well as with Disordered
Eating even at advanced pregnancy, when the pregnancy was physically apparent. Nonetheless, the question of whether the internalization present in non-pregnant samples persisted in pregnancy or a new internalization of a maternal ideal emerged requires further exploration through prospective longitudinal studies before and throughout pregnancy, particularly within the context of lower perceived Pressures for Thinness in pregnancy as discussed above.

With regards to postpartum cross-sectional studies, Welsh (2010) confirmed the moderate correlations observed between the internalization of the thin ideal and measures of body shape satisfaction (i.e., the Body Shape Questionnaire-Revised-10; Mazzeo, 1999) and eating attitudes (i.e., the Eating Attitudes Test-26; Garner et al., 1982) with a sample of women at an average of 6.63 months postpartum. Moreover, Welsh (2010) completed regression models incorporating biomedical (i.e., perceived shape change, weight change, and postpartum body mass index), psychological (i.e., internalization of the thin ideal and negative affect), and social variables (i.e., pressure for thinness). The analyses revealed that internalization of the thin ideal significantly predicted variance in both body shape satisfaction and eating attitudes above and beyond the variance predicted by the biomedical variables and negative affect. The author suggested that internalization of the thin ideal was an important and unique contributor to women’s experiences in the postpartum period.

With regards to prospective correlation and regression analyses, Internalization of the Thin Ideal had moderate to weak relationships and was a predictor with all outcomes measures for the three models. These results are of interest given that they confirm the predictive ability of the thin ideal internalization in relation to the experience of embodiment, body esteem and disordered eating. Despite limited studies in pregnancy and postpartum, these findings are not surprising given
the consistent results with adolescent women, suggesting that when women’s bodies are further away from the societal ideal, they tend to experience lower body esteem and disordered eating patterns (e.g., Tylka & Subich, 2004).

Regrettably, sustaining this thin ideal during this transition is problematic given the natural deviation of the female body from the unattainable ideal and the importance of highlighting the functionality of women’s bodies during pregnancy and in postpartum. Nonetheless, trends in the internalization of the thin ideal seen in Table W1 in Appendix W demonstrated that the experience of the Internalization of the Thin Ideal increased significantly from pregnancy into both early and late pregnancy. Therefore, the data patterns from this study clearly suggested that Internalization of the Thin ideal is an important aspect of the experiences of pregnant and postpartum women with their bodies.

Maternal Beliefs about Competence

Based on the research literature, it was hypothesized that women who reported greater maternal confidence and efficacy in postpartum would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Correlational analyses revealed that Maternal Beliefs about Competence had moderate to very weak relationships with the Experience of Embodiment, Body Esteem and Disordered Eating cross-sectionally at Times 2 and 3, except for Disordered Eating in late postpartum, and for all three T2-T3 Models. However, Maternal Beliefs about Competence only served as a predictor for the Experience of Embodiment at Times 2 and 3 and for the T2-T3 Model. Given that there is no previous research investigating the relationships amongst measures of maternal confidence and efficacy, and women’s experiences with their bodies, these results are novel. Previous authors have, however, examined challenges
mothers experienced in relation to their pre-pregnancy identities with a sense of loss regarding their pre-pregnancy selves, work, social life and autonomy (Patel, Lee, Wheatcroft, Barnes, & Stein, 2005) and the transition from focus on the self to focus on the baby.

In this study, maternal beliefs about competence only predicted the Experience of Embodiment and not Body Esteem or Disordered Eating. Given that the research based definition of the Experience of Embodiment encompasses both positive and negative aspects of embodiment, including connection and comfort, agency and passion, and self-care (Piran, 2016), it is possible that women with higher maternal beliefs experienced a positive connection with their bodies, as well as a sense of agency and functionality, attuned self-care, experience and expression of desire, and a freedom from self-objectification. Such finding is important given that maternal identity has been shown to predict both maternal and infant adaptation, including depression and anxiety (Blumberg, 1980, Carver & Gaines, 1987; Davids & Holden, 1970; Shereshefsky & Yarrow, 1974).

Moreover, Table W1 in Appendix W revealed that Maternal Beliefs about Competence increased from early to late postpartum, which may suggest that as women transitioned through motherhood, their confidence in their mothering abilities increased. Given the contextual nature of the development of maternal identity and the lack of research on its impact on the Experience of Embodiment, Body Esteem, and Disordered Eating, maternal identity is important to consider in future research. Moreover, it may also be important to include an adapted measure of Maternal Beliefs about Competence in pregnancy, as McCarthy (1999) did utilizing subscales and questions from the Multidimensional Body-Self Relations Questionnaire (MBSRQ, Cash, 2000) and the Childbearing Attitudes Questionnaire (Ruble, Brooks-Gun, Fleming, Fitzmaurice, Stangor, &
Deutsch, 1990), to observe the changes from pregnancy to postpartum and to determine whether pregnancy measurements predict postpartum outcomes in women’s experiences with their bodies.

**Comfort with Breastfeeding**

Based on the research literature, it was hypothesized that women who reported fewer feelings of discomfort with breastfeeding in public in the postpartum period would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Cross-sectional and prospective correlational analyses revealed that Comfort with Breastfeeding had weak to very weak relationships with the Experience of Embodiment, Body Esteem and Disordered Eating at Times 2 and 3, except for Disordered Eating in late pregnancy, and for the T2-T3 Model. However, cross-sectional and prospective regression analyses revealed that Comfort with Breastfeeding was not a significant predictor of the Experience of Embodiment, Body Esteem or Disordered Eating at any of the time points or for any models. No research to date has focused on Comfort with Breastfeeding and women’s experiences with their bodies during the postpartum period. However, two studies have investigated the impact of women’s comfort with the act of publicly breastfeeding with the concept of self-objectification (Johnston-Robledo et al., 2007, 2008). Self-objectification theory (Fredrickson & Roberts, 1997) postulates that women are socialized to evaluate their bodies from the lens of the culturally established ideals of women’s bodies, prioritizing aspects of appearance versus traits associated with health or functionality of the body. The internalization of this evaluation is referred to as self-objectification. Breastfeeding is particularly susceptible to this objectification and internalization process given that “breastfeeding creates tension between the sexual objectification of women’s bodies for pleasure and their role as an organic and natural method of infant feeding, and it is within this context that
women, and men, make decisions about infant feeding” (Earle, 2002, p. 212). In their studies, Johnston-Robledo and colleagues (2007, 2008) noted correlations between comfort with the idea of breastfeeding in public with subscales assessing feelings of embarrassment, breast and body shape concerns, and body shame in both female undergraduate and low-income pregnant women, respectively, which supported the current study’s correlational findings.

Moreover, a recent study demonstrated that pregnant women’s anticipated comfort with breastfeeding was contingent upon their weight whereby women considered obese were less likely to anticipate feeling comfortable in the presence of both male and female close friends and other females (Newby & Davi, 2016). However, given that these were assessed in non-pregnant or pregnant women in past research (Johnston-Robledo et al., 2007, 2008) and that the current study only assessed these construct in postpartum when women were potentially breastfeeding, future research should continue to utilize longitudinal designs to explore Comfort with Breastfeeding across this transition and to determine how cultural beliefs with regards to breastfeeding, breasts and women’s corporeality impact how they embody the experience of breastfeeding in public. Moreover, further investigations of the changes in Comfort with Breastfeeding during and after pregnancy would also be of interest given that women felt more comfortable in late than in early postpartum with the act of breastfeeding publicly (see Table W1 in Appendix W).

**Relational factors**

*Social support*

Based on the research literature, it was hypothesized that women who indicated greater social support from family, friends, and a significant other would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Cross-sectional
correlation analyses revealed that Social Support had weak to very weak relationships with Experience of Embodiment and Body Esteem at all time points and Disordered Eating at Time 2. Cross-sectional regression analyses revealed that Social Support was a significant predictor of the Experience of Embodiment and Body Esteem at Times 2 and 3. Interestingly, there are no studies to date available to support the correlational findings in pregnancy of the relationship of social support with women’s experiences with their bodies. The previous research into the role of the support of close others, including partner, family and friends, whether it is supportive, critical or unconcerned, on women’s body image following pregnancy is limited and included confounding variables. For instance, one study noted that women who received help with “baby care” experienced greater body image satisfaction than those who did not in the first year postpartum (Erbil et al., 2012). However, this sample was also shown to include a higher number of women who had university education, were civil servant workers, regularly engaged in physical activity, and whose husbands had positive attitudes towards the women’s body size (Erbil et al., 2012). Therefore, the relationship between positive body image and social support in postpartum may have reflected an overall positive context as opposed to a direct link between social support with body image. Moreover, the postpartum results of the current investigation were supported by qualitative studies (e.g., Mauthner, 2003), which have highlighted the sense of loneliness and isolation during postpartum, experiencing others as not understanding the challenges of this transition period and the demands of childcare.

With regards to prospective correlational analyses, Social Support was a significant predictor of Experience of Embodiment for all three models, and Body Esteem and Disordered Eating for the T2-T3 Model. Prospective regression analyses revealed that Social Support was a significant predictor of Body Esteem for the T2-T3 Model. No prospective analyses to date have
investigated this relationship. Nonetheless, the results of this study suggested that the presence of supportive others may be of greater importance during the postpartum period perhaps as demands placed upon mothers tend to increase. In fact, Table W1 in Appendix W demonstrated that the presence of strong social supports increased in postpartum from pregnancy. In previous studies of Social Support, the presence of supportive others has been related to perceived stress (Underwood, 2000), parenting satisfaction and parent-child relationships (Crinic et al., 1983), and the presence of depressive symptoms (Paykel et al., 1980). In fact, correlational analyses (Tables X1, X2, and X3 in Appendix X) demonstrated that increased Social Support in this study was related to decreased symptoms of Depression, Anxiety, and better Relationship with Partner at Times 1, 2, and 3, and with less Fatigue, greater Maternal Beliefs about Competence, and better Sexual Relationships at Times 2 and 3. Therefore, additional research is needed to continue to understand the impact of Social Support on women’s experiences with their bodies.

Relationship with partner

Based on the research literature, it was hypothesized that women with greater relationship quality and satisfaction with their partner would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Cross-sectional correlation analyses revealed that Relationship with Partner had weak relationships with Experience of Embodiment at all time points and very weak relationships with Body Esteem at Time 2. Prospectively, weak correlations were revealed with Experience of Embodiment for all models and very weak with Body Esteem for the T1-T2 Model. However, cross-sectional and prospective regression analyses revealed that Relationship with Partner was not a significant predictor at any of the time points or for any models. No studies to date have quantitatively investigated the associations between the
Relationship with Partner and experiences of women with their bodies; however, two qualitative studies have uncovered themes related to the impact of partners during pregnancy (Chang et al., 2006) and postpartum (Ogle et al., 2011). Specifically, both studies revealed themes with regards to the partner’s acceptance or disapproval of the women’s bodily changes in terms of identities as sexual beings and attractiveness, respectively; however, most partners expressed a desire for their wives to “reclaim (to some extent) their former bodily selves” (Ogle et al., 2011, p. 41). The results of the present investigation, especially the cross-sectional and prospective relationships with Time 2 outcome measure on the Experience of Embodiment, are in line with the results of the qualitative studies regarding partners’ impact on women’s relationships with their bodies.

Therefore, the Experience of Embodiment may be particularly sensitive to changes in the quality and satisfaction of the relationship with the partner because of its focus on embodied agency, joy, connection with physical desires, attuned self-care and freedom from objectification, all of which may be impeded by or facilitated by the qualities of interaction with one’s partner. Piran (2016) highlighted ways in which aspects of positive and connected embodied experiences can be related to relational contexts. For instance, quotes from interviews with girls and women revealed that a positive relational experience can enhance a positive Experience of Embodiment,

When you are in tune with your body and your share it so intimately with somebody else you are more aware of your body. Sharing just for the pure sake of sharing and the joy you get from it. We are very open about sexuality and discussing it. (White, mid 20-s; Piran, 2016, p. 58);

Alternatively, a negative relational experience can disrupt the Experience of Embodiment,
I throw myself into relationships but it gets really messy. I can get too friendly but things can get out of control. Like I had unprotected sex but I did not want to. So it was easy to take advantage of me. And I have lost my self-respect. (African-Canadian, mid-20s Piran, 2016, p. 55).

Moreover, given the correlational patterns, the early postpartum time point (Time 2) may represent a time when the quality and satisfaction of women’s relationship with their partner are most susceptible to difficulties. Therefore, investigating the Relationship with Partner is important given that several studies, including the current study (see Table W1 in Appendix W), have demonstrated a decrease in relationship satisfaction in the first year and well into the second year postpartum for both partners (e.g., Condon et al., 2004; Cowan et al., 1985). Hence, future studies could also consider the inclusion of fathers in the study of the transition from pregnancy into postpartum to understand their direct impact on how women experience their bodies and physical changes during this important phase.

**Behavioral factors**

**Physical activity**

Based on the research literature, it was hypothesized that women who reported greater engagement in exercise would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. However, no correlation or regression findings supported this hypothesis cross-sectionally or prospectively apart from a very weak relationship with Disordered Eating at Time 2. Previous studies conducted in pregnancy utilizing the Body Cathexis Scale (Secord & Jourard, 1953) to assess satisfaction with various body parts have revealed that women who engage in moderate to high exercise reported greater body image
satisfaction in late pregnancy (Boscaglia et al., 2003; Goodwin et al., 2000; Marquez-Sterling, Perry, Kaplan, Halberstein, & Signorile, 2000). In postpartum, the previously discussed study by Erbil and colleagues (2012) confirmed the trend observed in pregnancy in the aforementioned studies using the same outcome measure in a sample of women 7.48 months postpartum who had university education, were civil servant workers, and whose husbands had positive attitudes towards the women’s body size. One of the main differences between the current and previous studies is the categorization of exercise whereby women were divided into either two (i.e., low or high exercisers; Boscaglia et al., 2003) or three groups (i.e., none, middle or high exercisers; Goodwin et al., 2010) according to minutes per week or self-classification (i.e., not doing exercise, doing exercise randomly, or doing exercise regularly; Erbil et al., 2012).

The current study utilized a continuous scale to assess the number of minutes per week of exercise. Table Y1 in Appendix Y reported the means for the outcome measures when the continuous scale was categorized into two groups: no or low exercisers (i.e., less than 90 minutes per week) or into high exercisers (i.e., 90 minutes or more per week). Independent sample t-tests revealed no difference in the Experience of Embodiment, Body Esteem, or Disordered Eating between no/low and high exercisers in either the pregnancy or the two postpartum measurements. Therefore, further studies are needed in order to reliably determine the impact of individual differences in physical activity and the factors that determine levels of physical activity given that it is suggested to impact not only constructs of body image (Boscaglia et al., 2003; Erbil et al., 2012; Goodwin et al., 2000), but also well-being, including symptoms of depression and anxiety (Abraham et al., 2001; Ko et al., 2013; Marquez-Sterling et al., 2000).
An interesting pattern in this study is the marked difference noted in late postpartum in comparison with pregnancy or early postpartum whereby women engaged in fewer minutes of exercise per week (see Table W1 in Appendix W). Given the importance of exercise to well-being, this may suggest that alternative routes or strategies should be offered to women in pregnancy and postpartum to allow them to overcome some of the barriers they may face as a result of the macrosystem (e.g., access to programs as a result of limited financial resources or messages that one would need to exercise “in order to gain cultural power or privilege as mothers”; Nash, 2011, p. 50) as well as of the physical (e.g., pain, fatigue and increased weight), psychological (e.g., motivation, unfounded concerns for fetal growth or the pregnancy, depression and anxiety), and relational barriers (e.g., lack of social support; Bennett et al., 2004; Dennis et al., 2007; Evenson et al., 2002, 2004; Gadsby et al., 1993; Krans & Chang, 2011; Rauff & Downs, 2011). It may therefore be important, as suggested in a study of physical activity in adolescent girls (Nagasawa, 2014), to create an environment that provides safety and attunement to the women’s needs during this transition period. Paralleling the suggestions of Nagasawa (2014) within the school setting for adolescent girls, prenatal and postpartum women may benefit from systemic changes to establishing safe places in their communities where (1) women can comfortably and joyfully engage actively with their bodies, which may include their infant in postpartum, (2) women receive physical support from physical instructors with sensitivity training with regards to the value of a moderate, body attuned way of enjoying physical activity without a focus solely on weight loss, (3) women are offered physical activity opportunities during the day and in the evening where mothers have the opportunity to engage in self-care, (4) an environment is created where pregnant and new mothers can not only exercise together, but socialize, and (5) an emphasis is placed on reducing body shape modification activities but on increasing the functionality of the body.
In fact, postpartum community based programs involving weekly specialized exercise by a women’s health physical therapist for one hour combined with 30-minutes of parenting education for 8 weeks (Norman et al., 2010) or a weekly yoga and Pilates programme for one hour for twelve weeks (Ko et al., 2013) both revealed improvements in well-being and depressive symptoms. Therefore, further studies utilizing such programs may be helpful to prospectively, during and after pregnancy, examine how these body attuned ways of enjoying physical activity with other women undergoing similar transitions and in supportive environments may impact the embodied experience of physical activity.

