

**Social Identities, Mechanisms, and Disordered Eating among Black, White, and Black-White
Biracial Adolescents**

by

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Dedication

This dissertation is dedicated to a number of individuals who have helped shape my personal and research trajectories. Namely, I would like to thank my parents, my partner, Professors Sui-Lan Tan and Karyn Boatwright from Kalamazoo College and Professors Rona Carter and Monique Ward from the University of Michigan. These people, among countless others, have helped me achieve this goal and become a stronger person as a result.

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Abstract

Research on disordered eating in adolescence is necessary as a majority of adolescent girls are dissatisfied with their bodies and engage in some form of disordered eating. The extant research is often limited to samples of White college women and White adolescent girls. However, more recent research has shown variation in body ideals, body perceptions, and disordered eating in racially and ethnically diverse youth. Oftentimes, research focuses on group membership (sex and ethnicity-race), but this is often an unsatisfying proxy for social identity and socialization. This dissertation sought to expand research on both group membership and social identities by including understudied populations (Black and Black-White biracial adolescents) and the social identities of ethnicity-race and gender. Specifically, the impact of ethnic-racial group membership and social identities were explored using an intersectional sociocultural framework, wherein individuals' social identities are assumed to influence the social messages they receive about eating, body ideals, and their physical development. The first research question explored the impact of ethnic-racial group membership on social identities, pubertal timing, body ideals/perceptions, body comparisons, and disordered eating. There were group differences on almost all study variables, notably including that Black-White biracial girls had similar engagement to White girls in a number of disordered eating correlates and in disordered eating itself. The second question explored ethnic-racial group differences in the roles of social identities, pubertal timing, body comparisons, and body ideals/perceptions on disordered eating. Body comparisons and certain feminine ideologies were problematic for all girls, but other factors, like perceived Black female body ideal and masculine traits, were only significant for

certain groups. The third research question explored several possible moderations and mediations to explain the impact of pubertal timing on disordered eating. Current body size was a significant mediator between both perceived pubertal timing and menarche with disordered eating, such that earlier developing girls had larger body sizes which related to increased disordered eating. The fourth question was a deeper probe of biracial identity and was the first study of its kind for adolescents to explore how biracial identity categories impacted social identity, pubertal timing, body ideals/perceptions, body comparisons, and disordered eating. Girls who felt race was not a meaningful identifier had higher masculine and feminine traits and girls who felt their biracial identity was not socially validated scored similarly to their monoracial Black peers. The final question was an exploration of ethnic-racial composition of different social contexts (school, neighborhood, friend group). Certain correlates of disordered eating were stronger or weaker in different contexts. For example, perceiving the Black female body ideal to be larger was protective for Black girls in the ethnic-racial majority in their schools. Taken together, the findings from these questions invite future researchers to consider the body-in-context. Both group membership and identity have a role in adolescent disordered eating. Social identities had different impacts on disordered eating for different groups in different contexts. Future research would do well to pay attention to the specifics of their populations. For example, researchers should be attentive to how participants identify themselves and think through for what contexts their results may be relevant.

Chapter 1 Introduction

Statement of the Problem

The extant research on eating disorders is full of contradictions and understudied avenues. Even in terms of prevalence, there is discord. Some studies suggest the rate of eating disorders may be leveling off, especially within the US (Currin et al., 2005; Pike et al., 2014), while others suggest it is on the rise particularly for adolescents (Hay et al., 2008; Smink et al., 2012). The increase may have less to do with increases in the absolute number of people with eating disturbances, but rather result from changes in the Diagnostic and Statistical Manual (DSM), such as eliminating the stringent weight criteria for Anorexia (BMI at or below 17), reducing strict frequency specifications for bulimic and bingeing behaviors (once per week for three months rather than twice a week), and adding the helpful catch-all diagnosis of *other specified feeding and eating disorder* (Call et al., 2013). If eating disorders are indeed declining, this should be celebrated. However, this decline is put in stark contrast by high and increasing levels of subclinical disordered eating (Croll et al., 2002), problems arising at earlier ages than previously hypothesized (Flannery-Schroeder & Chrisler, 1996), and a burgeoning morphology (orthorexia, muscular dysmorphia; Brytek-Matera, 2012).

While individual diagnoses are still important, especially in the clinical realm, experts in the field have been calling for research to take up a transdiagnostic perspective (Wade et al., 2006), which involves looking at all levels and types of distorted eating behaviors and beliefs as a spectrum rather than distinct categories (Neumark-Sztainer, 2003). By sampling subclinical

populations rather than exclusively individuals with clinical diagnoses, researchers are able to assess up-stream influences of disordered eating in order to intervene before the behavior patterns are as ingrained, as well as address the impact that subclinical disordered eating has on psychosocial functioning.

Current Limitations in the Research

Most subclinical research, termed disordered eating research, has focused on college women as they are an easy-to-acquire sample. However, both eating disorder and disordered eating research identifies adolescence as a critical time frame to better understand potential precursors and onset factors. Eighty percent of girls in this developmental period contend with body dissatisfaction (Grogan, 2016) and 66% engage in some form of disordered eating behaviors (Croll et al., 2002). This developmental period marks not only the beginning of engaging in disordered eating for many adolescents (Halmi et al., 1979; Pike et al., 2014), but is also when they undergo the hormonal and physical changes associated with pubertal development. As part of girls' pubertal development, they develop breast tissue, begin their menses, and gain significant weight, particularly fatty tissue (Coleman & Coleman, 2002; Marshall & Tanner, 1969). These large-scale changes may increase body dissatisfaction and serve as an impetus for disordered eating, either as a method of body modification or as a coping mechanism (Graber et al., 1997; McNicholas et al., 2012). Difficulty navigating pubertal changes, as well as timing differences, have both been linked with increased disordered eating in adolescence (McCabe & Ricciardelli, 2004; McNicholas et al., 2012).

Although these rates may seem shocking at first, when viewed through the lens of a society which values thinness and fears fat these rates become all too understandable. Girls are bombarded with messages equating thinness with popularity, morality, and praise through

parents, peers, and the media (Northup & Liebler, 2010; Rubinsky et al., 2019; Saguy & Riley, 2005). Magazine or celebrity photos are commonly photoshopped, filtered, and curated such that they can hardly be considered within normal human variation. The average American is larger than ever before, but the majority of characters in child- and adolescent-marketed television are significantly thinner than the average teen girl (Northup & Liebler, 2010). Thinner bodies also receive more on-screen praise, which has implications for real-life weight discrimination (Fouts & Burggraf, 2000; Northup & Liebler, 2010).

In addition to these unrealistic media models, girls live in a culture that idealizes dieting and equates restraint and thinness with morality (Saguy & Riley, 2005; Tischner & Malson, 2012), but where in reality over a third of its population eats fast food on any given day and obesity is on the rise (CDC, 2018). Increased connectivity through social media pushes a comparison-centric environment (Fardouly & Vartanian, 2016), where girls feel pressured to engage with a rigged system that encourages thinness and comparison with unrealistic bodies, while simultaneously living in a fatter society and being marketed and fed unhealthy food. This paradox of ‘eat but remain thin’ causes excess strain during an already stressful developmental period.

The impact of gender and gender identity on disordered eating has received relatively more focus than other identities (Blazek & Carter, 2019; Green et al., 2008; Lopez et al., 2013; Peralta & Barr, 2017; Thurfjel et al., 2006), partially because for women there is value/power in aligning with the hegemonic ideal emphasizing beauty and thinness. Researchers are exploring what social expectations and beliefs are being incorporated into individuals’ sense of masculinity and femininity as it relates to their protective and risk nature. Ascribing to masculine traits, such as independence and assertiveness, may help buffer women against messages suggesting they

should look or be a certain way (as reviewed in Murnen & Smolak, 1997). Conversely, social expectations for women are that their relationships with others are important, particularly their relationships with men, and that looking good is a way to secure that relationship/power (Klingenspor, 1994). The more women conform to these feminine norms, the greater their risk of disordered eating (Williams & Ricciardelli, 2003). Green and colleagues (2008), for example, found that greater adherence to traditional feminine gender roles related to increased scores across all subscales of the eating disorder examination questionnaire (subscales: restraint, weight concern, eating concern, body shape concern) accounting for 68% of the variance in disordered eating symptoms.

While researchers continue to explore the impact of gender and gender identity on disordered eating, this research has been conducted almost exclusively with White women and girls, with little attention paid to gender identity for non-White adolescents (Flannery-Schroeder & Chrisler, 1996; Wichstrom, 2000; Thurfjell et al., 2006). Research suggests White girls are at heightened risk of disordered eating given strong cultural messages from society and the media promoting thinness as part of femininity (Cohen, 2006). At the same time, other research suggests Black girls are at a decreased risk of disordered eating given they endorse greater body satisfaction and include other facets to body image than weight, which could act as buffers against prominent thin ideal messages (Botta, 2000; Croll et al., 2002).

However, extant research is limited in a number of ways. First, it often ignores non-White populations, and when there are diverse samples the research tends to focus on racial group membership as a predictor rather than unpacking the impact of racial identity, the meaning and significance that individuals ascribe to being a member of their racial group, on the outcomes (Rivas-Drake et al., 2014). Moreover, we know next to nothing about how Black-

White biracial girls navigate these issues. The experiences of Black-White biracial girls are important because the limited existing research with Black-White biracial adults suggests that they may be at increased risk of disordered eating relative to their monoracial peers (Ivezaj et al., 2010). Lastly, research is limited on the intersectional nature of social identities (Cole, 2009; Lindsay-Dennis, 2015; Moradi & Grzanka, 2017). An intersectional framework posits that individuals' experiences stem from how their social identities fit within existing hierarchical systems, in a matrix of domination (Collins, 1990). Numerous studies support intersectional perspectives, showing that other social identities can impact gender identity, cultural identity, and political identity among others (Brunsma et al., 2013; Rockquemore, 2002). In many cases when researchers use racial group membership or gender group membership to discuss differences, the implication is not that there is something biologically different between groups, but rather it serves as a poor proxy for ethnic-racial or gender identity and socialization (Green et al., 2008; Green et al., 2011; Rhea & Thatcher, 2013). Therefore, when conducting disordered eating research from an intersectional framework it becomes necessary to be critical of the utility of explanations used for White women and adolescents based on White femininity.

Lastly, there are ethnic-racial and sex disparities in pubertal onset (Marshall & Tanner, 1969; Mendle et al., 2010). Girls go through puberty approximately two years earlier than boys, and Black girls go through puberty roughly one year earlier than their White counterparts (Herman-Giddens et al., 2012; Herman-Giddens et al., 1997; Wu et al., 2002). One complication of developing early is that while physical development may be progressing, emotional and social development may lag behind, leaving earlier developing girls ill-equipped to deal with the physical changes and the social implications they may bring about (Stage-Termination Hypothesis: Peskin & Livson, 1972; Petersen & Taylor, 1980; Maturation Disparity Hypothesis:

Ge & Natsuaki; 2009). However, we again need to pay attention to the roles that social identities play. Not only are Black girls developing at younger ages than their White counterparts, socially they are perceived as more adult than their same-age peers, and thereby perhaps needing less nurturing, protection, support, and comforting. Together, all of these factors could exacerbate existing maturational disparities (Epstein et al., 2017).

Purpose

To address the gaps in the literature, this dissertation will examine associations between racial identity, gender identity, pubertal timing, and disordered eating behaviors in a sample of Black, White, and Black-White biracial girls. By examining multiple social identities, this study will explore the impact of identity, beyond group membership, on disordered eating, and will seek to begin a deeper reflection on the role of intersectionality on body image and disordered eating for Black and Black-White biracial girls. Moreover, this dissertation will examine whether social comparison and body size/ideals can explain the associations between identity variables and disordered eating. Whereas there is research suggesting racial group membership differences in body ideals and body comparisons (e.g., Freedman et al., 2004; Gordon et al., 2010), very little work has explored the impact of ethnic-racial identity on these factors as an extension of that work (e.g. Henrickson et al., 2010; Rhea & Thatcher, 2013). Relatedly, most of this work has been conducted with adult samples, and therefore the role of these factors in adolescents has yet to be fully explored. Give the limited disordered eating research among biracial girls, the associations between the study variables in this sample will be exploratory in nature.

Definitions and Justifications

Given the broad scope of this dissertation, it seemed pertinent to provide definitions for some of the important terms used throughout this dissertation. In the formation of these

definitions, sometimes it was necessary to provide justification and reasoning for why this understanding of the term was chosen over others.

Disordered Eating

Disordered eating, from the transdiagnostic spectrum approach mentioned earlier, refers to engagement in any number of eating behaviors and body attitudes as they relate to three overarching criteria; 1) overvaluation of eating, weight, and body shape, 2) weight and shape fears, and 3) weight loss/control attempts. As a spectrum, disordered eating would consist at one end of restraint/under-eating and at the other end of overeating, with dissatisfaction, non-medically sponsored dieting, and purging falling somewhere in between (Neumark-Sztainer, 2003; Wade et al., 2006). Although most of the behaviors and attitudes overlap with eating disorder behaviors and attitudes, there are no cutoffs or frequency qualifications, but rather the focus is whether or not adolescents engage in these behaviors and attitudes and the frequency/severity with which they do.

Ethnic-Racial Identity

Ethnic-racial identity is a multidimensional psychological construct informed by beliefs and attitudes that an individual holds about her ethnic-racial group (Rivas-Drake et al., 2014). Recent research has suggested that ethnic and racial identity are intrinsically linked, and the more appropriate terms for the study of racial identity should be ethnic-racial identity (Umaña-Taylor et al., 2014). Ethnic-racial identity is often measured using either content or process approaches. Content measures [e.g. Multidimensional Inventory of Black Identity (MIBI); Sellers et al., 1997] directly explore the attitudes and beliefs one has about their group, such as how important is racial identity to their sense of self (centrality) or how they feel others perceive their racial or ethnic group (public regard). Process measures [e.g. Multidimensional Ethnic

Identity Measure (MEIM); Phinney, 1992] are more concerned with how these ideas and attitudes come to be, or rather the mechanisms that help develop and maintain a sense of identity. Although both aspects of ethnic-racial identity have important implications for the research at hand, the focus of this dissertation will be on the process of ethnic-racial identity development.

Gender Role/Identity

Similar to ethnic-racial identity, gender role/identity is also a socially informed, multidimensional psychological construct relating to the attitudes and beliefs one holds about their gender and the role it plays in their life (Smiler & Epstein, 2010). There are multiple ways to measure gender identity, as well, with some of the most common being trait and ideology measures. For this study, both trait and ideology measures will be used to more fully explore gender identity. Trait measures ask individuals to rate how well gendered, socially-desirable traits describe them (e.g., for men, assertive and independent; for women, warm and affectionate; as reviewed in Smiler & Epstein, 2010). Results suggest adherence to gender schemas. This style of measure is useful in that it allows individuals to express masculine, feminine, or androgynous identities, as opposed to the polarized male versus female nature of older measures.

Ideology measures, another way of looking at gender identity/roles, gauge awareness and conformity to a culture's beliefs about gender roles and stereotypes (Smiler & Epstein, 2010). Ideology measures reflect recognition of social pressures to enact specific forms of masculinity and femininity. It also relates to whether people feel they uphold these standards in their own lives. Not all aspects of femininity ideology are expected to contribute to disordered eating in the same way (Mahalik et al., 2005). For example, investment in appearance and valuing thinness would be feminine ideals expected to directly and negatively impact disordered eating, whereas caring for children may be less informative for eating patterns (Mahalik et al., 2005). In line with

the desire to be aware of the intersectional nature of this study and critiques of many of the gender identity measures, separate measures were included that were created and normed on White women (Bem Sex Role Inventory-short form; Bem, 1974; Conformity to Feminine Norms Inventory; Mahalik et al., 2005) and Black women (Belgrave Gender Role Inventory; Belgrave et al., 2016).

Puberty

Pubertal development is measured in a multitude of ways. In this dissertation, I examine pubertal timing, developing earlier or later than one's same-age and same-sex peers. Researchers assess pubertal timing using either objective or subjective measures. Both measures provide unique and valuable information, and, as such, data were collected for both. Objective measures of pubertal timing are those in which the timing of specific events/markers is put in relation to same-age, same-sex peers to capture if the individual is developing earlier, at the same time, or later than their peers. Subjective timing measures are still concerned with the concept of developing earlier, on time, or later than one's peers, but rely on the adolescents' perception of these differences. Do they feel like they are developing earlier or later than their peers?

When researchers begin conceptualizing timing as a social perception with existing social ramifications, the concept of pubertal timing begins to sound similar to other social identities. Individuals have attitudes and beliefs about what it means to develop early or late, and this aspect of life can be more or less central to their sense of self, especially during adolescence. It is therefore critical to take an intersectional perspective on how other identities might impact the meaning and evaluation of pubertal identity. In this way, pubertal timing could potentially be viewed as akin to an identity status, albeit one that may only be functional in early adolescence.

Social/Body Comparisons

Social comparison is an informational gathering and evaluative process individuals undertake as a form of self-appraisal (Festinger, 1954). According to Festinger's theory, in order to understand our own skills and abilities, we look to others we deem as similar and make judgments about how we measure up (e.g., whether we are better at algebra than a classmate or less timely in meeting deadlines than a co-worker). By making these comparisons, we see our strengths and shortcomings, what we could be, and potential guides for what we would like our end results to be (Festinger, 1954).

Although the original theory focused on skills and abilities, Festinger's work has been expanded to fit within disordered eating research. The comparisons, in this case, tend to be body-based rather than skills-based, 'am I as thin as the models I see on TV?' or 'do these pants look worse on me than they should?' (Hesse-Biber et al., 2006; Tylka & Sabik, 2010). One of the key differences is that body comparisons, especially comparisons made by those engaging in disordered eating, do not necessarily need to be made in regards to a similar other (Morrison et al., 2004). Comparisons may be to peers or those around the individual, but can also be to media models or even to imagined ideals (Kramer et al., 2008). The disregard for the similarity hypothesis and potential lack of a concrete comparison target can make these comparisons particularly damaging, as individuals may be comparing to unrealistic or unhealthy targets.

Body Ideals

Body ideals are socially predicated optimal weight, height, and shape specifications for men's and women's bodies (Grogan, 2016). Messages about the expectations can be communicated both directly and indirectly on an intimate or public scale from parents, peers, media, and anything in-between. The ideal for women in the US, generally, is to be thin with a shapely posterior and proportionate breasts. Potentially inaccurately, as will be discussed in

further detail in the literature review, many researchers presumed this ideal to be true for all women in the US regardless of the ethnic-racial background. More recent research suggests this may only be the ideal for White women from European backgrounds and not other groups. Black women, being the most heavily researched in this area, may have their own culturally-based body ideals and may not acquiesce to the mainstream thin body ideals (Chen Evans & McConnell, 2003; Rubin et al., 2003).

Research Questions

- 1) Do identity (ethnic-racial, gender, racialized gender, and pubertal timing), body ideals, and body comparisons impact disordered eating?
 - a) Does this vary by ethnic-racial group membership?
- 2) Does ethnic-racial identity affirmation moderate the relation between pubertal timing and disorder eating?
- 3) Do current body size, ideal body size, or body comparisons mediate the relation between pubertal timing and disordered eating?
- 4) How does being the ethnic-racial majority or minority in a social context (friends, school, neighborhood) impact identity (ethnic-racial, gender, racialized gender, and pubertal timing), body comparisons, body ideals (personal and cultural), and disordered eating?
How does context impact the relations between identity (ethnic-racial, gender, racialized gender, and pubertal timing), body ideals, and body comparisons on disordered eating?
- 5) For Black-White biracial adolescents only does biracial identity category (Rockquemore & Brunsma, 2002) impact identity (ethnic-racial, gender, racialized gender, and pubertal timing), body ideals, body comparison, or disordered eating?

Chapter 2

Literature Review

Traditionally research on eating disorders and disordered eating have been treated as distinct fields of research. Eating disorder research focuses on understanding individuals who are being treated primarily for clinical eating disorders, such as anorexia and bulimia, while disordered eating research focuses on individuals who engage in bingeing, purging, restriction, and body/weight preoccupation but may not meet the clinical diagnostic criteria for an eating disorder. However, recent research has highlighted the arbitrary nature of the distinctions used to differentiate eating disorders and disordered eating (Fairburn et al., 2003). For example, part of the diagnostic criteria for Anorexia Nervosa is a low body mass index (BMI) whereby individuals with a BMI below 17 are considered a mild case. However, by the time an adolescent has progressed to a BMI of 17 or lower, the negative restricting and compensating behaviors are already well underway (APA, 2013). Relatedly, distinctions between clinical disorders are often blurred in the lives of patients, and often the disorders can morph from one to another during treatment (Fairburn et al., 2003).

Fairburn and colleagues (2003), and others (Neumark-Sztainer, 2003; Cruwys et al., 2016), have begun using and encouraging others to use a transdiagnostic spectrum approach to understanding individuals' eating attitudes and behaviors. By this, the researchers mean looking across symptoms that were once considered distinct categories (e.g. measuring bingeing, purging, and restricting). Although the layperson may think of anorexic and bulimic behaviors as distinct, research has repeatedly shown that there is considerable overlap and crossover (as reviewed in Cruwys et al., 2016; as reviewed in Fairburn et al., 2003). Both behaviors are motivated by thin-

ideal internalization, and during the treatment process up to a quarter of individuals seeking treatment for Anorexia Nervosa cross-over and exhibit symptoms (or full-blown disorders) of Bulimia Nervosa (Argas et al., 2000). Similarly, the specific cut-offs are also relatively arbitrary as symptom count and severity increase in a relatively linear fashion (similar to work with depression, Pickles et al., 2001), such that symptom count has very little to do with specific diagnosis and there is likely greater variation within each group (disordered vs non-disordered) than between them (Wade et al., 2006).

However, the most compelling argument for the transdiagnostic spectrum approach is that there are core thought and behaviors patterns ubiquitous to all eating disorders and disordered eating (Neumark-Sztainer, 2003; Fairburn et al., 2003). The core thought and behaviors patterns relating to the transdiagnostic approach are 1) overvaluation of eating, weight, and shape, 2) dissatisfaction with body, and 3) body modification attempts (Cruwys et al., 2016). This is not to say that distinction is not important. Care and treatment for someone struggling with restrictive behaviors will necessarily be different than for someone struggling with bingeing behaviors in terms of specifics, but the issues at the core for both are the same. In regards to the spectrum aspect of this approach, it is helpful to think of a spectrum with restrictive behaviors at one end and bingeing behaviors at the other, with other types of behaviors (e.g., compensatory, substance use, etc.) at different points in between, while keeping in mind this does not mean restricting and bingeing are polar opposites as they have the same transdiagnostic core thought/behavior patterns (Neumark-Sztainer, 2003).

By understanding core thought and behavior patterns and thinking of disordered eating as a spectrum rather than distinct categories, the transdiagnostic spectrum approach helps us re-evaluate eating behavior research and make productive headway. The transdiagnostic aspect

helps highlight what is similar between two originally conceptually distinct fields of research (Fairburn et al., 2003). The spectrum aspect also helps researchers understand symptom crossover and overlap as distinctions are based on gradation rather than categories (Neumark-Sztainer, 2003). Putting the two together gives us a better understanding of influence so we can avoid creating new problems as we attempt to fix existing ones (Cruwys et al., 2016).

The model also leaves room for distinct influences that might push people to different parts of the spectrum. For example, individuals with perfectionism are often very rigid in their behaviors and strivings and as such gravitate to more restrictive, or restrictive-only behaviors to meet their goals (Shafran et al., 2002), whereas mood intolerance (i.e., difficulty coping with negative emotions) is more closely related to bingeing behaviors, whereby individuals look to self-soothe/cope through eating (Fairburn et al., 2003). Purging may serve to alleviate distress as well. Despite some evidence that different behaviors are correlated with different disordered eating outcomes there is considerable overlap, which may make specific diagnoses somewhat obsolete.

Based on these approaches, this dissertation takes a transdiagnostic spectrum approach. Specifically, this means looking at all kinds of disordered eating behaviors and beliefs (binge, purging, thinness ideology, etc.) together, as well as looking engagement in these behaviors and beliefs in total, rather than only looking at individuals who meet the diagnostic cutoffs for an eating disorder. By looking at transdiagnostic, spectrum-based disordered eating this dissertation hopefully elucidate what are some common and individual correlates of disordered eating broadly, which can be used to create broad and individualized interventions before the behavior and belief patterns become ingrained.

Prevalence of Disordered Eating in the United States

Given that eating disorders and disordered eating have been conceptualized as distinct, there are a lot of mixed findings in regard to population-based trajectories for disordered eating (increasing: Kessler et al., 2013; leveling-off: Pike et al., 2014). However, disordered eating rates doubled from 1995-2005 (Hay et al., 2008). Adolescent research suggests that disordered eating attitudes and behaviors are becoming the norm rather than the exception for adolescent girls. In a study of 81,000 US high school students, 56% of girls engaged in disordered eating (Croll et al., 2002). In another study of almost 5,000 high school girls, 46% reported being unsatisfied with their bodies, 70% wanted to lose weight, 45% reported currently being on a diet, and 57% reported disordered eating behaviors (Neumark-Sztainer, 2003). Younger adolescents are also at risk. In their sample, Sherwood and Neumark-Sztainer (2001) found that 33% of 5th and 6th grade girls reported body dissatisfaction and 29% reported currently attempting to lose weight. Although there have been social movements to address this, like body positivity movements, their impact seems to be limited at best in the growing shadow of disordered eating.

Impact of Disordered Eating

Disordered eating is associated with numerous health risks and complications. Although most of the health risk studies have focused on samples of clinically diagnosed individuals, the same concerns can arise in disordered eating samples, as well. Most severely, concerns include starvation, cardiac complications, electrolyte imbalances, and ruptured stomach (Arcelus et al., 2011). However, there are numerous issues such as esophageal damage, severe tooth wear, infertility, and increased risk for diabetes that are less severe but still problematic (Arcelus et al., 2011; Johnson et al., 2001; Pomeroy & Mitchell, 2002). These issues are more common for those struggling with long-term eating disorders, however, lower frequency engagement can result in many of these issues, as well, and engagement is often a slippery slope. Not all individuals who

engage in disordered eating will progress to clinical disorders, but dieters are eight times more likely to develop an eating disorder than non-dieters (Patton et al., 1990).

Predictors and Correlates of Disordered Eating

Both Polivy and Herman (2002) and Stice (2002), among others, extensively reviewed risk factors associated with disordered eating. Research suggests that both sociocultural factors, such as, the social acceptance and marketing of the thin ideal and peer interaction, and individual factors, such as, body dissatisfaction and BMI play a crucial role in the development and maintenance of disordered eating (Field et al., 2001; Polivy & Herman, 2002; Stice, 2002; Wade et al., 2006). Studies that examine sociocultural and personal factors individually have demonstrated small to medium effect sizes. However, when these factors are studied in concert they can tell a more informed story. As a result, several conceptual models have since been suggested that incorporate multiple influences on disordered eating including various sociocultural models and biopsychosocial models.

Sociocultural Predictors and Correlates

Thin Ideal. Western cultural messages value thinness, equating it with health, happiness, and success (Saguy & Riley, 2005). In this country of abundance, slimness and restraint are prized, contrasted with plumpness being the ideal in places where scarcity is more prevalent. These prevailing messages alone have been directly linked with increased disordered eating (Wertheim et al., 2001) and with specific behaviors such as dieting, binge eating, and purging (Stice et al., 2002; Field et al., 1999). Cultural messages have also been shown to influence attitudes and emotional states related to disordered eating, particularly body dissatisfaction and negative affect (Cattarin & Thompson, 1994; Field et al., 2001; Stice & Bearman, 2001; Stice et al., 1998; Stice & Whitenton, 2002; Wertheim et al., 2001).

As Polivy and Herman (2002) point out, the sociocultural pressure to be thin is likely a secondary, background cause. Many people exist in these societies with these messages and have healthy eating behaviors and body satisfaction. Research has suggested that internalization of these messages, on the individual level, is what drives the relationship between cultural messages and disordered eating (Flament et al., 2012; Vartanian & Dey, 2013). Internalization of these sociocultural pressures for thinness has been operationalized as the internalization of the thin ideal and overvaluation of appearance (Stice, 2002). In terms of socio-emotive aspects of disordered eating, thin-internalization is again related to increased body dissatisfaction and negative affect (Stice et al., 1996, Stice & Whitenton, 2002). It also predicts specific behaviors (e.g. dieting, bingeing, purging: Stice et al., 2002), overall disordered eating (Wichstrom, 2002), and symptom maintenance (Fairburn et al., 2003).

Thin ideal messages are transmitted to adolescents in numerous ways, through parents, peers, and media. These sources are particularly powerful in conjunction. For example, peers may discuss messages from the media, reifying them and making them more salient to adolescents (Kramer et al., 2008). In fact, some research suggests that although the influence of media is a common focus for research, the role of peers and parents may be more influential (Carey et al., 2014; Stice, 1998). This dissertation focuses mainly on peer influence; however, parent influence is still crucial to address given that they serve as a key influence in identity development.

Peers. The role of peers on disordered eating is important to note when studying sociocultural influences on disordered eating. Research tends to focus on individuals engaging in these behaviors, but when we broaden the scope, the insidious nature of disordered eating emerges. Disordered eating tends to spread in peer groups, akin to social contagion (Forman-

Hoffman & Cunningham, 2008). When pairing down further to the peer group level, similar patterns emerge. Peer groups tend to have similar body ideals, body dissatisfaction, and disordered eating (Rayner et al., 2013b). The direct impact peers play in disordered eating can take several forms, most commonly through modeling and reinforcement (e.g. Lieberman et al., 2001; Quiles Marcos et al., 2013). In modeling, a peer engages with a belief or behavior and the target mimics that behavior or belief. Alternatively, a peer can serve as a representation of the thin ideal for comparison. Research shows peer modeling is related to increased adolescent disordered eating (Carey et al., 2014; Halliwell & Harvey, 2006; Lieberman et al., 2001; Quiles Marcos et al., 2013; Stice, 2002). Some of these studies have focused on behavioral modeling (e.g. Lieberman et al., 2001), suggesting that having friends who diet or are preoccupied with body weight relates to greater instances of disordered eating in the adolescent themselves (Dohnt & Tiggemann, 2006; Stice 2002). Other studies have looked at peers as a source for physical comparison, finding that this too relates to disordered eating (Carey et al., 2014; Halliwell & Harvey, 2006). As such, the behaviors and physicality of peers can play an important role in adolescent disordered eating.

Reinforcement research tends to focus on sanctioning or encouragement of certain behaviors or ideals within the peer group, which adolescents then internalize (Lieberman et al., 2001). Studies of peer reinforcement highlight the role of peer teasing and pressure to be thin (e.g. Halliwell & Harvey, 2006; Quiles Marcos et al., 2013). Teasing, specifically teasing about weight, shape, or appearance, is particularly damaging for adolescent girls, relating to increases in body dissatisfaction and disordered eating (Hutchinson & Rapee, 2007; Lieberman et al., 2001). Feeling pressure from peers to be thinner, either through explicit verbal communication or

seeing thin peers positively reinforced, also leads to adolescent disordered eating (Branch & Eurman, 1980; Halliwell & Harvey, 2006; Stice, 2002).

Schools and Neighborhoods. Other important contexts to consider in adolescents' lives are their schools and neighborhoods. Although most studies focus on friend groups, it is important to note that these friend groups exist within larger cultural and social milieus. These larger contexts can then play a role on friend selection (Kruse et al., 2016; Moody, 2001). For example, adolescents are more likely to make friends with individuals that they spend a lot of time with. In adolescence two common sources of this intensive time spent with others are schools and neighborhoods. Kruse and colleagues (2016) showed that students tend to befriend individuals living near them. In terms of disordered eating, research has also shown broader levels of disordered eating homogeneity between adolescents. For example, Forman-Hoffman and Cunningham (2008) showed geographic clustering of disordered eating among high school students, such that students from the same county were at 4-10% increased risk of disordered eating than student pairs from differing counties. Forman-Hoffman and Cunningham (2008) suggest this as evidence for the social contagion of disordered eating within broader contexts than just friendship dyads or groups. Situating friendships within broader contexts may then become particularly important to understanding adolescent disordered eating.

Individual Predictors and Correlates

The sociocultural pressures discussed above, undoubtedly influence disordered eating. However, as many researchers have pointed out, their impact is likely exacerbated by individual factors (Stice, 2002; Levine & Murnen, 2009). Adolescents are by and large exposed to similar social pressures to be thin and similar media, yet despite these ubiquitous influences, not all adolescent girls in the US are dissatisfied with their bodies or engage in disordered eating. In the

next two sections individual psychological and biological influences on disordered eating are explored and framed within their relationship to the sociocultural influences, when possible.

Psychological. Individual variation across a number of psychological factors and their relation to disordered eating has been studied for decades (Stice, 2002). The most common factor is body dissatisfaction, which has been shown to impact disordered eating, on its own and in conjunction with socio-cultural influences. Research has demonstrated that individual, psychological factors are very important to processing and understanding the transdiagnostic, spectrum account of disordered eating (e.g., Polivy & Herman, 2002; Ricciardelli et al., 2001; Stice, 2002). For example, girls who report higher body dissatisfaction tend to have higher disordered eating broadly (Rayner et al., 2013).

Body Dissatisfaction. Body dissatisfaction is one of the most robust risk and maintenance factors for disordered eating (as reviewed in Stice, 2002). Adolescents with greater body dissatisfaction engaged in more dieting behaviors and eating pathology (Keery et al., 2004; Wertheim et al., 2001; Wichstrom, 2000). Body dissatisfaction also impacts bulimic (binging and purging) symptom onset (Field et al., 1999) and symptom maintenance (Stice & Argas, 1998) in adolescence, all with medium or close to medium effect sizes (Stice, 2002). Relatedly, body dissatisfaction indirectly impacts adolescent disordered eating through a number of other factors such as negative affect (Stice & Bearman, 2001), peer choice and comparison (Rayner et al., 2013), and internalization of the thin ideal (Cotter et al., 2015).

Biological. Biological perspectives on disordered eating have only really been emphasized since the nineties. While some research has focused on genetic and DNA risk, the two biological risk factors highlighted here are done so for their relation to sociocultural messages and pressures to be thin. Specifically, adolescents' weight and their pubertal

development and timing have consistently been shown to impact disordered eating both directly and indirectly.

Weight. Individuals who weigh more, in our society which values slender bodies, are expected to be under greater pressure to be thin, especially from family, peers, and medical professionals. Research on the direct effects is mixed, with some studies evidencing that individuals who weigh more engage in more binge eating (Stice et al., 2002) and disordered eating (Wichstrom, 2000), while other studies do not (Cooley & Toray, 2001; Gardner et al., 2000). Given the negative stigma of fat in the US and our society's obsession with demonizing individuals who are "overweight", I think the better assessment of risk is to understand how weight changes how individuals perceive the world around them and the impact it has on their behaviors, and therefore focus on indirect influences on disordered eating. Studies have suggested that larger adolescents perceive greater pressure to be thin (Cattarin & Thompson, 1994). They also experience increased body dissatisfaction, presumably from the difference between their bodies and what society asserts and broadcasts as ideal (Byely et al., 2000; Cattarin & Thompson, 1994; Stice & Whitenton, 2002). Weight is also related to negative affect, through mechanisms such as weight-based discrimination, both individually and systematically (Lewisohn et al., 1994; Stice & Bearman, 2001; Stice et al., 2000). Although this study does not directly look at the impact of weight on disordered eating, it is an important consideration and is taken into account as a control variable.

Pubertal Development/Timing. A much deeper treatment of this topic will be given later on, but it is necessary to include here as it is an important risk factor. Studies assessing both status and timing have suggested that going through puberty (Combs, Pearson, & Smith, 2011; Levine et al., 1994), and particularly going through puberty earlier than one's peers (Harden et

al., 2012; McNicholas et al., 2012; Swarr & Richards, 1996) puts adolescent girls at increased risk of engaging in disordered eating. For girls, puberty results in increased adipose tissue, which brings girls further away from the hegemonic thin body ideal for women (Graber et al., 1994).

Group Membership: Predictors and Correlates

Along with the above predictors and correlates, researchers have been deeply invested in the role of gender and ethnicity-race on disordered eating. As such, the following sections briefly explore the impact of these group membership predictors.

Sex and Gender. The DSM 5 (APA, 2013) suggests women are more likely to struggle with disordered eating than men by a 10:1 ratio. General findings for disordered eating in adolescence suggest a 2:1 ratio (Croll et al., 2002). Sex-based explanations have never fully been able to explain these differences. Some research has explored the influence of hormones on disordered eating, suggesting that estrogen can inhibit overeating (Harden et al., 2014). However, estrogen is unrelated to restrictive behavior, and no hormonal correlate of purging has been identified so the impact of this research is quite limited. Harden and colleagues (2014) also found that learned patterns of eating superseded hormonal impact, suggesting that psychological impacts likely overpower intraindividual hormonal influences on disordered eating. However, qualifying these as sex based-differences is inherently problematic as both biologically male and biologically female persons have both supposed “sex-based hormones”.

Ethnic-Racial Group Membership. Ethnic-racial group membership has been considered in adolescent disordered eating research since the 1980s (Chandarana et al., 1988). The Chandarana and colleagues (1988) study and others like it (Hermes & Keel, 2003) broke down group membership to White and “non-White” racial groups, in part, because anyone of a “non-White” ethnic-racial background was believed to be resilient to disordered eating. What

these studies missed, and what other later studies have found, is that there is great diversity in the risk of disordered eating between adolescent girls of different ethnic-racial backgrounds (Pernick et al., 2006; Rhea & Thatcher, 2013; Rodgers et al., 2017). Studies with both Black and White adolescents demonstrated that Black girls were at decreased risk of disordered eating compared to their White peers (Bucchianeri et al., 2016; Cha et al., 2016; Colabianchi et al., 2006; Pernick et al., 2006; Rhea & Thatcher, 2013). Other studies, however, demonstrated that adolescent Black girls may be at equal or even greater risk of disordered eating than White girls (Bodell et al., 2018; Elliot et al., 2013; McLaughlin et al., 2007). Studies have also shown that Asian and Latina girls are at increased risk of disordered eating relative to their Black and White peers (Bucchianeri et al., 2016; Pernick et al., 2006). However, the findings for Latina girls are somewhat mixed (Elliot et al., 2013; Rhea & Thatcher, 2013).

Differential internalization of the hegemonic thin ideal across ethnic groups may help explain these differences. Adolescent girls, like women, from some marginalized groups may see attaining the hegemonic thin ideal as a way of improving their social status and sense of belonging (Rodgers et al., 2017), and that this view might be strongest for individuals from “collectivist” cultures (Cha et al., 2016). For example, Stark-Wroblewski and colleagues (2005) demonstrated that Japanese and Chinese (considered collectivist cultures) international students felt strong pressure to conform to dominant Western appearance norms, and that adopting these norms related to increased disordered eating regardless of acculturation or distress. Prior research has also suggested that Black and Latina girls may be protected from the hegemonic thin ideal through alternative cultural body ideals that challenge the thin ideal (Colabianchi et al., 2006; Rubin et al., 2003). These studies suggest that cultural socialization and mainstream

internalization are important components of disordered eating, but they do not fully explore the role of ethnic-racial identity.

Theoretical Approach

Researchers have drawn from a number of theoretical perspectives to better understand disordered eating in adolescent girls (Cruwys et al., 2016; Fitzsimmons-Craft, 2011; Markey, 2004; Stice, 1994). Each theory has its own unique way of explaining and approaching adolescent disordered eating. One of the most widely used and supported theories is the sociocultural theory (Fitzsimmons-Craft, 2011; Stice, 1994). However, many studies using sociocultural theory have not fully incorporated the importance of social identities. To address these shortcomings, the approach taken in this dissertation is a multi-systems approach, meaning it draws from social cultural theory and intersectional theory.

