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**Parental Confirmation and Emerging Adult Children's Body Image:  
Self-concept and Social Competence as Mediators**

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**Parental Confirmation and Emerging Adult Children's Body Image:  
Self-concept and Social Competence as Mediators**

**by**

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## **Dedication**

This dissertation is dedicated to my parents, Kiyoyasu and Miwako Taniguchi.

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## **ABSTRACT**

Parental Confirmation and Emerging Adult Children's Body Image:  
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by

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Although the role of family factors in the development of body image is well documented, the mechanism of how family interactions are related to body image remains inadequately understood. Moreover, extant body image literature examining the role of family factors has largely focused on mother-daughter relationships, limiting our understanding on fathers' roles and sons' experiences. The purpose of this project was to address limitations in extant literature from a communicative perspective. Based on confirmation theory (Dailey, 2010), this project examined (a) how each component of parental confirmation (acceptance and challenge) was individually and interactively related to emerging adults' body image, (b) how these associations were mediated by social competence and self-concept, and (c) how hypothesized links differed by parental and child sex. Male and female college students ( $N = 447$ ; 319 females) responded to a series of online surveys. Collectively, the results provided general support for the proposed mediation model. There were minimal child sex differences, whereas there

were some differences in hypothesized associations depending on the parental sex. For mothers' communication behaviors, the positive association between mother acceptance and body image was fully mediated by social competence and self-concept together, and mother challenge enhanced the positive effect of mother acceptance on body image through self-concept (but not through social competence). In terms of fathers' communication behaviors, the positive association between father acceptance and body image was partially mediated by self-concept. Further, father acceptance and father challenge interacted to predict body image directly, without being mediated by the proposed mediators, such that father challenge enhanced the positive effect of father acceptance on body image. Altogether, the findings of this study suggest that acceptance and challenge are associated with emerging adults' body image through a somewhat different mechanism depending on parent sex (but not child sex). This research underscores the utility of employing a confirmation perspective in understanding the mechanisms of how family interactions are related to body image.

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## **Chapter 1: Introduction**

Negative body image is prevalent in the United States (Fallon, Harris, & Johnson, 2014). Body dissatisfaction affects 13% to 57% of the general female population (Cash & Henry, 1995; Fallon et al., 2014; Garner, 1997; Kruger, Lee, Ainsworth, & Macera, 2008). College years are marked by an increased prevalence of body dissatisfaction (Berg, Frazier, & Sherr, 2009; Delene & Bragowicz, 1990; Forrest & Stuhldreher, 2007; Mintz & Betz, 1988; Neighbors & Sobal, 2007). Forrest and Stuhldreher (2007) reported that close to 70% of undergraduate females expressed body dissatisfaction. A recent national survey indicated 45% undergraduate females dieted to lose weight in the previous month (American College Health Association, 2014).

Even though negative body image has been traditionally studied mainly among women (Grogan, 2006; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999), men also experience societal pressure to attain ideal bodies, and express body dissatisfaction (Galioto, Karazsia, & Crowther, 2012; Ricciardelli & McCabe, 2004; for reviews, see McCabe & Ricciardelli, 2004; Muise, Stein, & Arbess, 2003). Approximately 10% - 35% undergraduate males are dissatisfied with their bodies (Forrest & Stuhldreher, 2007; Mayo & George, 2014; O'Dea & Abraham, 2002). Close to 30% of undergraduate males reported dieting to lose weight (American College Health Association, 2014).

Negative body image is related to a host of negative psychological outcomes including low self-esteem, low life satisfaction, and depressive symptoms in both men and women (Cafri et al., 2005; Donaghue, 2009; Johnson & Wardle, 2005; Maida & Armstrong, 2005; Stice & Bearman, 2001). For women, body dissatisfaction is a risk

factor of eating disorders (Stice, 2002). For men, body dissatisfaction (especially muscle dissatisfaction) is linked to muscle dysmorphia (Maida & Armstrong, 2005), the use of muscle-building drugs such as anabolic steroids (Wright, Grogan, & Hunter, 2000) and human growth hormone (Pope, Phillips, & Olivardia, 2000). Considering the prevalence of body image problems, and the negative psychological and behavioral correlates of these problems, it is important to identify potential factors contributing to these problems.

Even though a complex web of factors contributes to negative body image (Thompson et al., 1999), family-of-origin experience is one of the key influences on the development of these problems (Kluck, 2010). Family members, especially parents, are key socialization agents for children: Through interactions with their parents, children develop their views towards themselves (Cooley, 1902), including their bodies (Arroyo & Segrin, 2013; Taniguchi & Thompson, 2015). Perception of parental warmth, acceptance, support, and involvement have been linked to healthier body image among children (Barker & Galambos, 2003; Byely, Archibald, Graber & Brooks-Gunn, 2000; McVey, Pepler, Davis, Flett, & Abdolell, 2002) whereas perceiving parents as less caring, less supportive, and more controlling is associated with eating disorders and weight concerns (Canetti, Kanyas, Lerer, Latzer, & Bachar, 2008; Bearman, Presnell, Martinez, & Stice, 2006; Sira & Whites, 2010).

While extant research is informative in understanding the general importance of parent-child interactions in children's body image, there are at least three limitations that need to be addressed. First, the vast majority of prior studies paid tangential attention to communication, as pointed out by some communication scholars (Botta & Dumlao, 2002;

Miller-Day & Marks, 2006). Importantly, a family relationship is enacted through communication among family (Vangelisti, 2013); communication is a vehicle through which family members provide support, express affection, and manage conflicts, to name a few. Considering the centrality of communication in family experiences, research examining the link between family factors and body image from a communicative perspective is necessary. One insightful framework in examining this issue from a communicative perspective is confirmation theory (Dailey, 2010). Confirmation is a process in which one feels endorsed by others through recognition and acknowledgement (Cissna & Sieburg, 1981, 2006) and is conceptualized as having two components: acceptance and challenge (Dailey, 2010; Dailey, Richards, & Romo, 2010; Dailey, Romo, & McCracken, 2010). Acceptance involves care, warmth, and attentiveness expressed by another person during interactions (Brock, Sarason, Sanghvi, & Gurung, 1998), and challenge involves pushing and challenging a person so that he or she can achieve greater potential (Buber, 1965; Dailey, 2008b). This project's first main purpose is to examine how acceptance and challenge individually and interactively associated with body image in young adult children.

The second limitation of extant body image research examining the role of family factors is that, even though it is increasingly clear that family-of-origin experience plays an important role in the development of negative body image (see Rodgers & Chabrol, 2009 for a review), the mechanisms through which family factors influence these problems is less explored. It is important to identify mechanisms to deepen our understandings of how body image concerns come to develop and are maintained.

Therefore, the current study examines the potential mediating role of two concepts that are relevant to parental confirmation and body image: social competence and self-concept (i.e., identity strength and self-esteem). More specifically, based on the basic premises of confirmation theory, this study expects that parental confirmation is beneficial to young adult children's development of self-concept and social competence, which, in turn, positively impacts their body image.