_Breastfeeding practice_

Based on one study (Erbil et al., 2012) which suggested that greater breastfeeding duration negatively correlated with body image satisfaction (Erbil et al., 2012), it was hypothesized that women who were not currently breastfeeding in postpartum would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Cross-sectional correlations revealed that Breastfeeding Practice had weak to very weak negative relationships with all outcomes measures in the postpartum time points except for the Experience of Embodiment at Time 3. Cross-sectional regression analyses revealed that Breastfeeding Practice served as a predictor of Disordered Eating at Time 2. The only study with breastfeeding as a variable of interest was cross-sectional with postpartum women at an average of 7.48 months postpartum (Erbil et al., 2012). These authors investigated the relationship of breastfeeding, as operationalized by looking at breastfeeding duration, with body image satisfaction, as measured by the Body Cathexis Scale (Secord et Jourard, 1953) revealing a slightly negative associated between these two variables. However, they also investigated the women’s breastfeeding status
(e.g., breastfeeding or not) at the time of questionnaire completion. This variable did not differentiate women’s body image satisfaction. That is, women who breastfed at the time of responding to the questionnaire had similar levels of body image satisfaction as those who were not breastfeeding.

Prospective correlations revealed that Breastfeeding Practice had weak to very weak negative relationships with all outcomes measures in the postpartum models, with the exception of the Experience of Embodiment for the T2-T3 Model. Regression analyses revealed that Breastfeeding Practice served as a predictor of Disordered Eating for the T2-T3 Model. Unlike Erbil and colleagues (2012), the current study’s correlation and regression analyses suggested that women who exclusively breastfed were more likely to experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns in comparison with those who formula fed. This finding is not surprising given that a study of 12,000 women from the United Kingdom revealed that women with body shape preoccupations were less intent on initiating or continuing breastfeeding beyond 4 months postpartum than women without such concerns (Barnes et al., 1997). Moreover, several studies have linked disordered eating behavior patterns (e.g., mothers high in restraint or those who eat in response to external stimuli, such as visibility of food, regardless of internal states of hunger) with the introduction of formula from either birth or after a short duration of breastfeeding (Brown, 2014). In addition to Body Esteem and Disordered Eating factors, decisions to formula feed instead of breastfeed have also been linked to a variety of physical and bodily shape concerns with respect to bodily confidence (Hauff & Demerath, 2012), comfort with breastfeeding in front of others (Brown, Raynor, & Lee, 2011a, 2011b, 2011c, Thulier & Mercer, 2009; Wambach & Cohen, 2009), and anticipated changes in breast shape (Alexander, Dowling, & Furman, 2010; Haughton, Gregorio, & Pérez-Escamilla, 2010).
Therefore, further studies need to delineate the pattern of relationships between decisions to and length of breastfeeding versus formula feeding and their impact on women’s experiences during this transition. Moreover, unlike this study, such decisions of infant feeding intentions and the Experience of Embodiment, Body Esteem, and Disordered Eating correlates should be investigated during pregnancy to further predict postpartum embodied experiences.

**Sexual relationships**

Based on the research literature, it was hypothesized that women who experienced greater satisfaction with and frequency of intimacy, and fewer rejections within the context of advances for intimacy from or towards their partner would experience a more positive embodiment, higher body esteem, and fewer reported disordered eating patterns. Cross-sectional correlational analysis revealed that Sexual Relationships had a weak relationship with Experience of Embodiment at all time points, and Body Esteem and Disordered Eating at Time 2. Regression analyses revealed that Sexual Relationships was a significant predictor of Experience of Embodiment and Disordered Eating at Time 1. However, the correlation and regression findings using Disordered Eating as the outcome variable were in the opposite direction than predicted. In pregnancy, previous research projects highlighted a multitude of individual factors involved in affecting sexual relationships, including (1) the tendency for some partners to view the pregnant women as less attractive due to the biological and physiological changes while others displayed positive reactions towards the changing bodies (Chang et al., 2006), (2) variability in women’s self-consciousness levels (Radoš et al., 2014), and (3) the impact of relationship dynamics (e.g., communication) and the fear associated with the perceived harmful impact of sexual intercourse on the fetus (Radoš et al., 2014). During pregnancy, only one study (Pauls et al., 2008) investigated this relationship and
reported that sexual functioning positively correlated with a measure of body image experiences with a focus on sexual relations (i.e., the Body Exposure during Sexual Activity Questionnaire; BESAQ; Cash, Maikkula, & Yamamiya, 2004).

Moreover, in pregnancy, Experience of Embodiment, and not Body Esteem, was predicted by Sexual Relationships. This is an important finding that supports this study’s methodology which aimed to broaden the conceptualization of the women’s experiences with their bodies by including not only measures of satisfaction with body parts or disordered eating behaviors, but also by incorporating the connections and disconnections with the body through assessing the Experience of Embodiment (2016) utilizing the Experience of Embodiment Scale for Women (Piran & Teall, 2006). This scale captures the quality of women’s bodily experiences as they interact with the world (Piran, 2016; Piran & Teall, 2012), including sexual and romantic relationships. Specifically, the Experience of Embodiment scale includes a 4-item subscale entitled, Experience and Expression of Sexual Desire. Therefore, it offers the opportunity to assess women’s attunement to their sexual desires as an aspect of their experiences in inhabiting their bodies.

In postpartum, body image concerns, prominently feelings of unattractiveness and self-consciousness regarding the postpartum body, have repeatedly been discussed as a factor involved in hindering engagement in sexual activities with partners (Pastore et al., 2007; Woolhouse et al., 2012). Moreover, the current study’s cross-sectional correlational findings aligned with those of Pauls and colleagues (2008) who failed to observed, at six months’ postpartum, a correlation between sexual functioning and body esteem. With regards to Disordered Eating, interestingly, the pattern of results was in the opposite direction than hypothesized whereby women with greater sexual satisfaction reported greater engagement in Disordered Eating behaviors. It is possible that
intimacy satisfaction and rejections may be heighten by self-objectification and the need to embody the thin ideal during postpartum, leading to Disordered Eating behaviors, such as increased dietary restraints. In fact, self-consciousness during sexual activity in a non-pregnant adult women sample has been related to disordered eating patterns (Schembri & Evans, 2008).

The prospective correlational analysis revealed that Sexual Relationships had weak relationship with Experience of Embodiment for all models and Body Image for the T2-T3 Model. Prospective regression analyses revealed that Sexual Relationships was a significant predictor of Experience of Embodiment for the T2-T3 Model. These results are novel given that no studies to date have investigated these patterns longitudinally. Given the findings of the current study, future research should continue to examine the relationship between engagement in sexual relationships and women’s experiences of living in their bodies during this transition, as well as aim to study the specific factors that may mediate these relationships (e.g., body self-consciousness, body image; Higgins, Choukas-Bradley, Crowder, & Bardone-Cone, 2016).

With regards to patterns of engagement in sexual relationships across this transition period, cross-sectional and prospective studies investigating sexual desire, functioning and satisfaction noted that the latter two demonstrated a decline during pregnancy and into the 6th month postpartum (Chang et al., 2011; Pauleta et al., 2010; Pauls et al., 2008). Similarly, the current study noted greater sexual dissatisfaction in early and late postpartum in comparison with pregnancy (see Table W1 in Appendix W). Despite these trends and similar to previous research (Trice-Black & Foster, 2011; Woolhouse et al., 2012), the relationship between Sexual Relationships and women’s experiences with their bodies in the current study was moderately correlated with Relationship with Partner at Times 1, 2, and 3, Depression and Anxiety at Time 3, and weakly
correlated with Depression at Times 1 and 2, Anxiety at Times 1 and 2, Maternal Beliefs about Competence at Times 2 and 3, and Social Support at Times 2 and 3, among others (see Tables X1, X2, and X3 in Appendix X). Therefore, further research is needed to understand the connections between Sexual Relationships during this transition in relation to multiple other factors that take place during this time.

**Summary of cross-sectional composite regression models.**

Although several variables correlated cross-sectionally with the outcome measures at each time points, only a limited number of factors remained significant in cross-sectional predictive models. The following summarizes the results of the cross-sectional composite models for Times 1, 2, and 3 when all possible variables of the macrosystem, biological, psychological, relational and social predictive factors are considered simultaneous. In pregnancy, the psychological variable of Internalization of the Thin Ideal exerted the greatest predictive power, followed by Depression and the behavioral variable of Sexual Relationships. The only cross-sectional study investigating the experience of women with their bodies during pregnancy involving multiple predictor variables was conducted by Kamysheva and colleagues (2008) with women between 15 and 25 weeks’ gestation. A regression based path model investigated the impact of biological (e.g., physical discomfort, sleep quality, and body mass index change from prepregnancy) and psychological variables (e.g., depression, self-esteem) to the four subscales (i.e., Attractiveness, Salience of Weight and Shape, Feeling Fat, and Strength and Fitness) of the Body Attitudes Questionnaire (Ben-Tovim & Walker, 1991). Their multifactorial model revealed that the three former subscales were impacted by a specific pathway whereby the presence of greater negative physical symptoms had a path to poorer sleep quality and depression, poorer sleep quality had a path to depression,
this latter variable lead to self-esteem, which then mediate the relationship between depression and sleep quality to the outcome variables. The subscale of Strength and Fitness however was only predicted by the physical symptoms. Like the current study, Kamysheva and colleagues (2008) highlighted the integral contribution of the psychological factors, including depression, to the experience of body image satisfaction in pregnancy. Moreover, their results highlighted different pathways for different subscales further providing support for the inclusion of multiple outcomes measures assessing the different facets women’s bodily experiences.

In early postpartum, the main predicting variable in composite models was the psychological variable of Anxiety. Other relevant variables included the psychological variables of Internalization of the Thin Ideal and Maternal Beliefs about Competence, the relational variable of Social Support, the biological variable of Weight Difference from Prepregnancy, the behavioral variable of Breastfeeding Practice, and the macrosystem variables of Pressures for Thinness and Ethnicity. No studies thus far have investigated a composite model of mother’s bodily experiences in early postpartum. In comparison with pregnancy, the composite models represented an increase in the number of significant predictive variables with the continued inclusion of the Internalization of the Thin Ideal; however, with a shift from Depression to Anxiety as a contributing factor. This is an important consideration given that mothers tend to experience a surge in new anxiety and an exacerbation in existing anxiety during the early months following childbirth (Ross & McLean, 2006). Moreover, additional variables in the domains of the macrosystem, biological, and relational were added and a shift was seen from Sexual Relationships to Breastfeeding Practice as the behavioral factor of interest. These additional variables could have represented the shift observed in new mothers with the experience of the postpartum body as deviant from the societal ideals and experiencing pressures to ‘get back to their prepregnancy shape’. The additional
variables also highlighted the struggles pertaining to weight retention, the need for support during this transition period, and the impact of breastfeeding on bodily experiences.

In late postpartum, the main predicting variable in composite models was the psychological variable of Internalization of the Thin Ideal. Other relevant variables included the psychological variables of Maternal Beliefs about Competence, and Depression, the macrosystem variable of Pressures for Thinness, the biological variable of Weight Difference from Prepregnancy, and the relational variable of Social Support. In comparison with other time points in the current investigation, late pregnancy’s Internalization of the Thin Ideal and Weight Difference from Pregnancy played significant roles. This may have highlighted that as the postpartum period progresses for women who have not regained their pre-pregnancy weight shapes, they may experience dissatisfaction with their bodies and disruptions with their embodiment. One cross-sectional study explored composite models with postpartum women at an average of 6.63 months postpartum (Welsh, 2010). In her doctoral dissertation, Welsh (2010) investigated the biomedical (e.g., Body Mass Index, perceived shape change, weight change), psychological (e.g., internalization of the thin ideal, negative affect), social factors (e.g., pressure for thinness and social support), and breastfeeding status to the experience of both body satisfaction and disordered eating. Significant predictors to body satisfaction included internalization of the thin ideal, pressures for thinness, weight change, perceive shape change, and breastfeeding; however, negative affect, which considered both depression and anxiety, was not a significant predictor. Significant predictors of disordered eating included internalization of the thin ideal, negative affect, pressure for thinness, postpartum BMI, and breastfeeding. Therefore, the results of the Welsh (2010) study provided support for the important contribution of the psychological, macrosystem, and biological factors in the current study, particularly the internalization of the thin
ideal, pressures for thinness, and weight retention. Moreover, the differing impact observed depending on the outcome variable further highlighted the importance for including various dimensions of women’s experiences with their bodies.

Overall, cross-sectional composite models highlighted the importance of psychological factors (e.g., Internalization of the Thin Ideal, Depression or Anxiety, and Maternal Beliefs about Competence) above and beyond the other variable domains. Moreover, given the intercorrelations amongst Depression and Anxiety, it is interesting that Depression presented as a predictor variable in late pregnancy and late postpartum while Anxiety was significant in early postpartum. The cross-sectional investigation of composite models to the experience of embodiment, body esteem and disordered eating behaviors is therefore in need of further investigation to further understand how different time points during this transition are impacted by differing factors.

Summary of prospective composite models.

Similar to the cross-sectional composite models, a limited number of factors were significant in composite models despite the presence of several significant correlational relationships in prospective models. The following summarizes the results of the prospective composite models when all possible variables of the macrosystem, biological, psychological, relational and social predictive factors are considered simultaneous. The first two models utilized the late pregnancy (Time 1) variables to predict the early (T1-T2 Model) and late (T1-T3) postpartum outcome measures. Interesting, both early and late postpartum outcome measures were predicted primarily by psychological variables with the Internalization of the Thin Ideal having the greatest impact followed by Depression. The latter model (T1-T3) further included the macrosystem variable of the Pressures for Thinness.
The final model utilized the early postpartum (Time 2) variables to predict the late (T2-T3 Model) postpartum outcome measures. For this model, a greater number of variables served as predictors. Consistent with the other two models, the psychological variable of Internalization of the Thin Ideal remained the most significant predictor. Additional predictors included the psychological variables of Anxiety, and Maternal Beliefs about Competence, the macrosystem variables of Pressures for Thinness and Ethnicity, the behavioral variables of Breastfeeding Practice and Sexual Relationships, the biological variable of Weight Difference from Prepregnancy, and the relational variable of Social Support.

Only two studies utilizing women’s experiences with their bodies as outcome measures have used multiple predictors in prospective inquiries during this transition (Rallis et al., 2007; Skouteris et al., 2005). The first examined the unique prospective patterns of relationships with body dissatisfaction subscales (i.e., Body Attitudes Questionnaire, Ben-Tovim & Walker, 1991) assessed between 32 and 39 weeks’ gestation from measures of (1) the retrospective prepregnancy recall of Body Mass Index and body dissatisfaction, (2) the scores on the depression, perceived socio-cultural pressure, public self-consciousness, and physical appearance comparison scales assessed between 16 and 23 weeks’ gestation, and (3) the perception of teasing assessed between 24 and 31 weeks’ gestation (Skouteris et al., 2005). Similar to the cross-sectional study discussed above (Kamysheva et al., 2008), their results suggested that body image was not a uniform construct as all four subscales displayed different patterns of significant predictors with all predictors being significant for at least one subscales with the exception of the body size as assessed by the Body Mass Index, and the public self-consciousness measure. Overall, the greatest predictive factor was prior body dissatisfaction, suggesting that across participants, the construct
of body image remained stable across pregnancy. Additionally, psychological predictors were of great importance in the predictive models.

The second study was a follow-up to the abovementioned study (Rallis et al., 2007). Similarly, it prospectively investigated the factors which contributed to the body dissatisfaction subscales at 12 months’ postpartum, with a specific focus on (1) the retrospective prepregnancy recall of body dissatisfaction and change in BMI from prepregnancy to twelve months’ postpartum, (2) the scores on the self-esteem and the social comparison’s with regards to appearance scales as assessed at 6 weeks’ postpartum, and (3) the scores on the depression, anxiety, and restrain scales assessed at 6 months’ postpartum. Again, the strongest predictor was prior body image suggesting that body image may remain constant across this transition. Moreover, the four different subscales were predicted by the tendency to engage in social comparisons assessed at 6 weeks’ postpartum and the symptoms of depression and dieting tendencies assessed at 6 months’ postpartum.

These two previous studies and the results of the current study highlighted the important contribution of the psychological constructs of the internalization of the thin ideal, depression in pregnancy and anxiety in early postpartum in addition to the macrosystem factors of the perceived pressures for thinness and the biological factor of weight retention. Moreover, the varying results depending on the timeframe within which the predictor and outcome variables are assessed and depending upon the outcome measures or subscales further provided support for the inclusion of a multitude of predictor variables and outcome measures.
Summary of women’s experiences inhabiting their bodies.

One of the unique qualities of the present investigation was the use of three different outcome measures. The only variables that were consistent in being predictive for one of the time points (i.e., Time 1, 2, or 3) or for one of the models (i.e., T1-T2, T1-T3, or T2-T3) across outcome measures were the psychological variable of the Internalization of the Thin Ideal, the macrosystem variable of the Pressures for Thinness and the biological variable of Weight Difference from Prepregnancy. This specific finding highlighted that women’s experiences with their bodies during this transition, whether it be with regards to embodiment, body esteem or eating patterns, are impacted by how society perceived their bodies, how they internalized those societal pressures and the ways in which their body deviated from the societal standards with regards to their weight. This therefore emphasized that at multiple levels within Bronfenbrenner’ Ecological Systems Theory (1977, 1979, 1986) and Bioecological Model (Bronfenbrenner & Morris, 1998, 2006), women’s experiences with their bodies related to important features of the environmental system (e.g., the macrosystem) as well as the principal elements of the processes and personal characteristics at the individual level.