Sociocultural Theory

Sociocultural theory was originally posited by Vygotsky in the late 1930s. However, due to political strife between the USSR and the US, his work remained relatively unknown until the late 70s (Vygotsky, 1930-1934/1978). Sociocultural theory railed against early behaviorism by suggesting that behavior was informed by interactions with others and the social world at large rather than behavior simply as a reaction to a stimulus. Sociocultural theory was revolutionary in suggesting that human behaviors were the result of our ability to use language and our social interactions rather than pre-programmed responses.

Sociocultural theory was adopted by many disordered eating and eating disorder researchers (Cheng et al., 2016; Paxton & Sculthorpe, 1991; Stice, 1994). Sociocultural theories of disordered eating posit that the hegemonic feminine body ideal is culturally emphasized as ideal and that the bombardment of messages reifying this, from multiple sources, leads to

internalization of the thin ideal and engagement in behaviors meant to achieve the thin ideal (Fitzsimmons et al, 2011). Sociocultural models account for how media, peers, and parents influence body ideals and disordered eating (Ata et al., 2007). Studies have found that perceived pressure from these sources individually (media: Ata et al., 2007; family: as reviewed in Quiles Marcos et al., 2013; peers: Presnell et al., 2004) and combined (Halliwell & Harvey, 2006) have a profound impact on adolescent disordered eating. The more thin-ideal internalization and thin-pressure girls report receiving from parents, media, and peers, the greater their disordered eating engagement, suggesting they are receiving messages socializing them to behave in these maladaptive ways. Although the premise of the theory leaves space for the exploration of the role of social identities on disordered eating, most of the research, especially earlier work, focuses solely on the hegemonic feminine ideal in White women (Bamford & Halliwell, 2009; Paxton & Sculthorpe, 1991; Stice, 1994; Striegel-Moore et al., 1986). In these models, thinness is inherently tied to femininity, if women and girls want to be socially understood as feminine they need to embody it through thinness (Bordo, 2003; Fitzsimmons, 2011; Grogan, 2008). Some of this work has relied on gender, finding that women and girls were more likely to internalize the thin ideal (Gutiérrez et al., 2015; Pritchard, 2008; Thompson & Stice, 2001). These studies suggest that the messages girls and women receive regarding the mainstream feminine ideal put them at increased risk of disordered eating.

However, the story should be more complex than that. Sociocultural models rely on social interaction, but also on adherence to and belief in the social norms. Social identities, and the importance of those identities to the individual, would also impact sociocultural models. The more feminine women and girls believe they are should heighten their belief in the mainstream feminine ideal as accurate and result in greater engagement in disordered eating as a means to

achieve that goal. Research has shown that women who were more feminine (trait & ideology measures) were at increased risk of disordered eating (Mahalik et al., 2005; Paxton & Sculthorpe, 1991; Pritchard, 2008; Stice 1994; Striegel-Moore et al., 1986). However, this research is still in its nascent stages for adolescents.

The role of ethnicity-race, another demographic predictor like gender, has been explored in sociocultural models. Markey (2004) called attention to the role culture can have on eating behaviors, body image ideals, and perceptions of health and the impact these areas have on disordered eating. As will be reviewed later, studies have shown that Black girls have larger body ideals, lower thin-ideal internalization, and lower disordered eating than White girls (Botta, 2000; Croll et al., 2002, Hesse-Biber et al., 2004). Given that the hegemonic feminine ideal is often the White ideal, these differences could be attributed to either disidentification with the hegemonic feminine ideal or identification with a Black feminine ideal. Both qualitative and quantitative studies have shown that Black women may not identify with or use the hegemonic feminine ideal as a point of comparison (Chin Evans & McConnell, 2003; Capodilupo, 2015; Greenwood & Cin, 2012; Ogden & Russell, 2013). Other research has shown that Black women and girls perceive the Black feminine ideal to be larger, and that the Black feminine ideal is about more than weight. It encompasses style, religion, and self-presentation (Botta, 2000; Hesse-Biber et al., 2004; Kelch-Oliver & Ancis, 2011; Kelly et al., 2011; Rubin et al., 2003).

In this situation too, sociocultural theory would suggest that the importance of ethnic-racial identity to girls' sense of self should also play a role in how they perceive cultural and hegemonic body messages. Some preliminary work does support this idea (Blazek & Carter, 2019; Rhea & Thatcher, 2013). For example, Rhea and Thatcher (2013) found that Black adolescent girls with higher ethnic-racial identity had lower disordered eating than their peers

with lower ethnic-racial identity. Disordered eating research broadly has done a poor job of exploring the impact of race and ethnic-racial identity in sociocultural models, especially in adolescence, therefore, the research in this area is quite scant.

Despite a theoretical justification for the exploration of social identities, little work on social identities has been conducted (Blazek & Carter, 2019; Mahalik et al., 2005; Rhea & Thatcher, 2013). When this work has been conducted, often only one social identity has been studied at a time (Mahalik et al., 2005; Rhea & Thatcher, 2013). Sociocultural theory highlights the importance of socialization, and girls are receiving socialization messages about the numerous social identities they inhabit, such as gender, race, and sexual orientation. Therefore, to fully understand the social messages they are receiving, researchers need to be attentive to the role of multiple social identities at the same time. Blazek and Carter (2019) looked at gender and ethnic-racial identity jointly in their study of Black adolescent disordered eating and found that for girls the femininity hypothesis was exacerbated for Black girls with low ethnic-racial identity exploration and that high masculinity was particularly protective for those same girls with low ethnic-racial identity exploration. These findings suggest a dire need for measuring multiple social identities in the same model. In order to successfully accommodate that within sociocultural theory this dissertation turned to intersectionality to help understand the interconnected nature of social identities.

Intersectionality

Though the concept and rationale of intersectionality long predates the coining of the term, the verbiage itself was coined by Kimberlé Crenshaw (1989) in her landmark discussion regarding discrimination against Black women, which is more than racism and sexism individually. Intersectional theory suggests that individuals have multiple social identities, none

of which exist solely independently, which are situated within hierarchies of power and oppression. An individual's identities inform each other such that their experiences, privileges, and discrimination stem from the integration of these identities together. For example, Intersectional theory would tell us that the experiences of Black girls are different from those of Black boys, despite a shared ethnic-racial identity, and are different from White girls, despite a shared gender identity.

Crenshaw, a law professor, specifically enumerated on this idea to understand the discriminatory experiences Black women faced. Their discrimination experiences were often not solely based on race or solely based on gender, which makes litigation in these cases very difficult. Other researchers have extended this work to other areas (Buchanan, 2005; Shields, 2008). For example, Dr. Settles and Dr. Buchanan have explored what they termed 'racialized sexual harassment (e.g., Buchanan, 2005; Buchanan et al., 2008; Woods et al., 2009). Their findings suggest that the workplace sexual harassment Black women face is unique from the harassment White women face. Black women are subject to harassment of a more sexual nature, wherein inappropriate comments about their clothes, bodies, or behaviors are made, whereas White women more often faced gendered harassment whereby their womanhood was challenged because of their working status. Therefore, each group experiences sexual harassment but harassment is altered by the social identity of race, hence racialized sexual harassment. The researchers also importantly frame their findings in the historical context of systems of oppressions within the US, specifically slavery. They suggest that sexual stereotypes created to subjugate enslaved Black women influence the types of sexual harassment Black women endure, and that this is inherently different from the experience of White women, who while occupying the same marginalized gender identity, have a privileged ethnic-racial identity.

Implementing intersectional research can be difficult (Cole, 2009, Moradi & Grzanka, 2017; Shields, 2008). Intersectional consideration needs to be present in all stages of creation, testing, and interpreting (Cole, 2009). The importance of this theory is apparent in the fervor with which many fields have adopted this idea; however, not all researchers approach it in the same way (Cole, 2009; Davis, 2019; Moradi & Grzanka, 2017). There is contention over how to ‘correctly’ implement this kind of research in a field like psychology, where the dominant methodological norms (quantitative research) that rely on independence of variables counter the core theoretical groundings of intersectionality (Cole, 2009; Davis, 2019). Recently researchers have rallied for a focus on structural power dynamics and social justice to take precedence over social identities in intersectional work to combat researchers applying the term too loosely (e.g., Davis, 2019; Moradi & Grzanka, 2017). Given the nascent state of intersectional disordered eating research, this dissertation will not explicitly measure discrimination and will focus on social identities. This is done so, not to ignore the importance of discrimination, but to set the stage for future researchers. The potential role of discrimination and power dynamics will be discussed throughout.

Putting Them Together: An Intersectional Sociocultural Model of Disordered Eating

Although substantial progress has been made in understanding the predictors and correlates of disordered eating in adolescent girls, significant gaps in the literature remain. Most research on DE has been conducted using samples of college students and adults (e.g. Pritchard, 2008 Shuttlesworth & Zotter, 2011), even though the onset of disordered eating often occurs in early adolescence (O’Dea & Abraham, 1999; Ricciardelli & McCabe, 2004). Moreover, research using samples of racially and ethnically diverse adolescent girls is limited. What little work there is has inconsistent findings, with some studies reporting that engagement with identity does not

impact disordered eating (Akan & Grillo, 1995), while other studies reporting ethnic-racial identity reduces disordered eating but focus on different measures (Acculturation - Cachelin et al., 2000; RAIS-B - Abrams et al., 1993; MEIM - Shuttlesworth & Zotter, 2011). Further, when ethnically and racially diverse samples are obtained, oftentimes these studies probe no further than the impact of ethnic-racial group membership (e.g. Croll et al., 2002; Elliot et al., 2013). As a result, we know very little about the importance and meaning of ethnic racial identity. By situating the research to include the social aspects of identity we can look at why ethnic-racial group membership might matter. For example, is it because of different cultural body ideals (Kelly et al., 2011) or disidentification with hegemonic, read White, body ideals (Chin Evans & McConnell, 2003). Similarly, disordered eating research has only assessed a single social identity at a time, with one exception (Blazek & Carter, 2019). Examining multiple social identities simultaneously will allow researchers to better understand the nuances that socialization of Black femininity might have as compared to Black identity or femininity messages more broadly. Research in other areas has suggested that these intersections are invaluable to understanding the experiences of individuals with multiple identities and perhaps particularly those with multiple marginalized identities (Buchanan, 2005; Settles, 2006). Lastly, intersectional research suggests that the salience of different identities may change contextually. Therefore, researchers need to be aware of and situate their findings accordingly.

Therefore, this dissertation will utilize the following conceptual model to understand disordered eating in Black, White, and Black-White biracial girls from an intersectional sociocultural perspective. Research on these paths will be explored next.

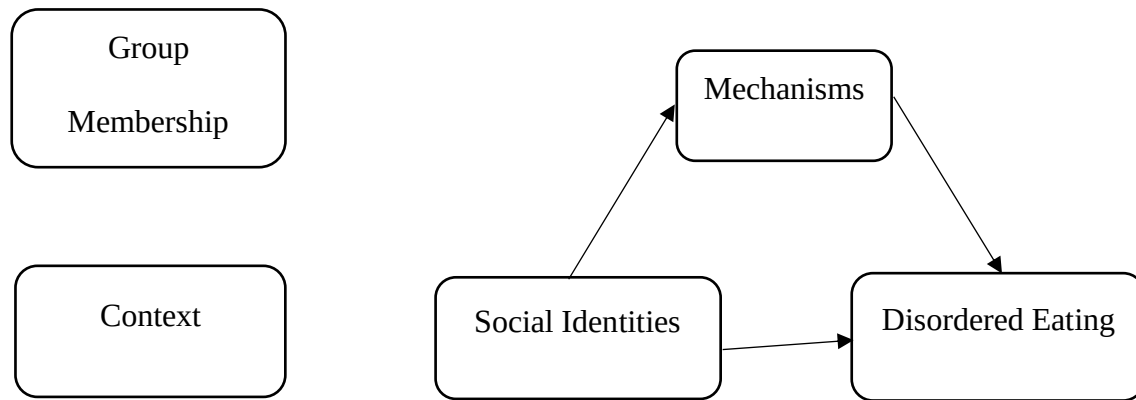


Figure 1. Conceptual Model

Predictors: Social Identities

Erikson (1968) suggested in his psychosocial stages theory that adolescence is the developmental period when young people begin to focus on and struggle with questions about identity. Marcia (1980) extended this theory by suggesting this is a time for exploration of identity, wherein adolescents can experiment with different identities and different forms of identity expression, which will ideally culminate into solidified and committed identities and sense of self. Even though research suggests identities such as ethnicity-race and gender are socialized earlier (Hughes et al., 2009; Martin & Ruble, 2010), this period combines deeper analytical thinking and new-found autonomy (Skinner et al., 2015; Umaña-Taylor et al., 2014), which allows for exploration even in these seemingly more static identities. Being introduced to new peer groups through changing schools, the increase in perceived importance of peer validation, increases in autonomy relating to choice of classes and activities, navigating new social expectations like dating, and many more changes that occur during this time make for plenty of opportunities for adolescence to see and enact new identities (e.g. Chung et al., 1998; Connolly & McIsacc, 2011; Dunphy, 1963; Steinberg & Monahan, 2007).

Another change that may bring identities to the forefront, specifically gender and potentially race, is puberty. The development of a more adult-like body will likely change both how people perceive and interact with the adolescent and how the adolescent views herself. Theories like the Gender Intensification Theory suggest that as girls develop they receive more targeted messages about what it means to be a woman (as reviewed in Herbert et al., 2017; Priess-Groben & Lindberg, 2011). These messages may spur a process of re-evaluating one's gender identity, either to conform to feminine norms or to change expression or identity as a form of resistance. Similarly, the development of secondary sexual characteristics may prompt peers to view the adolescent with romantic interest (Baams et al., 2015; Low & Shortt, 2016; Stattin et al., 2011). Dating, even in adolescence, is framed by strong heterosexual social scripts, which dictate how men and women should behave in heterosexual relationships, and often reflect very traditional feminine ideals (Kim et al., 2007; Tolman, 2006). Developing girls must now contend with these scripts both in terms of their own personal internalization and how they are perceived by others.

For ethnic-racial identity, again puberty marks a potential change in peers as well as increased value in the perceptions of others. Given the history of race in the US there are strong, socially-created hierarchies that lay groundwork for racial discrimination (Gravlee, 2009; Smedley & Smedley, 2005). As adolescents develop they may be seen as more adult and therefore more exemplative of stereotypes, leading to increased discrimination (Greene et al., 2006), which may, in turn, relate to shifting and reassessing ethnic-racial identity during this developmental transition. The salience and evaluation of social identities varies based on context (Ethier & Deaux, 1994; Onorato & Turner, 2004), and puberty is one developmental context that can have a profound impact on identity.

In this model these three social identities (ethnic-racial identity, gender identity, and pubertal timing) are believed to impact disordered eating. There has been at least some research conducted within each of these identities. The following sections will explore these individual identities and their role on disordered eating, but also their interconnection with the others, as per intersectional theory. Each of these identities can be viewed as individual, but when understood within the context of the other identities a better understanding of individual experience emerges as does a truer intersectional understanding of disordered eating.

Ethnic-racial Identity

Ethnic-racial identity is defined as “a multidimensional, psychological construct that reflects the beliefs and attitudes that individuals have about their ethnic-racial group memberships, as well as the process by which these beliefs and attitudes develop over time” (Umana-Taylor et al., 2014, pp. 23). This definition allows for a focus on both the content of the identity as well as the process of developing the identity, both of which are pertinent to this project. Adolescence is key to both the content and process aspect of ethnic-racial identity. Umana-Taylor and the Ethnic and Racial Identity in the 21st Century Study Group (2014) suggest that the development of socio-cognitive abilities, new social environments, and the changing contexts of adolescence promote exploration and creation of ethnic-racial identity as separate from the messages of identity received from parents (Phinney, 1990; Quintana, 1998). Ethnic-racial identity has been suggested to promote positive development and has been shown to relate positively to outcomes such as self-esteem, academic motivation, and prosocial tendencies and negatively to depression symptoms, somatization of stress, and drug use (as reviewed by Rivas-Drake et al., 2014).

Ethnic-racial Identity and Disordered Eating. Although there is a wealth of research supporting the positive impact of ethnic-racial identity, there is a lack of research on the relation between ethnic-racial identity and disordered eating. The majority of research relating to ethnicity-race and disordered eating focuses on group membership rather than identity. This research repeatedly shows that Black girls are at lower risk of disordered eating and a number of predictors (e.g., thin ideal internalization, body dissatisfaction) than White girls (Botta, 2000; Croll et al., 2002; Hesse-Biber et al., 2004; Kelly et al., 2011). However, there is very limited research about ethnic-racial identity in adolescence.

Research using ethnic-racial identity is almost exclusively focused on monoracial, minoritized adolescents and adults. Despite hegemonic body ideals ostensibly being representations of White cultural ideals, no studies to date have explored the impact of ethnic-racial identity on disordered eating for White adolescents. It is possible that ethnic-racial identity for White girls functionally equates to thin internalization, such that White girls who identify as White see the mainstream ideals as a relevant representation of what White women should look like and internalize this ideal as part of their ethnic-racial identity. However, conversely, identifying with an ethnic identity above their racial identity may provide potential protection in terms of redefining in-group versus out-group or changing body ideals.

Relatedly, there is only a single study of the impact of ethnic-racial group membership on disordered eating for biracial adults, and none for adolescents. This dearth is particularly problematic as the biracial category is the fastest growing ethnic-racial group in the United States (Rockquemore & Brunsma, 2002). The study that does exist suggests that the disordered eating experiences of biracial women are unique and warrant further investigation. The study suggested that bi/multiracial women and White women were similarly dissatisfied with their bodies, with

both groups reporting higher dissatisfaction than Black women. Bi/multiracial women also reported greater weight preoccupation than either Black or White women.

To address the limitations in the field, this dissertation explores ethnic-racial group membership and ethnic-racial identity. By examining both in conjunction, this dissertation expands the field by allowing for group differences and seeing how ethnic-racial identity and other factors, such as body ideals and comparisons, might serve as an explanatory extension of group membership research. By collecting data and exploring the experiences of Black-White biracial girls, this dissertation also allows exploration of how biracial group membership impacts the study variables and risk for disordered eating.

White Girls. In our society, ethnic-racial identity for Whites is somewhat dicey. Focusing on racial identity/pride in White Americans often invites images of White Nationalists and other predatory hate groups. Whereas Whites' ethnic identity is viewed as too varied and inconsistent to be useful, despite researchers often erasing the same broad ethnic variation in other groups. There have been only a handful of studies conducted with White participants, all adults. Two of the studies with White women, which used the multi-group ethnic-identity measure (MEIM), an appropriate measure for ethnic-racial identity in Whites, showed no relation between ethnic-racial identity and body satisfaction and disordered eating (Baugh et al., 2010; Stojek & Fischer, 2013). One other study (Lydecker et al., 2014), used White guilt as a proxy for low public regard (a commonly assessed sub-category of ethnic-racial identity in non-White samples). They found that women with high White guilt/low public regard had increased disordered eating. However, the impact of ethnic-racial identity on disordered eating for White adolescent girls has yet to be explored.

Black and Black-White Biracial Girls. The research on ethnic-racial identity, rather than group membership, on disordered eating is still in its nascent stages. There are just two studies of Black girls' ethnic-racial identity and its impact on disordered eating using the MEIM (Blazek & Carter, 2019; Rhea & Thatcher, 2013). Rhea and Thatcher (2013) showed using a single indicator of ethnic-racial identity, that having a higher ethnic-racial identity was protective, relating to lower disordered eating. Blazek and Carter (2019) extended Rhea & Thatcher's work by including gender identity as well. Blazek and Carter (2019) found that for Black girls with low ethnic-racial identity exploration being more feminine was a stronger risk factor than for Black girls with high ethnic-racial identity. However, the impact of ethnic-racial identity on disordered eating for biracial girls has yet to be explored.

Research using adult samples have showed similar results about the protective nature of ethnic-racial identity (Shuttlesworth & Zotter, 2011). Other research has taken alternative approaches to ethnic-racial identity, focusing on the Racial Identity and Attitudes Scale for Blacks (RIAS-B; Abrams et al., 1993; Akan & Grilo, 1995). Abrams and colleagues (1993) found that Black women who were more assimilated to mainstream culture and did not have a strong ethnic-racial identity had greater disordered eating. However, no relationship was found between the two by Akan and Grilo (1995). Lastly, while Ivezaj and colleagues (2010) study looked at ethnic-racial group membership rather than identity, it is the only study of its kind to explore disordered eating among biracial women. Ivezaj and colleagues (2013) found that biracial women were similarly preoccupied with their weight and dissatisfied with their appearance as White women and were more preoccupied and dissatisfied than Black women. However, again, no work has been done with biracial adolescents.

Gender Identity

Similar to ethnic-racial identity research, there is a wealth of information about the role of gender on disordered eating, but research on the role of gender identity is much more limited. Biological sex is whether someone is anatomically and genetically male, female, or intersex. Whereas gender is how someone identifies: man, woman, or trans (APA, 2012). These conceptions, specifically of being a man or a woman, are based on the beliefs, feelings, and behaviors that our culture associates with biological sex (APA, 2012). For example, socially we tend to think of men as being strong and independent and women as thin and concerned with the needs of others (Bem, 1974). But when researchers move beyond having individuals check box for man or woman, they begin to more deeply explore gender identity. Gender identity can be measured in various ways but two commonly used methods are gendered traits and gender ideologies.

Gendered traits are personality traits that are socially dichotomized as masculine or feminine (Bem, 1974, Smiler & Epstein, 2010). Traits we tend to think of masculine are traits like being independent or aggressive, whereas feminine traits are traits like being attentive to the needs of other and kind (Bem, 1974). Socially, feminine traits are more positively associated with women and negatively associated with men. Girls with more feminine traits fit nicely within society's gender schema, whereas girls with more masculine traits are seen to transgress ideas of gender. Importantly, this is the way an individual is and acts. The most commonly used gender trait measures are the Bem Sex Role Inventory (BSRI; Bem, 1974) and the Personality Attributes Questionnaire (PAQ; Spence et al., 1974).

Gender ideologies, on the other hand, assess individual's endorsement of society's beliefs about gender (Smiler & Epstein, 2010). For example, "men are tough" and "women should take care of their appearances" (Smiler & Epstein, 2010). These measures address people's awareness

of these gender social roles, but not necessarily their person adherence to them (Smiler & Epstein, 2010). Feminine gender ideologies then are not how a woman behaves but how she believes women should be. One of the most common ideology measures for femininity is the Conformity to Feminine Norms Inventory (Mahalik et al., 2005).

Gender Identity and Disordered Eating. Because the impact of sex and sex-related influences has been rather limited, researchers have turned to gender, exploring how its social construction can impact disordered eating (adolescents: Thurfjell et al., 2006; Wichstrom, 2000; adults: Green et al., 2008; Pritchard, 2008). Gender, specifically the social and cultural construction of masculinity and femininity, has been found to have well-established effects on disordered eating (as reviewed by Green et al., 2001; Murnen & Smolak, 1997). Researchers have explored adolescents' self-identified gender as it relates to disordered eating (Croll et al., 2002). Other studies have looked deeper, showing that for women greater endorsement of feminine traits relates to greater disordered eating (Hepp et al., 2005; Meyer et al., 2001; Pritchard, 2008).

Gender is complex, and as such, there are many ways to operationalize gender and gender identity. Therefore, gender identity and its relation to disordered eating has been explored in numerous ways. Common to all social identities, part of gender identity is the meaning with which it is imbued based on socially accepted stereotypes about the norms, behaviors, and beliefs of individuals who claim those labels. As mentioned the two most common areas of research regarding gender and disordered eating in girls/women are feminine traits and feminine gender role ideology, specifically regarding construction of Western femininity. As such, feminine women should be thin, they should invest time in their appearance, and they should seek approval from others (Bem 1974; Cruwys et al., 2016; Mahalik et al., 2005; Stice, 1994).

Therefore, individuals identifying as feminine are at increased risk of disordered eating and this risk is exacerbated when these same individuals also have low masculinity or reject a masculine identification (Brown et al., 1990; Meyer et al., 2000).

These gendered traits and behaviors are socialized from a young age, such that even at five years old, children believe thinner women to be more feminine (Pine, 2001). The overvaluation of thinness may be especially focal in adolescence as girls' bodies develop. Not only are girls' developing more adult bodies which are supposed to more closely reflect the feminine body ideals, but they are also necessarily gaining weight as part of that transition which puts them in jeopardy. Weight gain is particularly troublesome for women and girls because socially, thinness relates to self-worth (Rodin et al., 1984). As such, women and presumably adolescents who identify and express more feminine gender identities are at increased risk of developing disordered eating given that the tenets of femininity confer increased risk of disordered eating. However, the research is limited to White adult samples and no work has been done with Black or biracial adults or adolescents. Given the physical changes associated with puberty may socially hold different meanings for racially and ethnically diverse girls due to ethnic variations in body ideals more research is needed within these populations. Support for this line of reasoning will be presented based on measure of identity, namely trait then ideology research.

White Girls.

Feminine Traits. Feminine traits include being yielding, emotional, devoted to others, and approval seeking. Although there are other more positive traits related to femininity, the previous examples suggest that placing others before self and valuing the opinions of others are core traits of feminine identity. There are numerous ways that these traits can impact eating behaviors. For

example, girls who put the needs of others first may become less adept at interpreting their own internal physiological and emotional needs, which could result in ignoring or misinterpreting physical hunger cues. Another potential avenue through approval seeking is by obtaining the ideal feminine body as a means of attaining attention/approval of others.

Trait-based research with White adolescents is limited. Only one study using the BSRI on adolescents has been conducted. Wichstrom (2000) showed that feminine traits, as measured by the BSRI short form, did not relate to disordered eating among Norwegian boys and girls aged 12-20. It is possible that adolescents, particularly girls, may begin to experience the limitations and expectations of feminine traits as they face increased discrimination and pressure because of the feminization of their bodies through puberty that may result in self-enforced conformation or feel external pressure to conform to these trait norms.

Studies conducted with White adult women are more established and consistent. Research with White female clinical eating disorder patients suggests that these patients endorse more feminine traits than controls (Norman & Herzog, 1983; Williamson et al., 1985). These findings were replicated in non-clinical samples, as well, suggesting that White women who endorsed more feminine traits engaged in more disordered eating (Brown et al., 1990; Hart & Kenny, 1997; Heilbrun & Mulqueen, 1987; Hepp et al., 2005; Lakkis et al., 1999; Meyer et al., 2000; Paxton & Sculthorpe, 1991; Snyder & Hasbrouck, 1996; Williams & Ricciardelli, 2001).

A further reason to improve understanding about associations between gender traits and disordered eating stems from masculine trait research, wherein White women who endorse fewer masculine traits are at risk for disordered eating. Alternatively, White women who highly endorse masculine traits have lower disordered eating. Several studies have supported high endorsement of masculine traits as protective factor and low endorsement as a risk factor of

disordered eating (Hepp et al., 2005; Klingenspor, 1994; Meyer et al., 2000; Williams & Ricciardelli, 2001). Taken together, these findings support the femininity hypothesis, that high endorsement of feminine traits and ideologies is related to high risk of disordered eating for White women. The femininity hypothesis may be especially true for White women who also have low endorsement of masculine traits and ideologies.

Feminine Ideology. Gender roles are multi-faceted, including behaviors, attitudes, and presentations that are considered acceptable, appropriate, or desirable for people based on their gender identity. As noted earlier, core tenets of femininity ideology include valuing thinness, investment in appearance, and importance placed on obtaining and maintaining romantic relationships, among others. These most likely represent the core tenets of White, hegemonic femininity. The relation between hegemonic feminine ideology and disordered eating is multifaceted, however, our research on feminine gender ideology and disordered eating is limited. There are no studies conducted with White adolescents. All of the hypotheses must then derive from work with adult, White women. The thinness feminine ideology has been shown to related to increased disordered eating (Green et al., 2008; Hurt et al., 2007; Mahalik et al., 2005). This connection is straightforward; White women who believe that the feminine ideal is thin engage in disordered eating in an attempt to achieve that thin body ideal. However, other aspects of feminine ideology have also been linked with disordered eating (Green et al., 2008; Hurt et al., 2007; Mahalik et al., 2005). Specifically, high endorsement of the romantic relationships and investment in appearance subscales are commonly linked with increased disordered eating for White women (Green et al., 2008; Hurt et al., 2007; Mahalik et al., 2005). High investment in appearance, which is defined as committing resources to maintaining and improving physical appearance, is also linked with increased disordered eating in White women (Mahalik et al.,

2008). Endorsement of this ideology likely primes White women and, potentially, girls to focus on their bodies and how their bodies compare to either a specific or generalized body ideal. Although investment in appearance ideology is different, theoretically and empirically, from direct pursuit of a thinner body it still results in the same negative behaviors aimed at altering the body, this time in an effort to be more beautiful, not necessarily strictly thinner. Lastly, the romantic relationships ideology is the investment of self in finding and maintaining romantic relationships (Mahalik et al., 2005). Freedman and colleagues (2004) found that White men preferred thinner bodies as compared to Black men. Patel and Gray (2001) found that Black women were more accurate in predicting the body size preferences of Black men than White women were in predicting the body size preferences of White men. White women believed White men preferred thinner bodies than what White men actually picked as their preferred partner size (Patel & Gray, 2001). Given this misconception, White women and girls may engage in disordered eating as a means of gaining or maintaining a romantic relationship under the assumption that partners prefer thin bodies.

Black and Black-White Biracial Girls

Feminine Traits. There are no gendered trait studies in relation to disordered eating for Black or biracial women or girls. Some broader research suggests that Black women tend to be more androgynous than White women (Binion, 1990). This may result from when Black women were enslaved. While both White women and enslaved Black women were women, Black women were expected to work in the field and engaging in traditionally ‘male’ labor. White men needed to propagate stereotypes differently for Black and White women in order to subjugate them both (Slatton, 2018). For Black women, these stereotypes presented them as stronger and able to toil away. Post-slavery and continuing into today, Black men were and are

disproportionately incarcerated. While White women were expected to be at home and functioning as caregivers, Black women often had to take jobs outside the home or take on domestic labor for White women. Relatedly, the disproportionate mass incarceration of Black men has led to many Black women needing to be sole breadwinners for their families (Elliot & Reid, 2019; Keefe et al., 2017). Therefore, Black women may reflect more masculine traits given the systematic discrimination they and their people have faced throughout history in the US.

Feminine Ideology. Given the limited research on gender ideology for White adolescents, it is likely unsurprising that there are no studies of the role of Black or biracial girls' feminine ideologies on disordered eating. Unfortunately, adult samples are also limited, so much so that there is only one study exploring this topic. Bey-Cheng and colleagues (2002) found that for Black women greater endorsement of feminine appearance related to increased disordered eating. However, piggy-backing off of some of the work done with White women we may be able to get more depth. For example, as noted above regarding romantic relationship ideology, Patel and Gray (2001) found that Black women more attuned to the body desires of Black men. If Black women have larger body ideals and they also know Black men idealize a larger body for their partner perhaps romantic relationships are less strong of a predictor disordered eating for Black women. Again, thinking to research on Black femininity, Black women conceptualize femininity and body image as more based on personal characteristics like style and self-presentation rather than weight (Rubin et al., 2003). However, these direct relations have yet to be tested.

Given the intersectional focus of this dissertation, it is important to bring up where and how Black femininity may differ from White hegemonic femininity. The previous discussion has been framed around White femininity, but what about specific Black femininity? Research has shown that Black women tend to endorse more gender egalitarian ideologies than White women

(Jones et al., 2018). Research also suggests that Black women tend to consider gender and race simultaneously rather than piecing apart the impact of either group separately (Settles, 2006; Thomas et al., 2011). Black women define womanhood as strength, self-sacrifice, and care-taking (as reviewed by Jones et al., 2018), a mixture of hegemonic masculine and feminine ideologies. However, despite finding these differences there have been few measures of Black femininity created. That being said, including a measure of Black femininity is crucial to an intersectional understanding of the impact of gender identity and ethnic-racial identity for Black women, and as such, a measure of racialize-gender identity (Black femininity) was measured.

Puberty

Puberty is the biological, physiological, and socially nuanced developmental period, during which children's bodies develop into sexually mature bodies. However, during adolescence it can also be understood as an identity, for it shapes how girls views themselves and are viewed by others. As a developmental period, it starts with the production and circulation of growth and sex hormones known as adrenarche and gonadarche (Dorn & Biro, 2011; Patton & Viner, 2007). These hormones circulate and start development long before any noticeable physical changes occur (Patton & Viner, 2007). Many pubertal changes are similar across sex, such as increased height, body hair growth, increased oil production and occasionally acne, however, there are also many sex-specific changes (Marshall & Tanner, 1969, 1970). For girls this includes breast development, menarche, and less well-known but important to this topic, weight gain related to increased adipose (fatty) tissues (Marshall & Tanner, 1969; Rogol et al., 2002). The changes girls undergo (e.g. weight gain, skin changes) bring them closer to their adult body. For example, increased fatty tissues around the thighs and hips are necessary prerequisites for continued development and potential future childbirth.

Research on puberty tends to focus on two aspects of puberty development, status and timing. However, timing seems to be a stronger indicator in relation to disordered eating than status (McNicholas et al., 2012). Pubertal timing is a measure of how early or late an adolescent is developing in relation to her same-age, same-sex peers. This comparison to others and the impact these changes have on how others view the individual begin to lay the groundwork for viewing puberty as a social identity. Pubertal timing is often assessed using pubertal markers, such as menarche, breast development, voice change, and hair growth (Peterson et al., 1988). When using these types of markers, researchers can use a single item, most commonly for girls this is age at menarche (e.g. Harden et al., 2012), or create a composite score based on multiple markers (e.g. Peterson et al., 1988). More recently, researcher have explored a more subjective measure of pubertal timing that assesses an adolescent's perceived timing relative to her same-age, same-sex peers. This is usually done by asking the adolescent if she felt her development was early or later compared to her peers. Research has shown that this perceived measure may be particularly important, as it relates to how adolescents are interpreting and internalizing their own development (Harden et al., 2012; Kretsch et al., 2016). This measure is particularly important to this dissertation as perceived pubertal timing is associated with peer influence (Kretsch et al., 2016; Winer et al., 2016).

Pubertal Timing and Disordered Eating.

White Girls. Most pubertal timing research and research on how it impacts disordered eating is conducted with White samples. For white girls specifically, we know that girls who develop earlier than their peers are at greater risk for disordered eating (Kaltiala-Heino et al., 2003; McNicholas, et al., 2012; Swarr & Richards, 1996). Some research even suggests a causal link, in that early timing predicts greater disordered eating over time (Stice et al., 2001). In terms

of puberty broadly, while changes such as weight gain and curvier body are indicative of becoming a physically developed woman, these changes are easily interpretable as bringing girls further from the White female body ideal (e.g., thin, beautiful; Graber et al., 1994; McCabe & Ricciardelli, 2004). In terms of timing specifically, many of these changes can bring unwanted body attention which girls may not be prepared to handle. Puberty research broadly, has suggested that earlier developing girls may begin their physical development before their emotional and social capabilities can catch up (Ge & Natsuaki; 2009; Peskin & Livson, 1972; Petersen & Taylor, 1980).

The timing issue becomes further complicated regarding disordered eating. Early developing White girls, who are already at a social/emotional disadvantage, then go through that very necessary and natural increases in fatty tissue. They develop out of sync from peers, feeling different from peers and farther from the thin feminine ideal in their growing bodies. The increasing weight, specifically fatty tissues, in body parts (hips, thighs, and stomachs) that women and girls are often dissatisfied with is theorized to make girls feel like they are moving further away from rather than closer to their body ideals, especially when compared to boys whose pubertal weight spurt is predominantly muscle gain and therefore in line with mainstream masculine body ideals (Graber et al., 1994; Ricciardelli & McCabe, 2004).

Some research also examined the impact of subjective versus objective measures of pubertal timing on disordered eating, again for White girls (McNicholas et al., 2012; Swarr & Richards, 1996). Although both subjective and objective measures of pubertal timing are associated with disordered among White adolescent girls, a greater portion of the variance in disordered eating is attributable to subjective measures of timing (peer comparison: 12%) than objective (age at menarche: 4.4%; Harden et al., 2012). Part of the reason why objective

measures may be less impactful could stem from the salience of the markers used. For example, age at menarche, or at what age girls experience their first period, is a relatively private marker and not outwardly visible to others. Studies using more visible markers (i.e. breast development; Swarr & Richards, 1996) and those using self-report of pubertal development (how developed girls felt they were; Combs et al., 2011; McNicholas et al., 2012) were more likely to evidence a relation between pubertal development and disordered eating, suggesting that the social context of development may be a driving factor in this relationship.

Body mass index adds a further complexity to the relation between pubertal timing and disordered eating. Girls who have higher pre-pubertal BMIs tend to start puberty earlier (Kaplowitz et al., 2001). Girls with higher BMIs tend to be more dissatisfied with their bodies, potentially especially in regards to their changing bodies (Tiggemann, 2005). Lastly, adolescents who go through puberty early tend to have higher life-long BMIs (Sandhu et al., 2005). Research extolling BMI over timing and vice versa must be carefully assessed given this complex relationship.

Black and Black-White Biracial Girls. As mentioned previously, the impact of puberty on disordered eating has been of interest for several decades, yet this lengthy history, there are still gaps and inconsistencies in the research. In terms of pubertal timing, Black girls tend to go through puberty one to one and a half years before White girls (Marshall & Tanner, 1969). Despite this, the bulk of research relating to pubertal timing and disordered eating has been conducted with White adolescent girls or has not explored the role of race in somewhat diverse samples. Only two studies to date have directedly explored the role of pubertal timing on disordered eating for Black adolescents. And no studies to date have explored pubertal timing in biracial girls. In both studies of Black girls, earlier timing related to increased disordered eating,

similar to findings for their White peers (Pubertal Development Scale - Halpern et al., 1999; Age at menarche - Striegel-Moore et al., 2001). The research suggests that earlier pubertal timing may be a risk factor for both Black and White adolescents, however, we do not know what risks or benefits early timing may have for biracial girls.

Part of the reasoning for why timing is so impactful for White girls is that the changes can be interpreted as taking White girls away from the hegemonic thin, feminine ideal. But researchers need to carefully consider if this hegemonic ideal used by all girls? Intersectional theory demands that researchers interrogate their findings to understand if what they have found is the experience of all or just of some, based on group identities and experiences. In terms of the thin ideal, studies have shown Black women and girls may disidentify from the thin ideal (Botta, 2000; Capodilupo & Kim, 2014; Chin Evans & McConnell, 2003). Research suggests that Black girls have larger body ideals (Botta, 2000), therefore the thin feminine ideal may be less relevant. Therefore, the impact of early timing for Black girls may stem more directly from an extension and exacerbation being emotionally and socially underdeveloped at the time of pubertal development, rather than an interpretation of pubertal development taking Black girls further from their ideals.

Another tenet Intersectional theory is understanding how different social identities interact. Again, for Black girl's disordered eating, this may hold important keys however very little work in this area has been conducted with adolescents. Drawing then from research conducted with Black and White women, Cole and Zucker (2007) found that for Black women endorsing feminine traits and appearing more feminine were related to increased feminine identification, while for White women endorsing feminine gender role ideology was related to decreased feminist identification. This provides support that there are differences between what

is endorsed as Black Femininity versus White femininity. Other researchers have followed suit, showing that Black femininity may not be as enmeshed with the thin ideal and that Black women's body image may not be as weight-dependent as White women's (Capodilupo & Kim, 2014; Rubin et al., 2003). For Black women, things like self-presentation, self-respect, and religiosity played into a body ethics view of body esteem and Black femininity rather than White women's weight and aesthetics based hegemonic femininity (Rubin et al, 2003). Limited research has also explored ethnic-racial identity, going beyond group membership, to understand disordered eating. For example, Oney, Cole, and Sellers (2011) found variation in body dissatisfaction related to centrality, private regard, and public regard. Such that, for Black women high public and private regard were related to low body dissatisfaction. However, only one study to date has explored all three social identities in adolescence (Blazek & Carter, 2019). In this study the authors found interactions between racial identity and pubertal timing and gender identity and pubertal timing to be important to disordered eating behaviors in Black adolescents. However, it was limited in its measure of gender identity.