The third limitation of the extant body image literature on the role of family factors is that most studies focused on mother-daughter dyads, limiting our understanding of paternal influence, as well as sons' experiences. When both mothers and fathers are included in analysis, they are often treated as a parental unit (e.g., Arroyo & Segrin, 2013) rather than distinguished in terms of their contributions as separate parental figures. It is important to distinguish maternal and paternal contribution because (a) children perceive communication with each parent differently (Al Sabbah et al., 2009), and (b) mothers and fathers might contribute to children's developmental outcomes in a different way (Laible & Carlo, 2004). It is also important to distinguish child sex because the ways in which family factors impact children might depend on child sex (Hart, DeWolf, Wozniak, & Burts, 1992; McKinney, Milone, & Renk, 2011). Therefore, this project distinguishes the sex of parental figures and children by examining all sex-specific parent-child dyads (i.e., mother-daughter, mother-son, father-daughter, father-son).

Taking the limitations of extant research above into consideration, this project's purpose is to examine the association between parental confirmation and college

students' body image in all sex-specific parent-child dyads and to investigate if this association is mediated by social competence and self-concept. This project focuses on emerging adulthood, typically defined as 18-25 years of age (Arnett, 2000) because this is a period marked by a high risk of body dissatisfaction and maladaptive weight management behaviors for women (Eisenberg, Nicklett, Roeder, & Kirz, 2011; Neighbors & Sobal, 2007; Prouty, Protinsky, & Canady, 2002; Reinking, & Alexander, 2005) and men (Frederick et al., 2007; Mayo & George, 2014).

The period of emergent adulthood is characterized by important transitions including increasing decision-making, leaving home, and developing self-identity (Erikson, 1968; Nelson, Story, Larson, Neumark- Sztainer, & Lytle, 2008). Such a transition from adolescent to adulthood has been hypothesized to lead to elevated levels of stress (Dornbusch, 2000). Moreover, the vast majority of individuals leave home during the transition to college (U.S. Department of Education, 2011), and some of them may experience feelings of loneliness and decreased sense of social support availability (Cutrona, 1982; Larose & Boivin, 1998). Considering that poor body image correlates with the aforementioned issues – stress, feelings of loneliness, and a perceived lack of social supports (Budd, 2007; Rosen, Compas, & Tacy, 1993), emerging adulthood might be a critical period in which heightened stress could increase the risk of body dissatisfaction and eating disorders in vulnerable individuals.

Some might argue that parental communication has a less salient impact on body image among emergent adults than on adolescents and younger children. In fact, research on parental influence on body image tends to focus on the relationship between

adolescents and their parents (with the majority focusing on daughter-mother relationships). However, there is evidence to suggest that parents remain a source of body image for their children throughout their lifespan, including emergent adulthood (Arroyo & Segrin, 2013) and middle to later adulthood (Baugh & Barnes, 2015; Clarke & Griffin, 2007). Therefore, examining the perception of parental communication is essential when studying the body image of emerging adults. Moreover, examining perceptions of parental confirmation among emerging adults is especially meaningful given the premise of confirmation theory that the benefits of parental confirmation continue regardless of the developmental stage of children (Dailey, 2005, 2008b).

The current project seeks to contribute to extant body image literature by systematically investigating multiple predictors of body image at two different levels in the same model. Most empirical research has examined the role of a few body image predictors either at an individual level (e.g., low self-esteem) or parental level (e.g., parenting style). The current project tests a more comprehensive model in which the roles of body image predictors both at an individual level (i.e., social competence and self-concept) and at a parental level (i.e., parental confirmation) are simultaneously estimated.

Findings from this project have practical value, as its findings can be utilized to create or improve intervention and prevention programs for body image. First, practitioners can inform parents with children about characteristics of parental behaviors that are conducive to children's development of healthy body image. Practitioners can provide more complex and accurate explanations of this matter by explicating how the

sex composition of the parent-child dyad matters when considering parental effects on children's body image. Finally, even though family communication already experienced by individuals who suffer from poor body image cannot be altered, mediators, such as social competence, can be focal points of intervention programs geared toward those suffering from poor body image.

## **Chapter 2: Literature Review and Rationale**

The following literature review and rationale is composed of three sections. The first section defines the construct of body image as well as reviews the link between family factors and negative body image. The second section explores the role of two potential mediators: social competence and self-concept (identity strength and self-esteem). The first and second subsection explore if the association between parental confirmation and body image is mediated by social competence and self-concept, respectively. The last section argues for the importance of taking sex-specific parent-child combination into consideration. Within each section, relevant hypotheses and research questions are posited.

### **DEFINITION OF BODY IMAGE**

Body image is an elusive construct, and the term is often used in a confusing manner. It is important to delineate the conceptualization of body image construct here at the outset. Scholars agree that body image is a multi-dimensional construct (Banfield & McCabe, 2002; Cash, 2004; Garner, Olmsted, Bohr, & Garfinkel, 1982; Gleaves, Williamson, Eberenz, Sebastian, & Barker, 1995; Stewart & Williamson, 2004; Thompson et al., 1999; Thompson & van den Berg, 2002; Thompson, Burke, & Krawczyk, 2012). However, there is little agreement on the nature of these dimensions of body image.

The conceptualization of body image in extant literature includes at least of one of the following four dimensions: Perceptual, affective, cognitive, and behavioral. The perceptual dimension of body image involves how accurately individuals are able to

estimate their own body size and shape (Cash, Wood, Phelps, & Boyd, 1991; Slade, 1994). When there is a discrepancy between individuals' objective body size and their subjective perception of this size, "body size distortion" exists. The affective dimension of body image involves subjective feelings toward one's weight, body shape and size, and appearance. Body dissatisfaction falls within the affective component of body image (Thompson & Psaltis, 1988), and is defined as negative subjective feelings toward one's body shape, size or certain parts of the body (Stice & Shaw, 2002). Many scholars view body satisfaction/dissatisfaction as the most important global assessment of body image disturbance because it captures the very essence of subjective evaluations of individuals' own appearance (Thompson et al., 1999). Perhaps because of this, much of body image research focuses on body dissatisfaction.

The cognitive dimension of body image regards thoughts and beliefs about one's body's appearance (e.g., thinking that one's body size is too large). It also includes thoughts and beliefs regarding how significant and important one's appearance is (Thompson et al., 2012). It is important to note that affective and cognitive components of body image are often included in a single scale that claims to measure only one of these two components (Banfield & McCabe, 2002). For instance, the body dissatisfaction subscale in the Eating Disorder Inventory (Garner, Olmstead, & Polivy, 1983) assesses both thoughts ("I think my hips are too big") and feelings ("I feel satisfied with my body").

Finally, the behavioral dimension in the body image construct is controversial, as behavioral aspects can be seen as the consequences or manifestations of other dimensions

of body image (e.g., Stice, Nemeroff, & Shaw, 1996). Behavioral aspects can include weight-management behaviors (e.g., dietary restraint, exercising) and avoidance of situations that evoke fear that one's body is being negatively evaluated, such as swimming contexts (Thompson et al., 1999). Consistent with other scholars (Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006; Stice & Shaw, 2002), this project conceptualizes behavioral aspects as consequences of other components of body image (e.g., body dissatisfaction).