Moreover, disruptive eating patterns were rare in this study as indicated by the lack of disruptive eating behaviors reported by women. In addition to the above-mentioned variables related to the societal standards, the other predictor variables which contributed to disordered eating during this transition were the behavioral variables of Sexual Relationships and Breastfeeding Practice.

Finally, the measure of body esteem used in this study involve the assessment of the general satisfaction and positive view about the body, which differed from the measure of embodiment
with an emphasis on “positive body connection and comfort, embodied agency and passion, and attuned self-care” (Piran, 2016; p. 54). In most cases, similar patterns of results were found between body esteem and embodiment whereby they were predicted by, in addition the above-mentioned factors related to pressures, internalization and weight differences, the psychological variables of Depression or Anxiety, the relational variable of Social Support, and at times the macrosystem variable of Ethnicity. However, the primary difference is that embodiment was also predicted by the psychological variable of Maternal Beliefs about Competence and the behavioral variable of Sexual Relationships. As previously mentioned in the discussion, these predictive factors may tap into the specific “experience of engagement of the body with the world” (Allan, 2005, p.177) as assessed by the measures’ subscales (e.g., the Experience and Expression of Sexual Desire). Therefore, it is possible that women with higher maternal beliefs or greater intimacy in their relationship with their partner may have experienced a greater extent of connection with their bodies or a sense of agency, functionality, attuned self-care, experience and expression of desire, and a freedom from self-objectification.

**Conclusion**

In conclusion, the transitional phase from pregnancy to postpartum is an important one for women. Findings of this study indicated two main areas of interest in understanding the decline in the Experience of Embodiment, Body Esteem and an increase in Disordered Eating observed once women entered the postpartum period and into late postpartum. The first pattern of finding highlighted the impact of weight-related bodily experiences during prenatal and postpartum women on women’s embodiment, body esteem, and eating practices. While the perceived pressures for thinness and weight gain in pregnancy were not related to women’s experiences of
embodiment, body esteem, or the engagement in disordered eating patterns in pregnancy, both variables predicted all these body experiences in the postpartum phase. Moreover, the Internalization of the Thin Ideal was strongly related and served as a predictor for all time points and models. This was interesting given that women’s experiences with their bodies in pregnancy did not appear to be guided by the societal pressures for thinness or weight gains; nonetheless, the women in this investigation reported continuing to internalize the societally driven thin ideal. Therefore, along with the reduced pressures for thinness discussed above, pregnancy may represent a period where despite weight gain and physical changes, women experience a stable connection with their bodies and an overall positive embodiment. The Internalization of the Thin Ideal measure during pregnancy may represent an ongoing expectation that, during postpartum they would ‘regain their prepregnancy body’. Evidently, in postpartum, the weight retention experienced in conjunction with continued societal pressures and the internalization of the societal ideal may create an environment that leads to disconnection from the body, in addition to lower body esteem and disordered eating behaviors. These results suggested that further education may be required to introduce new and flexible norms for women during and after pregnancy with a focus on accepting the bodily changes, and emphasizing the functionality and well-being of the body in caring for the newborn and future health maintenance. For some women, these norms will apply also in anticipation of future pregnancies.

The second area of interest related to the interplay of the other two main psychological factors, namely depression and anxiety. These important psychological factors alternated in predicting women’s experiences with their bodies. Specifically, depression was an important predictor cross-sectionally and prospectively in pregnancy and late postpartum whereas anxiety served as a predictor when considered in early postpartum. These finding may support the
previously discussed studies suggesting that the immediate transition to motherhood is
characterized by new anxieties and an exacerbation of previous difficulties (Ross & McLean, 2006). Moreover, the high interrelations found between anxiety and depression seen in this study may support recently published findings suggesting an important comorbidity between perinatal depression and anxiety, particularly amongst recently immigrated women, those with increased childcare and perceived stress, and those with limited social support (Falah-Hassani, Shiri, & Dennis, 2016). Therefore, future research should attempt to understand the impact of both depression and anxiety separately as well as they occur together, and the impact of depression and/or anxiety on women’s experiences with their bodies.

Overall, the correlational and regression analyses served to demonstrate that factors related to societal pressures for thinness, the internalization of those pressures, and weight gain played a significant role during the transition from pregnancy to postpartum in affecting women’s experiences of living in their bodies, their body esteem and disordered eating patterns. In addition to these three factors, psychological factors, specifically anxiety and depression, appeared to play a stronger role than macrosystem, biological, relational, or behavioral factors. These psychological variables therefore require special attention in interventions related to women’s well being during the important transition from pregnancy to postpartum.

**Study Limitations and Strengths**

Prior to considering the potential areas for future research and clinical and community implications of the study, the strengths and limitations of the study must be addressed.
**Strengths**

The strengths of this study lied in its aims which were to enhance the understanding of women’s body experiences during and following pregnancy by (1) examining concurrently the role that the macrosystem (Ethnicity, Socioeconomic Status, and Pressures for Thinness) as well as biological (Weight Difference from Prepregnancy, Fatigue, and Labour and Delivery Control), psychological (Depression, Anxiety, Internalization of the Thin Ideal, Maternal Beliefs about Competence, and Comfort with Breastfeeding), relational (Social Support and Relationship with Partner), and behavioral factors (Physical Activity, Breastfeeding Practice, and Sexual Relationships) played in women’s body experiences during the transition from pregnancy into postpartum; (2) using a three time point prospective methodology: Time 1 after the twenty-sixth week of gestation, Time 2 between weeks eleven and fourteen postpartum, and Time 3 between weeks twenty-four and twenty-eight postpartum; (3) including a final sample of 208 participants; (4) using a broader range of measures of Experience of Embodiment, Body Esteem, and Disordered Eating.

Therefore, the first strength was the concurrent inclusion of a myriad of factors from the domains that research highlighted as relevant and that may shape the Experience of Embodiment, Body Esteem, and Disordered Eating during and following pregnancy into composite cross-sectional and prospective models. Expanding the research literature by highlighting the impact of sixteen factors, instead of one or a small number of factors, greatly enhanced the understanding of women’s experiences with their bodies during this important transition. Moreover, it was vitally important to simultaneously look at an array of variables because it provided the ability to investigate the impact of each factors concurrently while also parsing out the variables with the
greatest impact cross-sectionally and prospectively. In doing so, greater focus was provided in order to improve education and interventions supporting women and their partners through these changes. Additionally, the measure of Socioeconomic Status in this study (Caro & Cortés, 2012) expanded upon the operationalization used in previous study in order to encompass both the ways in which socioeconomic status is shaped by both knowledge and family resources.

The second strength was the use of a three time point prospective methodology (i.e., Time 1 after the twenty-sixth week of gestation, Time 2 between weeks eleven and fourteen postpartum, and Time 3 between weeks twenty-four and twenty-eight postpartum) with questionnaire administration times strategically chosen to coincide with patterns established in the research literature. This inclusion of a three time point prospective methodology expended on the research to date investigating women’s experiences with their bodies, which used primarily a cross-sectional research methodology with few studies following a prospective methodology, albeit during different timeframes during pregnancy and the postpartum period (Carter et al., 2000; Clark et al, 2009b; Skouteris et al., 2005; Walker et al., 2002, 2004). Completing such prospective longitudinal research allowed for the consideration of changes over time while also attempting to understand factors in pregnancy and early postpartum which predicted the experiences of early and late postpartum women with their bodies. In fact, the current study supported and extended the only study that prospectively investigated the predictive ability of multiple factors in a composite model across the postpartum period (Rallis et al., 2007), which revealed the importance of psychological factors in predicting later postpartum body image satisfaction. In addition to these psychological factors, the current study highlighted the importance of biological, such as the Weight Difference from Pregnancy, and the macrosystem factors, such as the Pressures for Thinness, in predicting postpartum adjustment.
Another strength of this research project was the recruitment of 424 women resulting in a final sample of 208 participants. Only a small subsample of the current research literature had utilized samples larger than 100 participants in a prospective design across pregnancy and into the postpartum period with a construct of women’s experiences with their bodies as the final unit of analysis (Clark et al., 2009a; Strang & Sullivan, 1985).

Moreover, the current study used a broader range of measures that assessed the way the women felt about and in their bodies, including the Experience of Embodiment (i.e., the Experience of Embodiment scale Piran & Teall, 2006, 2012), Body Esteem (i.e., the Body Esteem Scale for Adolescents and Adults [BESAA]; Mendelson et al., 2001) and a composite measure of Disordered Eating (i.e., assessing restraint, dieting, bingeing and the use of unhealthy and extreme weight control behaviours). Previous studies mainly focused on body image or esteem measures or on disordered eating patterns. The study therefore went beyond focusing on satisfaction with body parts or only assessing engagement in specific eating behaviors. The Experience of Embodiment assessed positive connection and comfort with the body, agency and functionality, body attunement and self-care, experiences and expression of sexual desire, and a subjective versus objective lens in inhabiting the body. This was particularly important as differing patterns of significance were found in predictive composite models depending upon the outcome measure, such that a smaller number of variables were predictive of disordered eating patterns whereby a greater number of variables were involved in the regression analysis of embodied experience during and after pregnancy. Moreover, only a small number of factors (i.e., the psychological variable of Internalization of the Thin Ideal, the macrosystem variable of Pressures for Thinness, and the biological variable of Weight Difference from Prepregnancy) were significant in one of the time points or for one of the models across the three outcome measures.
Limitations

There were also several limitations to the present study. One limitation involved the lack of diversity in ethnicity and socioeconomic status, as well as in other demographic factors. As a result, the microsystem variable of ethnicity was recoded into European Descent \((n = 191)\) and Non-European Descent \((n = 17)\). The use of those classifications was problematic given that each of these two subsamples was inherently diverse. Although attempts were made to recruit women in a variety of settings (e.g., Baby, Bump and Toddler Expo in Hamilton) and in different geographical locations (e.g., Kijiji in all available Canadian cities), the participants in the current study primarily identified themselves as Western European, heterosexual, and Canadian born. Moreover, most participants finished a university degree or higher, were well-off, and resided in a large population center. Diversity was also lacking in terms of the small number of participants who required fertility treatments, were expecting multiple children, or had significant health difficulties \((2.4\%)\). The characteristics of the present sample limited the generalizability to other populations and suggested that additional research is needed with more diverse samples. In addition, there were no significant opportunities to investigate the intersection of ethnicity and socioeconomic status with the development over time of Experience of Embodiment, Body Esteem, and Disordered Eating. Therefore, the results of the study may be more applicable to Heterosexual Caucasian Canadians of higher education living in large population centers without difficulties conceiving and having a single baby.

Another limitation of the study was the high rate of attrition (i.e., 52% of the recruited sample) due to exclusion criteria, giving birth prior to receiving the prenatal questionnaire, miscarrying, withdrawal from the study, and questionable responding. However, the most
significant reason for loss of participants was failure to complete the questionnaires within one month of receiving the email invitation despite two email reminders (i.e., 45% of the recruited samples). Such loss of participants may be due to the length of the questionnaire (i.e., between 30-60 minutes), lack of time to complete the questionnaires because of childcare or lack of support, difficulties accessing a computer for questionnaire completion, failure to receive the email as a result of junk mail classification, lack of significant incentive to participate or limited access to email during the postpartum period. Therefore, future research should attempt to address these potential concerns by shortening the questionnaires, offering a pen-and-paper option, or increase incentives to participate (e.g., gift cards at each time point).

Moreover, the current study did not include a prospective or retrospective prepregnancy or early pregnancy measurement of Experience of Embodiment, Body Esteem, and Disordered Eating, or of the predictor variables. The lack of prepregnancy or early pregnancy measurements precluded the ability to comment on whether pregnancy and the postpartum period represented a shift from previously held beliefs, ideals, and experiences with the body, if prepregnancy or early pregnancy beliefs, ideals, and experiences impacted pregnancy or postpartum experiences, or the appreciation of individual differences. Previously discussed research has demonstrated that prepregnancy factors may play a role in determining how women adapt to the changing body during pregnancy. For instance, prepregnancy individual characteristics, such as restraint and dieting behaviors, have been shown to impact body satisfaction in pregnancy (Clark & Ogden, 1999; Fairburn & Welch, 1990). Moreover, research involving retrospective recall of prepregnancy body image satisfaction suggested a shift whereby pregnancy was characterized by greater appreciation of one’s body (Boscaglia et al., 2003; Duncombe et al., 2008). Although retrospective assessments rely heavily on the accuracy of the women’s recall of their previous
experiences and suffer from memory biases, they may provide insights otherwise not captured without a longitudinal prospective assessment. Additionally, certain factors were only assessed during postpartum (i.e., Comfort with Breastfeeding, Maternal Beliefs about Competence, and Breastfeeding Practice) since they only take part during that phase; however, research findings indicated that these factors may play a role in pregnancy as a result of their anticipatory nature (e.g., the relationships between women’s anticipation about their own perceptions of themselves as mothers and their mothering abilities and body experiences during postpartum). Therefore, future studies may include a measurement of these constructs during pregnancy.

In addition, the large windows of questionnaire completion for each of the three time points is a limitation. The pregnancy timeframe for questionnaire completion encompassed women from 26 weeks’ gestation onwards (i.e., a 16-18 weeks’ period), The postpartum timeframes for questionnaire completion were intended to cover only a five-week period. However, for the early postpartum measurement, between weeks thirteen and seventeen, actual questionnaire completions ranged from nine to eighteen weeks postpartum. Similarly, for the late postpartum measurement, between weeks twenty-eight and thirty-two, the actual questionnaire completions ranged from nineteen to thirty-one weeks’ postpartum. These large windows of questionnaire completion related to the study’s procedure of sending the postpartum questionnaires according to the participants’ due date reported at Time 1 and to the fact that women’s actual birth and due dates rarely coincide and can vary substantially. Tables Z1, Z2, and Z3 in Appendix Z explored the variability of pregnancy and postpartum outcome measurements within each timeframe and no significant differences were identified for Times 1, 2, nor 3. However, it is possible that variability in the predictive measures existed within each time points that prevented the identification of longitudinal changes.
Another limitation was that the findings of this study focused solely on quantitative methodology. Despite providing information about different body experiences during the transition from pregnancy to postpartum in relation to the various predictor variables, quantitative methodologies may not capture nuances in women’s experiences. Therefore, expanding this knowledge by using qualitative studies could enrich the understanding of the transition from pregnancy to postpartum, and the context of such transitions. Specifically, qualitative projects alone or in conjunction with quantitative methodology would provide researchers with the opportunity to listen directly to the reflections and tales of pregnant women as they undergo this transition and experience the pregnant and postpartum body. As the voices of women would emerge from their narratives, it would continue to shed new and important light into the variability of thoughts, experiences, feelings, and attitudes that exist.

Finally, the current study only included the maternal perspective thereby ignoring the contribution of their partners and close social supports on their felt experiences. The few studies investigating the contribution of partners revealed that they exert an impact indirectly (e.g., partners’ working hours may interfere with being involved with the daily activities of childcare, Fägerskiöld, 2008), directly (partners expressing dissatisfaction with maternal body, Pastore et al., 2007), relationally (e.g., noting a deterioration of the quality of the relationship with their partner during postpartum, Condon et al., 2004; feelings of jealousy and exclusion, Ahlborg & Strandmark, 2001, 2006; Olsson et al., 2010) or culturally (e.g., having traditional, gender-specific arrangement with women performing the majority of childcare duties once couples have children, Cowan et al., 1985).
Moreover, this study may not have adequately captured the changes in the relationship with the participants’ partners given that the total Dyadic Adjustment Scale (DAS; Spanier, 1976) score was utilized. Although the DAS is the most commonly used measure to assess the quality of marital relations (Pritchett et al., 2011), the use of this measure specifically or the use of the total scores both have their shortcomings. For instance, the DAS has been criticized for being omnibus because of its emphasis on both subjective and behavioral components instead of stressing feelings about the relationship, as seen with measures such as the Quality of Marriage Index (QMI; Norton, 1983). Moreover, the items of the DAS, which strongly emphasize consensus and cohesion (e.g., 13 items) versus affection (e.g., 4 items) may neglect a crucial component of the prenatal and postpartum relationship quality, that is affection and emotion (Norton, 1983). Given that emotional support from partners during this emotionally overwhelming period is important (Dennis & Ross, 2006), it may be important to consider other measures of the relationship with partner, such as the Postpartum Partner Support Scale (PPSS; Dennis & Ross, 2006) or the Quality of Relationships Inventory (Pierce, Sarason, & Sarason, 1991), or to look specifically at certain subscales of the DAS, such as Affectional Expression subscale.