In this dissertation I have taken measures to address many of these issues. The sample will include Black adolescents and explore their unique experiences, as well as explore the experiences of Black-White biracial adolescents whose engagement with disordered eating remains woefully understudied. This dissertation will address the potential that Black girls may have larger body ideals. It will also include measures of racial identity, gender identity, racialized gender identity, and pubertal timing to understand the role these factors play and their potential synergy.

Explanatory Mechanisms: Body Ideals and Body Comparison

As noted in Figure 1, social identities likely not only directly impact disordered eating, but may also work through and be moderated by mechanisms. As noted above, research has repeatedly shown the impact of puberty and gender identity, and to a lesser extent ethnic-racial identity, on disordered eating. In addition to direct relationships between these variables, there are several well-established mechanisms of disordered eating that may indirectly explain the impact of puberty, gender identity, and ethnic-racial identity. In adolescence, two such mechanisms are body ideals (Flament et al., 2012; Keery et al., 2004; Slater & Tiggemann, 2010) and body comparisons (Halliwell & Harvey, 2006; Ramirez & Milan, 2016; Quiles Marcos et al., 2013). Adolescent girls' body ideals and who they compare their bodies to has been linked to ethnic-racial and gender group membership (Botta, 2000; Carter et al., 2019; Kelly et al., 2011). To date, there are no data on associations between social identities (gender and race) and girls' body ideals and body comparisons. However, some work has been conducted with adult samples (Adams et al., 2017; Locke & Nekich, 2000; Rakhkovskaya & Warren, 2016). For example, Locke and Nekich (2000) found that women with high feminine trait endorsement felt more connected to comparisons, making them more impactful. They also found that women low in masculine trait endorsement were more likely to make comparisons with thinner people. In terms of ethnic-racial identity, Rakhkovskaya and Warren (2016) found high ethnic-racial identity decreased belief in the thin ideal. Moreover, gender and race associations between girls' body ideals, body comparisons, and pubertal timing is scant (Usmiani & Daniluk, 1997). Given girls' awareness of their changing bodies are likely linked to the timing of their development and social identities, more research is needed to understand the impact of social identities on disordered eating during this time of intense physical change.

Body Ideals

As discussed earlier body ideals are heavily influenced by gender. The social ideal of the feminine body, hereafter referred to as the hegemonic feminine body ideal, is a thin figure (Grogan, 2016; Stice, 1994). The thin ideal is communicated through media and conversations with adults and peers, both implicitly and explicitly (Bessenoff, 2006; Polivy & Herman, 2002; Stice & Shaw, 2002). The perceived truth of and internalization of this ideal can vary from person to person. The presumed impact of body ideals on disordered eating comes from the discrepancy between the mainstream female body ideal and girls' current body size.

Impact of Gender and Race on Body Ideals

The feminine ideal is thinner and more waifish than the masculine ideal. Sociocultural models of disordered eating suggest that these thin ideals are communicated through a number of sources; parents, peers, media (Green et al., 2011; Polivy & Herman, 2002; Stice, 1994). However, this ideal is out of reach for many women and girls. As such White women and girls tend to perceive the ideal feminine body to be thinner than their own bodies (Botta, 2000; Jones et al., 2007; Patel & Gray, 2001). The internalization of this thin ideal in adolescence is measured in multiple ways, including thin ideal internalization measures, figural rating scales, and discrepancy scores between people's ideal bodies and their current bodies (Botta, 2000; Keery et al., 2004). Numerous studies with adolescent girls have shown that internalization of the thin ideal, high current-ideal discrepancies, and body dissatisfaction are related to increased disordered eating (Flament et al. 2012; Keery et al. 2004; Slater & Tiggemann, 2010).

As per intersectional theory, what we expect and find for White girls may not hold for Black girls based on differences in experience and socialization. For example, Black girls tend to have a larger ideal body than White women and girls (Botta, 2000; Jones et al., 2007). However, despite having larger ideals Black girls still often choose body ideals that are thinner than their

current body size (Jones et al., 2007). While Black girls may be socialized to have a larger cultural body ideal, they are still impacted by the hegemonic thin, especially through media (Harrison & Hefner, 2006). Though other studies note that there may not be a difference between thin ideal internalization or Black and White women (DeBraganza & Hausenblas, 2010). As for biracial girls and women, there is limited research on body ideals and body image. Some early qualitative work suggests that biracial women are acutely aware of body image and how they compare to others (Boveda, 2017). This same study also showed that biracial women focus on weight as an important part of body image, which shows some similarity to work done with White women (Boveda, 2017). Overall, research tends to suggest that Black girls have larger body ideals, but that despite these larger ideals they are still at risk for poor body image. For biracial girls, we know very little, but asking these questions might help elucidate body image and body ideals that these girls hold. As noted earlier, ethnicity-race does not tell the whole story. Difference between groups likely are not biological ones, but instead ethnicity-race and gender are serving as poor proxies for the impact of ethnic-racial and gender identity socialization.

Impact of Ethnic-Racial and Gender Identity on Body Ideals

The push to move beyond race and gender to ethnic-racial and gender identity has been a somewhat recent push. Unfortunately, this means the extant research is limited, especially when concentrating on adolescents. The proposed reason for the impact of gender identity on body ideals, is that thinness is inherent in hegemonic feminine gender ideologies (Bordo, 2003; Mahalik et al., 2005). Therefore, greater femininity is believed to be related to greater belief in the thin ideal and choosing thin body ideals. In terms of adolescent gender identity, a single study of White mothers and daughters showed that endorsing more masculine traits related to

positive body image for girls who had already begun their menses, whereas that feminine traits were related to more positive body image for premenarcheal girls (Usmiani & Daniluk, 1997). No studies to date have been conducted with Black or Black-White biracial girls.

When looking to adult gender identity research, the patterns are better established, suggesting that both feminine identification (Davis et al., 1996; Forbes et al., 2001; Molloy & Herzberger, 1998) and belief in gender stereotypes and gender roles (Adams et al., 2017; Cash et al., 1997) bolsters disordered eating. In one study of predominantly White women showed that women who believed more traditional gender norms and stereotypes placed increased importance on being physically attractive, and specifically that romantic relationship scripts related to greater internalization of societal beauty standard (i.e., thinness; Cash et al., 1997). Another study, showed that for White women, endorsement of more feminine traits related to having a thinner ideal body size (Forbes et al., 2001). In a comparative study of Black and White women, showed that women with more masculine traits had a smaller discrepancy between ideal body size and current body size and that Black women were more like to endorse masculine traits than White women (Molloy & Herzberger, 1998). Sadly, the impact of gender identity on body ideas has yet to explored for biracial women and girls.

In terms of ethnic-racial identity, there is similarly scant research. Currently there are no adolescent studies on the impact of ethnic-racial identity on body ideals for adolescents nor for White women, likely based on the reasons discussed previously. Drawing from Black adults samples we can see that ethnic-racial identity is protect for body image. Black women with a stronger ethnic-racial identity think more positively about their bodies (Schooler et al., 2004), and are less likely to internalize societal beauty standards like thinness (Cotter et al., 2015; Rogers Wood & Petrie, 2010). Rakhkovskaya and Warren (2016) showed that ethnic-racial

identity moderated the relationship between thin idealization and disordered eating, such that the relationship was lessened for Black women with greater ethnic-racial identity. Other related work has shown that the impact of ethnic-racial identity to be far-reaching by conducting research with other ways of conceptualizing identity such as through the Multi-dimensional Inventory of Black Identity and acculturation (Gordon et al., 2010; Oney et al., 2011). Taken together these findings suggest that body ideals cannot necessarily be expected to be the same or function the same across groups, further necessitating the intersectional perspective of this dissertation on what the driving ideals are, who are they the ideal for, and how do they shape other facets such as disordered eating.

Puberty and Body Ideals

There has been some research with adolescent girls showing that pubertal timing and status are related to body ideals and body satisfaction (Mitchell et al., 2012; Rousseau et al., 2018; Stice & Whitenton, 2002). For White girls, specifically, earlier timing relates to increased body dissatisfaction, increased desire to be thinner, and increased pressure to thin (Blyth et al., 1985; Duncan et al., 1985, Stice & Whitenton, 2002). In this case, there are also studies of Black developing girls as well, and this data tells a different story. Despite being some of the first to develop (Marshall & Tanner, 1969), it seems that later development rather than early development tends to be problematic. Later development for Black girls relates to more negative body image and body dissatisfaction (de Guzman & Nishina, 2014; Siegel et al., 1999). De Guzman and Nishina suggest that broadly Black girls may be protect for the negative impacts of puberty given larger cultural body ideals. In this case, they speculate that Black girls going through puberty perceive these changes are bringing them closer to their ideal, opposite to the expectations for White girls. A sentiment which Siegel and colleagues echo (1999). De Guzman

and Nishina (2014) also suggest that the thin ideal may serve to protect later developing girls for a longer time. The impact of pubertal timing on body image and ideals varies based on ethnicity-race, something that few studies account for.

Impact of Body Ideals on Disordered Eating

The previous sections discuss how gender, ethnicity-race, gender identity, and ethnic-racial identity impact body ideals, but the second step of this equation is how do ideals impact disordered eating with an awareness of the impact of those social identities. For White women and girls, greater internalization of the thin ideal relates to increased disordered eating (Flament et al., 2012; Keery et al., 2004; Vartanian & Dey, 2013). Relatedly, believing that being thin is ideal and achievable also relates to greater body dissatisfaction for White women (Erchull, 2015; Kronen, 2008), and may prompt White women and girls to engage in eating and exercise behaviors aimed at achieving a smaller body size. While there are no studies a present for Black girls, there are a few for Black women. Gilbert and colleagues (2009) found that relative to African and Afro-Caribbean women, African American women had higher internalization of the thin ideal and that this related to increased disordered eating for this group. Similarly, Gordon and colleagues (2010) found that while Black women had larger body ideals, the discrepancy between ideal body size and current body size was still predictive of greater disordered eating for Black women. Lastly, broaching the topic of ethnic-racial identity, Rogers Wood and Petrie (2010) found that greater ethnic-racial identity related to decreased thin ideal internalization, which in turn related to decreased disordered eating. What this suggests is that although Black women and girls may have larger body ideals, this does not exempt them from the impact body ideals have on disordered eating. For both Black and White women, and potential girls, perceiving the ideal to be thinner than your current body size can increase disordered eating. As

with many of these sections these relations have not been explored for Black-White biracial girls. As such, this dissertation will serve as a springboard and hopefully encourage other researchers to also engage with these questions.

Body Comparisons

The impact of body comparisons stems from Festinger's (1954) Social Comparison Theory. Social Comparison Theory consists of a number of hypotheses stemming from a core belief that people have a strong desire to evaluate their opinions and abilities. In the absence of an objective marker (e.g., a point scoring system on a test), people will use others' opinions and abilities as a way to make meaning of their own. He also importantly posited that factors that promote the importance of a certain ability or group will increase pressure to conform. He also suggested that upwards comparisons (i.e., comparisons with a peer who is 'better' at an ability) will tend to produce negative feelings, which can motivate people to make changes. An example of this could include running a mile in three minutes and 43 seconds. This time in and of itself is relatively meaningless, as there is no objective comparison. It becomes meaningful when put in the context of others' abilities; that three minutes and 43 seconds is Usain Bolt's world record for fastest mile. Therefore, we use others' performances in order to judge our own abilities (Festinger, 1954). One specific form of comparison is body comparisons.

Impact of Gender and Race on Body Comparisons

Studies using demographic predictors such as gender and race have shown variation in engagement in and impact of body comparisons (DeBraganza & HausenBlas, 2010; Quick & Byrd-Bredbenner, 2014; Morrison et al., 2004; Rancourt et al., 2016). Similarly to body ideals, body comparisons are more impactful on White women's and girls' body image than White men's and boys' (Myers & Crowther, 2009). In terms of race, adult studies demonstrate that

Black women engage in fewer comparisons (Poran, 2002; Quick & Byrd-Bredbenner, 2014; Rancourt et al., 2016), with some work suggesting that even when Black women make comparisons they are less impactful on body satisfaction (DeBraganza & HausenBlas, 2010). Again, there is no research today on body comparisons for Black-White biracial girls. The above findings suggest that White women and girls engage in more body comparisons than Black women; however, this difference is potentially because race and gender are serving as poor proxies for the impact of ethnic-racial and gender identity socialization.

Impact of Ethnic-Racial and Gender Identity on Body Comparisons

Unfortunately, the push to explore gender identity and ethnic-racial identity has not extended to research on body comparisons. Most studies remain firmly at the group membership level. Locke and Nekich (2000), however, did explore the impact of gender identity on social comparison for White women. They found that adult White women who endorsed more feminine traits felt more connected to the body comparison they made, which Festinger (1954) suggests would make comparison more impactful. They also found that women endorsing few masculine traits made more upwards comparisons (Locke & Nekich, 2000), which other research suggests can relate to increased disordered eating (Fitzsimmons-Craft et al., 2012; Tylka & Sabik, 2010). To date no work has been done about the impact of gender identity on body comparisons for White, Black, or Black-White biracial adolescents, nor is there work on the impact of ethnic-racial identity on body comparisons for these groups either. Extrapolating from other areas, we know that Black girls have larger body ideals (Botta, 2000; Keery et al., 2004), comparisons to these ideals may then be less likely to be damaging upward comparisons.

Puberty and Body Comparisons

There have been two studies looking at the impact of pubertal development on body comparisons, unsurprisingly both are primarily White samples, both finding a null relationship (Stormer et al., 1996; Thompson et al., 1998). Part of the reasoning behind these null findings could stem from the retrospective nature of the puberty variables. Both studies relied on undergraduate women to recall age at menarche and other pubertal development markers. Their reliance on objective rather than subjective markers may also explain the lack of relation to body comparisons, as choice of comparison tends to rely on subjective rather than objective feelings of what women believe their bodies should be like (Myers & Crowther, 2009; Pinkasavage et al., 2014). By using concurrent measure, or at the very least shorter spans for retrospection, and focusing on objective and subjective measures of pubertal timing this dissertation attempts to address this shortcoming in the field.

Impact of Body Comparison on Disordered Eating

The last piece of the mechanisms puzzle then, is the role of social comparisons on disordered eating, which has long been of interest in disordered eating research (Levine & Smolak, 1998; Thompson et al., 1999). For White girls specifically, engaging in social comparisons is related to increased disordered eating (Halliwell & Harvey, 2006; Morrison et al., 2004; Quiles Marcos et al., 2013). Like Festinger's (1954) original theory, girls' upward body comparisons, comparing themselves to someone thinner, were particularly relevant to body dissatisfaction and disordered eating (Halliwell & Harvey, 2006; Morrison et al., 2004). In a study with Black adolescents (though this finding is not necessarily specific to Black adolescents) social comparisons also related to increased disordered eating (Ramirez & Milan 2016).

White adult samples also suggest that comparisons, and again, particularly upward comparisons are related to increased disordered eating (Bamford & Halliwell, 2009; Bessenoff,

2006; Corning et al., 2006; Fitzsimmons et al., 2012; Pinkasavage et al., 2014; Tylka & Sabik, 2010). For example, Fitzsimmons-Craft and colleagues (2016), showed that for White women, body comparisons were a stronger influence on disordered eating than broader social comparisons. However, research has also established some key variations from Festinger's original theory. Festinger proposed that people are more likely to make comparisons to similar others, as this provides more accurate appraisal of one's skills/opinions. However, White women use unrealistic, thin media comparisons as often as they do peer comparisons (Strahan et al., 2006). Festinger (1954) also posited that people will cease upwards comparisons if they become damaging to self-image; again, this seems not to be the case in terms of body comparisons. White women continue to make upwards comparisons (Pinkasavage et al., 2014), even when they have damaging consequences such as decreased self-esteem and increased disordered eating (Fitzsimmons-Craft et al., 2016; Myers & Crowther, 2009; Strahan et al., 2006).

While there is only the Ramirez and colleagues (2016) study on Black adolescents, there has been more work with Black women. Specifically, Rancourt and colleagues (2016) found that body comparisons, specifically upward comparisons, related to increased disordered eating for Black women. This work has also specifically broached ethnic-racial identity particularly in reference to media comparisons. For example, both Schooler and colleagues (2004) and Zhang and colleagues (2009) found that having a stronger ethnic-racial identity helped mitigate the negative effects media comparisons for Black women. These findings suggest that body comparisons, particularly upward comparisons are problematic for Black and White women and likely both Black and White girls as well. Again, no research to date has looked at these relations for Black-White biracial girls.

Race and Gender Together: An Intersectional Approach

Results from previous disordered eating research suggest a need for an intersectional approach because the patterns of risk are not consistent across gender and ethnicity-race (Bodell et al., 2018; Bucchianari et al., 2016; Croll et al., 2002). For example, Croll and colleagues (2002) found that Black girls engaged in more disordered eating than Black boys, but less than White girls. These differences likely result from increased gender pressure for thinness relative to Black boys, but decreased conformity to the mainstream thin ideal relative to White girls. Blazek and Carter's (2019) finding that Black girls with high ethnic-racial exploration had low disordered eating, but that Black girls with low ethnic-racial exploration had high levels of disordered eating, similar to White girls, highlights the importance of intersectional approaches. The mainstream thin ideal is tied to the dominant form of femininity, White femininity (Bordo, 2003; Collins, 1990). For White women, becoming close to this ideal confers power. However, it is not the only femininity. Black feminine body ideals do not share the same ultra-slender focus and weight fixation (Hesse-Biber et al., 2004; Rubin et al., 2003). Engagement with Black femininity does not carry the same negative effect for Black women as engaging with White femininity does for White women (Coll & Zucker, 2007). Black women who feel particularly connected to their Black identity may also disidentify with the mainstream ideal (Chin Evans & McConnell, 2003; Ogden & Russell, 2013). Based on earlier work by Crocker and Major (1989) and Steele and Aronson (1995), psychological disidentification occurs when members of marginalized groups are less likely to use a domain in which their group is particularly stigmatized against as a basis of self-esteem. Since the mainstream feminine body ideal values Eurocentric features and physical appearance, and this has been a point of discrimination for Black women, they may not identify with and therefore not strive for the thin White ideal. However, if Black girls feel less connected to their ethnic-racial identity, then investment in the

mainstream feminine ideal may result in disordered eating as a way to garner some of the power associated with that hegemonic ideal.

This inclusion of Black-White biracial girls also stems from this intersectional perspective. There is limited research about racial identity let alone racialized gender identity (differences in gender ideals based on race) and disordered eating for biracial girls.

Rockquemore and Brunσμα's (2002a) work contextualizes biracial identity within the US. They suggest this group has largely been either excluded in psychology research or subsumed into Black samples given the US history of hypodescent (the automatic categorization of someone with mixed Black and White ancestry as Black). Similarly, they discussed historically how conceptualizations of biracial individuals as more Black or more White has changed to fit the needs and power dynamic of Black and White monoracial groups. For example, they point out that before the Civil War, in some areas of the United States and particularly in New Orleans, biracial individuals were not considered Black, but rather closer to White in order for White individuals to maintain majority and power in these areas. Post-civil war and during the Jim Crow era this middle status was revoked and biracial individuals were widely considered Black as support for hypodescent grew. Biracial individuals were welcomed into Black communities as they brought with them social capital often out of reach for Black individuals. This system of hypodescent is slow to change as it is built on very entrenched systems of discrimination. It took until 2010 for biracial individuals to be able to choose more than one race in the census, and the topic of biracial identity is still quite contested (Rockquemore & Brunσμα, 2002a).

Despite this jockeying of how others perceive biracial individuals should identify, biracial individuals themselves identify quite diversely (Rockquemore & Brunσμα, 2002a, b). From interviews Rockquemore and Brunσμα (2002a, b) identified in seven biracial

identifications; as a singular monoracial identity (Black or White), as biracial (with distinction as to whether they felt validated or not regarding their identity), as protean (a shifting identity, highlighting different facets of identity based on situational cues), transcendent (finding race to be a meaningless construct), or simply as other. These identities and the experiences of individuals identifying in these ways could have diverse outcomes. For example, do biracial individuals identifying as monoracial adhere to the cultural body standards of that race or not? Do biracial individuals with monoracial parents receive conflicting messages about beauty and body standards? Does disordered eating depend on racial-ethnic composition of friends, family, and neighborhoods? There is so much we have yet to explore.

The general theoretical extension would be that those biracial girls who identify as Black or say that they experience the world as a Black person may be aware of and have social access to the protective cultural body ideals and racialized gender scripts. However, Rockquemore and Brunson note that for biracial individuals, ostracism is often skin deep. Their interviewees highlighted skin-tone and Afrocentric features, or lack thereof, as contributing to whether they felt accepted or excluded among monoracial peers. This focus on the body as the object of acceptance or rejection likely brings body image and body dissatisfaction into sharp focus for many biracial girls. Biracial girls living in predominantly White social contexts likely have more exposure to mainstream body ideals and see these lauded by their peers as the goal. These girls might be at increased risk because although skin tone and Afro-centric features are relatively static, weight modification, to achieve the thin ideal, could promote acceptance and carry with it the power of acceptance into dominant groups. However, given the dearth of research, the above is not a theoretically-based supposition. By including Black-White biracial girls, this dissertation

aims to explore biracial identity and its relation to other social identities, body image, and disordered eating.

Context Matters

The last part of the conceptual model to explore is context. As mentioned previously in the sociocultural influences on disordered eating section, adolescents' varied social scenes play a role in their friend group composition and their disordered eating (Forman-Hoffman & Cunningham, 2008; Kruse et al., 2016). Studies have repeatedly shown that friends are a strong influence on disordered eating (e.g., Eisenberg & Neumark-Sztainer, 2010; Lieberman et al., 2001). Some research suggests a direct predictive effect between peer disordered eating and individual adolescent's disordered eating (Eisenberg & Neumark-Sztainer, 2010). While other research suggests that girls self-select friends who are similar to themselves in terms of body dissatisfaction and disordered eating (Rayner et al., 2013a, b).

Relatedly, friend group diversity has been shown to benefit outcomes such as academic achievement and motivation (Clark-Shim, 2014; Williams & Hamm, 2017). For White girls, especially, it is possible that more diverse peer groups could be beneficial in terms of body satisfaction and disordered eating. Allport's (1954) intergroup contact theory suggests that part of increasing diversity is increased interpersonal contact between members of different groups. Allport (1954) suggested this has the potential to reduce prejudice between groups. As mentioned previously, Black girls have larger body ideals and conceptualize body image more broadly than White girls (Botta, 2000; Kelly et al., 2011; Rubin et al., 2003). White girls who engage with more diverse peer groups may be more likely to encounter girls whose body ideals do not support the hegemonic thin ideal. Conversations and friendships with Black girls may allow White girls to push back against the hegemonic thin ideal. However, it possible that the

opposite is true for Black girls. Black girls who engage more with White girls likely encounter the hegemonic thin ideal more frequently and this could prove detrimental to their self-image.

Further consideration also needs to be paid to what influences peer friendships.

Adolescents are more likely to make friends with people whom they spend a considerable time (Kruse et al., 2016). For adolescents, the most common settings in which they spend most of their time are in school and in their immediate neighborhood/community. As mentioned previously, some research has already suggested a social contagion-like aspect of disordered eating in adolescents, wherein it spreads through counties such that adolescents within a county are more likely to report similar disordered eating than adolescents from different counties (Forman-Hoffman & Cunningham, 2008). As such, while peer group and peer group diversity are important influences on disordered eating, research also needs to further explore the impact of school and neighborhood diversity and influence on disordered eating.

The Current Study

The dissertation will expand the current research in a number of important ways. Firstly, it moves past the group-membership paradigm by exploring the role of gender, ethnic-racial, and racialized gender identity to further explain sex and ethnicity-race differences in body ideals, comparison, satisfaction, and disordered eating. Secondly, it expands the limited work of pubertal timing on these variables in non-White populations by using concurrent measures of relative perceived pubertal timing and menarche, which would capture objective and subjective impacts of puberty. Lastly, it expands the research by including Biracial adolescents. Too often data from Biracial adolescents are ignored or subsumed into a Black identifying group. However, there is evidence to suggest that biracial individuals identify differently from Black individuals

(Rockquemore & Brunsma, 2002a) and that their behavior patterns and ideals may be different, as well (Ivezaj et al., 2010).

Research Questions and Hypotheses

- 1) Do identity (ethnic-racial, gender, racialized gender, and pubertal timing), body ideals, and body comparisons impact disordered eating? Does this vary by ethnic-racial group membership?

Hypothesis 1a) High feminine trait endorsement will result in greater disordered eating.

Hypothesis 1b) Low masculine trait endorsement will result in greater disordered eating.

Hypothesis 1c) High endorsement of feminine ideologies will result in greater disordered eating, especially the high endorsement of investment in appearance and thinness.

Hypothesis 1d) Earlier age at menarche will result in greater disordered eating.

Hypothesis 1e) Earlier relative perceived pubertal timing will result in greater disordered eating.

Hypothesis 1f) High body comparisons orientation will result in greater disordered eating.

Hypothesis 1g) Choosing a thinner body ideal will result in greater disordered eating.

Hypothesis 1h) Larger current body size will result in greater disordered eating.

- a) Does this vary by ethnic-racial group membership?

Hypothesis 1i) High ethnic-racial identity affirmation will result in lower disordered eating for Black girls, but not White girls.

Hypothesis 1j) The impact of feminine traits and ideologies will be stronger for White girls than Black girls.

Hypothesis 1k) The impact of body comparisons will be stronger for White than Black girls.

- 2) Does ethnic-racial identity affirmation moderate the relation between pubertal timing and disorder eating?

Hypothesis 2a) Ethnic-racial identity will moderate the relation between pubertal timing for Black girls.

- 3) Do current body size, ideal body size, or body comparisons mediate the relation between pubertal timing and disordered eating?

Hypothesis 3a) Current body size will mediate the relation between pubertal timing and disordered eating.

Hypothesis 3b) Ideal body size will mediate the relation between pubertal timing and disordered eating.

Hypothesis 3c) Body comparisons will mediate the relation between pubertal timing and disordered eating.

- 4) How does being the ethnic-racial majority or minority in a social context (friends, school, neighborhood) impact identity (ethnic-racial, gender, racialized gender, and pubertal timing), body comparisons, body ideals (personal and cultural), and disordered eating?

How does context impact the relations between identity (ethnic-racial, gender, racialized gender, and pubertal timing), body ideals, and body comparisons on disordered eating?

- 5) For Black-White biracial adolescents only does biracial identity category (Rockquemore & Brunsma, 2002) impact identity (ethnic-racial, gender, racialized gender, and pubertal timing), body ideals, body comparison, or disordered eating?

Chapter 3

Method

Participants

Participants were adolescent girls aged 13-15 years that participated in an anonymous web-based study on changing bodies and identities. Because the survey was placed on an open website, inclusionary criteria for participation were specified in the informed consent page (i.e., Black, White, and Black-White biracial girls between ages 13-15 years); however, adherence to the criteria could not be verified due to the anonymous nature of the survey. In order to minimize superfluous replies to the survey, an online survey hosting site was used (www.qualtrics.com) and panel selection was conducted. Seven-thousand-six-hundred-and-twenty-four people started the study. Of those, 5,501 parents consented to allow their child to participate and 4,641 adolescents started the survey. Of those 4,641 participants, 1,270 were removed owing to biological sex, age, or race ineligibility. Lastly, Qualtrics also screens data based on duration, fullness of completion, and other key criteria. Qualtrics' and the primary investigators' screenings resulted in a final sample of 671 adolescent girls [M age = 14.12 (SD = .798)] who self-identified as Black (n = 235), White (n = 225), or Black-White biracial (n = 211).

Participant Demographics

All participants were residents of the United States: 47% from southern states, 21.5% from midwestern states, 15.8% from the northeast, and 15.6% from the west. The average BMI for participants was 23.44 (SD = 5.86), which is within the normal weight range for girls within their respective age groups. On average participants' mothers had at least some college education (73%). In terms of the study variables, a MANCOVA revealed that there were

significant differences between groups on a number of the study variables. There were no significant differences between groups on feminine traits, but White girls endorsed significantly fewer masculine traits ($M = 46.615$) relative to Black ($M = 47.948$; Black-White $\beta = .162$, $SE = .038$, $p < .001$) and Black-White biracial girls ($M = 47.483$; White-biracial $\beta = -.140$, $SE = .045$, $p = .002$).

In terms of feminine ideologies, there were significant group differences in thinness investment, investment in appearance, being nice in relationships, and care for children but not in romantic relationships. White ($M = 11.994$) and Black-White biracial ($M = 11.706$) girls invested more in their appearance than Black girls (Black $M = 11.256$; Black-White $\beta = -.144$, $SE = .041$, $p < .001$) and Black-biracial girls ($\beta = -.105$, $SE = .043$, $p = .015$), such that White and Black-White biracial girls thought that spending time on things like hair and make-up were more important than Black girls did. In terms of investment in thinness ideology, Black ($M = 12.435$) and White ($M = 12.530$) girls did not significantly differ from each other; however, they both were significantly less invested in this ideology relative to Black-White biracial girls ($M = 13.688$, Black-biracial $\beta = -.310$, $SE = .118$, $p = .009$; White-biracial $\beta = -.106$, $SE = .045$, $p = .018$); here, Black-White biracial girls believed being thin was more important relative to Black and White girls. White girls ($M = 16.010$) were more invested in the ideology of niceness in relationships than Black ($M = 15.070$, Black-White $\beta = -.191$, $SE = .037$, $p < .001$) and Black-White biracial girls ($M = 15.306$; White-biracial $\beta = .156$, $SE = .045$, $p < .001$), here White girls were more likely to believe that being nice to others is extremely important in their social relationships than Black and biracial girls. However, Black-White biracial girls were more likely than Black girls (Black-biracial $\beta = -.106$, $SE = .047$, $p = .023$) to believe that being nice to others is extremely important in their social relationships. Lastly, in terms of the care for children

ideology, White ($M = 14.013$) and biracial ($M = 13.928$) girls were significantly more invested in this ideology than Black girls ($M = 13.647$, Black-White $\beta = -.090$, $SE = .040$, $p = .026$; Black-biracial $\beta = -.089$, $SE = .036$, $p = .013$), but did not significantly differ from each other. That is, White and Black-White biracial girls found children more engaging and believed that caretaking for children was an important aspect of who they were. White and Black-White biracial girls tended to score higher on feminine ideologies relative to Black girls. However, it is important to note that there were not differences on every ideology. Specifically, there were no significant group differences in romantic relationships. Thus, the hypothesis of differences in investment in appearance was supported but not the hypothesis about thinness investment. There were no significant differences between groups on the measure of Black femininity using the Belgrave African American Women's Role Belief measure.

In terms of pubertal timing there was a significant difference for perceived relative pubertal timing but not for menarche. Black girls were more likely to perceive that their development was early relative to their same-age/sex peers than White ($M = 2.291$, Black-White $\beta = -.118$; $SE = .037$, $p = .001$) and Black-White biracial girls ($M = 2.859$, Black-biracial $\beta = -.623$; $SE = .118$, $p < .001$). White girls relative to Black-White biracial girls ($\beta = -.604$; $SE = .115$, $p < .001$), were more likely to perceive that their development was early relative to their same-age/sex peers.

There were significant differences in body comparison orientation between groups, as well. White ($M = 24.258$) and biracial ($M = 24.685$) girls engage in more body comparisons than Black girls ($M = 23.003$, Black-White $\beta = -.136$; $SE = .036$, $p < .001$; Black-biracial $\beta = -.158$; $SE = .045$, $p < .001$), but did not significantly differ from each other. This suggests that both

White and biracial girls are more likely to compare their bodies to their peers, in terms of size/shape, fitness, and individual body parts, than Black girls.

There were group differences across all body size and ideal measures. In terms of current body size, biracial girls indicated having the largest average current body size ($M = 6.344$). Black-White biracial girls had significantly larger average current body size than Black ($M = 6.004$; Black-biracial $\beta = -.128$; $SE = .036$, $p < .001$) or White ($M = 6.004$; Black-biracial $\beta = -.133$; $SE = .037$, $p < .001$) girls, who did not significantly differ from each other. This suggests that Black-White biracial girls perceived their bodies to be the largest of any of the ethnic-racial groups studied in this dissertation. For personal perceived ideal body size, Black ($M = 5.256$) and Black-White biracial ($M = 5.068$) girls both perceived their ideal body sizes to be significantly larger than White girls ($M = 4.596$; Black-White $\beta = .190$; $SE = .036$, $p < .001$; White-biracial $\beta = -.166$; $SE = .041$, $p < .001$). This means that the body size that Black and Black-White biracial girls thought was best was bigger than what White girls thought was best.

Consistent with previous research, Black girls ($M = 6.993$) perceived the ideal Black female body size to be significantly larger than White girls ($M = 6.305$; Black-White $\beta = .202$; $SE = .037$, $p < .001$). Black-White biracial ($M = 6.683$) girls perceived the Black female body ideal as in between and not significantly different from either group. Regarding the perceived Black female ideal, this means that in-group girls, Black girls, identified the cultural ideal to be bigger than out-group, White girls did. In terms of the perceived ideal White female body size, Black ($M = 3.375$) girls indicated they believed the White ideal was smaller than both White ($M = 3.824$; Black-White $\beta = -.196$; $SE = .038$, $p < .001$) and Black-White biracial ($M = 4.041$; Black-biracial $\beta = -.411$; $SE = .088$, $p < .001$) girls, who did not significantly differ from each

other. Similarly, in this case the in-group, White girls, chose a larger cultural ideal than out-group, Black girls did.

Lastly, there were also significant between-group differences in disordered eating. Using the total composite score, Black girls evidenced the lowest disordered eating ($M = 31.484$; Black-White $\beta = -.142$; $SE = .034$, $p < .001$; Black-biracial $\beta = -.174$; $SE = .041$, $p < .001$). However, Black-White biracial girls and White girls did not differ from each other (biracial $M = 33.957$; White $M = 33.100$). This suggests that White and Black-White biracial girls engage in more disordered eating than Black girls, which was consistent with the hypothesis.

Procedure

An anonymous web-based survey was designed to examine girls' perceptions of their body changes during puberty and their identity. The participants were recruited using a panel survey through Qualtrics LLC. As part of its panel survey program, Qualtrics hosts an 'in-house' pool of participants from whom they have collected basic demographic information. As part of the panel survey service, Qualtrics contacts participants from their pool who meet the demographic qualifications of the study. For this study, parents were given the option to allow their Black, White, and Black-White biracial daughters between the ages of 13-15 to participate in the study. The first page of the survey was parent consent followed by an adolescent assent page. After agreeing to participate, the adolescent girls were asked for their age, gender, and race. Participants who identified as Black, White, or Black-White biracial girls between the ages of 13-15 were directed to the rest of the survey where they completed measures regarding their gender identity, racial identity, racialized gender identity, body comparison orientation, body ideals, and disordered eating. Qualtrics offers its sample pool participants compensation in the

form of in-program currency that can be amassed and exchanged for real-world rewards (e.g. gift cards, travel discounts).

Before analysis, the responses were assessed both by Qualtrics and the primary investigator to remove low-quality data. Qualtrics staff, as part of the panel survey service, removed and replaced participants who did not match study demographics, had partially completed the survey, had completed the survey in less than one-third of the median time to complete (6.2 minutes), or had participants who responded with the same numeric response for all close-ended questions. When reviewing the data, the primary investigator asked for data to be replaced for participants who reported age at menarche that was not coherent with their age (e.g. saying that had their first period at an age older than their current age), those who reported an identity other than an ethnic-racial identity in the self-report of ethnic-racial identity (e.g., football player, smart-person), and those who did not provide reasonable responses to open-ended questions (e.g., key-smash response).

Protection of Human Subjects

In terms of participant ethics and safety, the researcher obtained approval from the University of Michigan's Institutional Review Board and was approved at the "no more than minimal risk" level before conducting the study. Qualtrics is well-vetted and invested in data security, having received numerous awards for proactive risk management and HIPPA security requirements. Qualtrics removed all personally identifiable data before sending it to the primary investigator. Qualtrics also encrypts all data in transit to prevent attacks and session hijacking. Once the researcher obtained the data, they were stored in a password-protected, data encrypted digital storage site (M+Box), to which only the primary investigator had access.

Measures

Social Identities

Gender Identity: Traits.

Bem Sex-Role Inventory-short form (BSRI-SF; Bem, 1974). The BSRI-SF is a 30-item, self-report questionnaire concerning personal adherence to personality traits socially prescribed as masculine or feminine, which has been suggested to be more reliable than the original 60-item measure (Vacha-Haase, 1998). One of the major strengths of this measure is that it positions femininity and masculinity as separate constructs, such that strongly ascribing to feminine traits does not necessitate a dip in masculine traits. Separate scales allow participants to indicate that they uphold the traits commonly associated with one, both, or neither of these gender identities. The measure consists of 10 masculine traits, 10 feminine traits, and 10 gender-neutral traits. For time constraint and participant fatigue purposes, the gender-neutral traits were dropped in this study. Masculine traits included being independent, aggressive, and assertive and feminine traits included being sympathetic, sensitive to the needs of others, and gentle. Participants were asked to indicate how characteristic the different listed personality traits were for them. Items are rated on a 7-point scale from 1 (almost never true) to 7 (almost always true). Scores on the masculine and feminine traits were summed separately, with higher scores indicating greater adherence to gendered traits. Adequate reliability with adolescent samples (Dibb-Smith & Brindal, 2015; Lampis et al., 2019; Maharishi & Rathnasabapathy, 2016), including Black youth (Buckley, 2018; Buckley & Carter, 2005) have been found (α range .68-.88). In this sample, the Cronbach's α for the masculine subscale for Blacks was .87, for Whites was .90, and for Black-White biracials was .85. The Cronbach's α for the feminine subscale for Blacks was .91, for Whites was .94, and for Black-White biracials was .92.

Gender Identity: Ideologies.

Conformity to Feminine Norms Inventory (CFNI; Mahalik et al., 2005). The CFNI is an 85-item, self-report questionnaire concerning adherence to gender norms and beliefs, from which a 45-item short-form version was created in 2010 (Parent & Moradi). This measure assesses a number of gender ideologies, but for time constraints and participant fatigue purposes, only the five subscales with previous theoretical and empirical connections to disordered eating were included (nice in relationships, thinness, care for children, romantic relationships, and investment in appearance), reducing the total number of items to 25 (as reviewed in Green et al., 2011; Sharp & Keyton, 2016). An example statement for the nice in relationships subscale is “being nice to others is extremely important.” Participants were asked to indicate how accurate the listed statements were for them. Items are rated on a 4-point scale from 1 (strongly disagree) to 4 (strongly agree). Scores on each ideology were summed separately. Between 1 and 3 responses per subscale required reverse coding so that higher scores indicated greater adherence to feminine ideologies. Given its relative newness compared to the BSRI, the CFNI has not been previously tested with adolescent samples. However, it has been used in both Black and White adult female samples (Berry, 2017; Lyócsa & Lyócsa, 2013; Mahalik et al., 2005; Parent & Moradi, 2010), which have found adequate reliability (α range .67-.92). In this sample, the care for children subscale Cronbach’s α for Blacks was .61, Whites was .85, and Black-White biracials was .77. For the nice in relationships subscale, Cronbach’s α for Blacks was .56, Whites was .70, and Black-White biracials was .73. For the romantic relationships subscale, Cronbach’s α for Blacks was .60, Whites was .75, and Black-White biracials was .60. For the investments in appearance subscale, Cronbach’s α for Blacks was .52, Whites was .74, and Black-White biracials was .59. For the thinness subscale, Cronbach’s α for Blacks was .84, Whites was .88, and Black-White biracials was .86.