Affective, cognitive, and behavioral (or relating to behavioral intention) components of body image are referred together as the attitudinal dimension of body image (e.g., Keeton, Cash, & Brown, 1990). The attitudinal dimension of body image is often contrasted with the perceptual dimension of body image (e.g., Thompson & van den Berg, 2002). Perceptual distortion is argued to be more characteristic of psychological pathology, especially eating disorders (Monteath & McCabe, 1997; Thompson & Gardner, 2002). Because the current study seeks to understand body image experience among college students rather than a clinical population, attitudinal body image – affective, cognitive, and behavioral (or behavioral intention)—will be the focus.

In the literature review of this project, the term body image is used to represent the broad construct including all four aforementioned dimensions, unless otherwise specified. Yet, given the focus of the extant research, the current literature review mostly focuses on the affective component of body image (i.e., body satisfaction or dissatisfaction). The term “negative body image” is used throughout the literature review, as used in previous studies (Cash, 2002; Davison & McCabe, 2006; Smolak &

Levine, 2001), to refer to concerns, problems, or disturbances involving body image. That is, negative body image is used here as an umbrella term, which can include all subcomponents of body image. In keeping with the general body image literature, this study also uses negative body image interchangeably with such terms as body image concerns, body image problems, and body image disturbance. Similarly, the term “healthy body image” is broadly used in this project to refer to positive qualities in terms of any of the subcomponents of body image. That is, healthy body image can include body satisfaction as well as positive perceptions and cognitions about one’s own body. Healthy body image is thus used interchangeably with positive body image.

### **Sex difference in body image**

Negative body image has been traditionally studied as a woman’s concern (Thompson et al., 1999). However, evidence suggests that sociocultural pressure on men to become muscular has been increasing in recent years (Leit, Pope, & Gray, 2001), and that body image concerns are increasingly relevant to males, especially adolescent boys and young men (Halliwell & Harvey, 2006; McCabe & Ricciardelli, 2004; McCreary & Sasse, 2000; O’Dea & Rawstorne, 2001; for a review of body image among males, see Thompson & Cafri, 2007). Yet, societal appearance norms and pressures for women are more intensive and pervasive (Buote, Wilson, Strahan, Gazzola, & Papps, 2011; for reviews, see Smolak & Thompson, 2009; Thompson et al., 1999). Therefore, not surprisingly, sex differences in body image and related behaviors have been consistently reported: Females generally experience more body dissatisfaction and disordered eating than males (Cash, 2002; Grogan, 2006; Henriques & Calhoun, 1999; Holsen, Kraft, &

Røysamb, 2001; Neighbors & Sobal, 2007; Rogers et al., 2009).

There are also differences between women and men in terms of their overall ideal bodies and the specific body areas of concerns. The ideal body for women is a slim body, and therefore, women often express desire to lose weight (Grogan & Wainwright, 1996; Tiggemann, 2004; Vartanian, Giant, & Passino, 2001). For men, a slender but moderately muscular body is the ideal (Pope et al., 2000; Grogan, 2008). Accordingly, men's body dissatisfaction falls into two categories: wanting to lose body fat and/or wanting to build muscle (Grogan & Richards, 2002; McCreary, Saucier, & Courtenay 2005; McCabe & Ricciardelli, 2004). In addition, the body area in which women want to lose fat is different from the areas in which men want to gain muscle (Andersen, Cohn, & Holbrook, 2000; McCabe & Ricciardelli, 2001). Women reported a desire to lose fat from the waist-down (e.g., hips, thighs, and buttocks) whereas men reported a desire to gain muscle from the waist-up (e.g., arm, chest). Finally, because greater height is considered ideal for men, height is another important dimension in men's body dissatisfaction (Ridgeway & Tylka, 2005).

## **FAMILY INTERACTIONS AND BODY IMAGE**

The role of family factors in the development of body dissatisfaction has long been a subject of investigation, especially in cases of patients with eating disorders (e.g., Humphrey, 1989; Minuchin, Rosman & Baker, 1978; for a review, see Kluck, Clopton, & Kent, 2011). This line of research has found an association between dysfunctional family environments and children's eating disorders (Humphrey, 1989; Minuchin et al., 1978). For instance, families with eating disordered children are often characterized by parental

over-protectedness (e.g., Slade, 1982), an extremely low or high degree of cohesion (Kagan & Squires, 1985; Kog & Vandereycken, 1989; Stern et al., 1989; Vandelinden, & Vandereycken, 1989) and less open discussion of disagreement (Humphery, 1986; Johnson & Flach, 1985; Kog & Vandereycken, 1989; Ordman & Kirschenbaum, 1986). Similar findings have been found among non-clinical populations. For example, perceiving one's parents as less caring and more controlling has been associated with weight concerns and disordered eating behaviors (Canetti et al., 2008; De Panfilis, Rabbaglio, Rossi, Zita, & Maggini, 2003).

Even though numerous studies identified dysfunctional family environments as a risk factor for negative body image concern and disordered eating behaviors (e.g., Bardone-Cone et al., 2010; May, Kim, McHale, & Crouter, 2006), relatively little attention has been paid to parent-child *communication* in this area of research (Botta & Dumulao, 2002; Miller-Day & Marks, 2006). Importantly, messages exchanged within intimate relationships yield great consequences (Burlison, Metts, & Kirch, 2000): Through communication with their parents, children develop self-concept (Dailey, 2008b; 2010), including how they feel about their bodies (Babio, Arija, Sancho, & Canals, 2008; Botta & Dumulao, 2002; Miller-Day & Marks, 2006; Sheldon, 2013). This study focused on the relational level of communication, rather than the content level of communication. Confirmation theory (Dailey, 2010) is a useful framework to understand how family interactions might impact children's body image from a communicative perspective.

## Confirmation Theory

### *Background*

Even though this project uses conceptualization of confirmation developed by Dailey (2010), it is helpful to briefly review the background of confirmation theory by earlier confirmation scholars. The term “confirmation” in an interpersonal context was first introduced by Martin Buber (1957), a self-proclaimed philosophical anthropologist. He maintained that confirmation is basic to humanness and may be the most significant feature of human interaction. Laing (1961), a British psychiatrist, later developed the conceptualization of confirmation by extensively referencing Buber. His focus was on disconfirmation in a psychiatric context, especially among schizophrenic patients.

Watzlawick, Beavin, and Jackson (1967) also made an important contribution to confirmation theory from an interactional perspective. They argued that any communication involves both a content level and a relational level of communication. A content level of communication pertains to the semantic information in the message. A relational level of communication involves how the speaker sees her/his relationship with the conversation partner as well as how the speaker sees herself/himself (i.e., self-definition). Important here is that every message involves the self-definition of the speaker; with each message, the speaker is revealing something about him- or herself. Building on Buber (1958) and Laing (1961), Watzlawick et al. maintained that there are three potential responses to another person’s expression of self-definition: confirmation, rejection, and disconfirmation. *Confirmation* implies the acceptance of self-definition of another person. *Rejection* is when one rejects the self-definition of the other, but it

implies at least limited recognition of the reality of the other person's self-perception.

*Disconfirmation* communicates, "You do not exist" (p.86), and disregards the other as a valid source of information. Watzlawick et al. argued that acceptance of individuals' self-definition (i.e., confirmation) is crucial to an awareness of the self as well as to mental development and stability.

Building on the work by earlier confirmation scholars, Sieburg and her colleagues (Cissna & Sieburg, 1981; Sieburg, 1975, 1985) conducted research regarding interpersonal confirmation. Pointing out that previous work did not provide a precise conceptualization of confirmation that can be empirically assessed, Sieburg (1975) systematized and categorized the confirmation construct.