Areas for Future Research

Building upon the strengths of the current study and addressing the limitations, avenues for future research should further investigate this important life transition for women by continuing to address the inconsistencies in methodologies across studies and using prospective, longitudinal, qualitative and quantitative methodologies to identify consistent trends and appreciate individual differences using a range of measures, such as measures of embodiment, body esteem, and eating patterns. The current study utilized a large number of variables; however, future studies may opt
to eliminate or assess certain constructs differently based on the fact that they were not as significant as expected in this study. For instance, future studies should expand to include additional informants to this transition, such as partners, in a way that assesses their contribution on the relationship with their partners and as a source of physical, emotional, informational or logistical support. Moreover, given that the presence of socially supportive others was not a significant variable in predicting women’s experiences in their bodies, perhaps additional sources of support may be important to consider separately, such as the potentially supportive role that family, friends, professionals, and peer groups play in affecting ways women inhabit their bodies during and following pregnancy. Variables assessing the behavioral constructs, such as strenuous physical activity and sexual relationships, may not be as important within the context of the remaining variables assessed and could therefore be exclude from future research or altered to focus on body attuned ways of engaging with the body and emotional support by the partner, respectively, if deemed appropriate.

Also, a larger sample should be obtained with increased diversity in terms of race, culture, socioeconomic status, sexual orientation, geographic location, class identifiers, abilities and disabilities so that different processes can be understood in relation to diverse social locations. Future inquiries should also aim to expand the timeframe of inquiry by starting the recruitment in prepregnancy and following women prospectively through pregnancy and beyond the first year postpartum. Additionally, future research could utilize a mixed-method approach so that quantitative findings could be enriched by the detailed qualitative analysis of women’s experiences during this transition. A qualitative study could examine the interaction of the multiple sociocultural factors, including the family, the media and peers, on core risk and protective factors for women’s sense of self and their embodiment over a longitudinal period from prepregnancy to
pregnancy to postpartum. This would be instrumental in documenting the intricate ways in which these social processes are related to the internalization of the socially dictated appearance standards and generate a better understanding of whether a new ideal of beauty exists in pregnancy that is not captured with traditional measures of Pressures for Thinness. Most importantly, future studies should strive to understand the multiple influences on embodiment while continuing to consider the five ecological systems of Bronfenbrenner’s (1979, 1986) Ecological Systems Theory. Finally, considerations in recruitment and retaining of participants should be a priority in order to reduce the attrition observed in the current study.

**Clinical Implications**

These findings strongly suggested that there is a myriad of important factors to bear in mind when considering the embodied experiences of women throughout this transition, which could inform enhanced education and interventions supporting women and their partners through these changes. Health professionals, including psychologists, therapists, social workers, physicians (particularly obstetrician/gynecologist), midwives, doulas, breastfeeding consultants, prenatal and postpartum physical activity therapists or trainers, amongst others, should take these results into account and be aware of risk factors in pregnancy and in the early postpartum period in order to develop preventative measures aimed at identifying and supporting women at risk of feeling negatively towards, and disconnected from, their bodies.

Based on the present study, these professionals should focus during pregnancy on the presence of depression, women’s perceived social pressures for thinness, as well as their degree of internalization of the thin ideal. During postpartum, professionals should similarly focus on women’s perceived social pressures for thinness and their internalization of the thin ideal
(especially considering differences in weight from pre- to post-pregnancy), as well as on women’s emotions (both anxiety and depression), their beliefs about their competence as mothers, their breastfeeding practices, experiences with sexuality, and availability of social support. To counter adverse weight pressures, women should be encouraged to be attuned to the functionality of their bodies and develop safe ways to explore the biological, psychological, relational, and behavioral changes that could enhance a positive adaptation to this transition. Of course, as strongly evident from this research project, the broader context within which women live, including the Pressures for Thinness from the macrosystem and in turn the psychological Internalization of the Thin Ideal, must be given strong consideration. Pregnant and postpartum women would benefit from education about the socialization of women to being “good” mothers and how that could negatively affect their experiences with their bodies and their new identity as mothers. Common myths about the impact of breastfeeding on weight loss and breast shape as well as about the timeline within which bodily changes take place following childbirth may need to be addressed to further encourage women to breastfeed and to allow their bodies to naturally return to a healthy state. In turn, addressing such myths may increase women’s positive and attuned connection to their bodies and their experience of body functionality. Women should also be taught healthy and balanced strategies of attuned self-care, so they stay connected to their bodies.

The pathways to accomplishing these changes must be explored given that it is a problem at multiple levels of the societal and individual context. Systematic interventions at all levels (e.g., media, health care professionals, mental health practitioners, partners) are important, yet lacking. In addition to furthering the education of primary care providers to these women with regards to encouraging a more realistic look at body-related changes and setting new norms based on bodily functionality rather than the strict harsh norms provided by the media, different avenues of
information dissemination need to be considered. Beyond the focus of this study, previous research has demonstrated that women’s experiences, particularly in postpartum, can be quite isolating (Berggren-Clive, 1998; Eastwood, Jalaludin, Kemp, Phung, & Barnett, 2012). Therefore, interventions formatted to involve peers or other women within the same life transition or with similar past or present experiences may be beneficial to address bodily related difficulties. During pregnancy, group formatted peer support and interpersonal therapy have been shown to reduce depression and anxiety, both of which have been found in this study to be related to the experience of women with their bodies (Field, Diego, Delgado, & Medina, 2013). Moreover, in postpartum, several studies have shown that peer support is greatly beneficial within the context of addressing postpartum-specific concerns, such as breastfeeding (Dennis, 2002; McInnes & Stone, 2001), parenting (Johnson, Howell, & Molloy, 1993), depression (Dennis, 2010; Dennis, Hodnett, Kenton, Weston, Zupancic, Stewart & Kiss, 2009; Leger & Letourneau, 2015; Letourneau, Secco, Colpitts, Aldous, Stewart, & Dennis, 2015; Montgomery, Mossey, Adams, & Bailey, 2012; ), and diabetes (Friedman, Niznik, Bolden, & Yee, 2016). Therefore, peer support groups that address important factors related to this transition, such as anxiety, depression, establishing body acceptance, and normalizing the realistic look of the postpartum body, may provide an avenue to normalize the bodily changes within a society that continues to emphasize thinness and a return to a pre-pregnancy look. Moreover, peer support groups can be an avenue to explore women’s physical and emotional health and wellbeing, particularly within the context of women who may want additional children and those needing to enhance their self-care with regards to proper nutrition, relaxation, rest, and body-attuned exercise.

With regards to exercise, peer support fitness groups, such as stroller fitness, may be helpful in emphasizing both the role of exercise and of validating women’s needs for rest and
support. In addition to in-person peer support, online and evidence-based therapeutic support may be helpful in providing accurate and up-to-date information for women about possible difficulties they may experience during pregnancy. For instance, website such as Postpartum Support International (www.postpartum.net), Office on Women's Health (https://www.womenshealth.gov/mental-health/pregnancy-conceive/index.html), and Postpartum Progress (www.postpartumprogress.com) may be excellent resources to offer to every women during the antenatal, prenatal and postpartum period.

Depression and Anxiety are both important during this transition, affecting as many as 1 in 5 women (Gavin et al., 2005). Moreover, they are important contributors and predictors of women’s experiences with their bodies during pregnancy and in postpartum. Therefore, special consideration needs to be given to these psychological experiences in an effort to reduce current and later adverse symptoms of depression, anxiety, disembodiment, negative body esteem and disordered eating behaviors. First, efforts should be focused on early screening of symptoms of depression and anxiety within primary care setting, including family doctors, midwives, and obstetrician/gynecologist, because early detection of prenatal and postpartum difficulties may ultimately serve to improve associated symptomatology (Miller, Shade, & Vasireddy, 2009). In order to accomplish this goal, the integration of quick diagnostic assessment tools, such as the Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987) and the Patient Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001), at regular intervals during the prenatal and postpartum period may assist in flagging positive identifications of those at risk (Gjerdingen et al., 2008; Miller et al., 2009; Miller, McGlynn, Suberlak, Rubin, Miller, & Pirec, 2012). Moreover, additional brief measures of anxiety, embodiment, body esteem, and disordered
eating should be integrated within this screening process. Based on these early screening attempts, proper therapeutic avenues for timely follow-up are required.

Overall, multiple intervening efforts at numerous levels within the prenatal and postpartum transition need to take place in order to create for these women a sense of “positive body connection and comfort, embodied agency and passion, and attuned self-care” (Piran, 2016, p. 54). The results of the present investigation, therefore, have important implications in relation to increase education, awareness and intervention strategies. The goal would be to introduce shifts in how women perceive their bodies and weight-related physical changes during this important transition, as well as to the way psychological difficulties, such as depression, anxiety, and women’s experiences of their bodies are assessed and addressed (e.g., peer support groups).
Appendix A

Recruitment – Poster and Website Advertisement

Are you pregnant?

An invitation to participate in a study about your experience during and after your pregnancy?

What will participants do?
Participants will complete an online questionnaire that assesses the social, biological, psychological and behavioral aspects of being pregnant and a new mother. This battery of tests will be completed at three different times over a period of nine months (once during pregnancy and twice in postpartum) and each time will take about 1-1.5 hours to complete. Participation is confidential.

Who is eligible to participate?
We are looking for women of diverse backgrounds residing in Canada of 18 years of age or older.

What is the goal of the study?
Within the cultural framework of Canada and your social and ethnic identity, your experience with your body is shaped by a variety of factors. The aim of this study is to explore how the social context, and social, biological, psychological, and behavioral factors serve to protect, as well as hinder, women as they transition from pregnancy into the postpartum period.

Benefits of the Study/Compensation:
You may find it beneficial to talk about your experiences around your body. Your participation in this study may also help others develop a greater understanding of their body and bodily experiences during the transition to parenthood which may, in turn, help both professionals provide better conditions for women during this important period in their lives. Further, as a thank you for your participation, you will receive a $10 e-gift certificate after completing this initial questionnaire and be entered into a draw to win one of five $200 e-gift certificates upon study completion.

If interested, please take a tear-out slip or contact Marianne O’Byrne, Ph.D. student at OISE/University of Toronto: pregnantbodyimage@gmail.com.

Pregnancy and Postpartum Experiences
Marianne O’Byrne, Ph.D. Student
Pregnancybodyimage@gmail.com
http://fluidsurveys.com/s/pregnant/screening/
Appendix B

Recruitment – Email Script

Hello future mom,

My name is Marianne O’Byrne and I am a Ph.D. Counselling and Clinical Psychology student at the Ontario Institute of Studies in Education at the University of Toronto working on my doctoral dissertation, under the supervision of Dr. Niva Piran. I am looking for pregnant women (age 18 or older) who are less than 26 weeks pregnant and would be interested in contributing to the study of body image and the experience of “embodiment”, that is how you experience your body as you interact with the world around you, during pregnancy and the transition to parenthood.

What will participants do?
Participants will complete an online questionnaire that assesses the social, biological, psychological and behavioral aspects of being pregnant and a new mother. This battery of tests will be completed at three different times over a period of nine months (once during pregnancy and twice in postpartum) and each time will take about 1-1.5 hours to complete. Participation is confidential.

Who is eligible to participate?
We are looking for women of diverse backgrounds residing in Canada of 18 years of age or older.

What is the goal of the study?
Within the cultural framework of Canada and your social and ethnic identity, your experience with your body is shaped by a variety of factors. The aim of this study is to explore how the social context, and social, biological, psychological, and behavioral factors serve to protect, as well as hinder, women as they transition from pregnancy into the postpartum period.

Benefits of the Study/Compensation:
You may find it beneficial to talk about your experiences around your body. Your participation in this study may also help others develop a greater understanding of their body and bodily experiences during the transition to parenthood which may, in turn, help both professionals provide better conditions for women during this important period in their lives. Further, as a thank you for your participation, you will receive a $10 e-gift certificate after completing this initial questionnaire and be entered into a draw to win one of five $200 e-gift certificates upon study completion.

If interested, visit the following link to complete the screening questionnaire (http://fluidsurveys.com/s/pregnant/screening/) or email me: pregnancybodyimage@gmail.com.

For any additional questions, comments, or concerns? Feel free to contact me by email.

Thank you for your interest,

Marianne O’Byrne
pregnancybodyimage@gmail.com
Appendix C

Screening Questionnaire

1. How old are you? _____

2. What are the first three characters of your postal code (i.e., M6A)?
   _____  _____  _____

3. How far along are you in your pregnancy? _____ weeks

4. During the next nine months, will you have access to a computer to allow you to complete the online questionnaires?
   ☐ Yes
   ☐ No

5. In order for the online questionnaires to be emailed to you at three different time points during (i.e., after twenty-six weeks of gestation) and after your pregnancy (i.e., around three and six months postpartum), please provide us with an email address. Please ensure that you will have access to this email address for the duration of the study (i.e., for approximately the next nine months.

   Email address: ________________________________
Appendix D

Email in Response to Screening Questionnaire

IF ELIGIBLE:

Thanks for your help!

You have now completed the first step to being eligible to participating in this study. According to your responses to the screening questionnaire, you are NOW eligible to participate in the study.

The link to the online questionnaire will be emailed to you for completion when you are 26 weeks’ gestation or more.

For any additional questions, comments, or concerns? Feel free to contact me by email.

All the best for a safe birth and healthy baby.

Marianne (Pelletier) O’Byrne, M.A.
Ph.D. Student
Department of Applied Psychology & Human Development
pregnantbodyimage@gmail.com

OR

IF UNELIGIBLE:

Thanks for your help!

You have now completed the first step to determining your eligibility to participating in this study. As previously outlined, eligibility requires that you be pregnant women over the age of 18 residing in Canada, have access to a computer, and understand English. After reviewing your responses, we have determined that, at this time, you are not eligible to participate in this study.

However, please find attached information and resources for women during and after their pregnancy.

For any additional questions, comments, or concerns? Feel free to contact me by email.

All the best for a safe birth and healthy baby.

Marianne O’Byrne
pregnantbodyimage@gmail.com

If you’re satisfied with your answers, press “done”.
Appendix E

Information Letter and Consent – Screening and First Questionnaire

(OISE/UT Emblem)

My name is Marianne O’Byrne and I am a doctoral student in the graduate Department of Applied Psychology & Human Development at the Ontario Institute for Studies in Education of the University of Toronto (OISE/UT), working under the supervision of Dr. Niva Piran. Pregnancy involves significant changes in women’s lives. The experience of being pregnant and becoming a parent has been shown to be impacted by a variety of factors, including biological (e.g., childbirth, fatigue, weight gain), social (e.g., social support, relationship with, spouse), psychological (e.g., pressures for thinness, depression, anxiety), and behavioral (physical activity, breastfeeding practice, partner, sexual relationships). All these factors can affect women’s experience of their bodies during pregnancy and in the postpartum period, including body image and embodiment.

The goal of this research project is to follow women for a period of nine months to investigate the role that biological, social, psychological, and behavioral factors play on women’s body image and embodiment during pregnancy and the postpartum period. Further, we are looking to find out which factors promote or challenge women’s experience of embodiment and satisfaction with their bodies. For that purpose, we are looking for pregnant women, ages 18 or older, who are less than 26 weeks pregnant, are able to read English, have access to a computer, and would be interested in contributing to the study of body image and the experience of embodiment. Interested and eligible women will complete questionnaires of body image, embodiment, and other scales that assess the experience of the biological, psychological and social aspects of being pregnant and a new mother. Questionnaires include, for example, demographic information, experiences of fatigue, eating behaviors, body image, depression, anxiety, self-esteem, life satisfaction, social support, sexual relationship, and relationship with partner. It is expected that completing all the questionnaires will take a total of 1-1.5 hours. Given the length of the survey, if you chose to take a break from the survey, and return to complete it later, a link will be provided for you to re-access your survey on the computer at the point at which you previously stopped. However, it is important that the survey be completed within one week of receiving the link. This battery of tests will be completed at three different times over a period of nine months (once during pregnancy and twice in postpartum).

Your participation in this research is completely voluntary. You may request to be removed from the database at any stage without explanation by emailing either Marianne O’Byrne or Dr. Niva Piran. Additionally, if you find you do not wish to answer particular question(s), you may omit these items. If, during completion of the survey, you decide you would like to discontinue participating, simply select the "discard responses and exit" option and your data will not be used in the study. If at any time during the next nine months or prior to the statistical analysis of the data, you decided that you would like to withdraw from the study, contact Marianne (pregnantbodyimage@gmail.com). There are no negative consequences to withdrawing from the
study, with the exception that only participants who complete all three surveys and submit their surveys within the specified timeframe will be able to enter the prize draw. IP addresses (i.e., the numerical address of the computer on which the survey is completed) will be collected to ensure that those who completed a compensation form for the first and third surveys also participated in and completed the main study survey.

It is possible that you will find it interesting to complete the different scales that assess body image, embodiment and well-being. Your participation may help us understand how body image and embodiment change in pregnancy and during the transition to parenthood. It will also help identify biological, psychological and social aspects, which contribute to well-being during and following pregnancy. In doing so, your responses may help mothers make a healthy transition from pregnancy into the first six months of being a parent. There are likely no risks to you as a result of your participation in this study. However, completing some items may result in some discomfort. You are free to decide not to respond to particular items. If you find the discomfort to be more than minor, please contact me or my supervisor, so that we can discuss how to provide you with further support (contact information is below, also, the researcher’s contact information will also be provided upon completion or withdrawal from the study).