Racialized Gender Identity.

Belgrave African American Women's Gender Role Belief Measure (Belgrave et al., 2016). The Belgrave African American women's gender role belief measure is an eight-item questionnaire concerning adherence to traits and ideologies specifically of Black femininity. Part of intersectional research means assessing the concepts and measures used in order to understand if they are access the desired content for all groups. In this situation, the gendered trait and ideology measures were both created and normed with White populations (Bem, 1974; Mahalik et al., 2005). These measures represent hegemonic White gendered traits and ideologies and may not be as relevant to Black femininity (Capodilupo & Kim, 2003; Rubin et al., 2003). Therefore, in keeping with the intersectional intention of this dissertation, it was necessary to include a measure of racialized gender identity, specifically, Black femininity. The strength of this measure derives from its being created from the experiences of Black women and normed with Black women. It was developed in response to concerns that common gender role/trait measures were assessing mainstream/White depictions of femininity and therefore may not be adequately capturing the experiences of Black women or the conceptualization of Black femininity (Belgrave et al., 2016; Cole & Zucker, 2007).

It exists as one of a limited number of measures of Black women's gender roles (Belgrave et al., 2016; Jones et al., 2018). Of the few existing measures, the Belgrave measure was most appropriate for use with adolescents in terms of comprehension and timeliness. Participants were given seven bipolar scales with opposite traits or ideologies and asked to indicate where on that scale they fell, for example, did they feel independent or dependent. There was a five-point responses scale from 1 "very like me" in response to pole one, 3 "not like me", and 5 "very like me" in response to pole two. Belgrave and colleagues reported two subscales:

agency ($\alpha = .74$) and caretaking ($\alpha = .81$) Caretaking, as it relates to mainstream conceptions of femininity, was shown to have relatively high convergent reliability with the Bem Sex Role Inventory - Femininity Scale [$r(92) = -.534, p < .001$]. However, given that the agency subscale had only two questions the two subscales were combined, and the responses summed to create a composite score. In this sample, the Cronbach's α for the Belgrave African-American women's gender role belief measure for Blacks was .80, Whites was .77, and Black-White biracials was .80. One question had to be recoded such that lower numbers indicated greater engagement with the Black feminine gender role.

Ethnic-Racial Identity.

Multi-group Ethnic Identity Measure (MEIM; Phinney, 1992). The study included Black, White, and Black-White biracial adolescents, and as such the ethnic-racial identity measure needed to be suitable for use with each of these groups. While there are numerous, well developed measures of Black racial identity, from an intersectional perspective these cannot be applied to White girls and likely may only apply to a subset of biracial girls. The MEIM is one of a few measures of ethnic-racial identity that is suitable for use with Black and White girls, and while it has not been used with biracial girls, the measure's flexibility likely makes it useful for them as well. The MEIM was originally a 20-item measure of ethnic-racial identity including both content and development of identity (Phinney, 1992) and was modeled off of Marcia's model of identity achievement (1980) as it relates to ethnic identity development. Phinney's (1992) adaptation allows for the measurement of 3 distinct subscales relating to ethnic-racial identity: (a) affirmation and belonging, (b) achievement, and (c) behaviors/ethnic identity exploration. For this study specifically, participants responded to the affirmation/belonging subscale, which measures the sense of group membership and feelings the individual has relating

to their group. This decision was partially because exploration has already been partially explored (Blazek & Carter, 2019), and also because the sense of connection/belonging within a group may prompt girls to adhere more to the norms of that group. Participants were given five statements relating to ethnic-racial affirmation and belonging, for example, “I feel a strong attachment towards my own ethnic-racial group.” Items were rated on a 4-point scale from 1 (strongly disagree) to 4 (strongly agree). Scores were summed such that higher scores indicated a greater sense of affirmation and belonging. Adequate reliability with adolescent samples (Dandy et al., 2008; Derlan & Umaña-Taylor, 2015; Homma et al., 2014) including Black youth (Seaton et al., 2012; Yip et al., 2010) have been found (α range .76-.90). In this sample, the Cronbach’s α for the affirmation and belonging subscale for Blacks was .93, Whites was .92, and Black-White biracials was .91.

Biracial identity question (Rockquemore & Brunsma, 2002b). Biracial identity was measured with a single-item question about how biracial youth self-identify based on the work of Rockquemore and Brunsma (2002b). This question was added to allow a deeper understanding of how biracial individuals identify and experience their bodies in relation to ideals, comparisons, and disordered eating. Given the intersectional perspective of this dissertation it was necessary to disentangle experiences of biracial girls as potentially different from either of their mono-racial Black or White peers. To do this, biracial participants were asked which of seven statements best described how they felt about their racial identity. Response options were: (a) I consider myself only Black, (b) I sometimes consider myself Black, sometimes White, and sometimes biracial, (c) I consider myself biracial, but I experience the world as a Black person, (d) I consider myself only as biracial (neither Black nor White), (e) I consider myself only White, (f) Race is meaningless, I do not believe in racial identities, (g) or Other, with a space to

provide their own identity option. These options relate to the categories of Monoracial Identity (exclusively Black or White), the Biracial Identity (Biracial/validated or unvalidated), the Protean Identity (fluidly moving between monoracial and biracial identities), and the Transcendent identity (not ascribing to current racial labels). Biracial participants were relatively well distributed across groups, with the exception of the Singular White identity and Singular Black identity, which were also low in Rockquemore and Brunson's work (2002a, b) [Singular Black = 5 (2.4%); Singular White = 5 (2.4%); Biracial Validated = 66 (31.3%), Biracial Unvalidated = 64 (30.3%); Protean = 33 (15.6%); Transcendent = 30 (14.2%); Other = 8 (3.8%)].

Puberty.

Menarche. Menarche is the age at which girls have their first menstrual cycle. To assess this, girls were asked two questions. First, they were asked if they had had their first period (menarche) to which they could respond yes or no. If girls reported having had menarche, they received a follow-up question asking about the age, in years and months (e.g., 10 years and 3 months), at which they had their first period. Most research, including this study, is interested in menarche relative to same-age, same-sex peers. To create a measure of this, standardized residual scores for menarche were created within their race and age groups (e.g., how did one 14-year-old biracial girl's timing compare to other 14-year-old biracial girls). To do this a variable was created with each age/ethnicity-race category accounted for (e.g., Black 13-year-olds, Biracial 14-year-olds). The age/ethnicity-race variable was regressed on the menarche variable (in years) to understand if girls were developing early, on-time, or later than their same-age, same-race peers.

Relative Perceived Pubertal Timing (From pubertal development scale; Peterson et al., 1992). Perceived pubertal timing is a single item self-report measure of perceived pubertal development relative to same-age, same-sex peers. This item was drawn from the Pubertal Development Scale (PDS; Peterson et al., 1992). Participants were asked, “Overall, do you think your development (how you are growing and changing) is any earlier or later than most other girls your age?” Responses were answered using a 5-point Likert scale, ranging from 1 “*much earlier*” to 5 “*much later*”. Lower scores indicated earlier perceived development relative to same-age, same-sex peers. Although self-report measures of puberty are not without critique (Dorn & Biro, 2011), studies have demonstrated reasonable confidence in the reliability and validity of girls’ perceptions of their pubertal development (Dubas et al., 1991; Graber et al., 1997). One of the major strengths of this measure is that perceived relative timing allows the research to assess how adolescents understand their development in relation to their environment. Personal perception is crucial, because how adolescents perceive their development can reflect both their physical development status and also their socio-emotional perceptions of development, as well (e.g., does she feel ill-prepared to face the change or perhaps ready to grow up and be taken more seriously; Carter et al., 2020).

Mechanisms and Influences

Body Ideals [Body Image Assessment for Obesity (BIA-O); Williamson et al., 2000]. The BIA-O is a figural assessment of body-size, using 18 silhouettes ranging from underweight to obese (Williamson et al., 2000). Ideal body size and perceptions of personal body size have repeatedly been linked to disordered eating (as reviewed in Grabe & Hyde, 2006; Ramirez & Milan, 2016; Tiggemann, 2003). Studies have shown that visual measures of body image (e.g., figural drawings, pictures, silhouettes) may be more developmentally appropriate for children

and adolescents (as reviewed in Halliwell, 2015). Silhouettes specifically are lauded as potentially reducing racialized interpretation of hand-drawn figures in visual measures of body image (Gardner et al., 1998). The 18-figure scale (BAI-O) was given as the response scale to a series of questions modeled broadly after a study by Gordon and colleagues (2010). Participants were asked to indicate which size figure was best representative of their beliefs in response to four body size related questions. Participants were asked to indicate their perceived current body size, their ideal body size, what they perceived the ideal Black female body size to be, and what they perceived the ideal White female body size to be. Higher scores indicated larger bodies. By allowing participants to choose different ideals for themselves and cultural in-groups and out-groups, researchers can better assess the impact hegemonic versus cultural body ideals on individuals' disordered eating. This is also important from an intersectional perspective, so as not to prescribe the same ideals upon all participants who vary based on social identities, bodily discrimination, and experiences. The BIA-O has not been used in adolescent samples, but demonstrates reasonable test-retest reliability with adult samples (over 2 weeks; current body size for women, $r = 0.93$; ideal body size for women, $r = 0.77$).

Body Comparisons [Body, Eating, and Exercise Comparison Orientation Measure (BEECOM); Fitzsimmons-Craft et al., 2012a]. The BEECOM is an 18-item measure of how commonly people compare themselves to others in terms of their body size/shape, eating habits, and exercise habits (Fitzsimmons-Craft et al., 2012a, b). One of the major strengths of this measure, relative to other comparison models, is its targeting of body-specific comparisons, not social comparisons broadly (Fitzsimmons et al., 2012a, b). Although the BEECOM measures multiple comparison dimensions, this dissertation was particularly focused on body comparisons to peers and therefore only the questions pertaining to body comparison orientation were asked.

The six-item body comparison subscale consisted of questions like “I pay attention to whether or not I am as thin as, or thinner, than my peers.” Participants were asked to indicate how often they engaged in the comparison-type that the statement was presented using a 7-point Likert scale from 1 “never” to 7 “always”. The BEECOM is again, a relatively new measure, and has not been used with adolescent samples. However, studies with adult samples show high reliability (Cronbach’s α .91 - .94; Fitzsimmons et al., 2012a; Saunders et al., 2019). In this sample, the Cronbach’s α for Blacks was .92, Whites was .96, and Black-White biracials was .95.

Ethnic-Racial demographics of friend group, school, and neighborhood (Based on a measure used in Carter et al., 2017). The ethnic-racial demographics of three common social contexts were assessed using adolescent self-report. A single item was used for each social environment. Single-item measures of racial composition have been used effectively in the past by researchers studying adolescents (Carter et al., 2017; Morales-Chicas & Graham, 2015). Participants were asked, “How many students/teens/friends from your school/neighborhood/friend group are of each of the following ethnic-racial groups?” Participants were asked about Black, White, biracial, Asian, and Latinx people and invited to respond using a 5-point scale from 1 “almost all” to 5 “none”. This dissertation was particularly interested in whether students were in the majority or minority in these contexts, specifically in relation to the other ethnic-racial groups of interest in this study. To create a measure of this, participants who reported that their ethnic-racial in-group was the majority compared to the other groups were considered to be part of in-group majority environments, those who reported their ethnic-racial in-group was the minority related to the other groups were considered to be in in-group minority environments.

Outcome

Disordered Eating.

Children's Eating Attitudes Test-Revised Form (chEAT; Maloney et al., 1988; Revision Anton et al., 2006). The original chEAT is a 26-item self-report measure of engagement in behaviors and beliefs related to disordered eating (Maloney et al., 1988). It is a modification of the 40-item adult form, the Eating Attitudes Test, designed to be more developmentally appropriate for children and adolescents, suitable for use with girls between the ages of 8 and 13. Anton and colleagues (2006) proposed a reduced 20-item version of the chEAT with a new scoring system to address past issues with skewness. Aton and colleagues (2006) also used a larger sample of Black adolescents when testing their model than previous work had (13%). Their new factor structure fit well [$\chi^2(155) = 466$, RMSEA = .005, CFI = .89] and showed good stability across a 6-month test-retest gap. Anton and colleagues do note that alpha values were somewhat low, particularly for their food-preoccupation subscale and their caloric awareness subscales; however, they are not drastically lower than those from other research with the scale (Bellerive-Ocker, 2001; Lynch & Eppers-Reynolds, 2005). Anton and colleagues proposed 6 subscales: Overconcern with Body Size, Dieting, Food Preoccupation, Social Pressure to Gain Weight, Vomiting, and Caloric Awareness. Between the interests of the study and concerns about the reliability of some scales, only the overconcern for body size, dieting, and vomiting subscales were used as well as one additional item about bingeing behaviors. This resulted in participants being given 12 statements relating to disordered eating behaviors and beliefs, for example, "I stay away from eating when I am hungry." They were asked to indicate how true these statements were for them using a 6-point scale from 1 (always true) to 6 (never true). Studies have shown adequate reliability for the chEAT in adolescent samples (Cronbach's $\alpha = .60 - .90$; Anton et al., 2006; Maloney et al., 1988; Smolak & Levine, 1994; Williamson et

al., 1997), as well as with Black adolescents (Cronbach's $\alpha = .66 - .88$; Bodell et al., 2018; Witherspoon et al., 2013). The subscales were collapsed for this dissertation due to the interest in overall engagement in disordered eating, rather than engagement in specific behaviors. In this sample, the Cronbach's α for Blacks was .87, Whites was .90, and Black-White biracials was .91.

Control Variables

Body Mass Index. Body mass index is a proportional measure of weight and health, which can be broken down into categories based on the Center for Disease Control guidelines of underweight, normal weight, and overweight categories (CDC, n.d.). Body mass index has been commonly used as a control in both puberty and disordered eating research. Puberty research suggests that adolescents with higher BMI begin the transition to puberty early (Biro et al., 2006; Kaplowitz, 2006; Kaplowitz et al., 2001), and those who enter puberty early also tend to weigh more throughout adolescence and into adulthood (Harris et al., 2008; Pierce et al., 2010). Participants were asked to provide their weight in pounds and their height in feet and inches. Adolescents' BMI was calculated from weight and height data using a formula from Adolphe Quetelet (Eknoyan, 2008), which is as follows: $BMI = (\text{mass}) / (\text{height})^2 \times 703$, where mass was measured in pounds, height was measured in inches, and 703 was the factor for UK/US units.

Chronological Age. Age is important to both puberty and disordered eating research. Controlling for age is important in pubertal timing research in order to attribute differences to timing rather than age (Coleman & Coleman, 2002). Similarly, disordered eating tends to spike in adolescence and so accounting for age can again be invaluable (Klump et al., 2010). Participants were asked to indicate how old they were from 5 options from 12 years old to 16

years old. Participants who indicated they were 12 or 16 (beyond the scope of this study), were excluded.

Data Analysis Plan

Preliminary Data Cleaning

Before conducting any analyses, the data were assessed for homogeneity, normality, and outliers. A Levene's test was conducted to test homogeneity. Most, but not all, of the independent variables were not significantly different based on race. There was a lack of homogeneity for the MEIM [$F(2, 669) = 5.971, p = .003$], menarche [$F(2, 669) = 3.814, p = .023$], perceived pubertal timing [$F(2, 669) = 4.156, p = .016$], BEECOM [$F(2, 669) = 5.594, p = .004$], and CFNI-Care for Children [$F(2, 669) = 5.483, p = .004$]. Normality was tested by assessing skewness and kurtosis at the scale-level when possible and at the item-level when necessary. Skewness and kurtosis were within acceptable levels (± 2) for all variables. Outliers were identified using Mahalanobis distances (> 23.69), Cook's distance ($> .006$), and leverage ($> .045$). Participants were considered outliers if they exceeded the cutoffs for two of the three measures. There were 41 outliers. Rather than deleting the outliers, the analyses were conducted in Mplus (Muthén & Muthén, 2017) using the maximum likelihood estimation with robust standard errors.

Research Question 1

This question had two main purposes. The first part was an assessment of the impact of identity and mechanism variables on disordered eating. The second aim was to assess if these relations differed by ethnic-racial group membership. These questions were assessed using a multigroup analysis of regression paths. In regression models, it is often recommended to mean center the variables in order to increase interpretability (Hayes, 2013). Given the between-group

differences, as reported in participant demographics, a combination of mean centering and group mean centering was used to prepare the data for analysis. The CFNI-romantic relationships subscale, the BSRI-feminine traits subscale, the Belgrave African American women's gender role measure, and menarche variables did not differ based on ethnic-racial group membership. As such, these variables were mean-centered. To do this, first, the average for each subscale/measure across ethnic-racial groups was calculated. These subscale/measure averages were then subtracted from participants' total scores on each subscale/measure. The closer to zero a participant's score was the closer to average it was. Negative numbers meant the participant's score was below average and positive numbers meant they scored above average.

The mean scores on the other variables did differ by ethnic-racial group membership and therefore needed to be group mean-centered. In group mean centering the mean for each group, in this case ethnic-racial group, is used to mean center within each group rather than a single average across groups. In this case, for each subscale/measure three means were calculated, one for Black participants, one for White participants, and one for Black-White biracial participants. The Black participants' means for each subscale/measure were subtracted from Black participants' scores, the White participants' means for each subscale/measure were subtracted from White participants' scores, and the Black-White biracial participants' means for each subscale/measure were subtracted from Black-White biracial participants' scores. Again, the closer to zero a participant's score was the closer to their ethnic-racial group average it was. Negative numbers meant the participant's score was below their ethnic-racial group average and positive numbers meant they scored above their ethnic-racial group average. This mean centering was conducted in SPSS (IBM, 2019) with data derived from Mplus (Muthén & Muthén, 2017) MANCOVA analysis.

After mean centering and group mean centering all the variables except the intended dependent variable, disordered eating, the multigroup regression analysis could begin. This analysis was conducted in Mplus (Muthén & Muthén, 2017), in part to make use of more robust estimators to account for minor issues with homogeneity. The first part of the question was about what identity and mechanism variables were significantly related to disordered eating for each group. In Mplus (Muthén & Muthén, 2017) each identity and mechanism variable were regressed onto disordered eating. Age and BMI were covariates relating to disordered eating. Several correlations, which were deemed theoretically sound were added into the model. This included; correlating age with BMI, BSRI-masculinity and BSRI-femininity, BSRI-femininity with all CFNI subscales, Belgrave's African American women's gender role belief measure with ethnic-racial affirmation and BSRI-femininity, perceived pubertal timing with age and BMI, menarche with age and BMI, current body size with ideal body size, ideal body size with perceived Black and White female ideal bodies, and current body size, ideal body size, and CFNI-thinness with BMI. At this point, the model fit was assessed and was good, allowing for the analysis to continue.

After establishing the significant regressions for each ethnic-racial group, the second part of the question aimed to understand if the differences between groups were significant. For example, was the role of BSRI-femininity stronger for White girls relative to Black girls. To do so a multigroup analysis was conducted. A multigroup analysis consists of three stages, model fitting, model comparison, and regression path comparison. The model fit had already been conducted as part of the first question. A model, with a good fit, had been created and assessed.

The second stage involves constraining different parts of the model to be equal across ethnic-racial groups. Three models are created in this step; 1) the unconstrained model, where all

paths all allowed to vary freely, 2) the partially constrained model, where all regression paths are constrained to be equal across groups, and 3) the full constrained mode, where all regressions paths and correlations are constrained to be equal across groups. Next, differences between these three models are assessed using the Satorra-Bentler chi-square difference test (2001), specifically differences between the unconstrained and the partially constrained and between the partially constrained and fully constrained models. There were significant differences between the models, which suggests that some of the regression paths did differ significantly between ethnic-racial groups.

The last step of this analysis involved constraining individual paths and using the Satorra-Bentler (2001) test to assess differences between the single-path constrained model and the unconstrained model. When the Satorra-Bentler chi-square difference test was significant, this meant that there was a difference between ethnic-racial groups on the constrained regression path. With a two-group model this difference is easy to interpret in terms of a difference in significance or magnitude, but with three or more groups understanding where the difference lies is more complicated. To assess this three new data sets were created, each with only 2 ethnic-racial groups and allowing for all possible combinations (e.g. Black-White contrast, White-biracial contrast). For the regressions that did significantly differ, this single-path constraint method was then repeated between groups to assess between which groups there was a difference.

Research Question 2

This question explored whether or not ethnic-racial identity affirmation worked as a moderator between pubertal timing variables and disordered eating. This question takes a unique view on moderation. Rather than presupposing the importance of the independent variable over

the moderator, this approach uses moderation to assess interaction between the independent variable and moderator in a way which allows the researcher to more fully explore intersectional theory. The method, allows for individual and combine effects for the independent and dependent variables, as well as overall model fit, or do these variables work well together to explain the results.

There were two models conducted for this question, one using menarche as the independent variable and one using perceived pubertal timing as the independent variable. The moderator in this situation was ethnic-racial identity affirmation/belonging. This dissertation was most interested in high versus low affirmation/belonging, and, as such, the variable was mean split and dichotomized, such that individuals with a below-average ethnic-racial affirmation/belonging score (in their ethnic-racial group) were given a zero and those above average were given a one. Moderation testing also requires the creation of an interaction term, in this case between the pubertal timing independent variable and ethnic-racial identity affirmation/belonging. This interaction term was created in MPlus (Muthén & Muthén, 2017) using Stride and colleagues' (2015) syntax. Then for each model three regressions were conducted; 1) the independent variable, either menarche or relative perceived pubertal timing, on disordered eating 2) ethnic-racial identity affirmation/belonging on disordered eating, and 3) the interaction term on disordered eating. Moderation is said to have occurred if the interaction term is significant.

Research Question 3

This question explored the mediation effects of several mechanisms between pubertal timing and disordered eating. There were three broad relations being tested: 1) the mediating role of current body size between pubertal timing variables and disordered eating, 2) the mediating

role of ideal body size between pubertal timing variables and disordered eating, and 3) the mediating role of body comparisons between pubertal timing variables and disordered eating. The more forgiving qualifications for mediation and moderation denoted by MacKinnon and colleagues (2007) were used as this portion of the study was exploratory in nature. These mediation and moderation analyses were conducted in MPlus (Muthén & Muthén, 2017) using Stride and colleagues' (2015) MPlus syntax for moderation and mediation models.

Mediation is a little more complex, syntactically than moderation. Mediation assumes that some of the significance of the relationship between the independent variable (IV) and the dependent variable (DV) is eaten up by their relationship to a third variable. Put another way, the relationship between the IV and DV is explained through the mediator variable. For example, the relationship between early pubertal timing and disordered eating may in part be due to these girls making body comparisons. Body comparisons, in this case, serves as the mediator. Mediating variables do not need to be dichotomized, as these models are not assessing high or low levels of the mediator. As such using the mean-centered and group mean centered variable created in question two was sufficient. These analyses were also conducted in Mplus (Muthén & Muthén, 2017). There were six models created, two models (menarche and perceived pubertal timing) for each of the three mediators (current body size, ideal body size, body comparisons).

In Mplus (Muthén & Muthén, 2017) three regressions and two condition effects are created. The regression paths are as follows: 1) the direct effect of the pubertal timing measure (menarche or perceived pubertal timing) on the outcome, disordered eating, 2) the impact of the pubertal timing measure (menarche or perceived pubertal timing) on the mediator (current body size, ideal body size, or body comparisons), and 3) the impacts of the mediator (current body size, ideal body size, or body comparisons) on the outcome, disordered eating. The conditional

effects are the indirect effect and the total effect. The indirect effect suggests whether or not the IV impacts the DV through the mediator. The total effect combines the indirect effect and the direct effect to suggest, as a whole, how effective the model is.

Research Question 4

This question was intended to explore the impact of context, specifically if being the ethnic-racial majority or minority impacted the study variables. This idea of context is also central to intersectional theory, which posits that different identities might be highlighted in different contexts. For example, a White woman who walks into a room of men, will likely be acutely aware of her gender identity. Whereas that same White woman would likely think more about her ethnic-racial identity rather than gender if she walked into a room where she was the only White person. As such this question explores how being in the ethnic-racial group membership majority or minority in peer groups, school, and neighborhoods impact the direct effects studied in research question one of this dissertation.

Unfortunately, the Biracial Majority group was too small to be meaningfully analyzed so only Black-White comparisons were possible. Again, the analyses used here are quite similar to those conducted in for the demographic data and in question one. To begin, a MANCOVA using context as the independent variable and grouping by ethnic-racial group was conducted using all other variables as dependent variables, except for age and BMI, which were control variables. These analyses were conducted in Mplus (Muthén & Muthén, 2017). From these results, race group mean-centered and race/context group mean centered variables were created, in SPSS (IBM, 2019), in preparation for multi-group regression analyses.

Three regression models (one per context) were created in Mplus (Muthén & Muthén, 2017). Some of the groups were a little smaller (ranging from 72 to 147), however, all of the

same correlations and covariates from question two could be included. The model fits were good, so the next step involved conducting the three-stage multi-group analyses for each model. The regression models had been created so the next step was to create the partially and fully constrained models and compare them using the Satorra-Bentler (2001) Chi-square difference test. There were significant differences between groups. Therefore, comparing the single-path constrained models to the unconstrained models commenced. Again, specifying the difference between these 4 groups (Black-Majority, Black-Minority, White-Majority, White-Minority) was difficult. Six data sets per model needed to be created to capture all possible comparisons.

Research Question 5

This final question sought to explore the disordered eating experiences of biracial girls as their unique experiences have often been overlooked in past research. Given the exploratory nature of this question, only differences in variable averages as a function of biracial identity category were explored. To do so, a MANCOVA was conducted using the four largest biracial identity groups (Protean, Unvalidated biracial, Validated biracial, and Transcendent) as the independent variable and the other variables as dependent variables, again controlling for age and BMI in Mplus (Muthén & Muthén, 2017).

Chapter 4

Results

Research Question 1

Do identity (ethnic-racial, gender, racialized gender, and pubertal timing), body ideals, and body comparisons impact disordered eating?

This question was answered using a multi-group regression analysis in Mplus (Muthén & Muthén, 2017). This type of analysis consists of two broad stages. The first stage explored how the model fit the data and investigated significant regression pathways. To do so, a baseline model of the regression pathways was created. Multiple regression works best when the involved variables are mean-centered. Variables for which the results of question one suggested a difference based on ethnic-racial group membership were group mean-centered by ethnic-racial group. Variables for which no significant difference was identified were mean-centered based on the total mean. As noted BMI and age were included in all regression models as covariates for the endogenous variable of disordered eating. The model fit is reported using multiple indicators: Chi-square, CFI, root mean squared error of approximation (RMSEA), and standardized root mean square residual (SRMR). Hu and Bentler (1999) suggested numerical cutoffs for judging model fit, specifically, CFI values close to .95 or greater, RMSEA values close to .08 or below, and SRMR values close to .08 as representative of acceptable model fit. The overall chi-square, a statistical measure of the lack of fit due to over-identifying restrictions on the model, is also reported. The following theoretically relevant covariances were added to the model: 1) masculine and feminine traits, 2) feminine traits with all feminine ideology subscales, 3) ethnic-racial identity affirmation and feminine gender role with African American women's gender role beliefs, 4) body comparison orientation with thinness ideology and investment in appearance

ideology, 5) menarche and perceived pubertal timing with BMI and age, 6) current body size with ideal body size, 7) ideal body size with perceived ideal Black female body size and perceived ideal White female body size, 8) current body size and ideal body size with BMI, 9) thinness investment ideology with BMI, and 10) age with BMI.

After this initial step, the multi-group analysis commenced testing ethnic-racial group variation in the baseline model between Black, White, and Black-White biracial girls. First, the model was fit simultaneously for all three groups to establish a common model across groups with no equality constraints (unconstrained model). The unconstrained model fit well ($\chi^2 = 128.043$, $df = 75$, $p < .001$, RMSEA = .057, CFI = .939, SRMR = .042). While the chi-square is significant, this is often the case for models with large sample size (> 200) and does not necessarily indicate poor fit (see Table 7). Overall these indices suggested a good model fit.

Subsequent to establishing a good model fit, the model is rerun with the regression weights constrained to be equal across groups (constrained model) and again with regression weights and covariances constrained to be equal across groups (full constrained model). To compare these nested models, a chi-square scaled differences test was conducted to assess variations in the regression strength and significance between ethnic-racial groups, see Table 7 (Satorra & Bentler, 2001). Once variation was established, each significant regression path was tested, one at a time, to identify where there were differences. Results for the regression significance for each group are presented separately (see Table 6) before moving into differences between groups in stage two.

Black Girls

The multigroup regression analysis supported several of the original hypotheses for Black girls. For Black girls, masculine traits, the feminine ideologies of investment appearance and

thinness, body comparisons, and current body size all impacted disordered eating in the expected fashion (see Table 6). While no specific hypothesis had been formulated for ideal Black female body size, its impact on disordered eating was also significant. As predicted, low endorsement of masculine traits related to high disordered eating ($\beta = -.159$; $SE = .067$, $p = .018$). Black girls who did not feel that masculine traits, such as being independent and assertive, accurately described them had high levels of disordered eating. Supporting hypothesis 2c, Black girls' high endorsement of the feminine ideologies of thinness and investment in appearance related to higher disordered eating (thinness: $\beta = .365$; $SE = .060$, $p < .001$; investment in appearance: $\beta = .091$; $SE = .038$, $p = .018$). Black girls who strongly believed that being thin and spending time on hair and make-up were important were more likely to engage in more disordered eating. Hypothesis 2f was supported, such that Black girls with high body comparison orientation engaged in more disordered eating ($\beta = .243$; $SE = .062$, $p < .001$). The last supported hypothesis was 2h, which suggested that having a larger current body size would be related to high levels of disordered eating was evidenced by Black girls ($\beta = .313$; $SE = .065$, $p < .001$). Lastly, perceiving the ideal Black female body size to be large related to low levels of disordered eating for Black girls ($\beta = -.123$; $SE = .052$, $p = .017$), here, Black girls who thought the ideal Black female body was large were protected from disordered eating.

White Girls

For White girls, all but two hypotheses were unsupported. For White girls, only feminine ideology and body comparisons were related to disordered eating (see Table 6). Specifically, high investment in the feminine ideology of thinness related to high disordered eating ($\beta = .500$; $SE = .065$, $p < .001$), such that White girls who believed being thin was important to their sense

of self engaged in high levels of disordered eating. Similarly, White girls with high body comparison orientation had high levels of disordered eating ($\beta = .302$; $SE = .065$, $p < .001$).

Black-White Biracial Girls

Several of the initial hypotheses were supported by the findings for Black-White biracial girls; however, there were some contradictory findings as well. Specifically, ethnic-racial identity affirmation, feminine traits and ideologies, African American women's gender role beliefs, and current body size all impacted disordered eating for Black-White biracial girls (see Table 6). Contrary to hypothesis 2b and the femininity hypothesis, high endorsement of feminine traits related to low disordered eating for Black-White biracial girls ($\beta = -.177$; $SE = .078$, $p = .024$). This suggests that Black-White biracial girls who believe traits like being sensitive to the needs of others, affectionate, and loving children were accurate to them were less likely to engage in disordered eating. However, in accordance with hypothesis 2c, endorsement of the feminine ideologies of thinness and investment in appearance had the opposite effect (thinness: $\beta = .421$; $SE = .072$, $p < .001$; investment in appearance: $\beta = .166$; $SE = .047$, $p < .001$). Black-White biracial girls who strongly believed that being thin and spending time on how they looked were important were at increased risk of disordered eating.

Again, hypothesis 2f was supported. High engagement in body comparisons with peers related to increased disordered eating ($\beta = .216$; $SE = .072$, $p = .003$). Hypothesis 2h was also supported, such that having a large current body size was related to high levels of disordered eating ($\beta = .140$; $SE = .071$, $p = .049$). Black-White biracial girls, were the only group for whom ethnic-racial identity affirmation impacted disordered eating. Black-White biracial girls who felt highly connected to and positively about their ethnic-racial identity had low disordered eating ($\beta = -.156$; $SE = .057$, $p = .006$). Similarly, Black-White biracial girls were the only group for

whom belief in African American women's gender roles related to disordered eating ($\beta = -.161$; $SE = .068$, $p = .018$). Black-White biracial girls who believed they aligned with these beliefs and traits had lower disordered eating.

Stage Two: Multigroup Analysis

Differences between the unconstrained model, partially constrained model, and fully constrained model were compared using the Satorra-Bentler Chi-square difference test (Satorra & Bentler, 2001), which allows for difference testing between nested models. The results of these comparisons are presented in Table 7. Having established differences, each significant regression path was constrained across groups one at a time, and the difference between the unconstrained and single-path constrained models were again tested using the Satorra-Bentler test. These analysis suggested there were significant differences between groups on four regression pathways from the original model: 1) the impact of masculine traits on disordered eating ($\Delta X^2 = 6.0547$, $\Delta df = 2$, $p = .0484$), 2) the impact of the feminine ideology of investing in appearance on disordered eating ($\Delta X^2 = 15.331$, $\Delta df = 2$, $p < .001$), 3) African American women's gender role ideology on disordered eating ($\Delta X^2 = 6.7978$, $\Delta df = 2$, $p = .0334$), and 4) current body size on disordered eating ($\Delta X^2 = 8.2363$, $\Delta df = 2$, $p = .0163$).

Given that there were three groups, datasets for each two-group comparison had to be created to test between which groups the differences occurred. Rerunning the Satorra-Bentler tests with these two-group comparisons datasets allowed for pinpointing the differences. The difference for masculine traits was between Black and White girls ($\Delta X^2 = 5.6774$, $\Delta df = 1$, $p = .0172$), such that the protective nature of masculine traits was significant for Black girls but not for White girls. The differences for investment in appearance were between both Black and Black-White biracial girls and White girls (Black-White $\Delta X^2 = 4.9676$, $\Delta df = 1$, $p = .0258$:

White-biracial $\Delta X_2 = 16.1981$, $\Delta df = 1$, $p < .001$), such that investment in appearance was a significant predictor for Black and Black-White biracial girls but not for White girls. As expected the differences for African American women's gender role beliefs was between Black-White biracial girls and both Black and White girls (Black-biracial $\Delta X_2 = 3.9304$, $\Delta df = 1$, $p = .0474$; White-biracial $\Delta X_2 = 5.2763$, $\Delta df = 1$, $p = .0216$), in that it was only a significant predictor for Black-White biracial girls. Lastly, the difference for current body size was between Black and White girls ($\Delta X_2 = 15.1940$, $\Delta df = 1$, $p < .001$), such that current body size was a significant influence on disordered eating for Black girls but not for White girls. While current body size was an influence on disordered eating for biracial girls the strength was middling and therefore not significantly different from either of the other groups.

Research Question 2

Does ethnic-racial identity affirmation moderate the relation between pubertal timing and disorder eating?

To answer these questions, two moderation analyses were conducted. While neither menarche nor relative perceived pubertal timing were significantly related to disordered eating in research question one, occasionally higher order relationships can help explain a lack of direct effect (see MacKinnon et al., 2007). As such, these models proceeded despite a lack of main effects in the initial regression analysis.

The first moderation model tested the moderative effect of ethnic-racial identity affirmation on the relation between perceived pubertal timing and disordered eating. Ethnic-racial identity affirmation was dichotomized within groups based on scoring above or below the mean. The model for perceived pubertal timing was just identified ($X_2 = 5.897$, $df = 8$, $p = .6587$, $RMSEA < .001$, $CRI = 1.00$, $SRMR = .047$). Across all groups, the results suggested that

perceived pubertal timing had an impact on disordered eating, such that later timing was related to increased disordered eating (Black girls: $\beta = -.244$, $SE = .065$, $p < .001$; White girls: $\beta = -.226$, $SE = .060$, $p < .001$; biracial girls: $\beta = -.209$, $SE = .054$, $p < .001$) and that ethnic-racial identity affirmation impacted disordered eating for all girls (Black girls: $\beta = -.189$, $SE = .039$, $p < .001$; White girls: $\beta = -.190$, $SE = .039$, $p < .001$; Black-White biracial girls: $\beta = -.180$, $SE = .037$, $p < .001$). However, the interaction between relative perceived pubertal timing and ethnic-racial identity affirmation on disordered eating was not significant for any ethnic-racial group (see Table 8). This suggests that ethnic-racial identity affirmation did not function as a moderator for any of the ethnic-racial groups.

Results for the menarche model were slightly different. The model fit was moderate ($\chi^2 = 11.924$, $df = 8$, $p = .1546$, $RMSEA = .047$, $CRI = .790$, $SRMR = .055$). Menarche was not a significant predictor of disordered eating for any of the groups. However, ethnic-racial identity affirmation remained a significant predictor across groups (Black girls: $\beta = -.185$, $SE = .039$, $p < .001$; White girls: $\beta = -.192$, $SE = .039$, $p < .001$; Black-White biracial girls: $\beta = -.180$, $SE = .038$, $p < .001$). The interaction between menarche and ethnic-racial identity affirmation was not significant across groups, as well (see Table 9). This pattern again suggests that ethnic-racial identity affirmation did not function as a moderator for any of the ethnic-racial groups.

Research Question 3

Do current body size, ideal body size, or body comparisons mediate the relation between pubertal timing and disordered eating?

To answer this question six mediation models were assessed, one for each pubertal timing measure coupled with each mediator. The first mediation models explored current body size as an explanatory mechanism of the relation between either relative perceived pubertal timing or

menarche and disordered eating. First, the results for the mediation with perceived pubertal timing will be presented (see Figure 2). The model fit well ($X^2 = 9.400$, $df = 6$, $p = .1523$, $RMSEA = .050$, $CFI = .973$, $SRMR = .053$). Perceived pubertal timing did not have a direct impact on disordered eating for any of the ethnic-racial groups. Across all ethnic-racial groups, perceived pubertal timing did impact current body size (Black girls: $\beta = -.240$, $S.E. = .042$, $p < .001$; White girls: $\beta = -.204$, $S.E. = .038$, $p < .001$; Black-White biracial girls: $\beta = -.229$, $S.E. = .039$, $p < .001$). Current body size in turn related to disordered eating across all groups (Black girls: $\beta = .392$, $S.E. = .042$, $p < .001$; White girls: $\beta = .417$, $S.E. = .040$, $p < .001$; Black-White biracial girls: $\beta = .337$, $S.E. = .035$, $p < .001$). The total model was significant ($\beta = -1.704$, $S.E. = .583$, $p = .003$), as was the indirect mediation effect ($\beta = -1.216$, $S.E. = .240$, $p < .001$). Current body size did function as a mediator between perceived pubertal timing and disordered eating for Black, White, and Black-White biracial girls, such that girls who perceived their development to be early also perceived their body to be larger, which in turn related to high levels of disordered eating.

In terms of menarche, the story was much the same (see Figure 3). The model was just identified ($X^2 = 4.135$, $df = 6$, $p = .9456$, $RMSEA < .001$, $CFI = 1.000$, $SRMR = .036$). Across all ethnic-racial groups, menarche impacted current body size (Black girls: $\beta = .169$, $S.E. = .041$, $p < .001$; White girls: $\beta = .152$, $S.E. = .038$, $p < .001$; Black-White biracial girls: $\beta = .156$, $S.E. = .038$, $p < .001$). Current body size in turn related to disordered eating across all groups (Black girls: $\beta = .409$, $S.E. = .042$, $p < .001$; White girls: $\beta = .443$, $S.E. = .038$, $p < .001$; Black-White biracial girls: $\beta = .338$, $S.E. = .034$, $p < .001$). The total model was marginally significant ($\beta = .520$, $S.E. = .272$, $p = .056$), and the indirect mediation effect was significant ($\beta = .473$, $S.E. = .120$, $p < .001$). Therefore, current body size did function as a mediator between menarche and

disordered eating for Black, White, and Black-White biracial girls. Again, what this suggests is that girls who experienced menarche at a young age tend to have larger bodies, which in turn relates to high levels of disordered eating.