A key role of confirmation is to help individuals discover and establish their identities and personal significance as human beings (Buber, 1957; Laing, 1961). Confirming behaviors allow individuals to experience their own being, uniqueness, and connectedness with others (Cissna & Sieburg, 1981; 2006). In fact, Watzlawick and his colleagues (1967) described confirmation as "the greatest single factor ensuring the mental development and stability that has so far emerged from our study of communication" (p. 84). Disconfirmation communicates to the other person that he or she is not a valid source of message, and that he or she is worthless and insignificant as a human being. Recent conceptualizations of confirmation characterize it as falling within a continuum ranging from extremely confirming to extremely disconfirming (Cissna & Sieburg, 1981; Dailey, 2005; Ellis, 2002; Sieburg, 1975, 1985). In other words, confirmation and disconfirmation can occur in varying degrees. Some responses might

be neutral in nature, some more confirming, and some more disconfirming than others.

***Dailey's (2010) refinement of confirmation theory: Acceptance and challenge***

Importantly, Buber asserted that confirmation involves not only acceptance but also encouraging the other to grow and attain what he or she can become. Buber argued, "I accept you as you are" does not necessarily mean "I don't want you to change" (Buber, 1965, p. 182). Although the component of challenging the other to attain higher potential is a key component in Buber's (1965) original conceptualization, this component was somewhat lost as confirmation theorization has advanced (Dailey, 2005, 2008b).

Taking this issue into consideration, Dailey extended the conceptualization of confirmation by defining confirmation as having two components: acceptance and challenge (Dailey, 2010; Dailey, Richards et al., 2010; Dailey, Romo et al., 2010). Acceptance is broadly defined as the degree to which specific others care for and value another by showing positive regard, care, warmth, and attentiveness during interactions (Brock, Sarason, Sanghvi, & Gurung, 1998). The concept of acceptance is similar to the concept of responsiveness, which, in the parent-child relationship, refers to parents' awareness of, as well as their willingness, and motivation to supportively attend to children's needs, wants, and concerns (Reis, Clark, & Holmes, 2004). Challenge, in the context of parent-child interaction, is defined as "pushing or challenging the child's existing abilities and skills that may result in building or strengthening cognitive, behavioral, social, or affective knowledge or skills" (Dailey, 2008b, p. 644). In other words, challenge involves pushing and challenging a person so that he or she can achieve greater potential (Buber, 1965; see also Dailey, 2010, Dailey, Richards et al., 2010;

Dailey, Romo et al., 2010).

Challenge is the unique and integral component of confirmation theory (Buber, 1965), but earlier confirmation conceptualizations and assessments did not explicitly highlight this component. For instance, as mentioned earlier, the systematization of a confirmation construct by Sieburg and her colleagues (Cissna & Sieburg 1981; Sieburg, 1975) defined confirmation in terms of recognition, acknowledgement, and endorsement, which do not directly address the notion of challenge. More recently, Ellis (2002) developed a scale called the Parent Confirmation Behavior Indicator (PCBI) to assess parental confirmation. Because Ellis' PCBI was created based on Sieburg and her colleague's systemization of the confirmation construct, it primarily focuses on acceptance, and the challenge component is not directly measured.

Dailey (2008b) proposed that parental challenge can include a variety of behaviors such as making children defend their opinions through reasoning, encouraging children to try new activities, asking questions, coaching children through their emotions, and pushing children to constructively resolve problems. Challenge invites children to “engage, debate, or struggle with the parent” (Dailey, 2008b, p. 649). Dailey (2008b) demonstrated that parental challenge is empirically distinct from other parenting behaviors such as encouraging autonomy, providing support, behavioral control and psychological control. For instance, challenge is different from simply encouraging autonomy in a sense that challenge encompasses a broader set of behaviors, as delineated earlier (Dailey, 2008b). It is also important to note that, while other parental behaviors need to increase (i.e., encouraging autonomy) or decrease (e.g., behavioral control) as

offspring grow from children, to adolescents, to young adults, challenge should be beneficial across the lifespan (Dailey, 2005, 2008b).

Confirmation theory predicts that the effect of acceptance and challenge might be interactive, rather than additive. That is, there should be something unique about the combination of the two components; the presence of one component might enhance the effect of the other. Specifically, confirmation theory predicts that the combination of a high level of acceptance and a high level of challenge (i.e., confirmation) produces the greatest child outcome compared to other combinations (i.e., high acceptance and low challenge, low acceptance and high challenge, and low acceptance and low challenge). Based on related developmental literature, Dailey (2010) reasoned that unconditional love and care (i.e., acceptance) without pushing children to attain higher potential (i.e., challenge) might foster a positive view of the self, but would not facilitate growth. Conversely, pushing and challenging children to improve in an absence of support might facilitate performance, but it may not promote the development of self-concepts and self-esteem. It might be even the case that challenge in absence of acceptance might have negative implications for children's development because children might feel criticized and not trusted. In reality, however, acceptance and challenge are highly correlated (Dailey, 2008b, 2010; Dailey, Imai, & Guinn, 2010). That is, parents who challenge their children are likely to also be warm and accepting.

Three studies by Dailey and her colleagues (Dailey, 2008b, 2010; Dailey, Imai et al., 2010) employed confirmation theory in parent-child contexts to examine children's self-concepts and provided general support for the theory. These studies demonstrated

the main effects of acceptance as well as challenge on children's outcomes, such as high self-esteem and identity strength (Dailey, 2008b, 2010; Dailey, Imai et al., 2010). On the other hand, findings on the interaction effect between these two components were somewhat inconclusive: one study (Dailey, 2008b) found interaction effects whereas the other (Dailey, 2010) produced mixed results. These studies also demonstrated a unique contribution of mothers and fathers to children's development, and suggested that challenge from mothers and acceptance from fathers might be especially important for children's development of identity and self-esteem, respectively (Dailey, 2010; Dailey, Imai et al., 2010).

In addition to its applicability within the context of child development, confirmation theory has been utilized in weight management contexts. Dailey and her colleagues examined how levels of acceptance and challenge in messages from a significant other about weight management are related to perceived messages effectiveness in promoting healthy behaviors (Dailey, Richards et al., 2010; Dailey, Romo et al., 2010; Dailey, McCracken, & Romo, 2011). The finding suggested the general premise of the theory, demonstrating main effects of acceptance and challenge: Greater degrees of acceptance and challenge were individually related to perceived message effectiveness in promoting healthy behaviors (Dailey, Richards, & Romo, 2010; Dailey, Romo, & McCracken, 2010; Dailey, McCracken, & Romo, 2011). Findings about the interaction effect between these two components are mixed, with one study demonstrating interaction effects (Dailey, Richards et al., 2010) and another yielding support for main effects only (Dailey, Romo et al., 2010).

Combined, previous research provides relatively clear evidence of the benefits of acceptance and challenge to self-concepts and weight management behaviors. What has not been explored yet is the role of confirmation in the development of body image. As we aim to deepen the understanding of the role of confirmation, focusing on body image can be an important connecting point between general self-concepts (identity strength and self-esteem) and more specific behaviors of weight management.