Your confidentiality will be maintained. A personal confidential identification number will be assigned to you after I received your first email. All research data will be identified only by this code, with personal details (email address linked to the identification number) kept in a secure database. Access to this identification number will only be granted to Marianne O’Byrne and Dr. Niva Piran. The only times your confidentiality could not be maintained would be if you provided identifying/personal information and you reported on any of questionnaires that you were planning to hurt yourself or someone else, if you reported that a child was being hurt or neglected or in danger of being hurt by you or another adult, and/or if you reported being sexually abused by a regulated health care professional. Only Marianne O’Byrne and Dr. Niva Piran, will have access to online responses. In the event that the results of this research are published in the form of scholarly presentation and/or in academic journals/books, only group data will be presented when we publish the results of the study and we will ensure that it will be impossible for anyone to identify you. Research data will be kept securely for 5 years after completion of study, at which point it will be deleted.

Some additional steps that can be taken to ensure your privacy:

1. Completion of the survey should take place in a private location.
2. Upon completion of the survey, instructions will be provided on how to erase the cache and temporary internet files on the browser.
3. Do not complete the survey in a place of employment as the employer may have access to internet usage.

Your involvement in this research is appreciated. If you would like to participate in this research, please indicate your consent below. You can receive information about the results of the study by indicating your interest on the Request for Information about Results of the Study form after you have completed and submitted your final survey. You will receive a $10 e-gift certificate to your
Toys R Us, Chapters Indigo or Amazon.ca after completing this initial questionnaire as a thank you for your participation. Additionally, you will be able to enter a draw to win one of five $200 e-gift certificates to your choice of Toys R Us, Chapters Indigo, or Amazon.ca after you have completed and submitted your third and final survey. The personal information (email address) you provide to receive results or enter the draw is collected in a completely separate survey, such that your previously submitted survey remains confidential.

Should you have any questions about this study, you can contact Marianne O’Byrne at pregnantbodyimage@gmail.com or Dr. Niva Piran at niva.piran@utoronto.ca, telephone: (416) 978-0712. If you have any further questions about your rights as a research participant, you can contact the Ethics Review Office at 416-946-3273 or ethics.review@utoronto.ca.

Supervisor:
Dr. Niva Piran
Department of Applied Psychology & Human Development
Ontario Institute for Studies in Education at the University of Toronto (OISE/UT)
7th floor, 252 Bloor Street West, Toronto, ON
niva.piran@utoronto.ca

You may print this information through your web browser.

Thank you for your participation!

Marianne (Pelletier) O’Byrne, M.A.
Ph.D. Student
Department of Applied Psychology & Human Development
pregnantbodyimage@gmail.com
Appendix F

Information Lettre and Consent - Second Questionnaire

My name is Marianne O’Byrne and I am a doctoral student in the graduate Department of Applied Psychology & Human Development at the Ontario Institute for Studies in Education of the University of Toronto (OISE/UT), working under the supervision of Dr. Niva Piran. Pregnancy involves significant changes in women’s lives. The experience of being pregnant and becoming a parent has been shown to be impacted by a variety of factors, including biological (e.g., childbirth, fatigue, weight gain), social (e.g., social support, relationship with, spouse), psychological (e.g., pressures for thinness, depression, anxiety), and behavioral (physical activity, breastfeeding practice, partner, sexual relationships). All these factors can affect women’s experience of their bodies during pregnancy and in the postpartum period, including body image and embodiment.

The goal of this research project is to follow women for a period of nine months to investigate the role that biological, social, psychological, and behavioral factors play on women’s body image and embodiment during pregnancy and the postpartum period. Further, we are looking to find out which factors promote or challenge women’s experience of embodiment and satisfaction with their bodies. At the current stage of this study, we are looking for pregnant women, ages 18 or older, who are between 13 and 17 weeks postpartum, are able to read English, have access to a computer, have completed the first questionnaire of this study and would be interested in continuing to contribute to the study of body image and the experience of embodiment. Similar to the first questionnaire, interested women will complete questionnaires of body image, embodiment, and other scales that assess the experience of the biological, psychological and social aspects of being pregnant and a new mother. Questionnaires include, for example, demographic information, experiences of fatigue, eating behaviors, body image, depression, anxiety, self-esteem, life satisfaction, social support, sexual relationship, and relationship with partner. It is expected that completing all the questionnaires will take a total of 1-1.5 hours. Given the length of the survey, if you chose to take a break from the survey, and return to complete it later, a link will be provided for you to re-access your survey on the computer at the point at which you previously stopped. However, it is important that the survey be completed within one week of receiving the link. This battery of tests will be completed at three different times over a period of nine months (once during pregnancy and twice in postpartum).

Your participation in this research is completely voluntary. You may request to be removed from the database at any stage without explanation by emailing either Marianne O’Byrne or Dr. Niva Piran. Additionally, if you find you do not wish to answer particular question(s), you may omit these items. If, during completion of the survey, you decide you would like to discontinue participating, simply select the "discard responses and exit" option and your data will not be used in the study. If at any time during the next nine months or prior to the statistical analysis of the data, you decided that you would like to withdraw from the study, contact Marianne...
(pregnantbodyimage@gmail.com). There are no negative consequences to withdrawing from the study, with the exception that only participants who complete all three surveys and submit their surveys within the specified timeframe will be able to enter the prize draw. IP addresses (i.e., the numerical address of the computer on which the survey is completed) will be collected to ensure that those who completed a compensation form also participated in and completed the main study survey.

It is possible that you will find it interesting to complete the different scales that assess body image, embodiment and well-being. Your participation may help us understand how body image and embodiment change in pregnancy and during the transition to parenthood. It will also help identify biological, psychological and social aspects, which contribute to well-being during and following pregnancy. In doing so, your responses may help mothers make a healthy transition from pregnancy into the first six months of being a parent. There are likely no risks to you as a result of your participation in this study. However, completing some items may result in some discomfort. You are free to decide not to respond to particular items. If you find the discomfort to be more than minor, please contact me or my supervisor, so that we can discuss how to provide you with further support (contact information is below, also, the researcher’s contact information will also be provided upon completion or withdrawal from the study).

Your confidentiality will be maintained. A personal confidential identification number will be assigned to you after I received your first email. All research data will be identified only by this code, with personal details (email address linked to the identification number) kept in a secure database. Access to this identification number will only be granted to Marianne O’Byrne and Dr. Niva Piran. The only times your confidentiality could not be maintained would be if you provided identifying/personal information and you reported on any of questionnaires that you were planning to hurt yourself or someone else, if you reported that a child was being hurt or neglected or in danger of being hurt by you or another adult, and/or if you reported being sexually abused by a regulated health care professional. Only Marianne O’Byrne and Dr. Niva Piran, will have access to online responses. In the event that the results of this research are published in the form of scholarly presentation and/or in academic journals/books, only group data will be presented when we publish the results of the study and we will ensure that it will be impossible for anyone to identify you. Research data will be kept securely for 5 years after completion of study, at which point it will be deleted.

Some additional steps that can be taken to ensure your privacy:

1. Completion of the survey should take place in a private location.
2. Upon completion of the survey, instructions will be provided on how to erase the cache and temporary internet files on the browser.
3. Do not complete the survey in a place of employment as the employer may have access to internet usage.

Your involvement in this research is appreciated. If you would like to participate in this research, please indicate your consent below. You can receive information about the results of the study by indicating your interest on the Request for Information about Results of the Study form after you
have completed and submitted your final survey. You will also be able to enter a draw to win one of five $200 e-gift certificates to your choice of Toys R Us, Chapters Indigo, or Amazon.ca after you have completed and submitted your third and final survey. The personal information (email address) you provide to receive results or enter the draw is collected in a completely separate survey, such that your previously submitted survey remains confidential.

Should you have any questions about this study, you can contact Marianne O’Byrne at pregnantbodyimage@gmail.com or Dr. Niva Piran at niva.piran@utoronto.ca, telephone: (416) 978-0712. If you have any further questions about your rights as a research participant, you can contact the Ethics Review Office at 416-946-3273 or ethics.review@utoronto.ca.

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7th floor, 252 Bloor Street West, Toronto, ON
niva.piran@utoronto.ca

You may print this information through your web browser.

Thank you for your participation!

Marianne (Pelletier) O’Byrne, M.A.
Ph.D. Student
Department of Applied Psychology & Human Development
pregnantbodyimage@gmail.com
Appendix G

Information Letter and Consent - Third Questionnaire

(OISE/UT Emblem)

My name is Marianne O’Byrne and I am a doctoral student in the graduate Department of Applied Psychology & Human Development at the Ontario Institute for Studies in Education of the University of Toronto (OISE/UT), working under the supervision of Dr. Niva Piran. Pregnancy involves significant changes in women’s lives. The experience of being pregnant and becoming a parent has been shown to be impacted by a variety of factors, including biological (e.g., childbirth, fatigue, weight gain), social (e.g., social support, relationship with, spouse), psychological (e.g., pressures for thinness, depression, anxiety), and behavioral (physical activity, breastfeeding practice, partner, sexual relationships). All these factors can affect women’s experience of their bodies during pregnancy and in the postpartum period, including body image and embodiment.

The goal of this research project is to follow women for a period of nine months to investigate the role that biological, psychological, and social factors play on women’s body image and embodiment during pregnancy and the postpartum period. Further, we are looking to find out which factors promote or challenge women’s experience of embodiment and satisfaction with their bodies. At the current stage of this study, we are looking for mothers, ages 18 or older, who are between 28 and 32 weeks postpartum, are able to read English, have access to a computer, have completed the first and second questionnaires of this study and would be interested in continuing to contribute to the study of body image and the experience of embodiment. Similar to the first questionnaire, interested women will complete questionnaires of body image, embodiment, and other scales that assess the experience of the biological, psychological and social aspects of being pregnant and a new mother. Questionnaires include, for example, demographic information, experiences of fatigue, eating behaviors, body image, depression, anxiety, self-esteem, life satisfaction, social support, sexual relationship, and relationship with partner. It is expected that completing all the questionnaires will take a total of 1-1.5 hours. Given the length of the survey, if you chose to take a break from the survey, and return to complete it later, a link will be provided for you to re-access your survey on the computer at the point at which you previously stopped. However, it is important that the survey be completed within one week of receiving the link. This battery of tests will be completed at three different times over a period of nine months (once during pregnancy and twice in postpartum).

Your participation in this research is completely voluntary. You may request to be removed from the database at any stage without explanation by emailing either Marianne O’Byrne or Dr. Niva Piran. Additionally, if you find you do not wish to answer particular question(s), you may omit these items. If, during completion of the survey, you decide you would like to discontinue participating, simply select the "discard responses and exit" option and your data will not be used in the study. If at any time during the next nine months or prior to the statistical analysis of the data, you decided that you would like to withdraw from the study, contact Marianne
(pregnantbodyimage@gmail.com). There are no negative consequences to withdrawing from the study, with the exception that only participants who complete all three surveys and submit their surveys within the specified timeframe will be able to enter the prize draw. IP addresses (i.e., the numerical address of the computer on which the survey is completed) will be collected to ensure that those who completed a compensation form also participated in and completed the main study survey.

It is possible that you will find it interesting to complete the different scales that assess body image, embodiment and well-being. Your participation may help us understand how body image and embodiment change in pregnancy and during the transition to parenthood. It will also help identify biological, psychological and social aspects, which contribute to well-being during and following pregnancy. In doing so, your responses may help mothers make a healthy transition from pregnancy into the first six months of being a parent. There are likely no risks to you as a result of your participation in this study. However, completing some items may result in some discomfort. You are free to decide not to respond to particular items. If you find the discomfort to be more than minor, please contact me or my supervisor, so that we can discuss how to provide you with further support (contact information is below, also, the researcher’s contact information will also be provided upon completion or withdrawal from the study).

Your confidentiality will be maintained. A personal confidential identification number will be assigned to you after I received your first email. All research data will be identified only by this code, with personal details (email address linked to the identification number) kept in a secure database. Access to this identification number will only be granted to Marianne O’Byrne and Dr. Niva Piran. The only times your confidentiality could not be maintained would be if you provided identifying/personal information and you reported on any of questionnaires that you were planning to hurt yourself or someone else, if you reported that a child was being hurt or neglected or in danger of being hurt by you or another adult, and/or if you reported being sexually abused by a regulated health care professional. Only Marianne O’Byrne and Dr. Niva Piran, will have access to online responses. In the event that the results of this research are published in the form of scholarly presentation and/or in academic journals/books, only group data will be presented when we publish the results of the study and we will ensure that it will be impossible for anyone to identify you. Research data will be kept securely for 5 years after completion of study, at which point it will be deleted.

Some additional steps that can be taken to ensure your privacy:

1. Completion of the survey should take place in a private location.
2. Upon completion of the survey, instructions will be provided on how to erase the cache and temporary internet files on the browser.
3. Do not complete the survey in a place of employment as the employer may have access to internet usage.

Your involvement in this research is appreciated. If you would like to participate in this research, please indicate your consent below. You can receive information about the results of the study by indicating your interest on the Request for Information about Results of the Study form after you...
have completed and submitted your final survey. You will also be able to enter a draw to win one of five $200 e-gift certificates to your choice of Toys R Us, Chapters Indigo, or Amazon.ca after you have completed and submitted your third and final survey. The personal information (email address) you provide to receive results or enter the draw is collected in a completely separate survey, such that your previously submitted survey remains confidential.

Should you have any questions about this study, you can contact Marianne O’Byrne at pregnantbodyimage@gmail.com or Dr. Niva Piran at niva.piran@utoronto.ca, telephone: (416) 978-0712. If you have any further questions about your rights as a research participant, you can contact the Ethics Review Office at 416-946-3273 or ethics.review@utoronto.ca.

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You may print this information through your web browser.

Thank you for your participation!

Marianne (Pelletier) O’Byrne, M.A.
Ph.D. Student
Department of Applied Psychology & Human Development
pregnantbodyimage@gmail.com
Appendix H

Demographic Inquiry

1. How old are you? _____

2. How far did you go in school? (indicate highest level)
   A  Finished some primary or lower-secondary or did not go to school
   B  Finished lower-secondary (i.e., first two years post-elementary)
   C  Finished upper-secondary (i.e., graduated high school)
   D  Finished post-secondary but not university
   E  Finished university of higher

3. What category best describes your occupational status:
   A  Have never worked outside the home for pay
   B  Small business owner (< 25 employees)
      *Includes owners of small business such as retail shops, services, restaurants.*
   C  Clerk
      *Includes office clerks, secretaries, typists, data entry operators, customer service clerks*
   D  Service or sales worker
      *Includes travel attendants, restaurant service workers, personal care workers, protective service workers, salespersons*
   E  Skilled agricultural or fishery worker
      *Includes farmers, forestry workers, fishery workers, hunters and trappers*
   F  Craft or trade worker
      *Includes builders, carpenters, plumbers, electricians, etc.; also metal workers, machine mechanics, handicraft workers*
   G  Plant or machine operator
      *Includes plant and machine operators, assembly-line operators, motor-vehicle drivers*
   H  General labourers
      *Includes domestic helpers and cleaners; building caretakers; messengers, porters and doorknobs; farm, fishery, agricultural, and construction workers*
   I  Corporate manager or senior official
      *Includes corporate managers such as managers of large companies (25 or more employees) or managers of departments within large companies; legislators or senior government officials; senior officials of special-interest organizations; military officers*
   J  Professional
      *Includes scientists, mathematicians, computer scientists, architects, engineers, life science and health professionals, teachers, legal professionals, social scientists, writers and artists, religious professionals*
4. Are you…
   A Single/Separated/Divorced
   B Co-habiting/Married/Remarried

   a. If Co-habiting/Married/Remarried, how long have you been together as a couple?
      ____ years

5. If currently cohabiting, married or remarried, how far did your partner go in school?
   (indicate highest level)
   A Finished some primary or lower-secondary or did not go to school
   B Finished lower-secondary (i.e., first two years post-elementary)
   C Finished upper-secondary (i.e., graduated high school)
   D Finished post-secondary but not university
   E Finished university of higher

6. What category best describes your partner’s occupational status:
   A Have never worked outside the home for pay
   B Small business owner (< 25 employees)
      *Includes owners of small business such as retail shops, services, restaurants.*
   C Clerk
      *Includes office clerks, secretaries, typists, data entry operators, customer service clerks*
   D Service or sales worker
      *Includes travel attendants, restaurant service workers, personal care workers, protective service workers, salespersons*
   E Skilled agricultural or fishery worker
      *Includes farmers, forestry workers, fishery workers, hunters and trappers*
   F Craft or trade worker
      *Includes builders, carpenters, plumbers, electricians, etc.; also metal workers, machine mechanics, handicraft workers*
   G Plant or machine operator
      *Includes plant and machine operators, assembly-line operators, motor-vehicle drivers*
   H General labourers
      *Includes domestic helpers and cleaners; building caretakers; messengers, porters and doorkkeepers; farm, fishery, agricultural, and construction workers*
   I Corporate manager or senior official
      *Includes corporate managers such as managers of large companies (25 or more employees) or managers of departments within large companies; legislators or senior government officials; senior officials of special-interest organizations; military officers*

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5 The relationship status query was adapted from Lynn, Alderdice, Crealey, and McElnay (2011).
J Professional
Includes scientists, mathematicians, computer scientists, architects, engineers, life science and health professionals, teachers, legal professionals, social scientists, writers and artists, religious professionals

7. Before becoming pregnant, was your partner employed?
A Yes, working part-time
B Yes, working full-time
C No, unemployed
D Other (please explain): __________________________

8. Please rate the financial wellbeing of your family according to the following categories:
A Not at all well-off
B Not very well-off
C Average
D Somewhat well-off
E Very well-off

9. What are the first three characters of your postal code (i.e., M6A)?
   ______ ______ ______

10. Including your expected baby, how many children (under 18 years of age) are currently living in your home?
None 1 2 3 4 5 6 7 8 9

11. How many adults (age 18 or older) including yourself are currently living in your household?
None 1 2 3 4 5 6 7 8 9

12. How many rooms are there in your house or apartment, not including kitchens or bathrooms? _____

13. What are the ethnic or cultural origins of your ancestors? Please indicate which of the groups you feel most accurately describes you.
A Eastern European (Polish, Russian, Croatian, etc.)
B Western European (English, French, Portuguese, etc.)