The next mediation models tested ideal body size as a mediator between either relative perceived pubertal timing or menarche and disordered eating. First, the results for the mediation with relative perceived pubertal timing will be presented (see Figure 4). The model fit decently ($X^2 = 7.069$, $df = 6$, $p = .3116$, RMSEA = .028, CFI = .903, SRMR = .043). While there was a significant total effect for this model ($\beta = 1.791$, $S.E. = .579$, $p = .002$), there was not a significant indirect effect. In this case, perceived pubertal timing impacted disordered eating across groups (Black girls: $\beta = -.134$, $S.E. = .044$, $p = .003$; White girls: $\beta = -.126$, $S.E. = .041$, $p = .002$; Black-White biracial girls: $\beta = -.114$, $S.E. = .037$, $p = .003$), but did not significantly impact ideal body size. Ideal body size did not impact disordered eating. Therefore, ideal body size cannot be considered a mediator between relative perceived pubertal timing and disordered eating.

The model using menarche as the independent variable also had acceptable model fit on most markers (see Figure 5; $X^2 = 7.769$, $df = 6$, $p = .2555$, RMSEA = .037, CFI = .747, SRMR = .043). Again, while there was a significant total effect for this model ($\beta = .545$, $S.E. = .275$, $p = .047$), there was not a significant indirect effect. In this case, menarche impacted ideal body size (Black girls: $\beta = .086$, $S.E. = .030$, $p = .028$; White girls: $\beta = .083$, $S.E. = .037$, $p = .027$; Black-White biracial girls: $\beta = .073$, $S.E. = .033$, $p = .028$), such that girls who experienced menarche at an earlier age had larger body ideals. However, neither ideal body size nor menarche were significantly related to disordered eating. As such, ideal body size does not function as a mediator between menarche and disordered eating.

The last mediation models used body comparison orientation as a mediator between either relative perceived pubertal timing or menarche and disordered eating. First, the results for the mediation with relative perceived pubertal timing will be presented (see Figure 6). The model was just identified ($X^2 = 3.898$, $df = 6$, $p = .6905$, RMSEA $< .001$, CFI = 1.000, SRMR = .046). The total effect for the model was significant ($\beta = 1.793$, $S.E. = .575$, $p = .002$), but the indirect effect was not. Both perceived pubertal timing (Black girls: $\beta = -.135$, $S.E. = .038$, $p < .001$; White girls: $\beta = -.137$, $S.E. = .037$, $p < .001$; Black-White biracial girls: $\beta = -.117$, $S.E. = .032$, $p < .001$) and body comparisons (Black girls: $\beta = .471$, $S.E. = .037$, $p < .001$; White girls: $\beta = .546$, $S.E. = .041$, $p < .001$; Black-White biracial girls: $\beta = .496$, $S.E. = .044$, $p < .001$) were significantly related to disordered eating. Early perceived pubertal timing and engaging in many body comparisons both related to high disordered eating. However, relative perceived pubertal timing did not impact body comparison orientation. As such, body comparisons did not function as a mediator between perceived pubertal timing and disordered eating.

The menarche model was much the same (see Figure 7). The model was just identified ($X^2 = 2.075$, $df = 6$, $p = .8120$, RMSEA $< .001$, CFI = 1.00, SRMR = .039). The effect for the total model was significant ($\beta = .541$, $S.E. = .274$, $p = .048$), but the indirect effect was not. Both menarche (Black girls: $\beta = .084$, $S.E. = .038$, $p = .021$; White girls: $\beta = .091$, $S.E. = .039$, $p = .020$; Black-White biracial girls: $\beta = .068$, $S.E. = .030$, $p = .023$) and body comparisons (Black girls: $\beta = .463$, $S.E. = .037$, $p < .001$; White girls: $\beta = .543$, $S.E. = .043$, $p < .001$; Black-White biracial girls: $\beta = .491$, $S.E. = .044$, $p < .001$) impacted disordered eating for all ethnic-racial groups, such that going through menarche at an earlier age and engaging in more body comparisons related to high levels of disordered eating. However, menarche did not significantly

impact body comparison orientation. Therefore, body comparisons did not function as a mediator between menarche and disordered eating.

These analyses suggest that although ethnic-racial identity affirmation and body comparison orientation play a role in disordered eating, they do not function as explanatory mechanisms for the role of either perceived pubertal timing or menarche on disordered eating. However, current body size does function as a mediator between both relative perceived pubertal timing and menarche and disordered eating for Black, White, and Black-White biracial girls.

Research Question 4

How does being the ethnic-racial majority or minority in a social context (friend group, school, neighborhood) impact identity (ethnic-racial, gender, racialized gender, and pubertal timing), body comparisons, body ideals (personal and cultural), and disordered eating? How does context impact the relations between identity (ethnic-racial, gender, racialized gender, and pubertal timing), body ideals, and body comparisons on disordered eating?

The analysis required to answer this research question were, first, three MANCOVAs of difference between majority versus minority groups (one per context), followed by three regression analyses (one per context). There were too few Black-White biracial girls reporting to be in the ethnic-racial majority in any context and as such Black-White biracial girls were excluded from this research question. To begin, friend group, school, and neighborhood ethnic-racial demographics was dichotomized as homogenous (own group being majority) or heterogenous (own group being minority). The means for these contexts are presented by ethnic-racial group in Tables 10 & 11. The results of the MANCOVAs are presented in Table 12. After completing the MANCOVA, mean-centered and group-mean centered variables were created

based on the results before proceeding to conduct the three multigroup regression analyses regarding how context impacted the role of identity, body ideals, and body comparisons on disordered eating (see Tables 13-15). Before finally establishing where these relations significantly differed between groups (see Table 16).

The results of the MANCOVA showed that there were significant differences between groups in terms of masculine traits, feminine ideologies, pubertal timing, body size/ideals, and disordered eating based on majority versus minority status in different contexts. The results of the MANCOVA are presented by ethnic-racial group and context.

Black Girls

School Context. For Black girls, there were differences based on school context in the romantic relationships ideology and perceived ideal Black female body size. In terms of the romantic relationships ideology, Black girls who were in the ethnic-racial majority in their school had higher scores on the romantic relationships ideology ($M = 12.807$) than Black girls who were in the ethnic-racial minority at their schools ($M = 11.989$; $\beta = .144$, $S.E. = .064$, $p = .025$). Black girls who were in the ethnic-racial majority in their schools felt that romantic relationships were more important to their sense of self than Black girls who were in the ethnic-racial minority at school. In terms of perceived ideal Black female body, Black girls who were in the ethnic-racial majority in their school perceived the ideal Black female body to be larger ($M = 7.614$) than Black girls who were the ethnic-racial minority in their schools ($M = 6.973$; $\beta = .139$, $S.E. = .063$, $p = .027$).

Neighborhood Context. For Black girls there were differences based on neighborhood context in the caring for children ideology, masculine traits, and perceived ideal Black female body size. In terms of the caring for children ideology, Black girls who were in the ethnic-racial

majority in their neighborhood had lower scores on the caring for children ideology ($M = 13.123$) than Black girls who were in the ethnic-racial minority in their neighborhood ($M = 14.078$; $\beta = -.166$, $S.E. = .063$, $p = .009$). Black girls in the ethnic-racial majority in their neighborhood felt that caring for children was less important to their sense of self than Black girls in the ethnic-racial minority in their neighborhood. In terms of masculine traits, Black girls in the ethnic-racial majority in their neighborhood endorsed fewer masculine traits ($M = 44.141$) than Black girls in the ethnic-racial minority in their neighborhood ($M = 47.014$; $\beta = -.140$, $S.E. = .065$, $p = .031$); such that Black girls in the ethnic-racial majority were less likely to think that traits like being independent, defending their own beliefs, and being assertive were accurate descriptions of themselves relative to Black girls in the ethnic-racial minority in their neighborhood. Lastly, Black girls in the ethnic-racial majority in their neighborhood perceived the ideal Black female body size to be larger ($M = 7.528$) than Black girls in the ethnic-racial minority in their neighborhood ($M = 6.953$; $\beta = .128$, $S.E. = .063$, $p = .041$).

Friend Context. For Black girls the only significant difference relating to friend context was regarding perceived ideal White female body size. Black girls who were in the ethnic-racial majority for their friend group perceived the ideal White female body size to be thinner ($M = 3.236$) than Black girls who were in the ethnic-racial minority in their friend group ($M = 3.957$; $\beta = -.149$, $S.E. = .061$, $p = .015$).

White Girls

School Context. For White girls, there were significant group differences in masculine traits, relative perceived pubertal timing, and perceived current body size based on school context. In terms of masculine traits, White girls who were in the ethnic-racial majority at their school were less likely to endorse masculine traits ($M = 42.533$) than White girls who were in the

ethnic-racial minority at their school ($M = 46.144$; $\beta = -.152$, $S.E. = .067$, $p = .023$). White girls in the ethnic-racial majority were less likely to think that traits like being independent, defending their own beliefs, and being assertive were accurate descriptions of themselves relative to White girls in the ethnic-racial minority in their school. In terms of relative perceived pubertal timing, White girls who were in the ethnic-racial majority for their school perceived their development to be later ($M = 2.881$) than White girls who were in ethnic-racial minority for their school ($M = 2.600$; $\beta = .159$, $S.E. = .064$, $p = .013$). Lastly, in terms of perceived current body size, White girls who were in the ethnic-racial majority for their school perceived their current body size to be smaller ($M = 5.200$) relative to White girls who were in the ethnic-racial minority in their school ($M = 6.133$; $\beta = -.147$, $S.E. = .066$, $p = .027$).

Neighborhood Context. For White girls there were significant differences in disordered eating and perceived current body size based on neighborhood context. In terms of disordered eating, White girls who were in the ethnic-racial majority in their neighborhoods had lower disordered eating ($M = 29.573$) relative to White girls who were in the ethnic-racial minority for their neighborhood ($M = 33.615$; $\beta = -.154$, $S.E. = .066$, $p = .020$). In terms of perceived current body size, White girls who were in the ethnic-racial majority in their neighborhood perceived their current body size to be smaller ($M = 5.222$) relative to White girls who were in the ethnic-racial minority in their neighborhood ($M = 6.319$; $\beta = -.164$, $S.E. = .067$, $p = .014$).

Friend Context. For White girls there were significant differences in menarche and ideal body size based on friend group context. In terms of menarche, White girls who were in the ethnic-racial majority in their friend group experienced menarche at an earlier age ($M = 4.276$) than White girls in the ethnic-racial minority in their friend group ($M = 4.799$; $\beta = -.148$, $S.E. = .065$, $p = .024$). In terms of ideal body size, White girls who were in the ethnic-racial majority for

their friends group chose a smaller body ideal ($M = 3.963$) than White girls who in the ethnic-racial minority for their friend group ($M = 4.596$; $\beta = -.156$, $S.E. = .065$, $p = .017$).

The results of this MANCOVA were used to inform mean-centering and group mean-centering variables in order to conduct a multigroup regression analysis of identity, puberty, body comparison, and body ideal variables on disordered eating with groupings done by race/context. Three models were created, one for each context. The results of each will be separately by context and ethnic-racial group majority/minority status.

School Context Model

The school context model fit well [$X^2(100) = 130.731$, $p = .021$; RMSEA = .052, CFI = .954, SRMR = .049]. The results were grouped by ethnic-racial group/context and as such there are four groups for whom to report results, see Table 13. The last section discusses significant differences between groups.

Black-Majority Girls. There were two significant regression paths for Black-majority girls: thinness ideology and body comparisons. For Black girls in the ethnic-racial majority at their school, higher endorsement of the feminine ideology of thinness related to higher levels disordered eating ($\beta = .364$, $S.E. = .097$, $p < .001$), such that girls who thought thinness was important to their sense of self had high levels of disordered eating. In terms of body comparisons, for Black girls in the ethnic-racial majority at their school, higher likelihood of making body comparisons related to higher levels of disordered eating ($\beta = .263$, $S.E. = .093$, $p = .005$).

Black-Minority Girls. There were six significant regression paths for Black-minority girls; thinness and investment in appearance ideologies, perceived ideal Black female body, current body size, body comparisons and relative perceived pubertal timing. In terms of feminine

ideologies, higher endorsement of both thinness and investment in appearance ideologies related to higher levels of disordered eating (thinness: $\beta = .122$, $S.E. = .045$, $p = .007$; investment in appearance: $\beta = .357$, $S.E. = .069$, $p < .001$). This means that for Black girls in the ethnic-racial minority at school, stronger belief that they should be thin and investing more time into their appearances relate to higher levels of disordered eating. In terms of perceived ideal Black female body size, Black-minority girls with a large perceived body ideal for Black women had lower levels of disordered eating ($\beta = -.189$, $S.E. = .064$, $p = .003$). Regarding current perceived body size, Black-minority girls with who perceived their current body size as large had high levels of disordered eating ($\beta = .330$, $S.E. = .074$, $p < .001$). For Black-minority girls, higher body comparison orientation was also related to higher levels of disordered eating ($\beta = .251$, $S.E. = .069$, $p < .001$). Lastly, for Black-minority girls, later relative perceived pubertal timing was protective ($\beta = -.153$, $S.E. = .067$, $p = .022$).

White-Majority Girls. There were two significant paths for White-majority girls, thinness ideology and body comparisons. For White girls in the ethnic-racial majority at their school, higher endorsement of the feminine ideology of thinness related to higher levels disordered eating ($\beta = .513$, $S.E. = .085$, $p < .001$), such that girls who thought thinness was important to their sense of self had high disordered eating. In terms of body comparisons, for White-majority girls higher likelihood of making body comparisons related to higher levels of disordered eating ($\beta = .263$, $S.E. = .085$, $p = .002$).

White-Minority Girls. The same two paths, thinness and body comparisons, that were significant for Black-Majority and White-Majority girls were also significant for White-Minority girls. For White-minority girls higher endorsement of the feminine ideology of thinness related to higher levels disordered eating ($\beta = .503$, $S.E. = .089$, $p < .001$), such that girls who thought

thinness was important to their sense of self had higher disordered eating. In terms of body comparisons, for White-minority girls, higher likelihood of making body comparisons related to higher levels of disordered eating ($\beta = .344$, $S.E. = .102$, $p = .001$).

Model Comparisons. While the results of the Satorra-Bentler chi-square difference tests suggest there are significant differences between Ethnic-racial group/context, however, those differences appear not to have been on significant regression paths and therefore are not of interest to the present study.

Neighborhood Context Model

The neighborhood context model fit well [$X^2(100) = 136.446$, $p = .009$; RMSEA = .056, CFI = .946, SRMR = .051]. The results were grouped by ethnic-racial group/context and as such there are four groups for whom to report results, see Table 15.

Black-Majority Girls. There were three significant regression paths for Black-majority girls: thinness ideology, masculine traits, and body comparisons. For Black girls in the ethnic-racial majority at their school, higher endorsement of the feminine ideology of thinness related to higher levels disordered eating ($\beta = .439$, $S.E. = .085$, $p < .001$), such that girls who thought thinness was important to their sense of self had higher disordered eating. In terms of masculine traits, for Black-majority girls higher endorsement of masculine traits related to low disordered eating ($\beta = -.343$, $S.E. = .108$, $p < .001$), such that Black-majority girls who thought that traits like being independent, defending their own beliefs, and being assertive were accurate descriptions of themselves had lower disordered eating. Lastly, in terms of body comparisons for Black-majority, higher likelihood of making body comparisons related to higher levels of disordered eating ($\beta = .167$, $S.E. = .085$, $p = .048$).

Black-Minority Girls. There were four significant paths for Black-minority girls: thinness and investment in appearance ideologies, perceived current body size, and body comparisons. In terms of feminine ideologies, higher endorsement of both thinness and investment in appearance ideologies relate to higher levels of disordered eating (thinness: $\beta = .292$, $S.E. = .089$, $p = .001$; investment in appearance: $\beta = .129$, $S.E. = .050$, $p = .001$). This means that for Black-minority girls, stronger belief that they should be thin and investing more time into their appearances is related to higher levels of disordered eating. Regarding current perceived body size, Black-minority girls with who perceived their current body size as larger had higher levels of disordered eating ($\beta = .299$, $S.E. = .078$, $p < .001$). Last, for Black-minority girls, higher body comparison orientation was also related to higher levels of disordered eating ($\beta = .316$, $S.E. = .079$, $p < .001$).

White-Majority Girls. There were two significant paths for White-majority girls, thinness ideology and body comparisons. For White girls in the ethnic-racial majority at their school, higher endorsement of the feminine ideology of thinness related to higher levels disordered eating ($\beta = .508$, $S.E. = .084$, $p < .001$), such that girls who thought thinness was important to their sense of self had higher disordered eating. In terms of body comparisons, for White-majority girls higher likelihood of making body comparisons related to higher levels of disordered eating ($\beta = .326$, $S.E. = .069$, $p < .001$).

White-Minority Girls. The same two paths, thinness and body comparisons, that were significant for Black-majority and White-majority girls were also significant for White-minority girls. For White-minority girls higher endorsement of the feminine ideology of thinness related to higher levels disordered eating ($\beta = .406$, $S.E. = .092$, $p < .001$), such that girls who thought thinness was important to their sense of self had higher disordered eating. In terms of body

comparisons, for White-minority girls, higher likelihood of making body comparisons related to higher levels of disordered eating ($\beta = .387$, $S.E. = .121$, $p < .001$).

Model Comparisons. The results of the Satorra-Bentler chi-square difference test suggested there were differences between groups (see Table 17). After individually constraining each significant regression path and testing them with the same Satorra-Bentler chi-square test, three paths which did significantly differ by ethnic-racial/context group were identified: investment in appearance ideology, masculine traits, and perceived current body size.

In terms of investment in appearance, there were two significant differences. Black-minority girls differed from both White-majority and White-minority girls (Black-minority/White-majority = $\Delta X^2 = 4.834$, $\Delta df = 1$, $p = .028$; Black-minority/White-minority = $\Delta X^2 = 23.573$, $\Delta df = 1$, $p < .001$), such that thinness ideology was a stronger predictor for the White-majority and -minority girls relative to the Black-minority girls. In terms of masculine traits, there were three significant differences, such that masculine traits were a significant predictor for Black-majority girls relative to any other group (Black-majority/Black-minority = $\Delta X^2 = 6.286$, $\Delta df = 1$, $p = .012$; Black-majority/White-majority = $\Delta X^2 = 7.856$, $\Delta df = 1$, $p = .005$; Black-majority/White-minority = $\Delta X^2 = 7.626$, $\Delta df = 1$, $p = .006$). Lastly, in terms of perceived current body size, there was a difference between Black-majority and White-minority girls ($\Delta X^2 = 5.180$, $\Delta df = 1$, $p = .023$), such that perceived current body size was a significant predictor for Black-majority girls and not for White-minority girls.

Friend Context Model

The friend context model fit well [$X^2(100) = 150.979$, $p = .001$; RMSEA = .067, CFI = .925, SRMR = .051]. The results were grouped by ethnic-racial group/context and as such there are four groups for whom to report results, see Table 15.

Black-Majority Girls. There were four significant regression paths for Black-majority girls: thinness ideology, masculine traits, perceived current body size, and body comparisons. In terms of thinness ideology, for Black girls in the ethnic-racial majority in their friend group, high endorsement of the feminine ideology of thinness related to high levels disordered eating ($\beta = .330$, $S.E. = .108$, $p = .002$), such that girls who thought thinness was important to their sense of self had higher levels of disordered eating. In terms of masculine traits, for Black-majority girls higher endorsement of masculine traits related to lower disordered eating ($\beta = -.216$, $S.E. = .096$, $p = .024$), such that Black-majority girls who thought that traits like being independent, defending their own beliefs, and being assertive were accurate descriptions of themselves had lower disordered eating. Regarding current perceived body size, Black girls in the ethnic-racial majority in their friend group who perceived their current body size as larger had higher levels of disordered eating ($\beta = .347$, $S.E. = .107$, $p = .001$). Lastly, in terms of body comparisons for Black-majority girls, higher likelihood of making body comparisons related to higher levels of disordered eating ($\beta = .224$, $S.E. = .077$, $p = .004$).

Black-Minority Girls. There were five significant regression paths for Black girls in the minority in their friend group: thinness and investment in appearance ideologies, perceived ideal Black female body size, current body size and body comparisons. In terms of feminine ideologies, higher endorsement of both thinness and investment in appearance ideologies relate to higher levels of disordered eating (thinness: $\beta = .314$, $S.E. = .072$, $p < .001$; investment in appearance: $\beta = .130$, $S.E. = .052$, $p = .013$). This means that for Black girls in the ethnic-racial minority in their friend group, stronger belief that they should be thin and investing more time into their appearances relate to higher levels of disordered eating. In terms of perceived ideal Black female body size, Black-minority girls with a larger perceived body ideal for Black

women had lower levels of disordered eating ($\beta = -.200$, $S.E. = .068$, $p = .003$). Regarding current perceived body size, Black-minority girls who perceived their current body size as larger had higher levels of disordered eating ($\beta = .291$, $S.E. = .084$, $p = .001$). Lastly, for Black-minority girls, higher body comparison orientation was also related to higher levels of disordered eating ($\beta = .283$, $S.E. = .084$, $p = .001$).

White-Majority Girls. There were three significant regression paths for White girls in the ethnic-racial majority in their friend group: thinness ideology, body comparisons, and ethnic-racial identity affirmation. For White girls in the ethnic-racial majority in their friend group, higher endorsement of the thinness ideology related to higher levels disordered eating ($\beta = .458$, $S.E. = .100$, $p < .001$), such that White -majority girls who thought thinness was important to their sense of self had higher disordered eating. In terms of body comparisons, for White-majority girls higher likelihood of making body comparisons related to higher levels of disordered eating ($\beta = .259$, $S.E. = .093$, $p = .005$). Lastly, in terms of ethnic-racial identity affirmation, for White-majority girls, higher ethnic-racial identity affirmation related to lower disordered eating ($\beta = -.143$, $S.E. = .069$, $p = .038$).

White-Minority Girls. There were four significant regression paths for White girls in the ethnic-racial minority in their friend group: thinness and nice in relationship ideologies, perceived ideal White female body size, and body comparisons. For White girls in the ethnic-racial minority in their friend group, higher endorsement of the feminine ideology of thinness related to higher levels disordered eating ($\beta = .508$, $S.E. = .100$, $p < .001$), such that girls who thought thinness was important to their sense of self had higher disordered eating. In terms of the being nice in relationships ideology, for White girls in the ethnic-racial minority in their friend group higher endorsement of the being nice in relationships ideology related to lower levels

disordered eating ($\beta = -.198$, $S.E. = .089$, $p = .027$), such that girls who thought being nice in relationships was important to their sense of self had lower disordered eating. In terms of perceived ideal White female body size, White-minority girls with a larger perceived body ideal for White women had higher levels of disordered eating ($\beta = .224$, $S.E. = .114$, $p = .050$). Lastly, in terms of body comparisons for White-minority girls, higher likelihood of making body comparisons related to higher levels of disordered eating ($\beta = .362$, $S.E. = .094$, $p < .001$)

Model Comparisons. The results of the Satorra-Bentler chi-square difference test suggested there were differences between groups (see Table 16). After individually constraining each significant regression path and testing them with the same Satorra-Bentler chi-square test, only the perceived current body size path was identified as significantly differing between by ethnic-racial/context group. In terms of current body size there was a significant difference between the White-majority and White-minority groups ($\Delta X^2 = 5.144$, $\Delta df = 1$, $p = .023$), however perceived current body size was not a significant predictor for either of these groups.

Research Question 5

For Black-White biracial adolescents only does biracial identity category (Rockquemore & Brunsma, 2002) impact identity (ethnic-racial, gender, racialized gender, and pubertal timing), body ideals, body comparison, or disordered eating?

This question was answered using data solely from Black-White biracial girls. Ethnicity-race theorists have rallied against the idea that all individuals in an ethnic-racial category experience this social identity ubiquitously. Therefore, Rockquemore and Brunsma (2002) explored variations in how Black-White biracial individuals self-identify their ethnic-racial group. Their work established six different identities: Solely Black, Protean, Unvalidated biracial, Validated biracial, Transcendent, and Solely White. Biracial individuals who identify as

Solely Black or Solely White self-identify as monoracial rather than biracial. Protean biracial individuals identify as Black, White, or biracial depending on the context they are currently in. Validated biracial individuals identify as biracial and feel that others support this identity; whereas Unvalidated biracial individuals identify as biracial but believe others view them as Black. Lastly, Transcendent biracial individuals don't identify as biracial and view racial distinctions as not meaningful to them. Given the limited number of respondents claiming a monoracial identity (as expected given Rockquemore & Brunsma's work), only respondents who identified as Protean, Unvalidated, Validated, and Transcendent were included in analysis ($N = 194$). This question, similarly to question one, sought to explore group mean differences based on biracial identity through a MANCOVA conducted in MPlus (Muthén & Muthén, 2017) controlling for age and BMI. The means for each group are reported in Table 17. Post-hoc analyses revealed that there were significant differences between the groups on masculine and feminine traits, feminine ideologies and the perceived ideal Black female body size, see Table 1.

In terms of feminine traits, Unvalidated biracial girls endorsed significantly less feminine traits ($M = 49.107$) than Validated ($M = 53.944$) and Transcendent ($M = 55.125$) biracial girls (Unvalidated-Validated: $\beta = -.175$, $SE = .079$, $p = .028$; Unvalidated-Transcendent: $\beta = -.167$, $SE = .084$, $p = .018$); here, Unvalidated biracial girls were less likely to think that traits like being sympathetic, attentive to the needs of others, and loving children were accurate descriptions of themselves relative to Validated and Transcendent biracial girls. For masculine traits, Transcendent biracial girls endorsed more masculine traits ($M = 51.243$) than Protean ($M = 47.437$), Unvalidated ($M = 46.340$), or Validated ($M = 48.068$) biracial girls (Protean-Transcendent: $\beta = -.160$, $SE = .080$, $p = .045$; Unvalidated-Transcendent: $\beta = -.196$, $SE = .062$, $p = .002$; Validated-Transcendent: $\beta = -.139$, $SE = .060$, $p = .020$). Transcendent girls were more

likely to think that traits like being independent, defending their own beliefs, and being assertive were accurate descriptions of themselves relative to all other groups of biracial girls.

In terms of feminine ideologies, there were significant group differences in the being nice in relationships and caring for children ideologies. In terms of the being nice in relationships ideology, Unvalidated biracial girls scored lower ($M = 14.510$) than Validated ($M = 15.970$) or Transcendent ($M = 16.343$) biracial girls (Unvalidated-Validated: $\beta = -.215$, $SE = .076$, $p = .004$; Unvalidated-Transcendent: $\beta = -.207$, $SE = .076$, $p = .007$). Unvalidated biracial girls were less likely to believe that being nice to others was extremely important in their social relationships relative to Validated and Transcendent biracial girls. In terms of the caring for children ideology, Validated biracial girls scored higher ($M = 14.937$) than Protean ($M = 12.932$) or Unvalidated ($M = 13.320$) biracial girls (Protean-Validated: $\beta = -.284$, $SE = .099$, $p = .004$; Unvalidated-Validated: $\beta = -.229$, $SE = .072$, $p = .001$). Validated biracial girls were more likely to believe that caring for children was extremely important to their relationships relative to Protean and Validated biracial girls.

Lastly, there were significant differences in perceived ideal Black female body size between Unvalidated and Validated biracial girls ($\beta = -.176$, $SE = .078$, $p = .023$). Unvalidated biracial girls perceived the ideal Black female body size to be larger ($M = 7.174$) than Validated biracial girls ($M = 6.182$).

Chapter 5

Discussion

This dissertation expands our current understanding of disordered eating in racially and ethnically diverse girls. Black and Black-White biracial girls have often been overlooked in disordered eating research. Given that early research shaped biases and created long-standing stereotypes about who is at risk for disordered eating, we have not established an adequate empirical base to understand disordered eating among racially and ethnically diverse girls. My hope is that by conducting this study and disseminating the results, awareness about risk and protective factors related to disordered eating in ethnic minority communities will increase. The universal findings can help broader intervention efforts and the group-specific results can be used to create targeted interventions for Black, White, and Black-White biracial girls to help reduce disordered eating risk in these communities.

Black Girls

Going back to the demographic data, Black girls and White girls did not differ on feminine traits, but Black girls endorsed more masculine traits than White girls. This difference in masculine traits may stem from how Black women have been viewed historically (Binion, 1990; Buckley & Carter, 2005; hooks, 1981). Men have sought to subjugate women, and one way of enacting this was to insist that women were frail and to define their role in society as domestic laborers. However, enslaved Black women were expected to work the same physically demanding roles as Black men (hooks, 1981), a direct juxtaposition to feminine frailty. In order for White men to maintain domination over women and over Black people, the belief that Black women were different, more masculine than White women was propagated (Slatton, 2018),

allowing for White men to continue to exploit both groups. As time progressed and slavery was outlawed, strong public discrimination was and still is present. While White women were expected to be at home and functioning as caregivers, Black women often had to take jobs outside the home or take on domestic labor for White women. Relatedly, the disproportionate mass incarceration of Black men has led to many Black women needing to be sole breadwinners for their families (Elliot & Reid, 2019; Keefe et al., 2017). As such, heightened masculine traits may serve Black girls/women in a beneficial way given the expectations society places upon them (Binion, 1990). Indeed, although the implications of the Strong Black Woman schema are often negative, it is often socially posited as positive and protective (Abrams et al., 2014; West et al., 2006).

In terms of hegemonic feminine ideologies, Black girls consistently scored low on feminine ideology endorsement. The social construction of traditional femininity often portrays women and girls as docile and other-focused. Given the power structures in the US, traditional femininity is White hegemonic femininity. However, this feminine ideal may be less relevant to Black women who, again, have been forced to take on more traditionally masculine roles based on discrimination within the US. This may suggest that Black girls do not adhere as strongly to the norms of hegemonic femininity. Surprisingly, Black girls did not endorse Black femininity more strongly than White or biracial girls. As discussed it was necessary to include a measure of Black femininity to assess intersectional experiences rather than rely on hegemonic White femininity measures. However, given the lack of difference between White and Black girls on this measure, it may not have adequately measured Black Femininity as separate from hegemonic White femininity. The measure was created from responses from Black adult women, and, as such, some items, such as being a caregiver or keeping family connected, might not be as

relevant to Black adolescents. There was also overlap between some adjectives/ideologies within the measure and traditional White hegemonic femininity measures (Belgrave et al., 2016; Bem, 1974). For example, the BSRI, CFNI, and the Black femininity measure all asked about attending to the needs of others and being supportive of others (Belgrave et al., 2016; Bem, 1974; Mahalik et al., 2005). However, given the limited number of measures assessing Black femininity (Jones et al., 2018), this was still a useful and necessary inclusion.

As expected, Black girls had higher ethnic-racial identity affirmation/belonging than White girls. Ethnic-racial identity affirmation was of particular interest in terms of extending previous research (Blazek & Carter, 2019), which looked at ethnic-racial identity exploration among Black adolescents. Studies have often compared across groups and tend to show that racially and ethnically diverse youth have a more developed sense of ethnic-racial identity than White adolescents (Douglass & Umaña-Taylor, 2016; Phinney et al., 1997). For Black youth, ethnic-racial identity often serves as a protective factor (Rivas-Drake et al., 2014; Umaña-Taylor et al., 2014). Historical underpinnings of current structural racism have left Black youth with limited options in terms of ethnic-racial identification (Kibria, 2003; Waters, 1990). The one-drop rule and impacts of slavery have systematically erased options for most Black Americans to identify as anything other than Black (Khanna, 2011). However, research has shown that ethnic-racial identity is still protective for Black youth. Part of this identity, specifically affirmation, means having a strong sense of belonging and community, so that even in the face of adversity and discrimination there is a sense of comradery and unity in identifying as Black.

Previous research suggests that Black girls go through puberty on average 1-1.5 years earlier than their White peers (Biro et al., 2006; Chumlea et al., 2003, Euling et al., 2008). The objective measure of pubertal timing, menarche, did not support these findings. There were no

significant differences between ethnic-racial groups in terms of reported menarche. However, results for the subjective measure of timing, relative perceived pubertal timing, did support the hypothesis. Here, as expected, Black girls reported the earliest perceived pubertal timing. Perceived pubertal timing is potentially a more important marker to this study as it relates to how girls interpret their own development and often relies on external/visible markers for comparison, through body comparisons. Research has also suggested that perceived puberty may relate more closely to a number of internalizing and externalizing outcomes than objective measures (Harden et al., 2012; Kretsch et al., 2016).

In terms of body ideals and body comparisons there were also interesting findings. Black girls' current body sizes did not differ from White girls'. However, the groups did differ on personal and cultural body ideals. Black girls chose a significantly larger ideal body than White girls, which is in line with previous research (Botta, 2000; Kelly et al., 2011). Black girls also perceived the Black female ideal to be larger than White girls did, again in line with previous work suggesting a larger body ideal for Black women/girls (Botta, 2000; Kelly et al., 2011). Though they perceived the White ideal to be smaller than White girls did. Black girls therefore understand that the White ideal is thinner, but potentially have an exaggerated belief of what that ideal is relative to the in-group. Lastly, in terms of disordered eating, Black girls engaged in less disordered eating than White and biracial girls.

Question one tested direct regression effects of the study variables on disordered eating. Several variables did not have a direct impact on disordered eating for Black girls: feminine traits, caring for children ideology, being nice in relationships ideology, romantic relationship ideology, Black femininity, ethnic-racial identity affirmation, pubertal timing, ideal body size, and ideal White body size. Many of these effects are unsurprising. Hegemonic femininity and

feminine ideals are likely not what Black women and girls are using to justify their bodies (Chen Evans & McConnell, 2003). Relatedly, Black women's body image relies on a number of other inputs than weight or ideal size (Capodilupo, 2015; Rubin et al., 2003). Other findings, like the lack of impact from ethnic-racial identity, are a little more perplexing. Ethnic-racial identity affirmation was expected to be related to disordered eating for Black girls. Building off previous research suggesting that ethnic-racial identity serves as a protective factor against disordered eating (Blazek & Carter, 2019; Rhea & Thatcher, 2013; Shuttlesworth & Zotter, 2011), it was predicted that ethnic-racial identity affirmation would be protective. However, the relation between ethnic-racial affirmation and disordered eating was not significant for Black girls. Affirmation was presumed to be important in terms of sense of belonging potentially relating to increased internalization of Black body ideals for Black girls. However, it may be that other aspects of ethnic-racial identity, such as exploration (Blazek & Carter, 2019) are really what is driving the other associations. But, even these non-significant findings are important. They provide further evidence, consistent with intersectional theory, that hegemonic White ideals, do not apply to all groups. The results also suggest that researchers may not be able to apply the same models of disordered eating (e.g., femininity hypothesis or some sociocultural models) to Black and White adolescents.

There were also important significant findings as well. Increased endorsement of masculine traits did relate to decreased disordered eating for them. Masculine traits, like being independent, may encourage girls to be less attentive to pressure from family, peers, and society to be thin (a strong correlate of disordered eating; Stice, 1994). Bringing in systems of discrimination and experience, Black girls, as part of Black femininity or otherwise may be socialized to take on more masculine traits in order to providers in their families and cope with

discrimination (Binion, 1990; Buckley & Carter, 2005; hooks, 1981). In terms of feminine ideologies, most feminine ideologies did not significantly impact disordered eating for Black girls, except investment in appearance. For Black girls, greater endorsement of the investment in appearance ideology related to increased disordered eating. Black girls and women often face discrimination for Afrocentric features, wearing their hair naturally, and general physical othering (Hagiwara et al., 2012; Stepanova & Strube, 2012). Wearing make-up and doing their hair in more Eurocentric ways may prove to reduce this discrimination. Again, going back to the idea of the power of gendered ideals, these girls might also see changing their physique to match the hegemonic norm might also reduce this discrimination.

Black girls with larger current body size reported increased disordered eating. Because of their larger size these girls may experience more weight-based teasing, and/or increased perceived pressure to be thin from peers and family, both of which are known correlates for disordered eating (Fairburn et al., 1997; Field et al., 2001; Quiles Marcos et al., 2013). However, Black girls with larger cultural ideals reported lower disordered eating. So, while being larger can have drawbacks, perceiving their cultural in-group body ideal to be larger can be protective. Internalizing the cultural ideal may help Black girls feel that engaging in disordered eating behaviors aimed at altering the body to be thinner is unnecessary.

The results of questions two and three and their implications will be discussed below in the section about all girls, as there were not significant group differences for these analyses.

Beyond the direct effects, this dissertation explored how these direct effects were modulated by being the majority or minority in different common social contexts. The implications of these findings will be discussed. In the school context, there were differences between Black-majority and -minority girls in terms of the romantic relationships ideology and

the ideal Black female body size. Black girls in the ethnic-racial majority at their school were more invested in the romantic relationship ideology than Black girls in the ethnic-racial minority at their school. Although interracial dating and marriage is on the rise, many people still date within their ethnic-racial group. Black girls in the majority at school may perceive school as holding a larger dating pool and therefore highlight this ideology as more valuable. Black girls in the majority at school also perceived the ideal Black female body size to be larger than Black girls in the minority at school. Black-minority girls might face increased exposure to and pressure to conform to the hegemonic thin feminine norm since they are in more racially and ethnically diverse schools. Rather than potentially being in a protective enclave, these girls likely engage with others who uphold the thin ideal on a regular basis.

In the neighborhood context, there were differences between Black-majority and -minority girls in terms of the caring for children ideology, masculine traits, and the ideal Black female body size. Black girls in the ethnic-racial majority in their neighborhood were less invested in the caring for children ideology than Black girls in the ethnic-racial minority in their neighborhood. Since this is a measure of hegemonic femininity, belief in this ideal is likely stronger where hegemonic femininity is more strongly upheld, which is more likely to be true in spaces where Black girls are not the majority. In terms of masculine traits, Black girls in the majority for their neighborhood endorsed fewer masculine traits than Black girls in the minority in their neighborhood. This finding may stem from internalized racism. Although all Black girls are likely to face racism, girls in the minority in their neighborhood might be more likely to experience explicit discrimination. Specifically, masculine Black girls may face discrimination in line with stereotypes of Black women, such as the Sapphire stereotype, which depicts Black women as domineering and aggressive (Epstein et al., 2017), traits often considered masculine.

As such repeated discrimination may increase internalization of these beliefs. Lastly, similar to the school context Black girls in the ethnic-racial majority in their neighborhood also perceived the ideal Black female body size to be larger than Black girls in the minority in their neighborhood. The same potential explanation applies. Black-minority girls might face increased exposure to and pressure to conform to the hegemonic thin feminine norm given their diverse context.

Lastly, in terms of the friend group context, there was a significant difference between Black-majority and -minority girls in terms of the perceived ideal White female body size. Black girls who were in the ethnic-racial majority for their friend group perceived the White female body ideal to be smaller than Black girls in the ethnic-racial minority in their friend group. Based on the findings from question one, Black girls may have an exaggerated view of the thin, White ideal. However, it appears that exposure to girls from other ethnic-racial backgrounds might ameliorate this exaggeration.

The second part of the context question was an exploration of the direct effects and differences between groups regarding these differences. In terms of other feminine ideologies, investment in appearance was problematic for Black girls who were in the minority across contexts. Black who were in the ethnic-racial minority and who had higher investment in appearance engaged in more disordered eating. This relationship was particularly strong for Black girls in the minority in their neighborhood relative to White-majority and White-minority girls in the same context. Although research has suggested that disidentification with White hegemonic beauty ideals can be beneficial for Black women (Chin Evans & McConnell, 2003), Black girls in who are an ethnic-racial minority may find it more difficult to disidentify with these ideals since they are likely reified as the ideal in their social contexts. As such, for Black

girls greater attention to and investment in appearance may highlight how and where they differ from that hegemonic ideal which could cause distress, relating to disordered eating behaviors as a method of body control or as a coping mechanism. Higher endorsement of nice in relationships ideology was protective for White girls who were the minority in their friend group. Perhaps as these girls were nicer to their peers they felt more accepted and included beyond peers within the same ethnic-racial group as themselves.