### ***Parental confirmation and body image***

Parental confirmation might be beneficial to the development of not only self-concept (Dailey, 2008b, 2010; Dailey, Imai et al., 2010) but also positive body image. As far as the author is aware, there are no published studies that examined how parental acceptance and challenge is related to children's body image.

A study by Dailey, Richards et al. (2010) is noteworthy to mention here because, even though their study was conducted in the specific context of weight management, it provides insight into how acceptance and challenge might individually and interactively predict body image. Dailey, Richards et al. (2010) examined whether levels of acceptance and challenge from a significant other (e.g., a romantic partner) during conversations about weight management in the past 30 days are related to participants' body esteem. They found that each component of confirmation (acceptance and challenge) was positively related to body esteem. In addition to the main effects, an interaction effect was found between acceptance and challenge: The combination of high acceptance and high challenge communicated by the significant other was associated with the highest level of body self-esteem. Although Dailey, Richards et al.'s (2010)

study was situated within interactions between significant others in weight management contexts, such findings could be extended to more general contexts. That is, acceptance and challenge communicated by parents might also be beneficial to the body image of children. Because this project conceptualizes confirmation as comprising acceptance and challenge, the contribution of each component to body image will be discussed, followed by the combined effect of acceptance and challenge (i.e., interaction effect). This project is primarily interested in the interaction effect between acceptance and challenge, given that confirmation is conceptualized as having both components to varying degrees. However, it details the main effect of each component first because it is theoretically important to know the role of each component.

*Acceptance.* Parental behaviors that are warm, nurturing and supportive should foster positive development of body image. At least two confirmation studies (Bruns, 2006; Ellis, 2002) using PCBI (Ellis, 2002) illuminate our understanding of how parental acceptance is related to children's body image. Ellis (2002) found that college students' perceptions of parental confirmation were related to more positive views of their own appearance. Bruns (2006) reported similar results: adolescent daughters' perceptions of paternal confirmation were associated with healthier body image (e.g., body satisfaction). Considering the focus on acceptance rather than challenge in Ellis' (2002) conceptualization of parental confirmation, these two studies suggest that parental acceptance is associated with positive perceptions about appearance among children.

A number of other studies examining parental behaviors close to acceptance (e.g., warmth, care, support and nurturance) also demonstrated similar results, both

concurrently and longitudinally. Cross-sectional studies suggested that feeling accepted, supported and cared for by parents is linked to children's positive body image. For instance, greater perception of both maternal and paternal care was associated with less body dissatisfaction among female college students (Cheng & Mallinckrodt, 2009) and among adolescent boys and girls (Barker & Galambos, 2003; Fulkerson, Strauss, Neumark-Sztainer, Story, & Boutelle, 2007). In addition to body dissatisfaction, perception of low parental caring and support was related to behavioral components of body image among adolescents, such as unhealthy weight control behaviors (Ackard, Neumark-Sztainer, Story, & Perry, 2006) and disordered eating practices (McVey et al., 2002).

Longitudinal studies also demonstrated similar results, suggesting that parental acceptance is positively associated with body image. Adolescents' perceptions of low parental support, care, and love prospectively predicted greater body dissatisfaction (Bearman et al., 2006; Boutelle, Eisenberg, Gregory, & Neumark-Sztainer, 2009), and even eating disorders (Beato-Fernandez, Beato-Fernandez, Rodriguez-Cano, Belmonte-Llario, & Martinez-Delgado, 2004) two to five years later.

Body image research from an attachment perspective also suggests, though indirectly, that parental acceptance is related to healthy body image. Attachment theory (Bowlby, 1969, 1973, 1980) shares some similarities with confirmation theory in that both theories focus on the quality of parent-child interactions and its influence on child outcome (Dailey, 2005). Infants' early attachment experiences shape how they feel about themselves and others (called an "internal working model") and how comfortable they

are with closeness and separation. These internalized models are believed to carry over to adulthood (Bowlby, 1973; Main, Kaplan, & Cassidy, 1985). When a caregiver is consistently available and sensitive to an infant's needs, the infant develops an attachment security. In this sense, parental behaviors that lead to secure attachment could be seen as conceptually close to an acceptance component of confirmation. When caregivers are inconsistent or insensitive, children are likely to develop an insecure attachment style (Bowlby, 1969; Kenny & Hart, 1992). Parental behaviors leading to insecure attachment could be seen as a reflection of low acceptance.

Literature indicates the link between parental attachments and body image among individuals with a wide variety of developmental stages – from pre-adolescents, to adolescents, to young adults (Baugh & Barnes, 2015; Kenny & Hart, 1992; Sharpe et al., 1998). In general, secure parental attachment is associated with body satisfaction, whereas an insecure attachment style is related to body dissatisfaction, disordered eating, and weight concerns (Kenny & Hart, 1992). Patients with eating disorders typically exhibit insecure parental attachment (Friedberg & Lyddon, 1996; Herzog & Becker, 1999; Horesh, Sommerfeld, Wolf, Zubery, & Zalsman, 2015; for a review, see O'Kearney, 1996). A link between insecure parental attachment and negative body image has also been found among non-clinical samples (Baugh & Barnes, 2015; Kiang & Harter, 2006; Meesters, Muris, Hoefnagels, & van Gemert, 2007). Some argue that disturbance in early infant-caregiver (often infant-mother) relationships results in failure to allow adolescents to establish a sense of autonomy, which leads to obsession in pursuing thinness as a means to regain a sense of control (Sugarman & Kurash, 1982).

In addition to attachment literature, communication research using the Parent–Adolescent Communication Scale (PACS; Barnes & Olson, 1982) also suggest similar findings. PACS assesses family members’ perception and experience of family communication through two subscales that are combined into one overall score: Open family communication and problems in family communication. *Open family communication* taps positive aspects of parent-child communication, such as freedom or openness to exchange ideas and thoughts, lack of constraints, and a positive emotional family climate (e.g., satisfaction in interactions, feeling understood). On the other hand, *problems in family communication* assesses negative aspects of parent-child communication including hesitancy or selectivity to share information, and negative styles of interactions (e.g., insults, nagging, silent treatment). Caution and hesitancy to share information can imply a family environment that is not supportive and accepting enough for children to feel safe and welcomed to discuss any topics they desire. In this sense, high open family communication as well as a low degree of problematic communication might be conceptually close to acceptance. On the other hand, low open communication as well as greater problems in family communication can imply a low level of acceptance.

At least three studies using PACS found the benefits of more open and less problematic family communication to children’s body image (Kluck, 2008; Taniguchi & Aune, 2013; Vidović, Jureša, Begovac, Mahnik, & Tocilj, 2005). The perception of less open and more problematic communication with parents was associated with higher degrees of body dissatisfaction (Taniguchi & Aune, 2013) and disordered eating (Kluck,

2008) among college students. Similarly, daughters with eating disorders perceived communication with mothers less open and more problematic compared to their control counterparts (Vidović et al., 2005).

In sum, the prior research cited above suggests that parental behaviors similar to acceptance are related to healthy body image in children. It stands to reason that children who feel accepted, loved, and supported will develop a positive orientation toward themselves, including their bodies. Therefore, the following hypothesis is created:

H1: Parental acceptance is positively related to healthy body image in emerging adults.