6 Using Statistics Canada’s definition of rural area and population centers (POPCTR; Statistics Canada, 2013) and Statistics Canada 2011 Census of Population (Statistics Canada, 2012), participants were classified as living in either a rural area (i.e., less than 1000 population), a small population center (i.e., population between 1,000 and 29,999), a medium population center (i.e., population between 30,000 and 99,999), and a large population center (i.e., population of 100,000 or more).
C  East Asian (Chinese)
D  East Asian (Korea)
E  East Asian (Japanese)
F  South Asian (East Indian, Pakistani, Sri Lankan, etc.)
G  Southeast Asian (Vietnamese, Malaysian, Filipino, etc.)
H  West Asian (Iranian, Afghan, Palestinian, etc.)
I  East African (Ethiopian, Kenyan, Somali, etc.)
J  Middle African (Cameroonian, Chadian, Congolese, etc.)
K  Northern African (Moroccan, Algerian, Egyptian, etc.)
L  Southern African (Botswana, South African, etc.)
M  Western African (Ghanaian, Nigerian, Guinean, etc.)
N  Latin American (Argentinean, Costa Rican, Mexican, etc.)
O  Caribbean Region (Jamaican, Trinidadian/Tobagonian, etc.)
P  Indian Caribbean (Guyana with origins in India)
Q  North American Aboriginal (Inuit, Métis, First Nations, etc.)
R  Oceania (Samoan, Fijian, etc.),
S  Australian or New Zealander
T  Other (please specify): ________________________________
U  Unknown

14. Do you have family living in Canada?
A  Yes
B  No
   a. If yes, do they live nearby?
      A  Yes
      B  No
         i. If yes, are they available to provide assistance? [Select ALL that apply]
            A  Financial
            B  Emotional
            C  Childcare
            D  Household Help
         ii. If no, why not? ________________________________

15. Were you born in Canada?
A  Yes
B  No
   a. If no, please specify in what country you were born: ___________________________

   b. If no, how long have you lived in Canada? _____ years
16. What language do you speak most often at home?" 
   A  English
   B  French
   C  Other (please specify): ______________________________

17. Prior to becoming pregnant, would you say your general health was…
   A  Poor
   B  Fair
   C  Good
   D  Very good
   E  Excellent

18. How would you describe your sexual orientation?
   ____________________________________________________________

19. What is your prepregnancy height? _____ feet _____ inches or _____ cm

20. What was your weight just prior to pregnancy? _____ lbs or _____ kg

21. Are you currently taking a leave of absence granted to expectant parents before childbirth? OR Are you currently taking a leave of absence granted to new parents after childbirth?
   A  Yes
   B  No

22. Is your partner currently taking a leave of absence granted to expectant parents before childbirth? OR Is your partner currently taking a leave of absence granted to new parents after childbirth?
   A  Yes
   B  No

7 As in Gjerdingen et al. (2009), the question and responses options for the health status query were adapted from the SF-36 single item rating of health (Ware & Sherbourne, 1992).
Appendix I

Prenatal Inquiry

1. What is your current weight? _____ lbs or _____ kg

2. How far along are you in your pregnancy? _____ weeks

3. What is your estimated due date? Year _____ Month _____ Day _____

4. How many pregnancies have you had? (Clarification: For this question, a pregnancy is defined as completing 24 or more gestational weeks prior to a live or still birth): _____ pregnancy(ies).\(^8\)

5. Was this pregnancy planned?\(^9\)
   A Yes
   B No

6. Did you receive any fertility treatments to assist in the conception of this baby?"
   A Yes
   B No
   a. If Yes: What fertility treatments did you try? [select ALL that apply]
      A Prescribed medications only
      B Prescribed medications in addition to assisted conception
      C Surgery
      D Intracuterine insemination (IUI)
      E In vitro fertilization (IVF)
      F Gamete intrafallopian transfer (GIFT)
      G Intracytoplasmic sperm injection (ICSI)
      H Egg donation
      I Sperm donation
      J Embryo donation
      K Over-the-counter supplementation (e.g., vitamins, herbs, etc.)

\(^8\) Given that several interpretations of parity exist and that most prenatal professionals conceptualize it as the “number of pregnancies at twenty-four completed weeks or above irrespective of outcome” (Opara & Zaidi, 2007), the pregnancy history question included this clarifying description of parity.

\(^9\) The intent to get pregnant query was adapted from Suttie (1998).
Alternative treatments (e.g., acupuncture, fertility yoga, Chinese medicine)
Other (please specify): __________________________________________________________________________

7. How would you describe your pregnancy? 
   A Easy
   B Average
   C Difficult

---

10 The ease of pregnancy was adapted from Suttie (1998).
Appendix J

Postnatal Inquiry

1. What is your baby’s date of birth? ____ (DD) ____ (MM) ____ ____ ____ (YY)

2. How many weeks’ gestation was your baby born? _____ weeks

3. What is the sex of your child? _____ male or _____ female

4. How much did your baby weigh at birth? _____ lbs or _____ kg

5. How long was your baby at birth? (measurement should be from crown (or top) of the head to his/her toes)? _____ inches or _____ cm

6. What type of delivery did you have?
   A Vaginal – spontaneous
   B Vaginal – assisted with forceps and/or vacuum
   C Caesarean section
      a. If Caesarean Section: Your caesarean section was:
         A Planned ahead
         B Decided after you went into labour
      b. If Caesarean Section: What was the reason for your caesarean section?
         A Cervix stopped dilating (failure to make progress in labour, often because the baby is too large for the pelvis)
         B Breech of other fetal position making vaginal delivery difficult (baby is not positioned with its head down)
         C Genital herpes outbreak
         D My own choice (elective)
         E Other (please specify):____________________________________
         F Don’t know

7. How would you describe your labour and delivery?
   A Easier than I expected
   B About what I expected
   C More difficult than I expected

8. During your labour and delivery, were you accompanied by a certified doula in order to receive physical, emotional, informational or advocacy support?
   A Yes
   B No
9. What was your weight at the time of the birth of your child? _____ lbs or _____ kg

10. What is your current weight? _____ lbs or _____ kg

11. How satisfied are you with your infant feeding method?^{11}

<table>
<thead>
<tr>
<th>Very satisfied</th>
<th>Mostly satisfied</th>
<th>Neither satisfied nor unsatisfied</th>
<th>Mostly unsatisfied</th>
<th>Very unsatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

12. Are you feeding your infant the way you planned?
   A Yes
   B No

13. How would you describe your breastfeeding experience since the birth of your infant?
   A Very well, only a couple if any minor difficulties
   B Good, a few minor difficulties
   C Satisfactory, some minor and/or major difficulties
   D Not well, several major difficulties
   E Terrible, many major difficulties
   F Did not breastfeed

^{11}Questions 11, 12 and 13 assessing breastfeeding satisfaction and experience were adapted from Dennis & McQueen, 2007.
Appendix K

Follow-Up Information via Email and in the Online Questionnaire Regarding Prenatal and Postpartum Emotional Difficulties

Pregnancy and the postpartum period can be a difficult period for women. Most expectant and new mothers expect to feel happiness and joy throughout this transition; however, the perinatal and postpartum transition can result in feelings of sadness, inadequacy, anxiety and despair.

Women who struggle with anxiety and depression during their pregnancy and after the birth of their child may benefit from seeking help. Although it may feel difficult at time to do so, reaching out to others for support can make you feel empowered by providing you with valuable information, allowing you to understand your experience and provide you with tools to feel better.

If you are experiencing any symptoms of anxiety or depression during your pregnancy or after the birth of your child, or if you are worried about your current emotional state, please seek the advice of your family doctor, midwife, obstetrician/gynecologist, or go to your nearest emergency department.

Below are additional resources which you may find helpful:\(^{12}\):

Depression After Delivery: [www.depressionafterdelivery.com](http://www.depressionafterdelivery.com)
  • Provides information and education for women and families affected by postpartum depression.

Mood Disorders Society of Canada: [www.mooddisorderscanada.ca](http://www.mooddisorderscanada.ca)
  • Offers awareness, education, advocacy, and research.

Motherisk: [www.motherisk.org](http://www.motherisk.org)
  • Professional information about the safety or risk of drugs, chemicals and disease during pregnancy and lactation.

Our Sisters’ Place: [www.oursistersplace.ca](http://www.oursistersplace.ca)
  • Provides information/support for women with mood disorders related to hormonal changes and lists available support groups in Ontario.

Pacific Postpartum Support Society: [www.postpartum.org](http://www.postpartum.org)

\(^{12}\) Resources retrieved and adapted from [http://pda.rnao.ca/content/additional-resources](http://pda.rnao.ca/content/additional-resources)
- Offers support and information for women with postpartum depression and their families. Also includes a list of available support groups in Alberta, British Columbia, Quebec, and Ontario.

Postpartum Support International: [www.postpartum.net](http://www.postpartum.net)
- Provides education and information for women with postpartum mood disorders and their families.

St. Joseph’s Health Centre: [www.stjosham.on.ca](http://www.stjosham.on.ca)
- Provides information about pregnancy and postpartum related mood changes.

The British Columbia Reproductive Mental Health Program: [www.bcrmh.com/disorders/postpartum.htm](http://www.bcrmh.com/disorders/postpartum.htm)
- Focuses on emotional issues and treatment related to women, including perinatal mood disorders.

The Marcé Society: [www.marcesociety.com](http://www.marcesociety.com)
- International research into the understanding, prevention and treatment of mental illness related to childbearing.

Should you have any questions about your experiences or the availability of resources in your area, you can contact Marianne O’Byrne at pregnantbodyimage@gmail.com or Dr. Niva Piran at niva.piran@utoronto.ca, telephone: (416) 978-0712.

Thank you,

Marianne (Pelletier) O’Byrne, M.A.
Ph.D. Student
Department of Applied Psychology & Human Development
pregnantbodyimage@gmail.com

Supervisor:
Dr. Niva Piran
Department of Applied Psychology & Human Development
Ontario Institute for Studies in Education at the University of Toronto (OISE/UT)
7th floor, 252 Bloor Street West, Toronto, ON
niva.piran@utoronto.ca
Appendix L

Thank You for Completing Screening Questionnaire

Thanks for your help!

You have now completed the first step to determining your eligibility to participating in this study. I will review your responses within 24 hours and respond to you by email to inform you of your eligibility.

In the meantime, for any additional questions, comments, or concerns? Feel free to contact me by email.

All the best for a safe birth and healthy baby.

Marianne O’Byrne
pregnantbodyimage@gmail.com

If you’re satisfied with your answers, press “done”.

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Appendix M

Thank You for Completing First Questionnaire

Thanks for your help!

You have now completed the first of a series of three questionnaires over a period of nine months. The next questionnaire will be administered approximately three months after the arrival of your baby (i.e., between weeks thirteen and seventeen postpartum).

Upon pressing “done”, you will be redirected to a completely separate survey to confidentially provide your personal information (email address) in order to indicate whether you would like to receive an emailed e-gift certificate for your choice of either Chapters Indigo, Toys R Us or Amazon.ca.

For any additional questions, comments, or concerns? Feel free to contact me by email.

All the best for a safe birth and healthy baby.

Marianne O’Byrne
pregnantbodyimage@gmail.com

If you’re satisfied with your answers, press “done”.
Appendix N

Thank You for Completing Second Questionnaire

Thanks for your help!

You have now completed the second of a series of three questionnaires over a period of nine months. The next questionnaire will be administered approximately six months after the arrival of your baby, three months from now (i.e., between weeks twenty-eight and thirty-two postpartum). An email with the link to the third questionnaire will be sent to you at that time.

For any additional questions, comments, or concerns? Feel free to contact me by email.

All the best,

Marianne O’Byrne
pregnantbodyimage@gmail.com

If you’re satisfied with your answers, press “done”.
Appendix O

Thank You for Completing Final Questionnaire

Thanks for your help!

You have now completed the final questionnaire over a period of nine months.

If you’re satisfied with your answers, press “done”.

Upon pressing “done”, you will be redirected to a completely separate survey to confidentially provide your personal information (email address) in order to indicate whether you would like to receive the results of the study and/or enter the draw.

Should you have any questions about this study, you can contact Marianne O’Byrne at pregnantbodyimage@gmail.com or Dr. Niva Piran at niva.piran@utoronto.ca, telephone: (416) 978-0712.

Warm regards,

Marianne O’Byrne
pregnantbodyimage@gmail.com
Appendix P

Request to Receive Compensation for First Questionnaire Completion

Thank you for your participation in this first of three questionnaires and for interest in this study!

☐ Please check if you would like to receive a $10 e-gift card to Toys R Us. Please provide an email address below in order for the gift certificate to be emailed to you within the next 48-72 hours.

☐ Please check if you would like to receive a $10 e-gift card to Chapters Indigo. Please provide an email address below in order for the gift certificate to be emailed to you within the next 48-72 hours.

☐ Please check if you would like to receive a $10 e-gift card to Amazon.ca. Please provide an email address below in order for the gift certificate to be emailed to you within the next 48-72 hours.

☐ Please check if you do not want to receive a $10 e-gift card to Toys R Us, Chapters Indigo or Amazon.ca.

In order to send you your e-gift card, an email address must be provided. It is important to know that this information is secure and will not be shared with anyone outside of the research protocol. Your information will not be associated with the answers you provide and will be stored separately. Only one entry per person will be accepted for compensation and only those who have completed all the survey will be considered for the e-gift certificate.

Please provide your email address (to receive info about study and to enter prize draw:

________________________________________

Thank you again!
Marianne O’Byrne
pregnantbodyimage@gmail.com
Appendix Q

Request to Receive Information about Results of Study and Compensation for Final Questionnaire Completion

Thank you for your participation and interest in this study!

☐ Please check if you would like to receive a summary of the results of this study. Please provide an email address below if you indicated you would like to receive a summary of the study.

☐ Please check if you would like to be entered into the draw to win one of five $200 e-gift certificates to your choice of Toys R Us, Chapters Indigo, or Amazon.ca. Please provide an email address below in order to be contacted in the event that your email address has been randomly selected as the winner.

In order to provide a summary of results and/or contact the recipients of the prizes, an email address must be provided. It is important to know that this information is secure and will not be shared with anyone outside of the research protocol. Your information will not be associated with the answers you provide and will be stored separately. Only one entry per person will be accepted for compensation and only those who have completed all three surveys will be considered for the prize entry.

Please provide your email address (to receive info about study and to enter prize draw:

________________________________________

Please contact Marianne O’Byrne (pregnantbodyimage@gmail.com) or Dr. Niva Piran (niva.piran@utoronto.ca; telephone: 416-978-0712) if you have any further questions about the study.
Appendix R

Disordered Eating Construct Questions

1. How often have you gone on a diet during the last year? By ‘diet’ we mean changing the way you eat so you can lose weight
   A Never (coded as 1)
   B 1-4 times (coded as 2)
   C 5-10 times (coded as 3)
   D More than 10 times (coded as 4)
   E I am always dieting (coded as 5)

2. In the past year, have you ever eaten so much food in a short period of time that you would be embarrassed if others saw you (being-eating)?
   A Yes
   B No (coded as 0)

   IF YES:

   a. During the times when you ate this way, did you feel you couldn’t stop eating or control what or how much you were eating?
      A Yes
      B No (coded as 0)

      IF YES:

      i. How often, on average, did you have times when you ate this way – that is, large amount of food plus the feeling that your eating was out of control?
         A Nearly every day (coded as 4)
         B A few times a week (coded as 3)
         C A few times a month (coded as 2)
         D Less than once a month (coded as 1)

3. Have you done any of the following things in order to lose weight or keep from gaining weight during the past three months?
   a. Fasted
      A Yes (coded as 1)
      B No (coded as 0)

   b. Ate very little food
      A Yes (coded as 1)
      B No (coded as 0)
c. Took diet pills  
   A  Yes (coded as 1)  
   B  No (coded as 0)  

d. Made myself vomit (throw up)  
   A  Yes (coded as 1)  
   B  No (coded as 0)  

e. Used laxatives  
   A  Yes (coded as 1)  
   B  No (coded as 0)  

f. Used diuretics (water pills)  
   A  Yes (coded as 1)  
   B  No (coded as 0)  

g. Used food substitute (powder/special drink)  
   A  Yes (coded as 1)  
   B  No (coded as 0)  

h. Skipped meals  
   A  Yes (coded as 1)  
   B  No (coded as 0)  

i. Smoked more cigarettes  
   A  Yes (coded as 1)  
   B  No (coded as 0)
Appendix S

Socioeconomic Status Calculations according to Caro and Cortés (2012)

Table S1
*Item Weights according to Provinces and National Average.*

<table>
<thead>
<tr>
<th>Item weight</th>
<th>Parental Education</th>
<th>Parental occupational status</th>
<th>Home possessions (constant)</th>
<th>Financial Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Participant</td>
<td>Partner</td>
<td>Participant</td>
<td></td>
</tr>
<tr>
<td>Parented</td>
<td>Partied</td>
<td>Partei</td>
<td>hompos</td>
<td></td>
</tr>
<tr>
<td></td>
<td>partnered</td>
<td>parneti</td>
<td></td>
<td>finan</td>
</tr>
<tr>
<td>Alberta</td>
<td>0.49</td>
<td>0.47</td>
<td>0.42</td>
<td>0.13</td>
</tr>
<tr>
<td>British Columbia</td>
<td>0.49</td>
<td>0.49</td>
<td>0.44</td>
<td>0.14</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>0.47</td>
<td>0.47</td>
<td>0.45</td>
<td>0.12</td>
</tr>
<tr>
<td>Ontario</td>
<td>0.50</td>
<td>0.47</td>
<td>0.45</td>
<td>0.06</td>
</tr>
<tr>
<td>Québec</td>
<td>0.47</td>
<td>0.48</td>
<td>0.45</td>
<td>0.19</td>
</tr>
<tr>
<td>Average</td>
<td>0.48</td>
<td>0.48</td>
<td>0.44</td>
<td>0.13</td>
</tr>
</tbody>
</table>
Table S2
Participant and Partner Education Response Options and Scores.