In terms of gendered traits, only the impact of masculine traits varied between groups and contexts. Specifically, high endorsement of masculine traits was only protective for Black girls in the majority in their neighborhoods and friend groups. For Black girls in more ethnically and racially diverse settings and for White girls from both contexts, greater conformity to hegemonic norms likely conveys some amount of power. However, for Black girls in the majority in their neighborhoods and schools, these more masculine traits, like independence and defending personal beliefs, may help them resist hegemonic feminine norms and body ideals.

There were also significant differences in the role of body size and body ideals across groups. Perceiving the ideal Black body to be large was protective for Black girls who were in the ethnic-racial minority in their school and friend groups (and marginally in their neighborhoods). Believing in a Black body ideal that is different from and larger than the body ideals of White women likely protects Black girls who, as the minority in school and friend contexts, are likely more commonly exposed to the hegemonic thin ideal. The impact of current body size also differed between groups and contexts. Larger current body size predicted increased disordered eating for Black girls in the minority in their schools and neighborhoods. Black adolescents tend to have a larger body size (Ogden & Carroll, 2010); as such, Black girls in the minority may face increased pressure to be thin and weight teasing (common correlates of

disordered eating: Halliwell & Harvey, 2006; Stice, 2002), in-line with a hegemonic norm supporting environment. Belief in a larger cultural body ideal may not be enough to protect them in these circumstances. Perceiving the White female body ideal to be larger was protective for White girls who were the minority in their friend context. Given their greater chance of exposure to diverse body ideals relative to White girls in more homogenous friend groups, White girls with diverse friend groups might amend their perceived ideals for White women based on their friends' ideals for women.

There was only one significant difference for pubertal timing. Later perceived pubertal timing relative to peers was protective for Black girls in the ethnic-racial minority in their school. Later timing is related to lower BMI, both in adolescence and beyond (Kaplowitz et al., 2001; Sandhu et al., 2005), therefore these girls may be at decreased risk for weight-based teasing and pressure to be thin because they were later in their pubertal development (Halliwell & Harvey, 2006; Stice, 2002).

These findings suggest that context can make a difference in terms of how these relations play out. It was crucial as this is the first study of its kind to explore how ethnic-racial demographics in different social contexts impact identity, puberty, and common mechanisms of disordered eating. The results broadly suggest that researchers need to be aware of body-in-context, such that perceived current body size and perceived cultural body ideals change based on context, particularly as this is relevant for Black girls in situations where they are more likely to encounter the hegemonic norm from trusted others (friends and schoolmates). It also highlighted that the protective nature of masculine traits differed between contexts. Intersectionality highlights that different social identities may be emphasized based on context. These results support this claim and may help clear up some of the contradictions about the

impact of ethnic-racial and gender identity. It may be that certain identities are more protective in certain circumstances

Biracial Girls

In terms of the demographic information, there were some very important findings in regards Black-White biracial girls. As discussed previously there is little to no work with biracial adolescents and their disordered eating experiences. This dissertation was able to show that, on average, Black-White biracial girls are as invested in feminine traits and norms as White girls. So, although Black girls may not be endorsing these hegemonic White feminine ideologies as much as their White peers, Black-White biracial girls are matching and, in some cases, exceeding White girls in their endorsement of these norms. Showing higher or equal endorsement for feminine traits and almost all feminine ideologies, suggesting that these girls are aware of hegemonic feminine norms and engaging in hegemonic feminine traits. Rockquemore and Brunsma (2002a) suggest that Black-White biracial individuals, perhaps particularly biracial women's and girls', acceptance or rejection into monoracial peer groups stems from assessments of their bodies. This may mean that Black-White biracial girls are primed to focus on appearance as it is relevant to their social interactions broadly. This focus on the body might help explain their heightened endorsement of ideologies specifically related to the body such as thinness and investment in appearance. These findings are important because research has repeatedly shown that greater investment in feminine traits and ideologies is a risk factor for disordered eating (Hepp et al., 2005; Green et al., 2008; Pritchard, 2008). Historically, White girls were considered to have the highest thinness endorsement and therefore greater disordered eating (Green et al., 2008; Pritchard, 2008; Wichstrom, 2000). However, Black-White biracial adolescents' high endorsement of feminine ideologies contradicts those previous findings and might help explain

why biracial women may be at increased risk of disordered eating relative to their monoracial peers (Ivezaj et al., 2010).

Biracial girls also had the greatest endorsement of ethnic-racial identity affirmation relative to mono-racial girls. Black-White biracial individuals in the United States have historically been considered Black through the one-drop rule. This rule was partially put into place in order to legitimize the enslavement of biracial individuals, who at that time were often the result of slave owners raping enslaved Black women (Zach, 1993). However, there is variation in how Black-White biracial individuals identify and the ways they portray ethnic-racial identity (Khanna, 2011; Rockquemore & Brunsma, 2002a). For Black youth, identifying as Black (in-line with societies prevailing view of their identity), may offer protection in that, while there is discrimination based on that identity, there is also access to community support and sense of self as part of that group based on that identity. For Black-White biracial youth, they likely have more experience with needing to justify their identity to both Black and White individuals because they are not identifying in-line with society's prevailing views (Khanna, 2011). As such, this repeated justification may lead to a stronger sense of connection to their ethnic-racial identity.

In terms of body ideals and body comparisons there were numerous significant differences. Biracial girls perceived their current body size to be larger than either Black or White girls. They did not differ from Black girls in terms of perceived ideal body size or ideal Black body size, suggesting some distancing from the hegemonic thin ideal and awareness of differences in cultural standard of beauty. They perceived the ideal White body size to be thinner than the cultural in group (White girls), but not as much as Black girls. In terms of body comparisons, biracial girls were more likely to engage in body comparisons than Black girls,

similar to White girls. Heightened engagement in body comparison has been shown to predict disordered eating, particularly for White women (Fitzsimmons-Craft et al., 2012a, b; Rancourt et al., 2016; Pinkasavage et al., 2014), and since Black-White biracial girls engaged in similarly high comparisons to White girls this may also be the case. Although no hypothesis was generated for biracial girls, this hyper-vigilance about the body makes sense in the context of the appearance-acceptance paradigm for biracial girls discussed in Rockquemore and Brunsma's (2002a) work. Biracial girls may feel connected or disconnected to groups depending on their Afrocentric features and/or ability to pass as White, which might lead to increased appraisals of the body and heightened attention to self in comparisons to peers.

Lastly, in terms of disordered eating, biracial girls engaged in similarly high levels of disordered eating to White girls. Although the stereotypes surrounding disordered eating suggest that White girls are at the highest risk, these results suggest that the experiences of biracial girls also result in high levels of disordered eating. These results are partially in line with previous research with biracial adults, which suggested that biracial women had higher disordered eating than Black women (Ivezaj et al., 2010). As such, it is incredibly important to study this underserved population. We know relatively little of the lived experiences of biracial adolescents, but this first question suggests they are at increased risk for disordered eating and many of its accompanying risk factors.

The next step, was to explore how these identity and mechanism variables impacted biracial girls' disordered eating. In terms of gendered traits, the femininity hypothesis was reversed for biracial girls, in that great endorsement of feminine traits related to decreased disordered eating. Many of the hegemonic feminine norms were not significant for biracial girls, but investment in appearance did relate to increased disordered eating, similar to the results for

Black girls. Perhaps engaging in hegemonic femininity provides power through increased acceptance into hegemonic femininity for Black-White biracial girls. While the measure of Black femininity was unrelated to disordered eating for Black girls, greater endorsement of Black femininity was protective for biracial girls. Endorsement of Black femininity may allow these girls access to larger cultural body ideals as their own and be consistent with their own investment in Black-femininity.

In terms of body ideals and body comparisons the only finding unique to Black and biracial girls is that having a larger current body size relates to increased disordered eating. Similarly to Black girls, larger biracial girls may experience more weight-based teasing, and/or increased perceived pressure to be thin from peers and family, both of which are known correlates for disordered eating (Fairburn et al., 1997; Field et al., 2001; Quiles Marcos et al., 2013).

As mentioned above the results of questions two and three will be discussed in the “All Girls” section as there were no significant differences between groups.

While the sample size was too small to adequately explore context for biracial girls, question five was devoted solely to biracial girls, in terms of exploring how biracial identity categories related differences in the study variables. Rockquemore and Brunsma’s (2002a) seminal research on biracial individuals in the US highlighted the variation of identification within the Black-White biracial community, which has often been assumed to be relatively homogenous. Their research identified and discussed six different identities; Solely Black, Solely White, Protean, Unvalidated biracial, Validated biracial, and Transcendent. In their sample and in this study’s sample, relatively few individuals identified as Solely Black or Solely White, and as such, these groups were too small to include in analysis. However, there were large enough

samples to explore if there were mean differences in the study variables as a function of biracial group membership. As this was purely exploratory there were no specific hypotheses generated about differences between groups. This analysis was meant as a jumping-off point to inspire future studies into the disordered eating experiences of Black-White biracial girls. By and large, there were few significant differences between the groups. However, where there were differences could be telling for future research.

Regarding feminine traits and ideologies, Black-White biracial girls identifying as Validated or Transcendent, endorsed more feminine traits and had higher endorsement of the nice in relationships and care for children ideologies than Unvalidated biracial girls. The Transcendent label means these girls find race to be a meaningless category, as such they may rely more on other salient identities, in this case perhaps gender. Regarding Validated versus Unvalidated girls, both groups identify as Black-White biracial but unvalidated girls feel as though they experience the world as a Black girl. Perhaps because Unvalidated girls perceived their experiences as close to that of monoracial Black peers, they have lower internalization of the hegemonic White femininity measures in both the trait and ideology measures. Interestingly, Transcendent girls were also higher in masculine traits than any of the other groups. Given the feminine and masculine trait findings together, this could point to these girls reject gender labels as well, and instead opting for a more androgynous identity, freer from both racial and gender identity constraints.

There was also a significant difference in terms of the perceived ideal Black female body size. Validated biracial girls chose a smaller Black ideal than Unvalidated biracial girls. Unvalidated biracial girls chose a similar ideal Black female body size to monoracial Black girls, which again may relate to feeling like they experience the world as a Black girl. It is possible

that the repeated lack of validation of their biracial identity may result in these girls identifying more strongly with Black girls, since that is how they believe society sees them.

Although it was not pertinent to conduct a regression model of these relatively small groups, this analysis can serve as a first step. Rather than treating Black-White biracial individuals as a monolithic group, as is often done with Black individuals, the results suggest Black-White biracial girls identify diversely and that there are subtle variations between these groups. These differences can be used to inform future quantitative and qualitative research hoping to further probe Black-White biracial girls identity development and disordered eating experiences.

White Girls

Lastly, in terms of individual group findings we come to the results for White girls. In terms of demographics there was a mix of expected and surprising findings. While White girls did not have higher feminine trait endorsement relative to Black and biracial girls, they did have lower endorsement of masculine traits than Black or biracial girls. As such, White girls were less likely to think that traits like being independent, defending their own beliefs, and being assertive were accurate descriptions of themselves relative to Black and Black-White biracial girls. Adult literature suggests that low masculine trait endorsement is related to increased disordered eating in White women (Brown et al., 1990; Klingenspor, 1994; Meyer et al., 2001). The lack of significant findings for feminine traits for Black and White girls, and the reverse finding for biracial girls calls into questions the accuracy of the femininity hypothesis for adolescent girls. Perhaps, this is related to development trend, wherein adolescents are spending time exploring gender whereas adults may feel more hemmed in to specific prescribed ways of enacting femininity. White girls endorsed all feminine norms at equal to or higher levels than Black girls.

White girls reported less racial identity affirmation than either Black or biracial girls, which is unsurprising, given how few studies have explicitly explored ethnic-racial identity and socialization among White youth (as reviewed by Priest et al., 2014). Studies that have often compared across groups, and tended to show that racially and ethnically diverse youth have a more developed sense of ethnic-racial identity than White adolescents (Douglass & Umaña-Taylor, 2016; Phinney et al., 1997). No effects were found for menarche, but White girls did perceive their pubertal development to be later than Black girls did, which is in line with previous research on the subject (Marshall & Tanner, 1969).

In terms of body ideals and comparisons, White girls perceived their current body size to be smaller than biracial girls did, but did not significantly differ from Black girls. White girls endorsed the smallest ideal body sizes relative to Black and biracial girls. They also seem to differentiate less between cultural body ideals, perceived the Black body ideal to be smaller than the in-group (Black girls) and perceiving the White ideal body (in-group) to be bigger than either Black or biracial girls. So, similarly to Black girls they perceive the in-group ideal to be larger than out-group people do. In terms of body comparisons, White girls engaged in more body comparisons than Black girls. Lastly, White girls engaged in more disordered eating than Black girls, but similarly high levels of biracial girls.

The second research question explored direct effects between identities, mechanisms, and disordered eating. Surprisingly, there were no direct effects that were unique to White girls. The only significant direct effects were significant for all girls and will be explored in the next section. The lack of findings is somewhat perplexing. It is possible that generationally things are changing. Perhaps the body positive movement is having an effect on the current generation, perhaps traditional hegemonic femininity is falling out of favor. Whatever the cause, these

findings suggest a need to reconsider the accuracy of older theories of disordered eating for current adolescents.

As mentioned in the discussions for Black and biracial girls, the results for questions two and three will be discussed in the next section.

In terms of context, there were significant findings for White girls as well. For White girls there were differences between being the ethnic-racial majority or minority at school in terms of masculine traits, perceived pubertal timing, and perceived current body size. White girls in the ethnic-racial majority at school had lower masculine trait scores than White girls in the ethnic-racial minority at school. For girls in the majority, the hegemonic ideal is likely quite strong as variation or dissent from other groups is minimal given those groups' minority status; as such, these girls may be less likely to endorse traits that are seen as masculine to uphold hegemonic femininity. In terms of perceived pubertal timing, White girls in the minority at school perceived their pubertal timing as later relative to White girls in the majority at school. White girls in the minority at school are likely some of the latest to go through menarche and this difference might be particularly pronounced in a context with greater ethnic-racial diversity (Herman-Giddens et al., 2012; Herman-Giddens et al., 1997; Wu et al., 2002). Lastly, White girls in the majority at school perceived their current body size to be smaller than girls in the minority at their school. This finding is somewhat perplexing given, it seemed that White isolated in environments with little variation from the hegemonic feminine norms would likely perceived themselves as larger relative to girls who have been exposed to girls of potentially more diverse and different body ideals. It is possible that perceived thinner size of White girls in the majority is an artifact of their belief in the thin ideal to the point of body modification and therefore an after effect of engaging in disordered eating.

For White girls there were differences between being the ethnic-racial majority or minority in their neighborhood regarding disordered eating and perceived current body size. In terms of disordered eating, White girls in the majority in their neighborhood had lower levels of disordered eating than White girls in the minority for their neighborhood. Again, this finding is confusing, as it has been assumed that exposure to alternative views to hegemonic femininity might reduce the risk of disordered eating. It is possible that instead, when White girls are the minority they cling more fervently to the hegemonic thin ideal as a means of identity and self-differentiation therefore increasing the risk of disordered eating. The results for current body size were the same as those for school context; White girls in the majority perceived their current body size as smaller than White girls in the minority. Again, this is potentially an artifact of their belief in the thin ideal to the point of body modification and therefore an after effect of engaging in disordered eating.

For White girls there were differences between being the ethnic-racial majority or minority in their friend group regarding menarche and ideal body size. White girls in the majority for their friend group experienced menarche earlier than White girls in the minority for their friend group. This is another somewhat perplexing finding. However, given that this is in the friend group context, a chosen group, it is possible that girls who developed earlier sought friends who were at the same developmental stage. In this case, earlier developing White girls might be closer in timing for non-White peers. Whereas, as a later developing group, White girls who were developing later may have chosen later developing friends who were more likely to be White. Finally, White girls in the majority for their friend group had smaller ideal body sizes relative to White girls in the minority for their friend group. White girls in the majority are less likely to be exposed to alternative body ideals and therefore their ideals are more strongly in-line

with the thin feminine ideal. Conversely, White girls with more diverse friend groups may be exposed to alternative body ideals and adopt them more readily. In the last part of question four difference in main effects were also explored. Ethnic-racial identity affirmation was protective for White girls who were an ethnic-racial majority in their friend group. It is possible that for these girls, having another social identity from which to draw identification and support beyond hegemonic femininity allowed them to think about themselves more broadly and be less tied to the feminine ideals and constraints therein.

All Girls

Finally, this section will cover results that were the same for all girls in questions one, two, three, and four. But stepping back to look at demographic there are some important non-differences to consider. Regarding feminine norms, there were no differences across groups on the romantic relationships ideology. Although girls at this age are likely beginning relationships, the ideals posited by this ideology may not be as relevant to younger girls who are still constructing what romantic relationships are and should look like (Clemans et al., 2009; Steensma et al., 2013). Relatedly, while there were significant differences in current body size and ideal body size these differences were quite small (~ 1-figure differences on an 18-figure scale).

In terms of the direct effects, Romantic Relationships, Nice in Relationships, and Care for Children showed no significant relation to disordered eating for any of the groups, despite previous work with adult samples suggesting a relation (Green, 2008; Mahalik et al., 2005). The feminine ideology most closely related to the body and the embodiment of femininity, Thinness, did show significant relations across groups. High endorse of the thinness ideology related to high engagement in disordered eating for all girls. The specific focus on obtaining the thin ideal

and presenting in a feminine way may explain why these ideologies specifically did relate to disordered eating.

Body comparisons were also damaging to all girls. Although the relation between body comparison and disordered eating for Black adolescents had yet to be explored, work with Black women had suggested this might be the case (Rancourt et al., 2016). When making body comparisons, women, and likely girls, tend to make comparisons to thin peers and model (Strahan et al., 2006) and will make these comparisons even though they result in damaging consequences, like disordered eating behaviors (Myers & Crowther, 2009; Pinkasavage et al., 2014).

However, again some of the lack of significant findings can be informative, For example, the lack of the impact of feminine traits for Black and White girls may stem from changing definitions of femininity. The BSRI was created in 1974; since then, the women's rights movement and other advancements have changed how society views women. As a result, perhaps the implications of these perceived gendered traits are changing, as well. Feminine trait scores were relatively high across groups (51.5-52.5 out of 70), which suggests these results do not stem from a lack of engagement with these traits, supporting the idea that the implications of these traits may have changed. Similarly, despite previous research showing early pubertal timing as problematic for girls (Halpern et al., 1999; McNamara et al., 2012; Striegel-Moore et al., 2001), neither measure (menarche or relative perceived pubertal timing) were related to disordered eating. Many (95%) of the girls were reporting on pubertal timing retrospectively. These measures are subject to issues with misremembering and misattribution of timing which may have accounted for these results; however, they are still commonly used and well-supported measures of pubertal timing.

Relatedly, previous research suggested that a thin ideal body size would relate to high disordered eating in order to achieve that body ideal (Flament et al., 2012; Vartanian & Dey, 2013). However, across all groups, ideal body size was unrelated to disordered eating. These results are somewhat perplexing. Although the personal ideal averages for each group were smaller than the current body size averages for each group, the differences were relatively small (.75-1.35). Perhaps this limited discrepancy between current and ideal body size can help explain the lack of significance. If the discrepancy is small, girls may not feel the need to engage in disordered eating behaviors to achieve the ideal. Alternatively given the pubertal context, girls may understand that they are undergoing an intense period of physical development and be more accepting of their larger bodies as these changes represent growth towards adulthood.

In terms of question two, previous research has shown that early pubertal timing related to greater disordered eating primarily for White girls, but with some preliminary evidence for Black girls, as well (Harden et al., 2014; Kaltiala-Heino et al., 2003; McNicholas et al., 2012; Striegel-Moore et al., 2001). Researchers have suggested that girls who develop before their peers may not be emotionally or socially prepared to cope with the changes, especially since these changes take girls further from the mainstream thin feminine ideal (Ge & Natsuaki, 2009; Graber et al., 1994). Research has shown that pubertal timing does impact some disordered eating mechanisms (e.g., thin internalization: Rousseau et al., 2018; Stice & Whitenton, 2002). Although research in other areas has explored the interplay of puberty and identity (e.g., pubertal timing and identity crises: Berzonsky & Lombardo, 1983; pubertal timing and racial identity: Carter et al., 2017; Seaton & Carter, 2018), research into this interplay regarding disordered eating has been slow to catch up (Blazek & Carter, 2019).

The results of the first research question did not show single-order relations between pubertal timing and disordered eating; however, it was possible that there were higher-order, multivariate relations between pubertal timing and disordered eating. Therefore, the moderation and mediation analyses proceeded. In line with previous research (Seaton & Carter, 2018), ethnic-racial identity was used as a moderator impacting the relation between pubertal timing and disordered eating. Although in these targeted models there were significant relations between both perceived pubertal timing and ethnic-racial identity affirmation and disordered eating, the interaction effects, and therefore the moderation effects, were not significant. This suggests that while puberty and ethnic-racial affirmation do play a role in adolescent disordered eating, they do interact in regards to disordered eating.

In terms of the mediation analyses, current body size, ideal body size, and body comparisons are all known mechanisms of disordered eating (Fitzsimmons-Craft et al., 2012a, b; Gordon et al., 2010; Pinkasavage et al., 2014; Vartanian & Dey, 2013). However, to date no research has explored how these mechanisms might function as mediators between pubertal timing and disordered eating. Of the three only, current body size was a mediator between pubertal timing and disordered eating. Both perceived pubertal timing and menarche evidenced significant mediations. Girls who developed earlier had larger current body size which was in turn related to increased disordered eating. These results are consistent with previous research showing that earlier developers have larger BMIs and maintain this larger average into adulthood (Kaplowitz et al., 2001; Sandhu et al., 2005).

Although ideal body size did not function as a mediator between pubertal timing and disordered eating, there were interesting relations at work within these models. Girls who experienced menarche later had a smaller ideal body size than early developing girls; this effect

was marginally significant for girls with later perceived pubertal development, as well. It is possible that early developing girls change their ideals based on their developing bodies, whereas later developing girls may maintain the mainstream thin feminine ideal longer because their bodies have been slower to change. Overall, these findings are perplexing, as previous research has shown that thinner ideals are related to increased disordered eating (Flament et al., 2012; Vartanian & Dey, 2013).

Lastly, regarding the body comparison mediation models, in both cases the pubertal timing measures related to disordered eating as did body comparisons. However, there was not a link between pubertal timing and body comparisons, even for perceived pubertal timing, which is likely reliant on physical comparisons. While this is unfortunate, it is in line with findings from another study which showed that timing and physical appearance comparisons were unrelated (Thompson et al., 1999).

These models were conducted in order to understand the interconnection of pubertal timing and common mechanisms on disordered eating. Pubertal timing has long been established as a risk factor for adolescent girls' disordered eating. However, much of this research is becoming dated and social implications and constructions of pubertal timing and identity are constantly being renegotiated. Therefore, it is important to attempt to replicate and expand on existing models to keep abreast of these changes. For example, these results suggest that although several of these common mechanisms are still related to disordered eating they do not impact the relation between pubertal timing and disordered eating.

Finally, in terms of context, in both the school and neighborhood contexts, the main effects of thinness ideology and body comparison were upheld for both Black and White girls in the majorities and minorities in these contexts.

Overall Conclusions

Taken as a whole, this dissertation showcases the importance of a number of overlooked aspects in disordered eating research. The impetus for this dissertation was a limited exploration in the field of non-demographic, non-group-membership based influences on disordered eating. The majority of the existing research has sampled White adult females and White adolescent girls (Hesse-Biber et al., 2006; McNicholas et al., 2012; Tremblay & Lariviere, 2009). With adult samples, the first forays outside of group-membership have been taken, but mainly through the impact of gender identity and gender role ideology on disordered eating (Green et al., 2008; Lancelot & Kaslow, 1994; Mahalik et al., 2005). Some, albeit significantly fewer, studies have explored the impact of gender identity and gender role ideology in adolescent samples (Thurfjell et al., 2006; Wichstrom, 2000). Although ethnic-racial group membership has been a commonly cited predictor of disordered eating, little work has moved beyond group membership to explore intragroup variation in identity and the role it has on disordered eating (Cachelin & Regan, 2006; Cachelin et al., 2000; Shuttlesworth & Zotter, 201), especially in an adolescent context (Blazek & Carter, 2019; Rhea & Thatcher, 2013). As such, as of the writing of this dissertation, this study was the first study of disordered eating among biracial adolescents, and one of the few studies exploring the impact of ethnic-racial identity on disordered eating in Black adolescents.

This dissertation worked to break down the monolith of Blackness in disordered eating research. It sought to understand the role of gender identity, racial identity, and racialized gender identity in the context of pubertal development, and specifically the impact these identities may have on disordered eating. It also sought to dismantle the monolith of Blackness by considering and exploring the experiences of Blackness in different contexts and the experiences of Black-White biracial adolescent girls, whose experiences are often overlooked or subsumed into Black

samples (Rockquemore & Brunsma, 2002a). By moving past demographic, group-membership predictors, this dissertation allowed for elucidation of what it means to the individual to be part of that group and to allow variation in how strongly individuals are connected to that identity.

The findings highlighted the importance of such considerations. Although there were differences on variables across ethnic-racial group membership in almost all variables, there was also variation in the roles that different identities played in disordered eating across groups. The feminine ideology of investment in appearance was of particular importance for Black and Biracial girls. Although research often discusses the benefits of Black girls' larger body ideals and the broader conceptualization of body image (Botta, 2000; Rubin et al., 2003), other aspects like sense of style and self-representation (Rubin et al., 2003) and the importance put on them, may relate to increased power of this ideology on disordered eating for these groups.

This dissertation also sought to explore the role of several variables in conjunction through mediation and moderation models. These models helped expand research about the impact of pubertal timing on disordered eating by understanding its relation to other common disordered eating influences. Although many of the mediations/moderations were not significant, current body size was a significant mediator for both subjective and objective measures of puberty. This mediation is critically important because although current body size, through BMI, is often used as a control in disordered eating research, the crucial connection between puberty, body size, and disordered eating is often ignored. Girls who go through puberty early tend to have larger bodies than their peers as part of the pubertal development process necessitates weight gain (Kaplowitz et al., 2001; Marshall & Tanner, 1969). This could be an integral link to explain why early developing girls are at increased risk (McNicholas et al., 2012; Striegel-Moore et al., 2001).

The fourth question touched on more exploratory expansions based on research in other fields and areas of psychology. Poor measurement of race is something that has plagued psychology research, and many other fields. Participants may only be allowed to choose a single race, or bi- and multiracial participants may be excluded from analysis given small group sizes. This dissertation sought to explore the experiences of one such group, Black-White biracial girls, in relation to disordered eating. Although there were not extensive differences between girls based on their biracial identity, there were some meaningful differences. Transcendent girls scored relatively high on masculine traits, feminine traits, and some feminine ideologies. It is possible that their belief that race is a meaningless category may apply to social identities more broadly. Perhaps practice and experience with supporting their identity and explaining to others about the lack of difference between races has provided these girls with tools and experience to apply these ideas to other areas. There were also important differences between Validated and Unvalidated biracial girls. Unvalidated girls responded more closely to their monoracial Black peers, perhaps out of perceived shared experience, but this response was different from Validated biracial girls. These differences suggest that a “biracial” identity is unique and independent from monoracial identities, but the increased risk these girls are at (see results for question 2) suggests that this identity may be connected to experiences or beliefs relating to disordered eating.

Lastly, as an extension of intersectional theory, this dissertation was able to show variation in the importance of social identities and related beliefs based on context. Different social identities can be more or less important in different contexts, which was definitely the case for Black girls who were the ethnic-racial minority in different social contexts. For example, the previously mentioned impacts of body comparisons and the investment in appearance ideology (see results from question 1 and question 4) were particularly strong for Black girls in minority

contexts where they are likely to be confronted with the hegemonic thin feminine ideal.

However, for these same girls, ethnic-racial identity and a larger perceived Black body ideal were protective in the face of that adversity.

What these results suggest as a whole is that, there is a need to explore a multitude of facets relating to social identities. It is not only group membership or only a sense of identity, but that these work in conjunction with context to impact individual experience, something that psychology has not always been particularly adept at exploring. Relatedly, the results bolster claims to dismantle the ideas of monolithic racial categories and to understand and explore the importance of variation in identity that naturally occurs. This call is being heeded in numerous areas (Ihara, 2009; Seaton et al., 2010), through the call for ethnic-racial identity and measures of identity rather than group-membership (see Umaña-Taylor et al., 2014).

Implications

My hope is that through this study, and hopefully others like it, we can begin to dismantle some of the harmful, socially accepted stereotypes about disordered eating. This history of bias in disordered eating research led to many age-, weight-, race-, and gender-based stereotypes that still pervade society (Gordon et al., 2002; Puhl & Suh, 2005; Specter & Wiss, 2014). By conducting studies that directly challenge some of these stereotypes to expand the theoretical assumptions behind them (e.g., that it is not sex but the enactment of hegemonic gendered identities that impact disordered eating) and communicating this information effectively to those working with adolescent girls, we can begin to reverse these stereotypes and help those who are at risk are overlooked because of these widely held stereotypes. Through this study and future work, I will continue to explore these differences and novel means of disseminating this information to the broader public. Eventually, in conjunction with other researchers and applied

practitioners, I hope to use this information to create more targeted and effective programming to promote positive identity development and reduce disordered eating risk for racially and ethnically diverse adolescents.

In terms of the potential for more targeted interventions, if the investment in appearance impact for Black girls is related to a fight against discrimination relating Afrocentric features or hair, talking to these girls about this type of discrimination and teaching them to value and appreciate their features and natural hair might help moderate the relation between investment in appearance and disordered eating. Similarly, encouraging biracial girls to explore Black femininity and their own ethnic-racial identity and talking about how it differs from hegemonic femininity and what it can positively include might also enhance the impact of Black femininity and ethnic-racial identity on decreasing disordered eating for biracial girls.

As thinness ideology and body comparisons seemed to be a universal issue, spending more time on these topics in interventions with diverse girls may prove particularly useful. Discussing the limitations of hegemonic femininity, highlighting the intense but necessary physical changes of puberty which make comparisons difficult, and talking about things to boost confidence rather than deflate it with comparisons likely would benefit girls from all backgrounds.

Limitations

Although the previous sections extolled the benefits of this study, it is important to remain realistic about problems and limitations with this study, as well. First, all the data were collected at a single time point, making it a cross-sectional study. As such, although the results suggest connections between the independent variables and disordered eating, no claims about directionality or causality can be made from single-time point data. These connections are

especially true for the mediation models assessed in research question three. Although conducting mediational analyses using cross-sectional data is possible (see MacKinnon et al., 2007), more stringent methods (see Baron & Kenny, 1986) suggest that true mediation is only feasible with multiple time points. Also, as the sample was not nationally representative, these results cannot be generalized to all adolescents, but they do provide an impetus from which to continue research.

Another limitation stems from the measures themselves. Whenever possible, measures that had been previously used with racially and ethnically diverse youth were selected (e.g., MEIM, chEAT); however, several of the measures had either not been used with adolescents nor specifically with diverse adolescent samples (e.g., BEECOM, Belgrave African American Women's Gender Role Belief Scale). In instances where measures were chosen that had not been previously used with diverse adolescent samples, these measures were carefully reviewed to assess if they were age appropriate and they were only used when there was not a feasible alternative that had been used with diverse adolescent samples. However, despite this rigorous process, there is the possibility that these measures were not assessing what was expected, were not age appropriate, or were misinterpreted by the sample.

Lastly, as is a concern with all studies conducted through large panel surveys without researcher-participant face-to-face interaction, there is always the possibility that respondents are not who they claim to be (either adult respondents or bots). To attempt to curtail this issue, I had formulated several questions ways to weed errant responders. For example, when asked to report their age and gender, respondents were given more options than the cut off for the study to hopefully reduce the number of people responding falsely. Similarly, the response procedure for height and weight was open ended. This allowed for removal of participants who responded with

unreasonably low or high weights or heights. Although not analyzed as part of this study, open ended data were collected based on a story completion task. Respondents who did not respond, responded with key-smashing, or responded not in English were removed. Lastly, responses were reviewed to assess where respondents had “Christmas treed”, either responded to all questions the same way or responded in a patterned way. Data that did not meet these criteria were removed and replaced; However, despite these safeguards, it is still possible that the respondents were not in fact all 13- to 15-year-old girls who were Black, White, or Black-White biracial.

Future Directions

Ideally, this study would be replicated across pubertal development, following girls from pre-puberty (around age 8) until they had completed their pubertal development (around age 16). Having multiple time points would allow more complex, causal modeling that would allow assessment of directionality in these relationships. Also, in regard to breaking down the monolith of race, it would be important to get a large enough sample to explore different Black and biracial identification. Studies have shown differences in a number of outcomes between African Black and Caribbean Black Americans (Carter et al., 2020; Medina et al., 2018; Seaton & Carter, 2018).

Similarly, future research should attempt to devise and test measures of gender identity, gendered racial identity, body comparison, body ideals, and disordered eating that are valid and reliable for use with racially and ethnically diverse youth. Particularly with disordered eating measures, there has been significant push back as to whether or not the traditional conceptualization and measurement of disordered eating is relevant to non-cis-gendered, White

women and adolescents. Further development and testing of measures are necessary to meaningful continuation of the field.

Lastly, there needs to be continued attention to the mechanisms by which identity matters. The field has been moving, beneficially, away from demographic predictors, which has allowed researchers to discover the importance of ethnic-racial and gender identity, among other social identities. However, the next push forward needs to be to identify how these identities make their impact. Does greater identification with ethnic-racial identity result in different socialization, different parenting messages, different dyadic conversations with friends, less attention paid to ethnic-racially irreverent body models? At this point the research is still in its nascent stages, and we simply do not have the answers, but this is as good a place as any to begin.

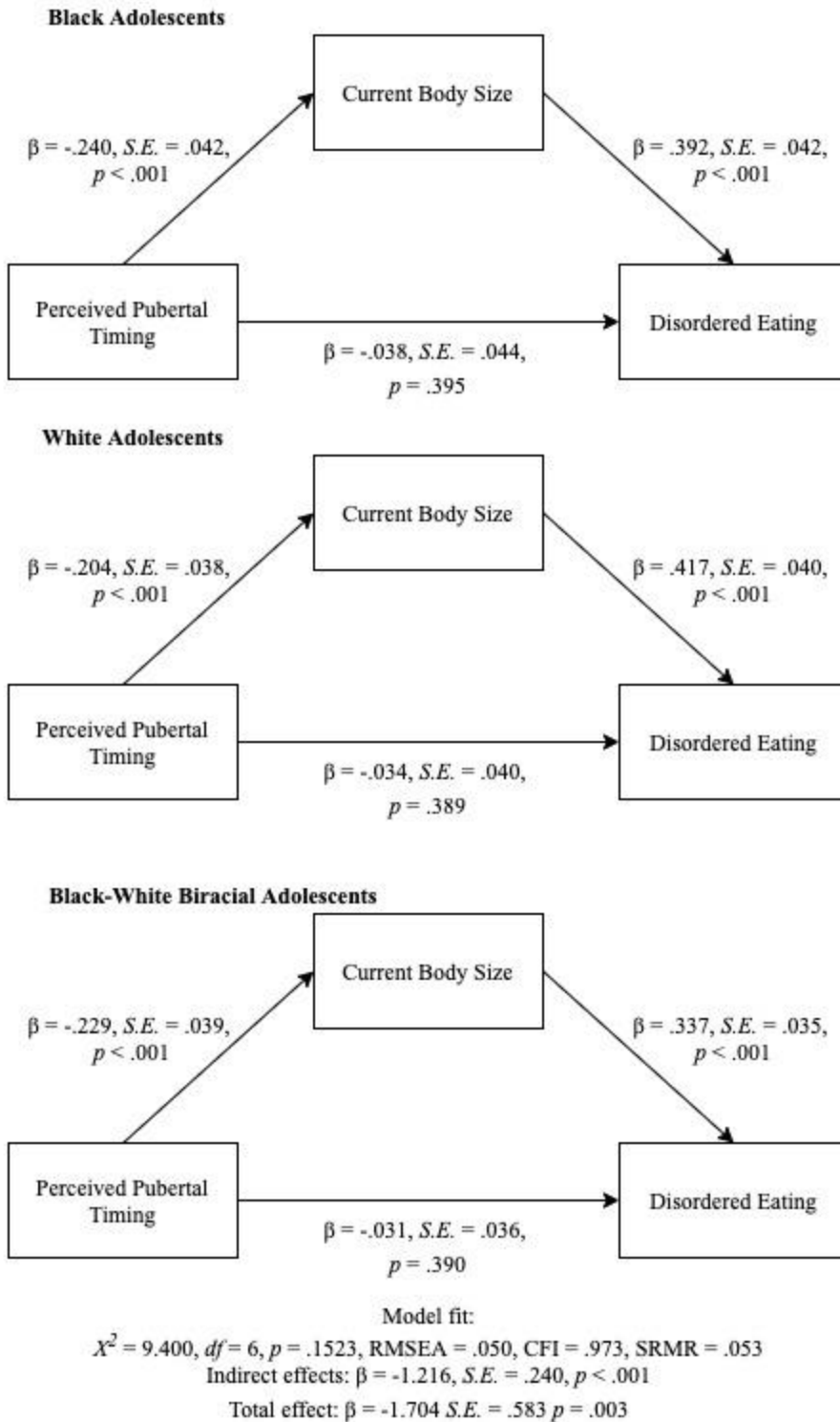


Figure 2. Current body size as a mediator between perceived pubertal timing and disordered eating.

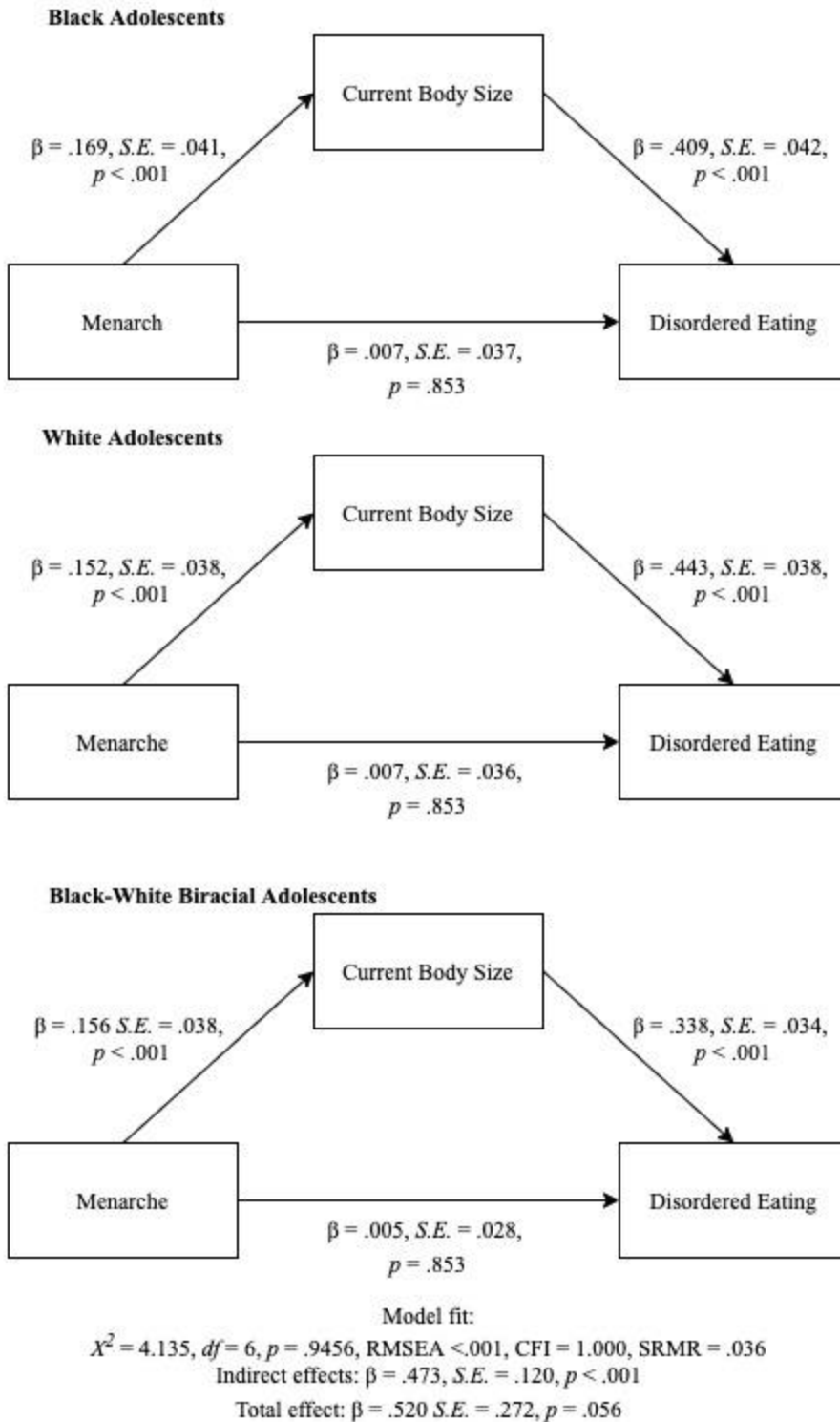


Figure 3. Current body size as a mediator between menarche and disordered eating.