**Challenge.** Compared to acceptance, the role of challenge in children's body image is somewhat unclear. As for acceptance, even in an absence of challenge, acceptance should still be beneficial to children's development of healthy body image (even though the effect of acceptance should be enhanced by the presence of challenge). In other words, the main effect of acceptance is expected: Acceptance will be positively related to healthy body image, even after controlling for the effect of challenge.

Unlike the prediction of the role of acceptance, there are at least two different predictions regarding the role of challenge in children's body image. The first prediction is that challenge is positively related to healthy body image. This prediction states that challenge is beneficial to body image. Repeated challenge should facilitate growth of self-efficacy, ability, skills, and self-identity (Dailey, 2008b), which should foster the development of children's healthy body image. Literature on concepts similar to parental challenge provides indirect support to this prediction. Parental overprotectiveness (also

called psychological control) can be argued here as similar to a low degree of challenge. Parental overprotectiveness is often measured by the overprotection subscale of the Parental Bonding Inventory (PBI; Parker, Tupling, & Brown 1979), which taps parental psychological control perceived by children. A high level of overprotection (as assessed by the PBI) is likely to communicate to children that they are not trusted as individuals who are capable of being independent and autonomous enough to make their own decisions. These children may not feel pushed or challenged to explore their higher potentials in different areas (perhaps in addition to the feeling of not being accepted as they are). In this sense, overprotection can be argued as conceptually similar to a low degree of challenge.

Prior research has demonstrated that children's perception of maternal overprotection is associated with body dissatisfaction among college students (Sira & Ballard, 2011; Sira & Whites, 2010). For instance, Sira and colleagues reported that greater parental control was associated with greater body dissatisfaction or maladaptive eating behaviors among male and female college students (Sira & Ballard, 2011; Sira & Whites, 2010). If high overprotectiveness can be conceptualized as low challenge, and if greater protectiveness is related to more negative body image, it should logically follow that greater challenge should be related to healthier body image. (However, it needs to be noted that the overprotection subscale includes a few items that might capture challenge, e.g., "let me decide things for myself"). Therefore, it makes it difficult to conclude that overprotection, as assessed by this scale, is a reflection of low challenge.

The second potential is that challenge might negatively impact children's body

image (i.e., main effect of challenge). Children who are repeatedly challenged without feeling accepted might feel criticized, and thus not good enough. Consequently, these children might develop a negative view toward themselves, including their bodies. In fact, one study showed that authoritarian parenting (i.e., low responsiveness and high demandingness), which can be argued to be similar to a combination of low acceptance and high challenge, is associated with negative body image (Enten & Golan, 2009). Enten and Golan (2009) reported that perceiving fathers as authoritarian (i.e., less responsive and more demanding) was positively associated with a total score assessing eating disorders in female patients with eating disorders (but see Nicholls & Viner, 2009, for a null finding about the link between authoritarian parenting and eating disorders).

In sum, the role of parental challenge on children's body image is unclear. Relevant parenting literature provides some insight into the role of challenge, but there is not enough evidence to generate a hypothesis. Therefore, the following research question is posited:

RQ1: How is parental challenge related to body image in emerging adults?

***Interaction between acceptance and challenge.*** In addition to examining individual contributions of acceptance and challenge, it is also important to consider the combined effect of acceptance and challenge. Reviewing research on parental behaviors that are similar to confirmation (high levels of acceptance and challenge) provides insight into the role of confirmation in children's body image. Authoritative parenting (Baumrind, 1991) is considered as conceptually most similar to confirmation because it is both responsive (also termed warm, caring, nurturing and supportive) and demanding

(also termed strict) (see Dailey, 2005 for more explanation regarding similarities). Enten and Golan (2009), in a study cited above, found that perceiving fathers as authoritative is negatively related to patients' drive for thinness and body dissatisfaction, suggesting the link between parental confirmation and healthy body image.

Similarly, other studies suggest that positive parenting conceptually close to confirmation is related to children's healthy body image. Maternal positive parenting practices (assessed by psychology autonomy promotion, democratic parenting and involvement) were associated with lower degrees of body dissatisfaction, dieting behaviors and drive for thinness among adolescent girls two years later (Blodgett Salafia et al., 2007). Young women who described their parents as supportive, affectively positive, and autonomy-prompting also reported feeling less preoccupied with thinness and less frequently engaged in bulimic behaviors (Kenny & Hart, 1992).

Other research suggests that parenting behaviors resembling disconfirmation (or an extremely low level of confirmation) are associated with children's negative body image. The parental behaviors characterized by low care and high psychological control (termed "affectionless control") can be argued to be conceptually similar to parental disconfirmation (i.e., extremely low confirmation) because such behaviors do not allow children to feel accepted and validated as they are (low acceptance) or to feel pushed and challenged to explore and develop their individuality (low challenge). Eating disorder research provides relatively strong evidence that low care and high control is linked to children's eating disordered symptoms. Eating disorder patients consistently describe their parents as less caring and more controlling than control groups without eating

disorders (Canetti et al., 2009; Horesh et al. 2015; Lobera, Rios, & Casals, 2011; Mallinckrodt, McCreary, & Robertson, 1995), and the severity of the symptoms is linked to their perception of parental care and control (Canetti et al., 2009; Horesh et al., 2015; Swanson et al., 2010). A similar finding was reported in studies with a non-clinical sample. Perceiving parents as less caring and more controlling was related to greater eating disturbance among college students (Perry, Silvera, Neilands, Rosenvinge, & Hanssen, 2008). Taken together, the literature on parenting behaviors and body image seem to suggest that parental behaviors that are similar to confirmation (the combination of high acceptance and high challenge) are associated with healthy body image in children.

In addition to parenting literature, some communication research on body image sheds light on the potential role of parental confirmation on children's body image. At least three studies examined how family communication patterns (FCPs; Fitzpatrick & Ritchie, 1994; Ritchie & Fitzpatrick, 1990) are related to children's body image. FCPs consist of two orientations: Conversation orientation and conformity orientation. Parents high in conversation orientation encourage children to engage in interaction with a wide variety of topics with little constraints (Koerner & Fitzpatrick, 2002). On the other hand, conformity orientation highlights homogeneity of attitudes and belief in families, and it emphasizes parental power and control (Koerner & Fitzpatrick, 2002). Children are expected to follow parents' rules and values and are socialized to repress negative feelings and thoughts. Conflicts are often avoided to maintain family harmony. Children of parents high on conformity orientation might perceive that parents do not see them as

unique individuals who have valuable ideas.

Schrodt, Ledbetter and Ohrt (2007) are the first to test the link between FCPs and confirmation using Ellis' (2002) PCBI. They argued that conversation orientation communicates to children that "their thoughts and opinions are valued" (p. 27) and thus should be related to confirmation. Schrodt et al. (2007) further argued that conformity orientation emphasizes "a homogeneity of values, attitudes and beliefs among family members" (p. 27). This orientation might be perceived by children as disconfirming. Not surprisingly, Schrodt et al. (2007) reported that perception of parental conversation orientation was positively related to, and conformity orientation was negatively associated with, perceptions of parental confirmation (even though confirmation was conceptualized as one dimension as measured by Ellis' PCBI).