<table>
<thead>
<tr>
<th>Response Options</th>
<th>Associated Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finished some primary or lower-secondary or did not go to school</td>
<td>1</td>
</tr>
<tr>
<td>Finished lower-secondary (i.e., first two years post-elementary)</td>
<td>2</td>
</tr>
<tr>
<td>Finished upper-secondary (i.e., graduated high school)</td>
<td>3</td>
</tr>
<tr>
<td>Finished post-secondary but not university</td>
<td>4</td>
</tr>
<tr>
<td>Finished university of higher</td>
<td>5</td>
</tr>
</tbody>
</table>
Table S3
Participant and Partner Occupational Status Options and Scores.

<table>
<thead>
<tr>
<th>Response Options</th>
<th>Associated Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has never worked outside the home for pay</td>
<td>22</td>
</tr>
<tr>
<td>Small business owner (&lt; 25 employees). Includes owners of small business such as retail shops, services, restaurants.</td>
<td>57</td>
</tr>
<tr>
<td>Clerk. Includes office clerks, secretaries, typists, data entry operators, customer service clerks.</td>
<td>49</td>
</tr>
<tr>
<td>Service or sales worker. Includes travel attendants, restaurant service workers, personal care workers, protective service workers, salespersons</td>
<td>45</td>
</tr>
<tr>
<td>Skilled agricultural or fishery worker. Includes farmers, forestry workers, fishery workers, hunters and trappers</td>
<td>31</td>
</tr>
<tr>
<td>Craft or trade worker. Includes builders, carpenters, plumbers, electricians, etc.; also metal workers, machine mechanics, handicraft workers</td>
<td>37</td>
</tr>
<tr>
<td>Plant or machine operator. Includes plant and machine operators, assembly-line operators, motor-vehicle drivers</td>
<td>33</td>
</tr>
<tr>
<td>General labourers. Includes domestic helpers and cleaners; building caretakers; messengers, porters and doorkeepers; farm, fishery, agricultural, and construction workers</td>
<td>24</td>
</tr>
<tr>
<td>Corporate manager or senior official. Includes corporate managers such as managers of large companies (25 or more employees) or managers of departments within large companies; legislators or senior government officials; senior officials of special-interest organizations; military officers</td>
<td>67</td>
</tr>
<tr>
<td>Professional. Includes scientists, mathematicians, computer scientists, architects, engineers, life science and health professionals, teachers, legal professionals, social scientists, writers and artists, religious professionals</td>
<td>73</td>
</tr>
</tbody>
</table>
### Table S4
Participant and Partner Subjective Financial Status Response Options and Scores.

<table>
<thead>
<tr>
<th>Response Options</th>
<th>Associated Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all well-off</td>
<td>1</td>
</tr>
<tr>
<td>Not very well-off</td>
<td>2</td>
</tr>
<tr>
<td>Average</td>
<td>3</td>
</tr>
<tr>
<td>Somewhat well-off</td>
<td>4</td>
</tr>
<tr>
<td>Very well-off</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix T

Missing Data Analysis

Table T1  
*Completion Rate (i.e., the percentage of values completed across all participants) for each of the Outcome and Predictor Measures at each Time Point.*

<table>
<thead>
<tr>
<th>Factors</th>
<th>Construct</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
<td>EE</td>
<td>99.63</td>
<td>99.70</td>
<td>99.73</td>
</tr>
<tr>
<td></td>
<td>BE</td>
<td>99.67</td>
<td>99.50</td>
<td>99.62</td>
</tr>
<tr>
<td></td>
<td>DE</td>
<td>99.72</td>
<td>99.97</td>
<td>99.80</td>
</tr>
<tr>
<td>Macrosystem</td>
<td>Ethnicity</td>
<td>100.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Socioeconomic Status</td>
<td>97.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressures for Thinness</td>
<td>99.52</td>
<td>99.70</td>
<td>99.88</td>
</tr>
<tr>
<td>Biological</td>
<td>Prenatal Weight</td>
<td>99.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Current Weight</td>
<td>98.08</td>
<td>94.71</td>
<td>98.56</td>
</tr>
<tr>
<td></td>
<td>Fatigue</td>
<td>97.28</td>
<td>94.78</td>
<td>99.87</td>
</tr>
<tr>
<td></td>
<td>Labour and Delivery Control</td>
<td></td>
<td>99.66</td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td>Depression</td>
<td>99.47</td>
<td>99.66</td>
<td>99.62</td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>99.81</td>
<td>99.71</td>
<td>99.81</td>
</tr>
<tr>
<td></td>
<td>Internalization of the Thin Ideal</td>
<td>99.79</td>
<td>99.95</td>
<td>99.52</td>
</tr>
<tr>
<td></td>
<td>Maternal Beliefs about Competence</td>
<td></td>
<td>99.82</td>
<td>99.73</td>
</tr>
<tr>
<td></td>
<td>Comfort with Breastfeeding</td>
<td></td>
<td>99.52</td>
<td>99.36</td>
</tr>
<tr>
<td>Relational</td>
<td>Social Support</td>
<td>99.84</td>
<td>99.80</td>
<td>99.84</td>
</tr>
<tr>
<td></td>
<td>Relationship with Partner</td>
<td>99.80</td>
<td>97.17</td>
<td>96.30</td>
</tr>
<tr>
<td>Behavioral</td>
<td>Physical Activity</td>
<td>85.58</td>
<td>81.73</td>
<td>91.35</td>
</tr>
<tr>
<td></td>
<td>Breastfeeding Practice</td>
<td></td>
<td>100.00</td>
<td>99.52</td>
</tr>
</tbody>
</table>
Sexual Relationships

98.48  98.16  98.48

Note. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct.
### Table T2

**Number of Participants with Measures with Missing Total Scores as a Result of Incomplete or Missing Data.**

<table>
<thead>
<tr>
<th>Number of Measures with Missing Total Scores</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 measures</td>
<td>4</td>
</tr>
<tr>
<td>6 measures</td>
<td>4</td>
</tr>
<tr>
<td>5 measures</td>
<td>0</td>
</tr>
<tr>
<td>4 measures</td>
<td>5</td>
</tr>
<tr>
<td>3 measures</td>
<td>16</td>
</tr>
<tr>
<td>2 measures</td>
<td>29</td>
</tr>
<tr>
<td>1 measure</td>
<td>55</td>
</tr>
<tr>
<td>No measure missing</td>
<td>95</td>
</tr>
</tbody>
</table>
Appendix U

Comparison of Non-Imputed and Imputed Data

Table U1
*Means and Standard Deviations for the Non-Imputed and Imputed Data at Time 1.*

<table>
<thead>
<tr>
<th>Factors</th>
<th>Construct</th>
<th>Non-Imputed</th>
<th>Imputed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Means</td>
<td>S.D.</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td>EE</td>
<td>131.03</td>
<td>17.28</td>
</tr>
<tr>
<td></td>
<td>BE</td>
<td>2.24</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>DE</td>
<td>4.13</td>
<td>4.51</td>
</tr>
<tr>
<td><strong>Macrosystem</strong></td>
<td>Ethnicity</td>
<td>12.15</td>
<td>2.50</td>
</tr>
<tr>
<td></td>
<td>Socioeconomic Status</td>
<td>1.78</td>
<td>0.70</td>
</tr>
<tr>
<td><strong>Biological</strong></td>
<td>Weight Difference from Prepregnancy</td>
<td>21.48</td>
<td>12.60</td>
</tr>
<tr>
<td></td>
<td>Fatigue</td>
<td>24.55</td>
<td>6.43</td>
</tr>
<tr>
<td><strong>Psychological</strong></td>
<td>Depression</td>
<td>7.20</td>
<td>4.65</td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>34.29</td>
<td>10.70</td>
</tr>
<tr>
<td></td>
<td>Internalization of the Thin Ideal</td>
<td>22.86</td>
<td>8.71</td>
</tr>
<tr>
<td><strong>Relational</strong></td>
<td>Social Support</td>
<td>69.07</td>
<td>14.40</td>
</tr>
<tr>
<td></td>
<td>Relationship with Partner</td>
<td>114.18</td>
<td>13.84</td>
</tr>
<tr>
<td>Behavioral Activity</td>
<td>Physical Activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>66.55</td>
<td>94.33</td>
<td>66.55</td>
</tr>
<tr>
<td>Sexual Relationship</td>
<td>16.8</td>
<td>5.86</td>
<td>16.97</td>
</tr>
</tbody>
</table>

*Note. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct.*
Table U2
*Means and Standard Deviations for the Non-Imputed and Imputed Data at Time 2.*

<table>
<thead>
<tr>
<th>Factors</th>
<th>Construct</th>
<th>Non-Imputed</th>
<th></th>
<th>Imputed</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Means</td>
<td>S.D.</td>
<td>Means</td>
<td>S.D.</td>
</tr>
<tr>
<td>Outcome</td>
<td>EE</td>
<td>127.41</td>
<td>18.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE</td>
<td>2.10</td>
<td>0.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DE</td>
<td>6.95</td>
<td>7.07</td>
<td>6.97</td>
<td>7.06</td>
</tr>
<tr>
<td>Macrosystem</td>
<td>Pressures for Thinness</td>
<td>1.97</td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological</td>
<td>Weight Difference from Prepregnancy</td>
<td>10.50</td>
<td>12.43</td>
<td>10.51</td>
<td>12.47</td>
</tr>
<tr>
<td></td>
<td>Fatigue</td>
<td>24.64</td>
<td>6.60</td>
<td>24.63</td>
<td>6.58</td>
</tr>
<tr>
<td></td>
<td>Labour and Delivery Control</td>
<td>51.78</td>
<td>10.75</td>
<td>51.64</td>
<td>10.72</td>
</tr>
<tr>
<td>Psychological</td>
<td>Depression</td>
<td>6.74</td>
<td>4.74</td>
<td>6.70</td>
<td>4.72</td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>33.36</td>
<td>10.57</td>
<td>33.57</td>
<td>10.49</td>
</tr>
<tr>
<td></td>
<td>Internalization of the Thin Ideal</td>
<td>23.99</td>
<td>9.21</td>
<td>23.98</td>
<td>9.19</td>
</tr>
<tr>
<td></td>
<td>Maternal Beliefs about Competence</td>
<td>70.89</td>
<td>11.03</td>
<td>70.95</td>
<td>10.92</td>
</tr>
<tr>
<td></td>
<td>Comfort with Breastfeeding</td>
<td>3.33</td>
<td>1.13</td>
<td>3.33</td>
<td>1.13</td>
</tr>
<tr>
<td>Relational</td>
<td>Social Support</td>
<td>71.14</td>
<td>12.00</td>
<td>70.98</td>
<td>12.20</td>
</tr>
<tr>
<td></td>
<td>Relationship with Partner</td>
<td>111.39</td>
<td>14.66</td>
<td>110.72</td>
<td>15.15</td>
</tr>
<tr>
<td>Behavioral</td>
<td>Physical Activity</td>
<td>82.85</td>
<td>124.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------</td>
<td>-------</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual</td>
<td>Relationships</td>
<td>18.45</td>
<td>5.99</td>
<td>18.55</td>
<td>5.95</td>
</tr>
</tbody>
</table>

*Note.* EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct.
### Table U3
Means and Standard Deviations for the Non-Imputed and Imputed Data at Time 3.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Construct</th>
<th>Non-Imputed</th>
<th></th>
<th>Imputed</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Means</td>
<td>S.D.</td>
<td>Means</td>
<td>S.D.</td>
</tr>
<tr>
<td>Outcome</td>
<td>EE</td>
<td>128.94</td>
<td>19.03</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>BE</td>
<td>2.14</td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DE</td>
<td>7.16</td>
<td>7.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Macrosystem</td>
<td>Pressures for Thinness</td>
<td>2.04</td>
<td>0.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological</td>
<td>Weight Difference from Prepregnancy</td>
<td>8.07</td>
<td>12.67</td>
<td>8.07</td>
<td>12.72</td>
</tr>
<tr>
<td></td>
<td>Fatigue</td>
<td>25.00</td>
<td>6.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td>Depression</td>
<td>6.55</td>
<td>4.58</td>
<td>6.66</td>
<td>4.63</td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>35.16</td>
<td>11.71</td>
<td>35.27</td>
<td>11.63</td>
</tr>
<tr>
<td></td>
<td>Internalization of the Thin Ideal</td>
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<td>8.98</td>
<td>24.21</td>
<td>9.05</td>
</tr>
<tr>
<td></td>
<td>Maternal Beliefs about Competence</td>
<td>72.26</td>
<td>10.83</td>
<td>72.21</td>
<td>11.56</td>
</tr>
<tr>
<td></td>
<td>Comfort with Breastfeeding</td>
<td>3.49</td>
<td>1.15</td>
<td>3.49</td>
<td>1.15</td>
</tr>
<tr>
<td>Relational</td>
<td>Social Support</td>
<td>69.20</td>
<td>13.56</td>
<td>69.41</td>
<td>13.6</td>
</tr>
<tr>
<td></td>
<td>Relationship with Partner</td>
<td>110.43</td>
<td>15.85</td>
<td>110.16</td>
<td>16.53</td>
</tr>
<tr>
<td>Behavioral Physical Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>47.60</td>
<td>84.43</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sexual Relationships</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18.12</td>
<td>5.84</td>
<td>18.24</td>
<td>6.05</td>
</tr>
</tbody>
</table>

*Note.* EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct.
Appendix V

Assumption Testing for the Repeated Measures ANOVA

Table VI
Means, Standard Deviations, Skewness and Kurtosis for the Outcome Measures at each Pregnancy and Postpartum Transition Points.

<table>
<thead>
<tr>
<th>Outcome Measure</th>
<th>Transition Point</th>
<th>Means</th>
<th>S.D.</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>131.03</td>
<td>17.28</td>
<td>-.297</td>
<td>-.142</td>
</tr>
<tr>
<td></td>
<td>Time 2</td>
<td>127.41</td>
<td>18.86</td>
<td>-.344</td>
<td>-.571</td>
</tr>
<tr>
<td></td>
<td>Time 3</td>
<td>128.94</td>
<td>19.03</td>
<td>-.498</td>
<td>.019</td>
</tr>
<tr>
<td>EE</td>
<td>Time 1</td>
<td>2.24</td>
<td>.64</td>
<td>-.397</td>
<td>-.295</td>
</tr>
<tr>
<td></td>
<td>Time 2</td>
<td>2.10</td>
<td>.67</td>
<td>-.100</td>
<td>-.497</td>
</tr>
<tr>
<td></td>
<td>Time 3</td>
<td>2.1</td>
<td>.77</td>
<td>-.233</td>
<td>-.642</td>
</tr>
<tr>
<td>BE</td>
<td>Time 1</td>
<td>4.05</td>
<td>4.79</td>
<td>1.61</td>
<td>3.911*</td>
</tr>
<tr>
<td></td>
<td>Time 2</td>
<td>6.97</td>
<td>7.06</td>
<td>1.278</td>
<td>.862</td>
</tr>
<tr>
<td></td>
<td>Time 3</td>
<td>7.16</td>
<td>7.85</td>
<td>1.484</td>
<td>1.609*</td>
</tr>
</tbody>
</table>

Note. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct. Skewness: Values ranging from +/-1 to +/-2 are considered acceptable. Kurtosis Values ranging from +/-1 are considered very good while values ranging from +/-2 are considered acceptable. Values falling outside of this range are marked with an *.
Appendix W

Descriptive and Comparisons for Predictor Variables across the Three Time Points

Table W1
Means and Standard Deviations for the Continuous Predictor Variables Comparing Values across the Three Time Points.