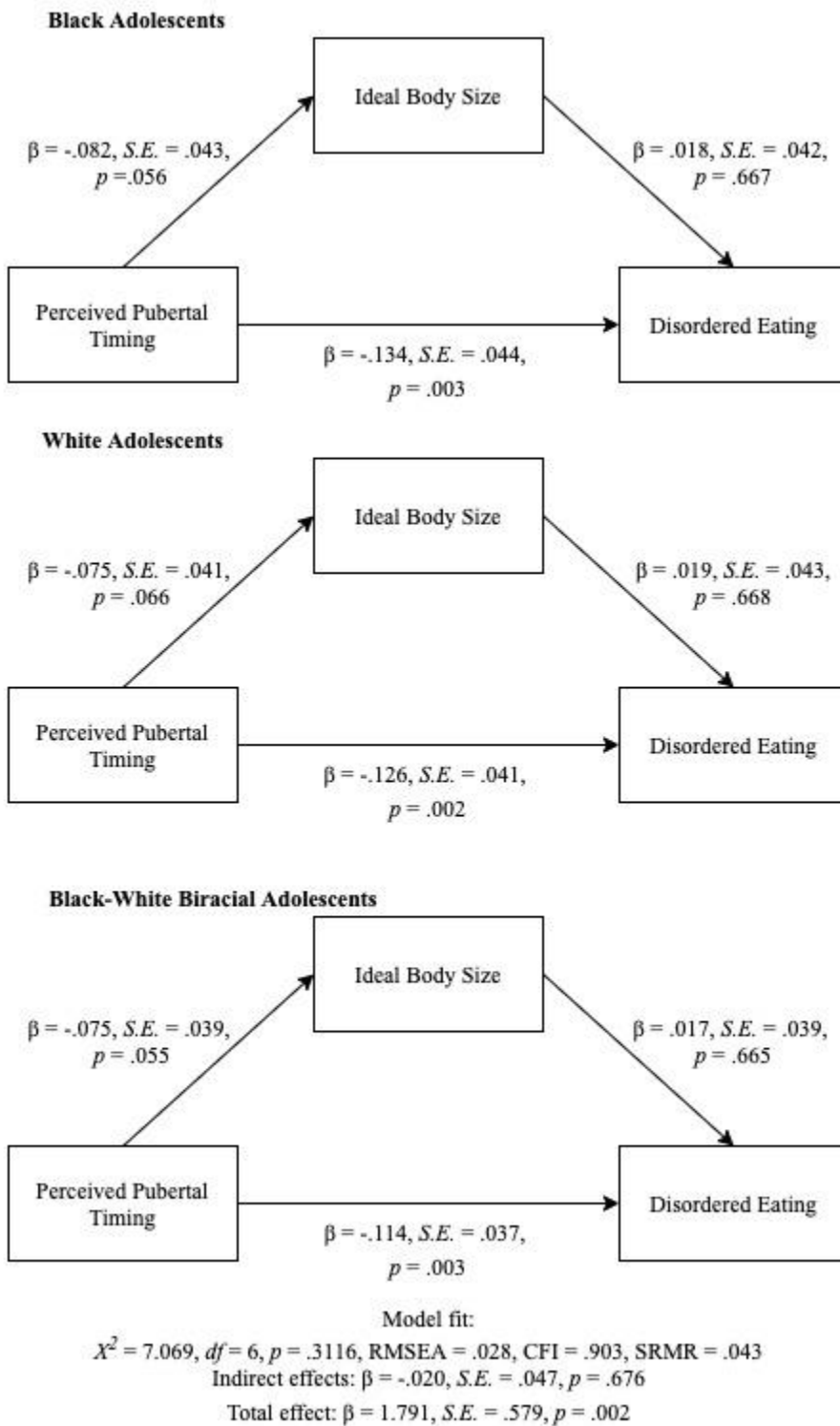


Figure 4. Ideal body size as a mediator between perceived pubertal timing and disordered eating.

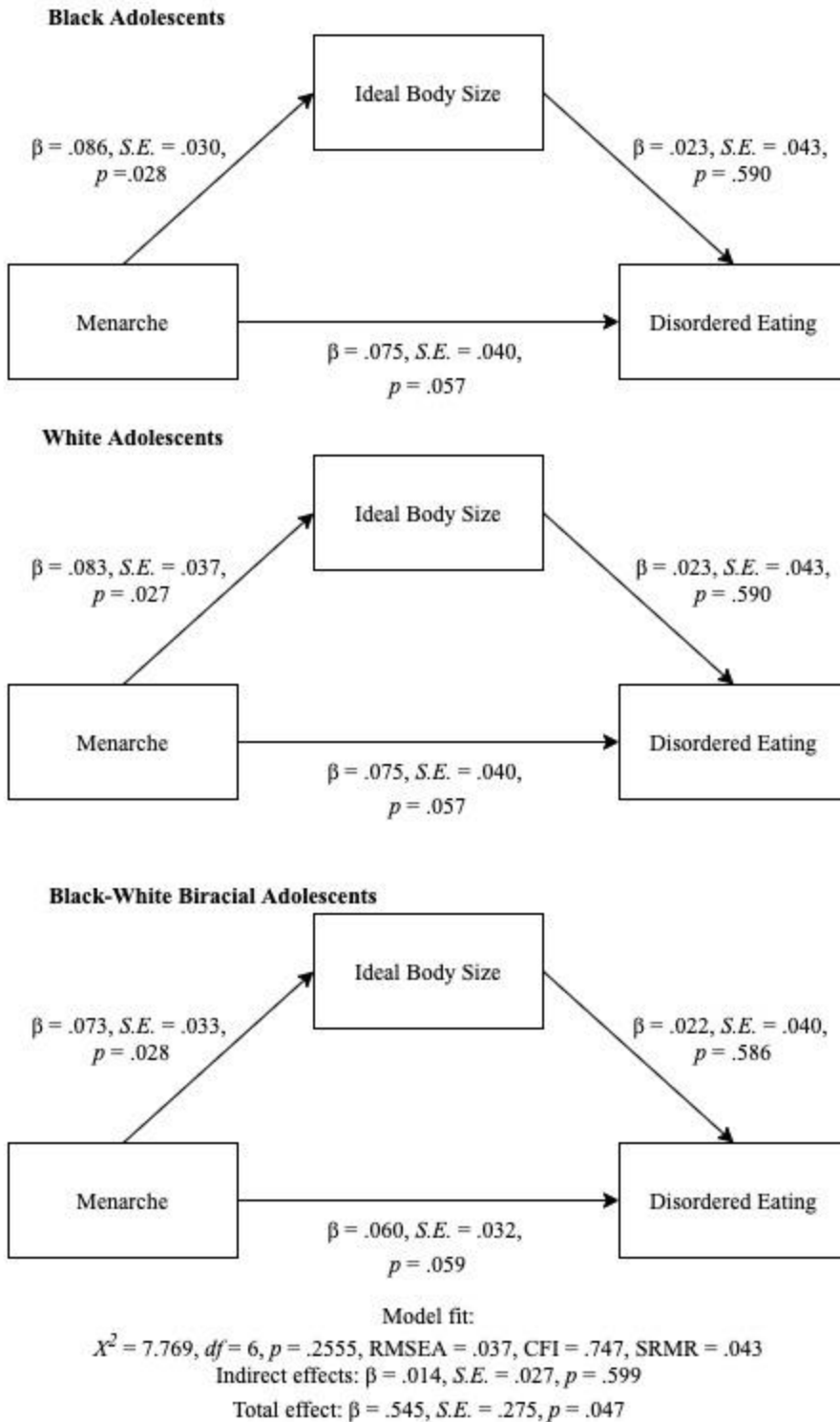


Figure 5. Ideal body size as a mediator between menarche and disordered eating.

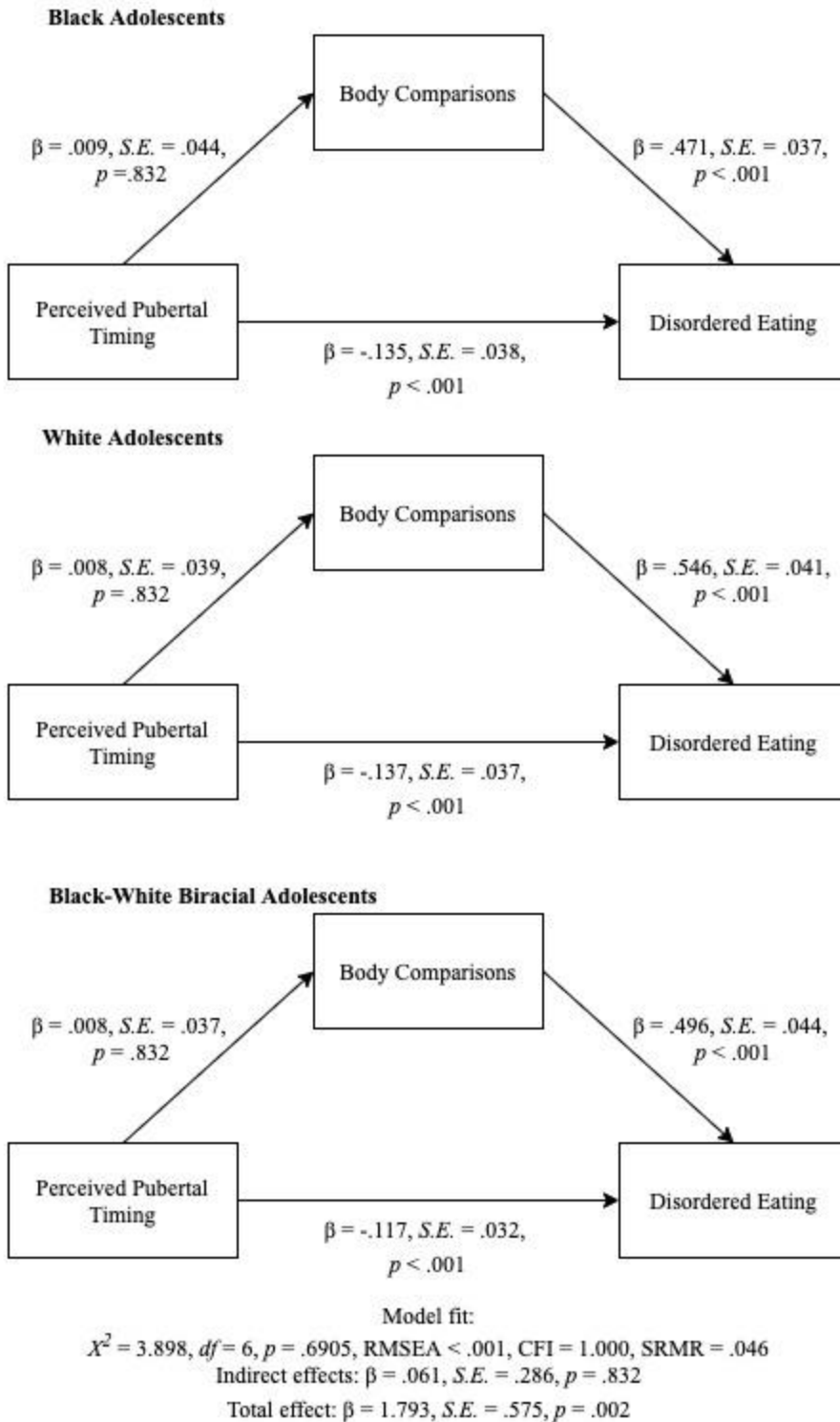


Figure 6. Body comparisons as a mediator between perceived pubertal timing and disordered eating.

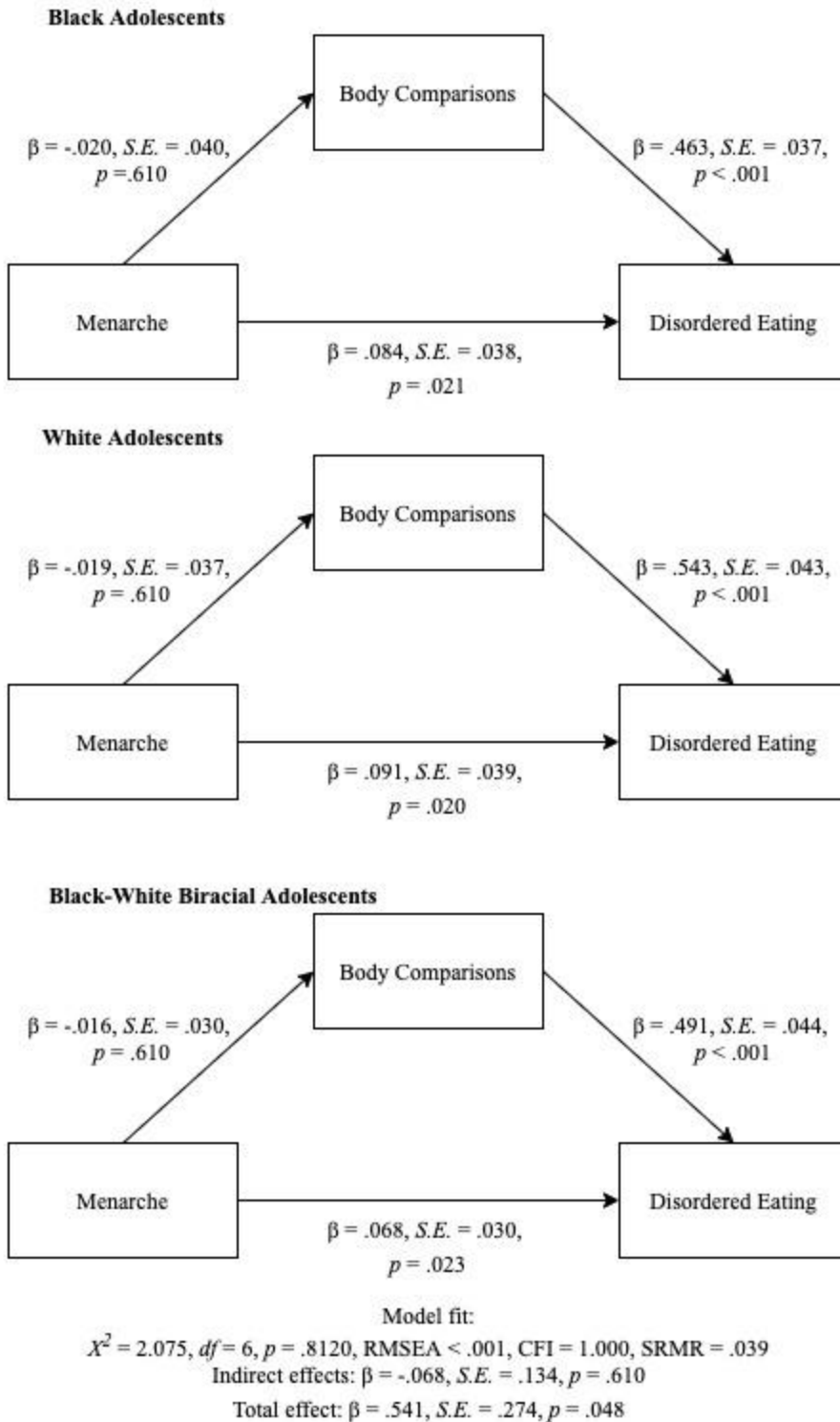


Figure 7. Body comparisons as a mediator between menarche and disordered eating.

*Table 1.**Missing Values Analysis Table*

Variable	Number of Responses	Number Missing	Percent Missing	Mean (SD)
Age	672	0	0%	2.12(.80)
Race	672	0	0%	N/A
State	672	0	0%	N/A
Height (Feet)	670	2	.3%	4.92(.32)
Height (Inches)	664	8	1.2%	4.45(2.92)
Weight	672	0	0%	134.05(34.86)
BSRI-Willing to Take a Stand	672	0	0%	4.74(1.70)
BSRI-Dominant	672	0	0%	4.19(1.73)
BSRI-Independent	672	0	0%	5.19(1.64)
BSRI-Strong Personality	672	0	0%	5.22(1.69)
BSRI-Soothes Hurt Feelings	672	0	0%	4.94(1.69)
BSRI-Sympathetic	672	0	0%	5.30(1.66)
BSRI-Warm	672	0	0%	5.28(1.59)
BSRI-Aggressive	672	0	0%	3.20(1.76)
BSRI-Loves Children	672	0	0%	5.20(1.78)
BSRI-Sensitive to Other's Needs	672	0	0%	5.19(1.62)
BSRI-Tender	672	0	0%	4.82(1.64)
BSRI-Assertive	672	0	0%	4.50(1.68)
BSRI-Affectionate	672	0	0%	5.10(1.65)
BSRI-Defends Beliefs	672	0	0%	5.55(1.61)
BSRI-Leadership Abilities	672	0	0%	5.02(1.81)
BSRI-Risk Taking	672	0	0%	4.77(1.71)

BSRI-Compassionate	672	0	0%	5.47(1.51)
BSRI-Understanding	672	0	0%	5.57(1.52)
BSRI-Forceful	672	0	0%	3.54(1.82)
CFNI-Caring for Kid Rewarding	672	0	0%	2.86(.90)
CFNI-Being Nice is Important	672	0	0%	3.38(.75)
CFNI-Romantic Relationship is Essential	672	0	0%	2.39(.93)
CFNI-Never Wear Make-up	672	0	0%	2.61(1.08)
CFNI-Happy to Gain Weight	672	0	0%	2.12(.97)
CFNI-Like to Lose Weight	672	0	0%	2.78(1.08)
CFNI-Make People Feel Special	672	0	0%	3.12(.83)
CFNI-Happier if Thinner	672	0	0%	2.57(1.09)
CFNI-Life Plans Don't Rely on Relationships	672	0	0%	2.71(.96)
CFNI-Regularly Wear Make-up	672	0	0%	2.16(1.06)
CFNI-Rarely Act Nice	672	0	0%	2.03(.95)
CFNI-Like Being Around Kids	672	0	0%	3.00(.82)
CFNI-Ashamed if Mean	672	0	0%	2.86(1.00)
CFNI-People Enjoy Kids More than Me	672	0	0%	2.54(.95)
CFNI-Hurt People to Get What I Want	672	0	0%	1.88(.94)
CFNI-Trying to Lose Weight	672	0	0%	2.29(1.09)
CFNI-Kids Annoy	672	0	0%	2.43(.92)
CFNI-Get Ready Without Mirror	672	0	0%	2.21(1.04)
CFNI-Attractive Without Makeup	672	0	0%	2.85(.91)
CFNI-Life Complete Without Partner	672	0	0%	2.48(.96)
CFNI-Focus on Romantic Relationships	672	0	0%	2.62(.90)
CFNI-Romantic Relationships are Important	672	0	0%	2.56(.92)

CFNI-Avoid Kids	672	0	0%	1.92(.90)
CFNI-Fear of Weight Gain	672	0	0%	2.39(1.04)
CFNI-Spend Time Doing Hair and Makeup	672	0	0%	2.13(1.01)
BELG-Independent	672	0	0%	2.01(1.26)
BELG-Trustworthy	672	0	0%	1.7(1.13)
BELG-Irresponsible	672	0	0%	3.36(1.29)
BELG-Resilient	672	0	0%	2.44(1.15)
BELG-An Advisor	672	0	0%	2.33(1.13)
BELG-Supportive of Others	672	0	0%	1.76(1.08)
BELG-Caregiver	672	0	0%	2.07(2.07)
BELG-Keeps Family Connected	672	0	0%	2.22(2.22)
MEIM-Happy to a member of my group	672	0	0%	3.35(.85)
MEIM-Sense of Belonging	672	0	0%	3.08(.89)
MEIM-Pride	672	0	0%	3.19(.88)
MEIM-Strong Attachment	672	0	0%	3(.94)
MEIM-Feel Good	672	0	0%	3.2(.86)
Biracial Identity	672	0	0%	N/A
Perceived Pubertal Timing	672	0	0%	2.67(.99)
Age at Menarche	666	6	.9%	5.12(1.60)
BEECOM-Thinner than Peers	672	0	0%	3.80(1.95)
BEECOM- “Matches Up”	672	0	0%	3.89(1.82)
BEECOM-Compare Parts	672	0	0%	4.05(1.94)
BEECOM-Compare Body Shape	672	0	0%	3.96(2.00)
BEECOM-Revealing Clothes	672	0	0%	3.79(1.99)
BEECOM-Toned as Peers	672	0	0%	3.63(2.00)
Friend Proportion - Black	666	6	.9%	2.98(1.16)

Friend Proportion – White	662	10	1.5%	2.82(1.10)
Friend Proportion – biracial	655	17	2.5%	3.54(1.08)
School Proportion - Black	672	0	0%	2.78 (.90)
School Proportion - White	672	0	0%	2.48(.84)
School Proportion - biracial	672	0	0%	3.27(.87)
Neighborhood Proportion – Black	672	0	0%	3.18(1.21)
Neighborhood Proportion -White	672	0	0%	2.66(1.09)
Neighborhood Proportion – biracial	672	0	0%	3.74(.99)
chEAT-Scared Overweight	672	0	0%	3.07(1.68)
chEAT-Avoid Food	672	0	0%	4.36(1.43)
chEAT-Food Fixation	672	0	0%	2.97(1.33)
chEAT-Binge	672	0	0%	4.55(1.60)
chEAT-Guilt	672	0	0%	4.43(1.71)
chEAT-Caloric Awareness	672	0	0%	3.62(1.77)
chEAT-Vomit act	672	0	0%	5.46(1.10)
chEAT-Think about Thinner	672	0	0%	3.5(1.88)
chEAT-Exercise to Burn Calories	672	0	0%	3.45(1.84)
chEAT-Fixate Fat on Body	672	0	0%	3.3(1.76)
chEAT-Avoid Sugar	672	0	0%	4.35(1.42)
chEAT-Diet Foods	672	0	0%	4.48(1.45)
chEAT-Discomfort After Eating	672	0	0%	4.4(1.62)
chEAT-Dieting	672	0	0%	4.66(1.57)
chEAT-Empty Stomach	672	0	0%	4.72(1.57)
chEAT-Vomit urge	672	0	0%	3(1.24)
chEAT-Cut Food	672	0	0%	5.32(1.55)

Note: MEIM = Multigroup Ethnic Identity Measure, chEAT = Children's Eating Attitudes Test, BSRI = Bem Sex Role Inventory, BELG = Belgrave African-American Women's Gender Role

Belief Measure, BEECOM = Body, Eating, and Exercise Comparison Orientation Measure, CFNI = Conformity to Feminine Norms Inventory.

Table 2.

Means, Skewness, and Kurtosis for Full Sample and No-Outlier Sample

	Full Sample (N =671)			Without Outliers (N=634)		
Variable	Mean (SD)	Skewness	Kurtosis	Mean (SD)	Skewness	Kurtosis
Feminine Traits	52.031 (12.471)	-.698	.324	52.400 (11.801)	-.543	-.142
Masculine Traits	45.954 (11.818)	-.399	-.064	46.156 (11.247)	-.306	-.267
CFNI						
Care for Children	13.960 (3.190)	-.210	-.257	13.995 (3.150)	-.180	-.291
Nice in Relationships	15.455 (2.971)	-.420	-.159	15.483 (2.899)	-.381	-.272
Romantic Relationships	12.371 (3.025)	-.024	-.004	12.407 (2.983)	-.012	-.001
Invest in Appearance	11.611 (3.234)	.071	-.305	11.563 (3.184)	.062	-.249
Thinness	12.912 (4.239)	-.020	-.914	12.924 (4.224)	-.036	-.902
Belgrave: Black Femininity	17.188 (5.976)	1.111	1.113	17.030 (5.794)	1.117	1.118
Ethnic-racial Identity Affirmation	15.833 (3.864)	-1.067	1.002	15.970 (3.729)	-1.073	1.152
Perceived Pubertal Timing	2.672 (.922)	-.141	-.187	2.670 (.920)	-.127	-.197
Menarche	4.785 (1.746)	-.645	1.145	4.780 (1.756)	-.658	1.113
Current Body Size	6.101 (2.967)	.754	.812	5.961 (2.758)	.529	.131
Ideal Body Size	4.961 (2.111)	.598	.938	4.909 (1.989)	.359	-.062

Ideal Black Body Size	6.629 (2.327)	.512	1.531	6.550 (2.180)	.190	.139
Ideal White Body Size	3.973 (2.230)	1.406	4.385	3.882 (1.963)	.621	.061
BEECOM	23.116 (10.390)	.134	-.882	23.079 (10.283)	.140	-.874
chEAT	31.714 (13.233)	.500	-.421	31.472 (12.896)	.435	-.580

Note: CFNI = Conformity to Feminine Norms Inventory, BEECOM = Body, Eating, and Exercise Comparison Orientation, chEAT = Children's Eating Attitudes Test.

Table 3.

Pearson Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. BSRI-F	--	.554***	.370***	.510***	.074***	.017	-.044	-.233**	.259***	-.008	-.061	-.093*	-.038	-.053	.044	.026	-.194***
2. BSRI-M	.554***	--	.176***	.130***	-.033	-.060	-.029	-.006	.293***	-.018	-.019	-.076*	-.006	.001	-.013	.023	-.167***
3. CFNI-CfC	.370***	.176***	--	.349***	.129***	.070	.005	-.187**	.119**	-.004	-.038	-.037	-.083*	-.075	-.075	-.010	-.083*
4. CFNI-NiR	.510***	.130***	.349***	--	-.014	-.024	-.072	-.201**	.119**	-.025	-.003	-.073	-.088*	-.141***	.066	-.028	-.112**
5. CFNI-Rom	.074	-.033	.129***	-.014	--	.116**	.214***	.016	.055	-.046	.047	.059	-.005	.030	-.013	.186**	.128***
6. CFNI-IiA	.017	-.060	.070	-.024	-.014	--	.071	.015	-.040	-.010	-.024	-.024	-.075	-.058	.011	.193***	.165***
7. CFNI-T	-.044	-.029	.005	-.072	-.024	.071	--	.091*	-.074	-.220**	.121**	.461**	.005	.084*	-.087*	.530**	.633**
8. Belg	.233***	-.245***	-.187***	-.201***	.016	.015	.091*	--	-.060	.027	.006	.172**	-.083*	.033	-.033	.132**	.087*
9. MEIM	.259***	.293***	.119**	.119**	.055	-.040	-.074	-.060	--	-.004	.042	.051	.026	.011	-.051	-.015	.222**
10. PPT	-.008	-.018	-.004	-.025	-.046	-.010	.220**	.027	-.004	--	.452**	.230**	-.086*	-.073	-.001	.007	.126**
11. Men	-.061	-.019	-.038	-.003	.047	-.024	.121**	.006	.042	.452**	--	.177**	.115*	.048	-.028	-.018	.069
12. CBS	-.093*	-.076*	-.037	-.073	.059	-.024	.461**	.089*	-.051	.230**	.177**	--	.577**	.299**	-.140**	-.172**	.382**
13. IBS	-.038	-.006	-.083*	-.088*	-.005	-.075	.005	.035	.026	-.086*	.115**	.577**	--	.485**	.316**	.033	.016
14. IBBS	-.053	.001	-.075	-.141**	.030	-.058	.084*	.067	.011	-.073	.048	.299**	.485**	--	.259**	.033	.049
15. IWBS	.044	-.013	-.075	.066	-.013	.011	-.087	.038	-.051	-.001	-.028	.140**	.316**	.259**	--	-.033	-.022
16. BEECOM	.026	.023	.010	-.028	.186**	-.024	.530**	.132**	-.015	.007	-.018	.172**	-.083*	.033	-.033	--	.501**
17. chEAT	-.194***	-.167***	-.083*	-.112**	.128***	.165**	.633**	.087*	.222**	.126**	-.126**	.382**	.016	.049	-.022	.501**	--

Note: Above -- line: Full Sample Data, Below -- line: Sample without outliers. *** $p \leq .001$, ** $p \leq .01$, * $p \leq .05$. BSRI-F = Bem Sex Role Inventory Feminine Traits, BSRI-M = Bem Sex Role Inventory Masculine Traits, Men = Menarche, PPT = Perceived Pubertal Timing, BAAWGR = Belgrave African American Women's Gender Role Scale, BEECOM = Bode, Exercise, and Eating Comparison Orientation, CBS= Current Body Size, IBS = Ideal Personal Body Size, IBBS = Perceived Ideal Body Size for Black Women, IWBS = Perceived Ideal Body Size for White Women, CFNI-CfC = Conformity to Feminine Norms Inventory – Care for Children, CFNI-NiR = Conformity to Feminine Norms Inventory – Nice in Relationships, CFNI-Rom = Conformity to Feminine Norms Inventory – Romantic Relationships, CFNI-IiA = Conformity to Feminine Norms Inventory – Invest in Appearance, CFNI-T = Conformity to Feminine Norms

Inventory – Thinness, MEIM = Multigroup Ethnic Identity Measure, chEAT = Children’s Eating Attitudes Test

Table 4.

Ethnic-racial Group Means for Study Variables

Variable	Biracial Mean	Black Mean	White Mean
BSRI_F	51.886	51.502	52.548
BSRI_M	47.483	47.948	46.615
CFNI-Care for Children	13.928	13.652	14.013
CFNI- Nice in Relationships	15.306	15.070	16.010
CFNI- Romantic Relationships	12.630	12.420	12.426
CFNI- Invest in Appearance	11.706	11.256	11.994
CFNI-Thinness	13.688	12.435	12.530
Belgrave	17.213	17.274	16.956
MEIM	15.745	15.181	14.318
PPT	2.859	2.270	2.291
Menarche	4.885	4.987	4.864
Current Body Size	6.344	6.004	5.941
Ideal Body	5.068	5.256	4.596
Black Ideal	6.683	6.993	6.305
White Ideal	4.041	3.375	3.824
BEECOM	24.685	23.003	24.258
Disordered Eating	33.957	31.484	33.100

Note: MEIM = Multigroup Ethnic Identity Measure, BSRI-F = Bem Sex Role Inventory-Femininity, BSRI-M = Bem Sex Role Inventory-Masculinity, PPT = Perceived Pubertal Timing, Belgrave = Belgrave's African-American Women's Gender Role Beliefs Measure, BEECOM = Body, Eating, & Exercise Comparison Orientation Measure, CFNI = Conformity to Feminine Norms Inventory.

Table 5.

Multivariate Analysis of Covariance for Ethnic-racial Group on Study Variables

Variable			
Comparison Group	Standardized β	Standard Error	<i>p</i> -value
Gendered Traits: Feminine Traits			
Black-White	-.051	.039	.189
Black-biracial	-.008	.037	.834
White-biracial	.037	.045	.405
Masculine Traits			
Black-White	.162	.038	<.001
Black-biracial	.073	.045	.107
White-biracial	-.140	.045	.002
CFNI: Thinness			
Black-White	.028	.038	.446
Black-biracial	-.310	.118	.009
White-biracial	-.106	.045	.018
Invest in Appearance			
Black-White	-.144	.041	<.001
Black-biracial	-.105	.043	.015
White-biracial	.077	.046	.093
Romantic Relationships			
Black-White	-.022	.042	.590
Black-biracial	-.016	.047	.703
White-biracial	-.019	.046	.689
Nice in Relationships			

Black-White	-.191	.037	< .001
Black-biracial	-.106	.047	.023
White-biracial	.156	.045	< .001
Care for Children			
Black-White	-.090	.040	.026
Black-biracial	-.089	.036	.013
White-biracial	.047	.047	.311
Black Feminine Gender Role			
Black-White	.027	.041	.517
Black-biracial	.029	.087	.737
White-biracial	-.043	.044	.460
Ethnic-Racial Identity Affirmation			
Black-White	.240	.037	<.001
Black-biracial	-.138	.046	.003
White-biracial	-.541	.096	<.001
Pubertal Timing: Perceived Pubertal Timing			
Black-White	-.118	.037	.001
Black-biracial	-.623	.118	<.001
White-biracial	-.604	.115	<.001
Menarche			
Black-White	.044	.059	.457
Black-biracial	.009	.029	.763
White-biracial	-.024	.056	.665
Body Ideal/Perceptions: Current Body Size			
Black-White	.014	.029	.629

Black-biracial	-.128	.036	<.001
White-biracial	-.133	.037	<.001
Ideal Body Size			
Black-White	.190	.036	<.001
Black-biracial	.023	.047	.633
White-biracial	-.166	.041	<.001
Perceived Black Ideal Body Size			
Black-White	.202	.037	<.001
Black-biracial	.049	.039	.216
White-biracial	-.032	.044	.460
Perceived White Ideal Body Size			
Black-White	-.196	.038	<.001
Black-biracial	-.411	.088	<.001
White-biracial	-.060	.046	.187
Body Comparison Orientation			
Black-White	-.136	.036	<.001
Black-biracial	-.158	.045	<.001
White-biracial	-.057	.045	.212
Disordered Eating			
Black-White	-.142	.034	<.001
Black-biracial	-.174	.041	<.001
White-biracial	-.074	.042	.081

Table 6.

Regression Analysis by Ethnic-racial Group

	Black Girls		White Girls		Biracial Girls	
Variable	B (S.E.)	p-value	B (S.E.)	p-value	β (S.E.)	p-value
BSRI-F	-.020 (.064)	.752	-.088 (.061)	.145	-.177 (.078)	.024
BSRI-M	-.159 (.067)	.018	.016 (.054)	.764	-.121 (.063)	.053
CFNI-CfC	-.005 (.049)	.914	-.005 (.042)	.908	-.080 (.057)	.161
CFNI-NiR	-.017 (.047)	.716	-.084 (.055)	.123	.109 (.059)	.063
CFNI-IiA	.091 (.038)	.018	-.035 (.045)	.435	.166 (.047)	< .001
CFNI-Thin	.365 (.060)	<.001	.500 (.065)	< .001	.421 (.072)	< .001
CFNI-Rom	-.028 (.038)	.460	-.030 (.044)	.487	.014 (.044)	.745
Belgrave	.003 (.050)	.950	.018 (.049)	.714	-.161 (.068)	.018
MEIM	-.100 (.063)	.113	-.049 (.051)	.335	-.156 (.057)	.006
PPT	.021 (.061)	.738	.016 (.060)	.788	.016 (.054)	.766
Men	-.026 (.050)	.602	.014 (.054)	.795	.061 (.059)	.297
CBS	.313 (.065)	< .001	.072 (.074)	.334	.140 (.071)	.049
IBS	.018 (.066)	.784	-.041 (.073)	.579	-.141 (.081)	.083
IBBS	-.123 (.052)	.017	-.061 (.065)	.353	.076 (.057)	.185
IWBS	.026 (.052)	.621	.020 (.066)	.755	.001 (.056)	.984
BEECOM	.243 (.062)	<.001	.302 (.065)	< .001	.216 (.072)	.003

Note: MEIM = Multigroup Ethnic Identity Measure, BSRI-F = Bem Sex Role Inventory-Femininity, BSRI-M = Bem Sex Role Inventory-Masculinity, Belgrave = Belgrave's African-American Women's Gender Role Beliefs Measure, , BEECOM = Body, Eating, & Exercise Comparison Orientation Measure, PPT = Perceived Pubertal Timing, Men = Menarche, CBS = Current Body Size, IBS = Ideal Body Size, IBBS = Ideal Black Female Body Size, IWBS = Ideal White Female Body Size, CFNI = Conformity to Feminine Norms Inventory.

Table 7.

Results of the Ethnic-racial groups Multigroup Analysis Across Nested Models

Multi-group Model	X^2	df	$\Delta X^2(p)$	Δdf	p	CFI	RMSEA	SRMR
Model 1 (Unconstrained)	128.043	75	--	--	<.001	.939	.057	.042
Model 2 (Partially Constrained)	183.611	107	55.5342(.006)	32	<.001	.912	.057	.043
Model 3 (Fully Constrained)	242.655	153	60.8914(.070)	46	<.001	.897	.051	.052

Note. X^2 = chi square; df = degrees freedom; p = p -value; CFI = comparative fit index; RMSEA = root square mean error of approximation. $N = 671$

Table 8.

Ethnic-racial Identity Affirmation Moderation - Perceived Pubertal Timing

Model Fit:

$X^2 = 5.897$, $df = 8$, $p = .6587$

RMSEA < .001, CRI = 1.00, SRMR = .047

Path	β (S.E.)	p
Black		
Perceived Pubertal Timing → DE	-.244(.065)	<.001
Ethnic-racial Identity → DE	-.189(.039)	<.001
Perceived Pubertal Timing X Ethnic-racial Identity → DE	.130(.071)	.068
White		
Perceived Pubertal Timing → DE	-.226(.060)	<.001
Ethnic-racial Identity → DE	-.190(.039)	<.001
Perceived Pubertal Timing X Ethnic-racial Identity → DE	.120(.067)	.071
Black-White biracial		
Perceived Pubertal Timing → DE	-.209(.054)	<.001
Ethnic-racial Identity → DE	-.180(.037)	<.001
Perceived Pubertal Timing X Ethnic-racial Identity → DE	.094(.052)	.069

Note: DE = Disordered Eating

Table 9.

Ethnic-racial Identity Affirmation Moderation Model - Menarche

Model Fit:

$\chi^2 = 11.924$, $df = 8$, $p = .1546$

RMSEA = .047, CRI = .790, SRMR = .055

Path	β (S.E.)	p
Black		
Menarche $\rightarrow$ DE	.058(.079)	.464
Ethnic-racial Identity $\rightarrow$ DE	-.185(.039)	<.001
Menarche X Ethnic-racial Identity $\rightarrow$ DE	.020(.073)	.786
White		
Menarche $\rightarrow$ DE	.058(.078)	.463
Ethnic-racial Identity $\rightarrow$ DE	-.192(.039)	<.001
Menarche X Ethnic-racial Identity $\rightarrow$ DE	.021(.079)	.786
Black-White biracial		
Menarche $\rightarrow$ DE	.046(.064)	.467
Ethnic-racial Identity $\rightarrow$ DE	-.180(.038)	<.001
Menarche X Ethnic-racial Identity $\rightarrow$ DE	.015(.055)	.786

Note: DE = Disordered Eating

Table 10.