When confirmation is considered to have two dimensions, as in this study, similar arguments seem to stand. Conversation orientation (especially when combined with low conformity orientation) could be argued as somewhat similar to confirmation in the sense that it: (a) communicates to children that their thoughts and perceptions of the world matter (similar to acceptance components), and (b) encourages children to express feelings and opinions, even when they are negative and different from their parents' (similar to challenge components). On the other hand, conformity orientation (especially when combined with low conversation orientation) could be argued as somewhat disconfirming in nature in the sense that this orientation stresses homogeneity in thoughts, ideas and beliefs among family members. Conformity orientation does not communicate that children's unique opinions and thoughts matter (similar to low

acceptance) and instead discourages children from expressing negative feelings and thoughts (similar to low challenge).

Three published studies examined how college students' perceptions of family communication patterns are related to their body image (Botta & Dumlao, 2002; Miller-Day & Marks, 2009; Sheldon, 2013). These studies demonstrated that body image problems (e.g., maladaptive eating) were inversely associated with fathers' conversation orientation, and was positively related to fathers' conformity orientation among undergraduate students (Botta & Dumlao, 2002; Miller-Day & Marks, 2009; Sheldon, 2013). One of the key conclusions drawn from these three studies is that high conversation orientation (argued to be similar to confirmation) seems to be conducive to the development of healthy body image, whereas conformity orientation (argued to be similar to disconfirmation) is related to negative body image and problematic eating behaviors.

Taken together, the combination of high acceptance and high challenge is hypothesized to create optimal body image development in children. Put differently, a combination of high acceptance and high challenge should be associated with the healthiest body image in children, compared to other combinations of acceptance and challenge (i.e., low acceptance and low challenge, low acceptance and high challenge and high acceptance and low challenge). The following hypothesis is added:

H2: Acceptance and challenge interact to predict body image in emerging adults, such that a combination of high acceptance and high challenge is related to the healthiest body image.

## **POTENTIAL MEDIATORS: SOCIAL COMPETENCE AND SELF-CONCEPT**

Even though there is relatively clear evidence of the link between family-of-origin experience and children's development of body dissatisfaction and eating problems, the mechanism through which how family experience come to impact children's body image is less clear. This project selects two concepts that are most relevant to parental confirmation and body image as potential mediators: social competence and self-concept.

### **Social Competence**

#### *Definition of social competence*

Because the conceptualization of social competence is elusive, it is important to address its definition before detailing the potential role of social competence as a mediator. Despite the long history of scholarly interest in the concept of social competence, there is little consensus regarding its definition. Social competence is synonymous with a number of different terms such as social skills, interpersonal skills, interpersonal competences, and communication competences. These terms are often used interchangeably, and the definition of the term is inconsistent across the authors. The same term is used by different authors to represent different phenomenon, and different terms are used by different authors when they actually refer to similar phenomena (Spitzberg & Cupach, 1989, 2011). It is not surprising that many scholars have noted the lack of consensus in terminology (e.g., Rose-Krasnor, 1997; Spitzberg & Cupach, 1989, 2011).

Using the definition by Rubin and Rose-Krasnor (1992), this study defines social competence as “the ability to achieve personal goals in social interaction while

simultaneously maintaining positive relationships with others over time and across situations” (p. 285). In this project, social competence is considered synonymous with interpersonal competence (consistent with other scholars, such as Spitzberg and Cupach, 1984, 1989, 2011). Even though some scholars have attempted to distinguish social competence from social skills (e.g., Rose-Krasnor, 1997; Spitzberg, 2003), which can be defined as more specific behaviors that make up social competence (Spitzberg & Cupach, 1989, p. 8), these distinctions have rarely been recognized in the literature (Segrin, 2000). Unless otherwise specified, the current review uses the term social competence as a general term (in the broadest sense) that subsumes most other specific approaches to social competence (e.g., social skills).

There are various components in social competence including perspective taking (Long & Andrews, 1990; Schröder, Abé, & Schütz, 2011), regulating emotions (Mills & Rubin, 1993) and managing conflict (Buhrmester, Furman, & Wittenberg, 1988). Different competencies are required depending on the different contexts and stages of the relationship (Lipton & Nelson, 1980). Previous scholars argued that social competence is best assessed by incorporating several aspects (Raver & Zigler, 1997; Rose-Krasnor, 1997). Accordingly, the current study incorporates three aspects into the broad construct of social competence: (a) competence in specific interpersonal contexts, (b) communication apprehension, and (c) relationships with others. The first aspect, competence in specific interpersonal contexts, assesses individuals’ perceptions of their own competence in five different domains (i.e., relationship initiation, self-disclosure, assertion, support provision, and conflict management) that are necessary for the

development and maintenance of meaningful interpersonal relationships (Buhrmester et al., 1988). The second aspect of social competence, communication apprehension, assesses how anxious or comfortable one feels in interpersonal situations.

Communication apprehension taps motivational and affective factors that are important in facilitating or hindering social competence (Spitzberg & Cupach, 1989, 2011). If people feel unmotivated or anxious in social situations, even people with good abilities or skills may not feel or come across as very competent. Therefore, how anxious or comfortable individuals are in social situations provides important information in understanding their level of social competence. Finally, relational perceptions are one of the relevant and common ways to operationalize social competence (e.g., Arroyo & Segrin, 2013; Rose-Krasnor, 1997). Therefore, this study assesses individuals' experience of their current interpersonal relationships (e.g., satisfaction) as a third aspect of social competence.

### ***Confirmation and social competence***

Confirmation theory predicts that parental confirmation facilitates children's practice and mastery of skills, and thus promotes development across a number of domains (Dailey, 2005), including social domains. The individual roles of acceptance and challenge, and their potential interactive roles, will be addressed below.

***Acceptance.*** Because acceptance provides a safe and supportive environment for children to explore different ideas, and to practice skills to communicate their emotions, ideas, and thoughts, it can be argued that parental acceptance fosters children's development of social competence. Moreover, repeated parental understanding, support, and nurturance should help children develop a positive orientation towards the world,

which, in turn, may lead to feeling comfortable and confident in social interactions.

Therefore, parental acceptance should facilitate social competence.

Relevant here are Wichstrom and his colleagues' studies (Wichstrom, Holte, Husby, Wynne 1993; Wichstrom, Holte, Husby, & Wynne 1994; Wichstrom, Anderson, Holte, & Wynne, 1996) which first examined the role of parental confirmation in children's social competence. It is important to note that confirmation in their studies focused on the degree to which parents accepted or ignored/rejected the self-definition of children (based on Watzlawick et al.'s, 1967 conceptualization). Confirmation, in their studies, thus involved acceptance of children's utterances as a valid expression of their perception, cognition, and emotion. Therefore, this project situates Wichstrom et al.'s work as research providing information about parental acceptance (rather than parental confirmation, which includes both acceptance and challenge as conceptualized in the current study). Wichstrom et al. showed that parental confirmation was linked to children's social competence and development. They argued that parents' confirming responses may foster a belief in children's "capacity to communicate, relate, think, feel and perceive" (Wichstrom et al., 1993, p. 3). However, their studies largely focused on at-risk children, one of whose parents was an inpatient of psychiatric treatment; thus, it is unclear if the findings are applicable to children of non-clinic parents. Moreover, child competencies in different dimensions (e.g., social, academic, and cognitive competences) were aggregated into one score making it impossible to identify the effect of parental confirmation particularly on social competence. Yet, the research by Wichstrom and colleagues provides at least initial evidence that parental confirmation (with an emphasis

on acceptance) is beneficial for children's development in social domains, including social competence.