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Macrosystem</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socioeconomic Status</td>
<td>12.18 (2.52)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressures for Thinness</td>
<td>1.78 (0.70)</td>
<td>1.97 (0.77)(^{e})</td>
<td>2.04 (0.78)(^{f})</td>
</tr>
<tr>
<td><strong>Biological</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight Difference from Prepregnancy(^{a})</td>
<td>21.39 (12.55)</td>
<td>10.51 (12.47)(^{e})</td>
<td>8.07 (12.72)(^{g})</td>
</tr>
<tr>
<td>Fatigue</td>
<td>24.50 (6.45)</td>
<td>24.63 (6.58)</td>
<td>25.00 (6.80)</td>
</tr>
<tr>
<td>Labour and Delivery Control</td>
<td></td>
<td>51.64 (10.72)</td>
<td></td>
</tr>
<tr>
<td><strong>Psychological</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>7.15 (4.65)</td>
<td>6.70 (4.72)</td>
<td>6.66 (4.63)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>34.10 (10.85)</td>
<td>33.57 (10.49)</td>
<td>35.27 (11.63)</td>
</tr>
<tr>
<td>Internalization of the Thin Ideal(^{b})</td>
<td>22.92 (8.69)</td>
<td>23.98 (9.19)(^{i})</td>
<td>24.21 (9.05)(^{h})</td>
</tr>
<tr>
<td>Maternal Beliefs about Competence(^d)</td>
<td></td>
<td>70.95 (10.92)</td>
<td>72.21 (11.56)</td>
</tr>
<tr>
<td>Comfort with Breastfeeding(^d)</td>
<td></td>
<td>3.33 (1.13)</td>
<td>3.49 (1.15)</td>
</tr>
<tr>
<td><strong>Relational</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support(^c)</td>
<td>68.92 (14.38)</td>
<td>70.98 (12.20)(^{j})</td>
<td>69.41 (13.65)(^{k})</td>
</tr>
<tr>
<td>Behavioral</td>
<td>Relationship with Partner&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Physical Activity&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Sexual Relationships&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------------------------------------</td>
<td>-------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td></td>
<td>113.56 (14.39)</td>
<td>66.55 (94.33)</td>
<td>16.97 (5.94)</td>
</tr>
<tr>
<td></td>
<td>110.72 (15.15)&lt;sup&gt;e&lt;/sup&gt;</td>
<td>82.85 (124.13)</td>
<td>18.55 (5.95)&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>110.16 (16.53)&lt;sup&gt;f&lt;/sup&gt;</td>
<td>47.60 (84.43)&lt;sup&gt;g&lt;/sup&gt;</td>
<td>18.24 (6.05)&lt;sup&gt;f&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>Note</sup>. Means are presented with standard deviations in parentheses.

<sup>a</sup> A Repeated Measures ANOVA corrected using Greenhouse-Geisser estimates of sphericity revealed a significant main effect, \( p < .005 \)

<sup>b</sup> A Repeated Measures ANOVA corrected using Greenhouse-Geisser estimates of sphericity revealed a significant main effect, \( p < .01 \)

<sup>c</sup> A Repeated Measures ANOVA corrected using Greenhouse-Geisser estimates of sphericity revealed a significant main effect, \( p < .01 \)

<sup>d</sup> A paired sample t-test conducted revealed a significant difference between Time 2 and Time 3, \( p < .005 \)

<sup>e</sup> A post hoc LSD test indicating significant difference at \( p < .005 \) between Time 1 and Time 2.

<sup>f</sup> A post hoc LSD test indicating significant difference at \( p < .005 \) between Time 1 and Time 3.

<sup>g</sup> A post hoc LSD test indicating significant difference at \( p < .005 \) between Time 2 and Time 3.

<sup>h</sup> A post hoc LSD test indicating significant difference at \( p < .01 \) between Time 1 and Time 3.

<sup>i</sup> A post hoc LSD test indicating significant difference at \( p < .05 \) between Time 1 and Time 2.

<sup>j</sup> A post hoc LSD test indicating significant difference at \( p < .05 \) between Time 1 and Time 3.

<sup>k</sup> A post hoc LSD test indicating significant difference at \( p < .05 \) between Time 2 and Time 3.
Table W2
*Frequency for the discrete predictor variables.*

<table>
<thead>
<tr>
<th>Macro/mesosystem</th>
<th>Ethnicity</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macrosystem</td>
<td>European Descent</td>
<td>191</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-European Descent</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral</td>
<td>Breastfeeding Practice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exclusively Breastfeeding</td>
<td>139</td>
<td>128</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Combination of Breastfeeding and Formula</td>
<td>37</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exclusively Formula</td>
<td>32</td>
<td>52</td>
<td></td>
</tr>
</tbody>
</table>
Appendix X

Spearman’s Correlation Coefficient between each of the Predictor Variables across the Three Time Points

Table X1

*Table X1: Spearman’s Correlation Coefficient between each of the Predictor Variables at Time 1.*

<table>
<thead>
<tr>
<th>Macrosystem</th>
<th>Biological</th>
<th>Psychological</th>
<th>Relational</th>
<th>Behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WDF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SES</td>
<td>PfT</td>
<td>P</td>
<td>Fat</td>
</tr>
<tr>
<td>Macrosystem</td>
<td>Eth -.062</td>
<td>-.103</td>
<td>-.021</td>
<td>.070</td>
</tr>
<tr>
<td>SES</td>
<td>.077</td>
<td>-.135</td>
<td>-.175*</td>
<td>-.152*</td>
</tr>
<tr>
<td>PfT</td>
<td>.074</td>
<td>.125</td>
<td>.237***</td>
<td>.201***</td>
</tr>
<tr>
<td>Biological</td>
<td>WDFP</td>
<td>.075</td>
<td>.037</td>
<td>.038</td>
</tr>
<tr>
<td>Fat</td>
<td></td>
<td>.432***</td>
<td>.405***</td>
<td>.041</td>
</tr>
<tr>
<td>Psychological</td>
<td>Dep</td>
<td>.677***</td>
<td>.185*</td>
<td>-.309***</td>
</tr>
<tr>
<td></td>
<td>Anx</td>
<td>.224***</td>
<td>-.255***</td>
<td>-.361***</td>
</tr>
<tr>
<td></td>
<td>IoTI</td>
<td></td>
<td>-.086</td>
<td>-.068</td>
</tr>
<tr>
<td>Relational</td>
<td>SS</td>
<td></td>
<td></td>
<td>.373***</td>
</tr>
<tr>
<td></td>
<td>RwP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral</td>
<td>PA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Eth = Ethnicity; SES = Socioeconomic Status; PfT = Pressures for Thinness; WDFP = Weight Difference from Pregnancy; Fat = Fatigue; Dep = Depression; Anx = Anxiety; IoTI = Internalization of the Thin Ideal; SS = Social Support; RwP = Relationship with Partner; PA = Physical Activity; SR = Sexual Relationships.

* * p < 0.05, ** * p < 0.01, *** * p < 0.005
Table X2
Spearman’s Correlation Coefficient between each of the Predictor Variables at Time 2.

<table>
<thead>
<tr>
<th>Macrosystem</th>
<th>Biological</th>
<th>Psychological</th>
<th>Relational</th>
<th>Behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SES</td>
<td>PfT</td>
<td>WDfP</td>
<td>Fat</td>
</tr>
<tr>
<td>MAC Eth</td>
<td>- .062</td>
<td>.046</td>
<td>.039</td>
<td>-.038</td>
</tr>
<tr>
<td>SES</td>
<td>.136</td>
<td>-.050</td>
<td>.090</td>
<td>-.046</td>
</tr>
<tr>
<td>PfT</td>
<td>.067</td>
<td>.227*</td>
<td>.037</td>
<td>.278*</td>
</tr>
<tr>
<td>BIO WDfP</td>
<td></td>
<td>.004</td>
<td>.059</td>
<td>.032</td>
</tr>
<tr>
<td>Fat</td>
<td></td>
<td></td>
<td>.546*</td>
<td>.445*</td>
</tr>
<tr>
<td>LaDc</td>
<td></td>
<td></td>
<td></td>
<td>-.265*</td>
</tr>
<tr>
<td>PSY Dep</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anx</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IoTI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CwB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REL SS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RwP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEH PA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. MAC = Macrosystem; BIO = Biological; PSY = Psychological; REL = Relational; BEH = Behavioral; Eth = Ethnicity; SES = Socioeconomic Status; PfT = Pressures for Thinness; WDfP = Weight Difference from Pregnancy; Fat = Fatigue; LaDC = Labour and Delivery Control; Dep = Depression; Anx = Anxiety; IoTI = Internalization of the Thin Ideal; MBC = Maternal Beliefs about Competence; CwB = Comfort with Breastfeeding; SS = Social Support; RwP = Relationship with Partner; PA = Physical Activity; BP = Breastfeeding Practice; SR = Sexual Relationships. * p < 0.05, ** p < 0.01, *** p < 0.005
Table X3
Spearman’s Correlation Coefficient between each of the Predictor Variables at Time 3.

| MAC  | SES  | PTT  | WDfP | Fat  | Dep  | Anx  | IofTI | MB   | CwB  | SS   | RwP  | PA   | BP   | SR   |
|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Eth  | .062 | -.006| .061 | -.011| .076 | -.004| .045  | .059 | -.145| -.090| -.061| .119 | .116 | .027 |
| SES  | .001 | -.055| .004 | -.086| -.122| -.051| -.188 | .055 | .017 | .085 | .025 | -.174| .038 |      |
| PTT  | .151 | .230 | .299 | .345 | .445 | -.139| -.099 | -.238| -.150| .040 | .074 | .281 |      |      |
| BIO  | .103 | .108 | .105 | .111 | .049 | .053 | .009  | .002 | .120 | .207 | .016 |      |      |
| Fat  | .495 | .461 | .204 | -.367| .059 | -.258| -.204 | -.036| .049 | .371 |      |      |      |
| PSY  | .767 | .304 | -.506| -.208| -.326| -.371| -.096 | .075 | .402 |      |      |      |
| Anx  | .290 | -.510| -.203| -.425| -.440| -.131| .130  | .470 |      |      |      |
| IofTI| -.147| -.211| -.146| -.146| .028 | .143 | .142  |      |      |      |
| MBC  | .149 | .372 | .354 | .154 | .024 | -.349|      |      |      |
| CwB  | .206 | .176 | .047 | -.284| -.124|      |      |      |
| REL  | .444 | .060 | .006 | -.338|      |      |      |      |
| SS   |      |      |      |      |      |      |      |      |
| RwP  | .082 | .024 | .591 |      |      |      |      |
| BEH  | .017 | .072 |      |      |      |      |      |
| BP   | .138 |      |      |      |      |      |      |

Note. MAC = Macrosystem; BIO = Biological; PSY = Psychological; REL = Relational; BEH = Behavioral; Eth = Ethnicity; SES = Socioeconomic Status; PTT = Pressures for Thinness; WDfP = Weight Difference from Pregnancy; Fat = Fatigue; Dep = Depression; Anx = Anxiety; IofTI = Internalization of the Thin Ideal; MB = Maternal Belief about Competence; CwB = Comfort with Breastfeeding; SS = Social Support; RwP = Relationship with Partner; PA = Physical Activity; BP = Breastfeeding Practice; SR = Sexual Relationships.

* p < 0.05, ** p < 0.01, *** p < 0.005
Appendix Y

Descriptive and Comparisons for Outcome Variables across the Three Time Points according to level of exercise.

Table Y1
Means and Standard Deviations for the Times, 1, 2, and 3 Outcome Variables Comparing Low and High Exercisers.

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
<th>Time 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>(n = 138)</td>
<td>(n = 70)</td>
<td>(n = 146)</td>
<td>(n = 62)</td>
<td>(n = 162)</td>
<td>(n = 46)</td>
</tr>
<tr>
<td>EE</td>
<td>129.84 (18.11)</td>
<td>133.37 (15.38)</td>
<td>126.46 (18.68)</td>
<td>129.65 (19.23)</td>
<td>127.72 (20.13)</td>
<td>133.26 (13.83)</td>
</tr>
<tr>
<td>BE</td>
<td>2.20 (0.64)</td>
<td>2.32 (0.63)</td>
<td>2.08 (0.70)</td>
<td>2.14 (0.57)</td>
<td>2.13 (0.80)</td>
<td>2.18 (0.64)</td>
</tr>
<tr>
<td>DE</td>
<td>3.97 (4.81)</td>
<td>4.21 (4.78)</td>
<td>6.46 (6.88)</td>
<td>8.17 (7.39)</td>
<td>7.01 (7.88)</td>
<td>7.67 (7.79)</td>
</tr>
</tbody>
</table>

Note. Means are presented with standard deviations in parentheses. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct.

a An independent sample t-test conducted revealed no significant difference between Low and High exercisers for EE, \( p = .164 \), BE, \( p = .226 \), or DE, \( p = .731 \).
b An independent sample t-test conducted revealed no significant difference between Low and High exercisers for EE, \( p = .266 \), BE, \( p = .583 \), or DE, \( p = .110 \).
c An independent sample t-test conducted revealed no significant difference between Low and High exercisers for EE, \( p = .081 \), BE, \( p = .728 \), or DE, \( p = .615 \).
Appendix Z

Descriptive of and Comparisons for Outcome Variables across the Three Time Points

Table Z1
Means and Standard Deviations for the Time 1 Outcome Variables Comparing Across the Prenatal Period.

<table>
<thead>
<tr>
<th>Weeks’ Gestation</th>
<th>26 to 29 (n = 120)</th>
<th>30 to 33 (n = 36)</th>
<th>34 to 37 (n = 41)</th>
<th>38 to 41 (n = 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE\textsuperscript{a}</td>
<td>131.96 (16.37)</td>
<td>129.17 (19.92)</td>
<td>129.15 (18.11)</td>
<td>134.00 (15.62)</td>
</tr>
<tr>
<td>BE\textsuperscript{b}</td>
<td>2.30 (0.63)</td>
<td>2.18 (0.54)</td>
<td>2.14 (0.75)</td>
<td>2.14 (0.59)</td>
</tr>
<tr>
<td>DE\textsuperscript{c}</td>
<td>3.76 (4.86)</td>
<td>5.41 (5.74)</td>
<td>3.80 (3.97)</td>
<td>3.73 (2.72)</td>
</tr>
</tbody>
</table>

Note. Means are presented with standard deviations in parentheses. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct.

\textsuperscript{a} A Repeated Measures ANOVA failed to reveal a significant main effect, $F(3, 204) = .522, p = .668$.

\textsuperscript{b} A Repeated Measures ANOVA failed to reveal a significant main effect, $F(3, 204) = .942, p = .421$.

\textsuperscript{c} A Repeated Measures ANOVA failed to reveal a significant main effect, $F(3, 204) = 1.180, p = .319$. 
<table>
<thead>
<tr>
<th>Weeks’ Postpartum</th>
<th>9 to 12 (n = 138)</th>
<th>13 to 16 (n = 67)</th>
<th>17 to 18 (n = 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE(^a)</td>
<td>127.08 (19.04)</td>
<td>127.91 (18.93)</td>
<td>131.33 (9.71)</td>
</tr>
<tr>
<td>BE(^b)</td>
<td>2.09 (0.62)</td>
<td>2.12 (0.77)</td>
<td>2.28 (0.64)</td>
</tr>
<tr>
<td>DE(^c)</td>
<td>7.12 (7.05)</td>
<td>6.55 (7.14)</td>
<td>9.33 (7.64)</td>
</tr>
</tbody>
</table>

*Note.* Means are presented with standard deviations in parentheses. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct.

\(^a\) A Repeated Measures ANOVA failed to reveal a significant main effect, \(F(2, 205) = .109, p = .897\).

\(^b\) A Repeated Measures ANOVA failed to reveal a significant main effect, \(F(2, 205) = .168, p = .846\).

\(^c\) A Repeated Measures ANOVA failed to reveal a significant main effect, \(F(2, 205) = .314, p = .731\).
Table Z3  
*Means and Standard Deviations for the Time 3 Outcome Variables Comparing Across the Late Postpartum Period.*

<table>
<thead>
<tr>
<th>Weeks’ Postpartum</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 to 22</td>
</tr>
<tr>
<td>(n = 22)</td>
</tr>
<tr>
<td>EE(^a)</td>
</tr>
<tr>
<td>BE(^b)</td>
</tr>
<tr>
<td>DE(^c)</td>
</tr>
</tbody>
</table>

*Note.* Means are presented with standard deviations in parentheses. EE = Experience of Embodiment as assessed by the Experience of Embodiment scale; BE = Body Esteem as measured by the Body Esteem Scale for Adolescents and Adults Body Esteem Scale; and DE = Disordered Eating construct.

- a A Repeated Measures ANOVA failed to reveal a significant main effect, $F(2, 203) = .159, p = .853.$
- b A Repeated Measures ANOVA failed to reveal a significant main effect, $F(2, 203) = .789, p = .456.$
- c A Repeated Measures ANOVA failed to reveal a significant main effect, $F(2, 203) = .135, p = .874.$
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