Context Group Means for Study Variables for Black Girls

Variable	School		Neighborhood		Friends	
	Maj.	Min.	Maj.	Min.	Maj.	Min.
BSRI_F	50.182 (1.424)	51.578	49.810 (1.205)	52.076	50.973 (1.150)	51.362
BSRI_M	44.420 (1.350)	47.014	44.141 (1.176)	47.604	46.555 (1.078)	46.940
CFNI-Care for Children	13.875 (.290)	13.510	13.123 (.262)	14.078	13.827 (.254)	13.543
CFNI- Nice in Relationships	14.761 (.298)	14.639	14.547 (.268)	14.798	14.382 (.260)	14.923
CFNI- Romantic Relationships	12.807 (.323)	11.989	12.434 (.314)	12.078	12.518 (.298)	12.026
CFNI- Invest in Appearance	11.045 (.310)	10.904	11.283 (.274)	10.690	10.973 (.286)	10.819
CFNI- Thinness	13.330 (.444)	12.558	12.962 (.409)	12.783	12.682 (.397)	13.095
Belgrave	17.284 (.666)	17.802	17.849 (.605)	17.411	17.773 (.575)	17.655
MEIM	16.705 (.466)	16.578	16.311 (.417)	16.883	17.000 (.391)	16.491
PPT	2.591 (.107)	2.667	2.594 (.101)	2.674	2.755 (.097)	2.509
Men.	5.056 (.187)	4.904	4.971(.183)	4.953	4.891 (.186)	5.071
Current Body Size	6.818 (.326)	6.054	6.359 (.278)	6.326	6.200 (.265)	6.474
Ideal Body	5.818 (.326)	5.374	5.708 (.208)	5.404	5.536 (.191)	5.500
Black Ideal	7.614 (.229)	6.973	7.528 (.199)	6.953	7.264 (.221)	7.069

White Ideal	3.295 (.234)	3.816	3.557 (.220)	3.675	3.236 (.203)	3.957
BEECOM	21.807 (.990)	21.558	22.415 (.991)	21.023	20.718 (.941)	22.474
Disordered Eating	31.754 (1.455)	29.215	31.383 (1.254)	29.166	28.931(1.157)	31.298

Table 11.

Context Group Means for Study Variables for White Girls

Variable	School		Neighborhood		Friends	
	Maj.	Min.	Maj.	Min.	Maj.	Min.
BSRI_F	53.133 (.879)	53.122	53.496 (.871)	52.347	53.522 (.876)	53.101
BSRI_M	42.533 (.948)	46.144	43.555 (.931)	44.874	44.045 (.934)	44.158
CFNI-Care for Children	14.474 (.291)	14.100	14.405 (.275)	14.153	14.575 (.291)	13.955
CFNI- Nice in Relationships	16.600 (.209)	15.978	16.536 (.198)	15.958	16.575 (.216)	16.000
CFNI- Romantic Relationships	12.482 (.257)	11.878	12.392 (.255)	11.917	12.336 (.227)	12.101
CFNI- Invest in Appearance	12.289 (.275)	12.200	12.314 (.277)	12.125	12.368 (.283)	12.077
CFNI- Thinness	12.259 (.346)	12.811	12.333 (.339)	12.791	12.418 (.348)	12.461
Belgrave	16.904 (.411)	16.834	16.686 (.407)	17.278	16.776 (.435)	16.989
MEIM	15.274 (.292)	15.667	15.431 (.275)	15.430	15.097 (.295)	14.980
PPT	2.881 (.073)	2.600	2.817 (.070)	2.667	2.813 (.074)	2.696
Men.	4.341(.143)	4.711	4.464 (.143)	4.540	4.276 (.150)	4.799
Current Body Size	5.200 (.260)	6.133	5.222 (.236)	6.319	5.246 (.250)	6.022
Ideal Body	4.052 (.176)	4.456	4.059 (.152)	4.542	3.963 (.151)	4.596
Black Ideal	6.015 (.187)	5.822	5.948 (.175)	5.917	5.866 (.188)	6.000

White Ideal	4.333 (.165)	4.489	4.418 (.167)	4.347	4.418 (.171)	4.360
BEECOM	23.549 (.851)	22.123	23.223 (.802)	22.477	23.231 (.876)	22.472
Disordered Eating	30.439 (1.402)	31.507	29.573 (.958)	33.615	30.400 (1.400)	31.297

Table 12.

Multivariate Analysis of Covariance Context Group on Study Variables

Variable				
	Black		White	
Context	β (S.E.)	<i>p</i>	β (S.E.)	<i>p</i>
Gendered Traits: Feminine Traits				
School: Maj-Min	-.053 (.066)	.422	<-.001(.070)	.995
Neighborhood: Maj-Min	-.089(.065)	.172	.046(.071)	.517
Friends: Maj-Min	-.016(.066)	.815	.018(.070)	.797
Masculine Traits				
School: Maj-Min	-.102 (.065)	.118	-.152(.067)	.023
Neighborhood: Maj-Min	-.140(.065)	.031	-.053(.067)	.430
Friends: Maj-Min	-.016(.066)	.811	-.005(.069)	.945
CFNI: Thinness				
School: Maj-Min	.085 (.064)	.186	-.066(.067)	.326
Neighborhood: Maj-Min	.021(.065)	.746	-.052(.065)	.421
Friends: Maj-Min	-.049(.066)	.461	-.005(.067)	.939
Invest in Appearance				
School: Maj-Min	.023 (.065)	.724	.013(.068)	.851
Neighborhood: Maj-Min	.099(.065)	.125	.026(.066)	.692
Friends: Maj-Min	.026(.067)	.699	.042(.068)	.535
Romantic Relationships				
School: Maj-Min	.144 (.064)	.025	.094(.068)	.163
Neighborhood: Maj-Min	.058(.066)	.380	.071(.065)	.280
Friends: Maj-Min	.081(.066)	.224	.036(.066)	.583

Nice in Relationships				
School: Maj-Min	.021 (.065)	.747	.119(.067)	.076
Neighborhood: Maj-Min	-.044(.065)	.494	.105(.069)	.125
Friends: Maj-Min	-.096(.067)	.151	.110(.067)	.102
Care for Children				
School: Maj-Min	.062 (.064)	.330	.054(.066)	.326
Neighborhood: Maj-Min	-.166(.063)	.009	.035(.066)	.595
Friends: Maj-Min	.050(.066)	.449	.090(.066)	.176
Black Feminine Gender Role				
School: Maj-Min	-.040 (.064)	.540	.006(.070)	.926
Neighborhood: Maj-Min	.034(.065)	.598	-.052(.070)	.459
Friends: Maj-Min	.009(.066)	.890	-.020(.069)	.777
Ethnic-Racial Identity Affirmation				
School: Maj-Min	.015 (.067)	.824	-.058(.065)	.379
Neighborhood: Maj-Min	-.070(.065)	.287	<-.001(.065)	.999
Friends: Maj-Min	.064(.067)	.344	-.119(.065)	.064
Pubertal Timing: Perceived Pubertal Timing				
School: Maj-Min	-.038 (.067)	.568	.159(.064)	.013
Neighborhood: Maj-Min	-.041(.066)	.534	.081(.066)	.218
Friends: Maj-Min	.126(.065)	.051	.066(.046)	.325
Menarche				
School: Maj-Min	.040 (.064)	.534	-.105(.067)	.116
Neighborhood: Maj-Min	.005(.066)	.942	-.021(.065)	.752
Friends: Maj-Min	-.050(.067)	.458	-.148(.065)	.024
Body Ideal/Perceptions: Current Body Size				

School: Maj-Min	.127 (.066)	.052	-.147(.066)	.027
Neighborhood: Maj-Min	.006(.065)	.931	-.164(.067)	.014
Friends: Maj-Min	-.091(.067)	.171	-.122(.067)	.069
Ideal Body Size				
School: Maj-Min	.106 (.066)	.109	-.100(.067)	.136
Neighborhood: Maj-Min	.075(.065)	.252	-.114(.067)	.089
Friends: Maj-Min	.009(.067)	.893	-.156(.065)	.017
Perceived Black Ideal Body Size				
School: Maj-Min	.139 (.063)	.027	.042(.068)	.533
Neighborhood: Maj-Min	.128(.063)	.041	.006(.069)	.925
Friends: Maj-Min	.044(.066)	.501	-.030(.067)	.660
Perceived White Ideal Body Size				
School: Maj-Min	-.106 (.061)	.081	-.038(.067)	.566
Neighborhood: Maj-Min	-.025(.064)	.701	.017(.063)	.790
Friends: Maj-Min	-.149(.061)	.015	.014(.067)	.830
Body Comparison Orientation				
School: Maj-Min	.012 (.064)	.846	.070(.067)	.298
Neighborhood: Maj-Min	.072(.065)	.273	.035(.068)	.599
Friends: Maj-Min	-.091(.067)	.171	.037(.066)	.576
Disordered Eating				
School: Maj-Min	.100 (.066)	.131	-.043(.067)	.525
Neighborhood: Maj-Min	.090(.064)	.158	-.154(.066)	.020
Friends: Maj-Min	-.096(.066)	.144	-.036(.068)	.596

Table 13.

Regression Analysis for School Context

	Black-Majority		Black-Minority		White-Majority		White-Minority	
Variable	β (S.E.)	<i>p</i>	β (S.E.)	<i>p</i>	β (S.E.)	<i>p</i>	β (S.E.)	<i>p</i>
BSRI-Femininity	.079 (.095)	.406	-.168 (.093)	.072	-.101 (.075)	.180	-.058 (.097)	.552
BSRI-Masculinity	-.160 (.105)	.127	-.074 (.076)	.326	.028 (.080)	.723	-.006 (.074)	.935
CFNI-Care for Children	-.108 (.072)	.186	.014 (.058)	.806	-.027 (.056)	.624	.074 (.074)	.321
CFNI-Romantic Relationships	-.022 (.054)	.675	-.014 (.047)	.765	-.048 (.060)	.427	.046 (.056)	.412
CFNI-Nice in Relationships	-.088 (.067)	.199	.113 (.064)	.077	-.117 (.073)	.109	-.033 (.094)	.727
CFNI-Invest in Appearance	.040 (.062)	.523	.122 (.045)	.007	-.023 (.051)	.647	-.060 (.079)	.451
CFNI-Thinness	.364 (.097)	<.001	.357 (.069)	<.001	.513 (.085)	<.001	.503 (.089)	<.001
Belgrave	.157 (.090)	.091	-.052 (.056)	.354	-.007 (.062)	.910	.062 (.076)	.415
MEIM	-.140 (.113)	.185	-.084 (.050)	.090	-.051 (.056)	.367	-.174 (.089)	.052
PPT	.140 (.087)	.109	-.153 (.067)	.022	.041 (.073)	.575	.023 (.093)	.803
Menarche	-.079 (.088)	.369	-.089 (.069)	.200	.062 (.065)	.344	-.036 (.081)	.662
Current Body Size	.189 (.120)	.113	.330 (.074)	<.001	.180 (.095)	.057	-.065 (.106)	.538
Ideal Body Size	.057 (.104)	.586	.079 (.083)	.339	-.169 (.099)	.086	-.002 (.099)	.984
Ideal Black Female Body Size	-.045 (.089)	.610	-.189 (.064)	.003	-.039 (.078)	.613	-.065 (.094)	.488

Ideal White Female Body Size	.105 (.090)	.246	.001 (.051)	.977	.037 (.084)	.663	.035 (.087)	.686
BEECOM	.263 (.093)	.005	.251 (.069)	<.001	.263 (.085)	.002	.344 (.102)	.001

Note: CFNI = Conformity to Feminine Norms Inventory, BSRI = Bem Sex Role Inventory, Belgrave = Belgrave's African American Women's Gender Role Belief Scale, BEECOM = Body Eating, and Exercise Comparison Orientation Measure, PPT = perceived pubertal timing, MEIM = Multigroup Ethnic Identity Measure.

Table 14.

Regression Analysis for Neighborhood Context

	Black-Majority		Black-Minority		White-Majority		White-Minority	
Variable	β (S.E.)	<i>p</i>	β (S.E.)	<i>p</i>	β (S.E.)	<i>p</i>	β (S.E.)	<i>p</i>
BSRI-Femininity	.122 (.091)	.179	-.159 (.086)	.064	-.100 (.064)	.119	.006 (.141)	.968
BSRI-Masculinity	-.343 (.108)	.001	.021 (.078)	.786	-.001 (.057)	.988	-.036 (.106)	.736
CFNI-Care for Children	.020 (.060)	.738	-.043 (.060)	.481	.018 (.048)	.707	-.032 (.088)	.716
CFNI-Romantic Relationships	-.079 (.060)	.182	.006 (.049)	.908	-.051 (.058)	.379	.066 (.069)	.341
CFNI-Nice in Relationships	.044 (.066)	.507	.007 (.065)	.908	-.077 (.057)	.175	-.165 (.131)	.209
CFNI-Invest in Appearance	-.016 (.069)	.818	.129 (.050)	.010	-.003 (.052)	.950	-.138 (.080)	.085
CFNI-Thinness	.439 (.085)	<.001	.292 (.089)	.001	.508 (.084)	<.001	.406 (.092)	<.001
Belgrave	.063 (.079)	.429	-.040 (.059)	.493	-.052 (.055)	.339	.106 (.088)	.226
MEIM	-.166 (.113)	.144	-.079 (.057)	.165	-.086 (.052)	.101	-.061 (.099)	.540
PPT	.096 (.104)	.355	-.051 (.072)	.478	.031 (.069)	.653	-.016 (.104)	.877
Menarche	-.106 (.077)	.171	-.006 (.076)	.934	.031 (.070)	.655	-.010 (.080)	.899
Current Body Size	.204 (.125)	.103	.299 (.078)	<.001	.122 (.088)	.167	-.075 (.123)	.543
Ideal Body Size	.056 (.110)	.612	.048 (.092)	.600	-.123 (.096)	.199	.027 (.127)	.829
Ideal Black Female Body Size	-.147 (.081)	.069	-.145 (.075)	.054	-.046 (.072)	.528	-.063 (.108)	.560

Ideal White Female Body Size	.101 (.093)	.277	.008 (.049)	.867	.045 (.072)	.526	.037 (.139)	.789
BEECOM	.167 (.085)	.048	.316 (.079)	<.001	.326 (.069)	<.001	.387 (.121)	.001

Note: CFNI = Conformity to Feminine Norms Inventory, BSRI = Bem Sex Role Inventory, Belgrave = Belgrave's African-American Women's Gender Role Beliefs Measure, BEECOM = Body, Eating, & Exercise Comparison Orientation Measure, PPT = Perceived Pubertal Timing, MEIM = Multigroup Ethnic Identity Measure.

Table 15.

Regression Analysis for Friend Context

	Black-Majority		Black-Minority		White-Majority		White-Minority	
Variable	β (S.E.)	<i>p</i>	β (S.E.)	<i>p</i>	β (S.E.)	<i>p</i>	β (S.E.)	<i>p</i>
BSRI-Femininity	.013 (.089)	.888	-.172 (.105)	.103	-.030 (.083)	.717	-.145 (.100)	.149
BSRI-Masculinity	-.216 (.095)	.024	-.066 (.074)	.375	.061 (.062)	.327	-.046 (.086)	.593
CFNI-Care for Children	.028 (.067)	.671	-.003 (.067)	.966	-.049 (.052)	.347	-.010 (.066)	.883
CFNI-Romantic Relationships	-.019 (.058)	.751	.009 (.055)	.864	-.012 (.064)	.855	-.025 (.056)	.651
CFNI-Nice in Relationships	-.082 (.072)	.253	.097 (.081)	.234	-.026 (.077)	.731	-.198 (.089)	.027
CFNI-Invest in Appearance	.108 (.063)	.086	.130 (.052)	.013	.016 (.052)	.758	-.081 (.074)	.270
CFNI-Thinness	.330 (.108)	.002	.314 (.072)	<.001	.458 (.100)	<.001	.508 (.100)	<.001
Belgrave	.079 (.080)	.325	-.062 (.064)	.331	.015 (.059)	.793	-.019 (.085)	.828
MEIM	.013 (.086)	.882	-.170 (.055)	.002	-.143 (.069)	.038	.034 (.073)	.642
PPT	.063 (.110)	.568	-.058 (.067)	.387	.029 (.071)	.684	-.053 (.098)	.585
Menarche	-.105 (.088)	.233	.043 (.062)	.492	.018 (.072)	.804	-.071 (.079)	.372
Current Body Size	.347 (.107)	.001	.291 (.084)	.001	.176 (.093)	.059	-.068 (.108)	.530
Ideal Body Size	-.165 (.095)	.082	.160 (.084)	.059	-.094 (.106)	.373	-.026 (.110)	.810
Ideal Black Female Body Size	-.079 (.072)	.269	-.200 (.068)	.003	.004 (.084)	.959	-.097 (.081)	.230

Ideal White Female Body Size	.149 (.090)	.099	-.030 (.057)	.599	-.045 (.073)	.531	.224 (.114)	.050
BEECOM	.347 (.107)	.001	.291 (.084)	.001	.176 (.093)	.059	-.068 (.108)	.530

Note: CFNI = Conformity to Feminine Norms Inventory, BSRI = Bem Sex Role Inventory-Femininity, Belgrave = Belgrave's African-American Women's Gender Role Beliefs Measure, BEECOM = Body, Eating, & Exercise Comparison Orientation Measure, PPT = Perceived Pubertal Timing, MEIM = Multigroup Ethnic Identity Measure.

Table 16.

Results of Ethnicity-Race/Context Group Multigroup Analysis Across Nested Model

Multigroup Model	X^2	df	$\Delta X^2(p)$	Δdf	p	CFI	RMSEA	SRMR
School Model								
Model 1 (Unconstrained)	130.731	100	--	--	.021	.954	.052	.049
Model 2 (Partially Constrained)	204.576	149	72.871(.015)	49	.002	.918	.057	.053
Model 3 (Fully Constrained)	308.050	218	106.830(.947)	132	<.001	.868	.060	.067
Neighborhood Model								
Model 1 (Unconstrained)	136.446	100	--	--	.009	.946	.056	.051
Model 2 (Partially Constrained)	195.247	148	50.102(.131)	48	.006	.929	.053	.053
Model 3 (Fully Constrained)	291.702	217	96.111(.017)	69	.001	.888	.055	.068
Friend Model								
Model 1 (Unconstrained)	150.979	100	--	--	.001	.925	.067	.051
Model 2 (Partially Constrained)	226.420	148	75.4751(.007)	48	<.001	.884	.069	.055
Model 3 (Fully Constrained)	321.127	217	95.5080(.019)	69	<.001	.846	.065	.068

Table 17.

Black-White Biracial Identity Means for Study Variables

Variable	Protean	Unvalidated	Validated	Transcendent
Feminine Traits	51.178	49.107	53.944	55.125
Masculine Traits	47.437	46.340	48.068	51.243
CFNI- Care Children	12.932	13.320	14.937	13.830
CFNI- Nice in Relationships	14.850	14.510	15.970	16.343
CFNI- Romantic Relationships	12.525	12.671	12.884	12.212
CFNI- Invest in Appearance	11.793	11.710	11.812	11.462
CFNI-Thinness	13.575	12.755	13.702	13.946
Black Femininity	17.166	17.622	16.800	16.060
Ethnic-Racial Identity Affirmation	15.800	15.234	15.192	15.234
Perceived Pubertal Timing	2.448	2.566	2.815	2.442
Menarche	4.758	5.066	4.838	5.080
Current Body	6.375	6.090	6.688	6.316
Ideal Body	4.960	5.331	4.882	5.398
Black Ideal	6.605	7.174	6.182	6.895
White Ideal	3.793	4.221	3.657	4.211
BEECOM	28.466	24.366	24.026	24.160
chEAT	33.106	34.659	33.190	36.994

Note: BEECOM = Body, Eating, & Exercise Comparison Orientation Measure, CFNI = Conformity to Feminine Norms Inventory, chEAT = Children's Eating Attitudes Test

Table 18.

Multivariate Analysis of Covariance of Black-White Biracial Identity Group on Study Variables

Variable			
Comparison Group	Standardized β	Standard Error	<i>p</i> -value
Gendered Traits: Feminine Traits			
Protean-Unvalidated	.074	.104	.473
Protean-Validated	-.100	.098	.306
Protean-Transcendent	-.109	.082	.184
Unvalidated-Validated	-.175	.079	.028
Unvalidated-Transcendent	-.167	.084	.018
Validated-Transcendent	-.033	.068	.628
Masculine Traits			
Protean-Unvalidated	.047	.109	.665
Protean-Validated	-.027	.104	.792
Protean-Transcendent	-.160	.080	.045
Unvalidated-Validated	-.075	.082	.364
Unvalidated-Transcendent	-.196	.062	.002
Validated-Transcendent	-.139	.060	.020
Feminine Gender Role Ideologies: Thinness			
Protean-Unvalidated	.089	.093	.338
Protean-Validated	-.014	.094	.882
Protean-Transcendent	.031	.087	.722
Unvalidated-Validated	-.104	.078	.181
Unvalidated-Transcendent	.100	.077	.197
Validated-Transcendent	.020	.078	.792

Invest in Appearance			
Protean-Unvalidated	.012	.101	.903
Protean-Validated	-.003	.109	.980
Protean-Transcendent	.037	.094	.693
Unvalidated-Validated	-.015	.080	.851
Unvalidated-Transcendent	.028	.079	.723
Validated-Transcendent	.039	.082	.632
Romantic Relationships			
Protean-Unvalidated	-.024	.110	.823
Protean-Validated	-.060	.106	.570
Protean-Transcendent	.040	.115	.727
Unvalidated-Validated	-.036	.072	.620
Unvalidated-Transcendent	.059	.098	.547
Validated-Transcendent	.086	.096	.368
Nice in Relationships			
Protean-Unvalidated	.050	.106	.640
Protean-Validated	-.165	.100	.098
Protean-Transcendent	-.168	.091	.065
Unvalidated-Validated	-.215	.074	.004
Unvalidated-Transcendent	-.207	.076	.007
Validated-Transcendent	-.042	.074	.568
Care for Children			
Protean-Unvalidated	-.055	.096	.571
Protean-Validated	-.284	.099	.004
Protean-Transcendent	-.097	.099	.326
Unvalidated-Validated	-.229	.072	.001

Unvalidated-Transcendent	-.055	.085	.515
Validated-Transcendent	.120	.088	.173
Black Feminine Gender Role			
Protean-Unvalidated	-.035	.100	.724
Protean-Validated	.028	.101	.777
Protean-Transcendent	.063	.095	.506
Unvalidated-Validated	.064	.084	.445
Unvalidated-Transcendent	.090	.083	.279
Validated-Transcendent	.042	.085	.627
Ethnic-Racial Identity Affirmation			
Protean-Unvalidated	.065	.093	.481
Protean-Validated	.071	.097	.466
Protean-Transcendent	.050	.094	.590
Unvalidated-Validated	.005	.079	.951
Unvalidated-Transcendent	<.001	.084	.999
Validated-Transcendent	-.004	.086	.967
Pubertal Timing: Perceived Pubertal Timing			
Protean-Unvalidated	-.060	.105	.564
Protean-Validated	-.189	.100	.058
Protean-Transcendent	.003	.096	.978
Unvalidated-Validated	-.128	.079	.105
Unvalidated-Transcendent	.049	.083	.555
Validated-Transcendent	.147	.079	.064
Age at Menarche			
Protean-Unvalidated	-.095	.090	.295
Protean-Validated	-.025	.080	.757

Protean-Transcendent	-.097	.091	.398
Unvalidated-Validated	.071	.083	.394
Unvalidated-Transcendent	-.004	.089	.966
Validated-Transcendent	-.058	.084	.491
Body Ideal/Perceptions Current Body Size			
Protean-Unvalidated	.049	.068	.476
Protean-Validated	-.054	.066	.413
Protean-Transcendent	.008	.080	.992
Unvalidated-Validated	-.103	.062	.099
Unvalidated-Transcendent	-.030	.076	.696
Validated-Transcendent	.049	.080	.540
Ideal Body Size			
Protean-Unvalidated	-.085	.088	.336
Protean-Validated	.018	.090	.842
Protean-Transcendent	-.077	.107	.473
Unvalidated-Validated	.103	.070	.138
Unvalidated-Transcendent	-.012	.100	.696
Validated-Transcendent	-.091	.100	.364
Perceived Black Ideal Body Size			
Protean-Unvalidated	-.113	.097	.243
Protean-Validated	.085	.102	.407
Protean-Transcendent	-.044	.091	.627
Unvalidated-Validated	.199	.085	.020
Unvalidated-Transcendent	.043	.079	.587
Validated-Transcendent	-.109	.080	.173
Perceived White Ideal Body Size			

Protean-Unvalidated	-.089	.090	.321
Protean-Validated	.029	.078	.715
Protean-Transcendent	-.067	.091	.459
Unvalidated-Validated	.119	.075	.112
Unvalidated-Transcendent	.002	.092	.987
Validated-Transcendent	-.089	.083	.286
Body Comparison Orientation			
Protean-Unvalidated	.172	.093	.062
Protean-Validated	.189	.099	.055
Protean-Transcendent	.140	.088	.112
Unvalidated-Validated	.015	.084	.862
Unvalidated-Transcendent	.007	.078	.928
Validated-Transcendent	-.004	.082	.960
Disordered Eating			
Protean-Unvalidated	-.051	.090	.596
Protean-Validated	-.003	.090	.976
Protean-Transcendent	-.099	.097	.305
Unvalidated-Validated	.049	.077	.552
Unvalidated-Transcendent	-.060	.089	.503
Validated-Transcendent	-.097	.088	.270

Appendices

Appendix A: Consent/Assent Forms

Parent Consent Form:

Consent for My Child to be Part of a Research Study

Title of the Project: Study on Puberty, Identity, Comparison, Ideals and Eating

Principal Investigator:

Janelle L. Blazek, MS

Doctoral Candidate, Department of Psychology

University of Michigan

Faculty Advisor:

Rona Carter, PhD

Professor, Department of Psychology

University of Michigan

Invitation to be Part of a Research Study

We are inviting your child to participate in a research study. In order to participate, your child must be a girl between the ages of 13-15 and be Black (African American), White, or Black-White biracial. Participation in this study is voluntary.

What is the study about and why are we doing it?

The purpose of the study is to examine what aspects of adolescents' lives impact their eating behaviors and also how these aspects might interact. Body dissatisfaction and problematic eating behaviors are a common issue for adolescent girls. Even if your daughter doesn't have problematic eating behaviors she can still help us understand what might be protective against problematic eating behaviors.

What will happen if your child takes part in this study?

Your child will be asked to respond to an anonymous survey that assesses their racial and gender identities, their likelihood to compare to others, their body ideals, their pubertal timing, and eating habits and attitudes. The survey should take about 20 minutes to complete. Your child should complete this survey in a private space so that their answers cannot be seen by others.

How could your child benefit from this study?

Although your child may not receive a direct benefit from participating, the findings of this study will inform future research and interventions focused on the social and educational factors that affect teens' development.

What risks might result from your child being in this study?

As your child responds to questions about their social attitudes, identity, or appearance, they may reflect on experiences that were frustrating or upsetting. If your child feels uncomfortable at any time, they can skip a specific question or stop the survey. A breach of confidentiality is always a risk concerning online surveys, especially if your child completes the survey in an open space where others can see their responses. However, we do not collect information that can personally identify your child. Also, only the research team can access the data once they are submitted.

How will we protect your child's information?

We plan to publish the results of this study and share the findings in public settings. Because the survey is anonymous, we cannot link any survey responses to you or your child's personal information. The data will be stored on password-protected computer files on a secure server. We plan to keep the data for at least 5 years for study and record keeping purposes.

What will happen to the information we collect once the study is over?

We will keep the data from this study to use for future research. We will not have access to any identifiable information. We may share the data with other investigators without asking for your consent again, but it will NOT contain information that could directly identify you or your child.

Your Child's Participation in this Study is Voluntary

It is totally up to your child to decide to be in this research study. Participating in this study is voluntary. In addition to your consent, your child must also provide assent to participate. Even if your child decides to be part of the study now, they may change their mind and stop at any time. Your child may also choose to not answer a question for any reason. If you or your child choose to withdraw from the research, your data will not be shared with us.

Contact Information for the Study Team and Questions about the Research

If you have questions about this research, you may contact us at:

Principal Investigator:

Janelle L. Blazek, MS

Doctoral Candidate, Department of Psychology

djanelle@umich.edu

734-763-3075

Faculty Advisor:

Rona Carter, PhD

Professor, Department of Psychology

ronac@umich.edu

Contact Information for Questions about Your Rights as a Research Participant

If you have questions about your child's rights as a research participant or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the following:

University of Michigan

Health Sciences and Behavioral Sciences Institutional Review Board

2800 Plymouth Road

Building 520, Room 1169

Ann Arbor, MI 48109-2800

Phone: (734) 936-0933 or toll free, (866) 936-0933

Email: irbhsbs@umich.edu

Parent or Legally Authorized Representative Permission

By allowing your child to move forward with the survey, you are agreeing to your child's participation in this study. Make sure you understand what the study is about before you agree.

If you have any questions about the study after you agree for your child to participate, you can contact the study team using the information provided above. If you are able to, print out or save this form to your computer so that you can review this information again.

Adolescent Assent Form:

Teen's Assent to be Part of a Research Study

Title of the Project: Study on Puberty, Identities, Comparisons, Ideals, and Eating

Principal Investigator:

Janelle L. Blazek, MS

Doctoral Candidate, Department of Psychology

University of Michigan

Faculty Advisor:

Rona Carter, PhD

Professor, Department of Psychology

University of Michigan

Invitation to be Part of a Research Study

We are inviting you to participate in a research study. In order to participate, you must be between the ages of 13-15 and consider your racial identity to be Black (African American), White, or Black-White biracial. Participation in this study is voluntary. It is totally up to you to decide if you would like to complete this survey.

What is the study about and why are we doing it?

The purpose of the study is to examine how young people think about their bodies, identities, and eating. We want to see how these forces are connected to each other and to teens' well-being.

What will happen if you take part in this study?

Your parent has given you permission to participate in this research study. However, the decision is up to you if you would like to participate. If you decide to participate, you will be asked to respond to an anonymous survey that includes questions about puberty, your identity, comparisons to other people, what you think people should look like, and your eating behaviors. You should complete this survey in a private space so that others cannot see your answers. The survey should take about 30 minutes to complete.

How could you benefit from this study?

Although you may not directly benefit from participating, the findings of this study will help researchers better understand how young people think about their bodies, where they get this information, and how it might affect how and what they eat. The findings from this study can guide the creation of programs to help young people be successful and well.

What risks might result from your being in this study?

As you respond to questions about your social attitudes, identity, or appearance, you might reflect on experiences that were frustrating or upsetting. If you feel uncomfortable at any time, you can choose to skip a specific question or stop the survey. A breach of confidentiality is always a risk concerning online surveys, especially if you are completing the survey in an open space where others can see your responses. However, we do not collect information that can

personally identify you. Also, only the research team can access the data once they are submitted.

How will we protect your information?

We plan to publish the results of this study and share the findings in public settings. However, the survey is anonymous, and we do not ask for any personal information about your identity. We therefore cannot link the survey responses to your personal information. To keep your survey responses private, we will store the data on password-protected computer files on a secure server. We plan to keep the data for at least five years for our records.

What will happen to the information we collect once the study is over?

We will keep the data from this study to use for future research. We may share the research data with other investigators without asking for your permission again, but it will NOT contain information that could directly identify you.

Your Participation in this Study is Voluntary

It is totally up to you to decide to be in this research study. Participating in this study is voluntary. Even if you decide to be part of the study now, you may change your mind and stop at any time. You may also choose to not answer a question for any reason. If you choose to withdraw from the research, your data will not be shared with us.

Contact Information for the Study Team and Questions about the Research

If you have questions about this research, you may contact us at:

Principal Investigator:

Janelle L. Blazek, MS

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Faculty Advisor:

Rona Carter, PhD

Professor, Department of Psychology

ronac@umich.edu

Contact Information for Questions about Your Rights as a Research Participant

If you have questions about your rights as a research participant or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the following:

University of Michigan

Health Sciences and Behavioral Sciences Institutional Review Board

2800 Plymouth Road

Building 520, Room 1169

Ann Arbor, MI 48109-2800

Phone: (734) 936-0933 or toll free, (866) 936-0933

Email: irbhsbs@umich.edu

Assent

By moving forward with the survey, you are agreeing to participate in this study. Make sure you understand what the study is about before you agree. If you have any questions about the study, you can contact the study team using the information provided above. If you can, print out or save this form to your computer so that you can review this information again.

Appendix B: Measures:

Bem Sex Role Inventory Short-Form:

Instructions: Below you will find a number of personality traits. We would like you to choose how true each of these characteristics is for you using the options from ‘almost never true’ to ‘almost always true’.

Items	Values
Willing to take a stand	1 = Almost never true
Dominant	2 = Usually not true
Independent	3 = Rarely true
Strong personality	4 = Occasionally true
Soothes hurt feelings	5 = Often true
Sympathetic	6 = Usually true
Warm	7 = Almost always true
Aggressive	
Loves children	
Sensitive to the needs of others	
Tender	
Assertive	
Affectionate	
Defends own beliefs	
Has leadership skills	
Willing to take risks	
Compassionate	
Understanding	
Forceful	
Gentle	

Conformity to Feminine Norms Inventory:

Instructions: Please rate the following statements on how much you agree or disagree that they are accurate for you.

Items	Value
Taking care of children is extremely fulfilling.	1 = Strongly disagree
Being nice to others is extremely important.	2 = Disagree
Having a romantic relationship is essential in life.	3 = Agree
I never wear make-up.	4 = Strongly agree
I would be perfectly happy with myself if I gained weight.	
I would like to lose a few pounds.	
I always try to make people feel special.	
I would be happier if I were thinner.	
My life plans rely on my having a romantic relationship.	
I regularly wear make-up.	
I rarely go out of my way to act nice.	
I like being around children.	
I would be ashamed if someone thought I was mean.	
Most people enjoy children more than I do.	
I am not afraid to hurt people's feelings to get what I want.	
I am always trying to lose weight.	
I find children annoying.	
I get ready in the morning without looking in the mirror very much.	
I feel attractive without make-up.	
If I were single, my life would be complete without a partner.	
When I have a romantic relationship, I enjoy focusing my energies on it.	
Being in a romantic relationship is important.	
I actively avoid children.	
I am terrified of gaining weight.	
I spend more than 30 minutes a day doing my hair and make-up.	

Belgrave African American Women's Gender Role Ideology Measure:

Instructions: The following question is about what kind of person you are. Each item had a pair of opposite descriptions. Please choose which description is more like you and how much like you it is. Clicking 'very like me' on the left side means you feel like the description of the left is very accurate to you. Clicking 'somewhat like me' on the right means the description is more like you than the description on the left, but only sort of like you. For example, the first description is about being independent (left description) or dependent (right description). If a girl felt like she was very dependent, she would click the 'very like me' button farthest to the right, closest to the word dependent.

Item	Values
Independent/Dependent	1 = Very like me (left oriented)
Trustworthy/Not trustworthy	2 = Somewhat like me (left oriented)
Irresponsible/Responsible	3 = Not like me
Resilient/Cannot bounce back easily	4 = Somewhat like me (right oriented)
An advisor/Does not advise others	5 = Very like me (right oriented)
Supportive of others/Not supportive of others	
Caregiver/Not a caregiver	
Keeps family connected/Not involved in family activities	

Multigroup Ethnic Identity Measure:

Instructions: In this country, people come from many different countries and cultures, and there are many different words to describe the different backgrounds of ethnic groups that people come from. Some examples of names of ethnic groups are: Hispanic or Latina, Black or African American, Asian American, Chinese, Filipino, American Indian, Mexican American, Caucasian or White, Italian American, biracial, and many others. What ethnic group(s) do you consider yourself to be?

The next questions are about your ethnic group(s) and how you feel about it or react to it. Please pick the option that best describes how much you agree or disagree with each statement.

Items	Values
I am happy that I am a member of the ethnic group(s) that I belong to.	1 = Strongly disagree
I have a strong sense of belonging to my own ethnic group(s).	2 = Disagree
I have a lot of pride in my ethnic group(s) and their accomplishments.	3 = Agree
I feel a strong attachment towards my own ethnic group(s).	4 = Strongly agree
I feel good about my cultural and ethnic background(s).	

Biracial Identity Question:

Item	Values
Which of the following statements best describes how you feel about your ethnic-racial identity?	1 = I consider myself only Black (of African American) 2 = I sometimes consider myself Black, sometimes White, and sometimes biracial depending on the circumstances 3 = I consider myself biracial, but I experience the world as a Black person 4 = I consider myself only as biracial (neither Black nor White) 5 = I consider myself only White 6 = Race is meaningless, I do not believe in racial identities 7 = other (open-ended response box)

Puberty

Menarche:

Items	Values
Have you had your first period?	1 = yes 2 = no
How old were you when you had your first period, in days and months	Years (open-ended response box) Months (open-ended response box)

Relative Perceived Pubertal Timing:

Item	Values
Overall, do you think your development (how you are growing and changing) is any earlier or later than most other girls your age?	1 = Much earlier 2 = Somewhat earlier 3 = About the same time 4 = Somewhat later 5 = Much later

Body Ideal:

Items:

Which figure best represents your current body?

Which figure best represents your ideal body?

Which figure best represents the ideal body for White women?

Which figure best represents the ideal body for Black women?

Values:



Body, Eating, and Exercise Comparison Orientation - Body Comparisons Subscale

Instructions: Please respond to the following statements by selecting the response that best represents how true these statements are for you, from never to always.

Items	Values
I pay attention to whether or not I am as thin as, or thinner, than my peers.	1 = Never
In social situations, I think about how my figure ‘matches up’ to the figures of those around me.	2 = Almost never
I notice how I compare with my peers in terms of specific parts of the body (for example, stomach, hips, breasts).	3 = Seldom
I compare my body shape to that of my peers.	4 = Sometimes
When I see a peer who is wearing revealing clothing, I have thoughts of how my own body compares.	5 = Often
I pay attention to whether or not I am as toned as my peers.	6 = Almost always
	7 = Always

Ethnic-Racial Demographics of Social Contexts:

School

Instructions: Take a moment to think about all the students in your school. Please answer the following questions about the make-up of the students in your school in terms of race and ethnicity.

Items	Values
How many students from your school are each of these ethnicities of races?	1 = All
Black	2 = Many
White	3 = Some
Biracial	4 = Few
Asian	5 = None
Latino/a	
Other (open-ended response box)	

Neighborhood

Instructions: We would also like to know about the people in your neighborhood. Take a moment to think about the people your age in your neighborhood. Please answer the following questions about the make-up of adolescents in your neighborhood in terms of race and ethnicity.

Items	Values
How many adolescents in your neighborhood are each of these ethnicities of races?	1 = All
Black	2 = Many
White	3 = Some
Biracial	4 = Few
Asian	5 = None
Latino/a	
Other (open-ended response box)	

Friends

Instructions: We would also like to know about your friends. Take a moment to think about the people you consider to be your close friends. Please answer the following questions about the make-up of your close friends in terms of race and ethnicity.

Items	Values
How many of your close friends are each of these ethnicities of races?	1 = All
Black	2 = Many
White	3 = Some
Biracial	4 = Few
Asian	5 = None
Latino/a	
Other (open-ended response box)	

Children's Eating Attitudes Test

Instructions: We would like to ask you some questions about your eating habits and the way you think about food. Please choose the response from 'always' to 'never' that show how often the statement is for you.

Items	Values
I am scared about being overweight.	1 = Always true
I stay away from food when I am hungry.	2 = Often true
I think about food a lot of the time.	3 = Occasionally true
I have gone on binges where I felt like I might not be able to stop eating.	4 = Rarely true
I feel guilty after eating.	5 = Very rarely true
I am aware of the calorie content in foods.	6 = Never true
I vomit after I have eaten.	
I think a lot about wanting to be thinner.	
I think about burning up calories when I exercise.	
I think a lot about having fat on my body.	
I stay away from foods with sugar in them.	
I eat diet foods.	
I feel uncomfortable after eating sweets.	
I have been dieting.	
I like my stomach to be empty.	
I enjoy trying rich new foods.	
I have the urge to vomit after eating.	
I cut my food into small pieces.	

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