Attachment literature, although indirectly, also provides evidence suggesting a positive association between parental acceptance and children's social competence. As previously argued, parental attachment is somewhat similar to parental acceptance. Studies found that parental attachment is related to social competence among children (Cohn, 1990), adolescents (Rice, Cunningham, & Young, 1997) and young adults, including college students (Kenny & Donaldson, 1991; Mallinckrodt, 1992; Rice et al., 1997). Securely attached children report higher social self-efficacy (Mallinckrodt, 1992), and are better liked and rated as more socially competent by teachers and friends compared to insecurely attached counterparts (Cohn, 1990). This suggests that an accepting climate (that allows for a secure attachment) is linked to greater social competence in children.

Other studies that examined concepts resembling parental acceptance also showed similar findings. Bell, Avery, Jenkins, Feld and Schoenrock (1985) showed that perceived emotional closeness to parents was associated with greater social competence among a sample of college freshman students. Similarly, Mallinckrodt (1992) found that greater levels of both maternal and paternal care (e.g., emotional responsiveness) recalled by male and female college students were associated with higher social self-efficacy. Based on the reasoning and indirect evidence above, the following hypothesis is proposed:

H3: Parental acceptance is positively related to social competence in emerging

adults.

**Challenge.** Similar to the predictions about the link between challenge and body image, there are at least two different predictions regarding the nature of the relationship between challenge and social competence. The first prediction is that parental challenge should be positively related to social competence. There are several potential reasons that parental challenge might foster the development of social competence as discussed by Dailey (2008b). For example, challenging parents coach their children through negative emotions such as anger and sadness by helping them to understand these negative emotions, to channel these emotions, and thus to cope with these emotions in a more socially appropriate manner. Children who are regularly challenged should have a better understanding of their internal experience of emotions, and how to regulate these emotions, and should therefore be able to navigate interpersonal relationships, especially when emotionally challenging situations arise. In fact, emotional regulation is one of the key components for successful interpersonal relationships (Lopes et al., 2004; Lopes, Salovey, Cote, & Beers, 2005).

In addition to coaching children through negative emotions, challenging parents also help children cultivate an ability to articulate their thoughts, needs and requests as well as to provide logical reasoning behind them and defend them when necessary. Children in challenging environments are also encouraged to explore different ideas and experiences. Such an orientation could help children increase social skills, especially in terms of developing a broad response repertoire when interacting with others. Challenging parents also push children to consider other people's perspectives, which is

another key component of successful interpersonal relationships (Long & Andrews, 1990; Schröder et al., 2011). Finally, because challenging parents hold children responsible for their own decisions and actions, these children will learn to think and behave in a socially appropriate manner. Taken together, one can argue that parental challenge should foster social competence.

A second potential prediction is that challenge alone might even have a negative impact on children's development of social competence (i.e., main effect of challenge). When parents repeatedly push and challenge their children without expressing love, understanding, and nurturance, children might feel criticized and not trusted as competent and capable. Children might come to believe that parental challenge reflects incompetence on their part—their parents push them because they are simply not good enough. For instance, one example of parental challenge is making children deal with the consequences of their decisions and actions. When children make a mistake, and when parents make them face the negative consequences of such a mistake with little or no support and warmth, these children might perceive such parental behaviors as harsh and cold. It is well documented that harsh parenting styles, especially authoritarian parenting, are associated with negative child outcomes (Bronte-Tinkew, Moore, & Carrano, 2006), including poor social competences (Hart, Newell, & Olsen, 2003), aggression, lower peer acceptance (Chen, Dong, & Zhou, 1997), and social anxiety (Klonsky, Dutton, & Liebel, 1990). As another example, when parents encourage their children to navigate their negative emotions to something more positive without expressing understanding and love, children might interpret this parental behavior as motivated by parents' self-interest

(e.g. as a strategy to avoid dealing with children's negative emotions). These children might not be able to truly understand and manage negative emotional experiences in a constructive manner, which, in turn, might hamper the development of social competence. Because there are two opposing possibilities, the following research question is posited:

RQ2: How is parental challenge related to social competence in emerging adults?

*Interaction between acceptance and challenge.* As addressed earlier, the effects of acceptance and challenge might be interactive, rather than additive. High acceptance and high challenge (i.e., confirmation) should facilitate the optimal development of social competence, compared to other combinations of acceptance and challenge. Research suggests parental behaviors similar to confirmation are conducive to children's development of social competence.

Authoritative parenting style (i.e., the parenting style that is most similar to confirmation) is associated with the most optimal child outcomes including social and communication skill (Hart et al., 2003; Lamborn, Mounts, Steinberg, & Dornbush, 1991). For instance, Chen et al. (1997) reported that authoritative parenting was related to indices of social competence (e.g., peer acceptance, sociability competence rated by peers) whereas authoritarian parenting was negatively associated with these indices among Chinese children. Moreover, Gunnoe, Hetherington, and Reiss (1999) found that authoritative parenting was related to adolescents' social responsibility.

Similarly, a relatively large body of parenting literature suggests that other types of positive parenting practices (e.g., affection expression, being consistent with family

rules), which can be argued to be similar to confirmation, are related to later social competence in childhood (Booth, Rose-Krasnor, & Rubin, 1991; Freitag, Belsky, Grossmann, Grossmann, & Scheuerer-Englisch, 1996; Rice, 1990; Sroufe, Egeland, & Kreutzer, 1990) and even in adulthood (Burt, Obradovic, Long, & Masten, 2008; Shaffer et al., 2009). For instance, positive perceptions of general family quality, including parental support, affection, connectedness, autonomy encouragement, or a combination of these were associated with social competence (e.g., social self-efficacy and social adjustment) among adolescents (Engels, Deković, & Meeus, 2002; Laible & Carlo, 2004) as well as among college students (Rice et al., 1997; Schoenrock, Bell, Sun & Avery, 1999).

Several communication studies using FCPs also suggest similar findings. As mentioned earlier, conversation orientation is conceptually similar to confirmation in that both confirming parents and parents with high conversation orientation encourage children to express thoughts and ideas, even if they are different from the parents'. FCPs literature, though indirectly, supports that confirming environments foster children's social competence. Key findings from the FCPs literature is that high conversation orientation, especially in the presence of low conformity orientation, was associated with indices of social competence (Koesten, 2004), such as sociability (Huang, 1999), relationship maintenance behaviors and relationship closeness (Ledbetter, 2009), and conflict management skills (Koerner & Fitzpatrick, 2002). On the other hand, low conversation orientation, especially in the presence of high conformity orientation, was negatively related to indices of social competence, such as high communication

apprehension (Elwood & Schrad, 1998; Hsu, 1998), verbal aggressiveness (Schrodt & Carr, 2012), social withdraw (Fitzpatrick et al., 1996), and reticence (Kelly et al., 2002). Therefore, these studies suggest that parents who encourage children to discuss their unique emotions, thoughts, and ideas in a warm and supportive environment will facilitate children's social competence.

Taken together, children who are repeatedly confirmed (with high acceptance and high challenge) should be more likely to develop a positive orientation toward the world, feel confident, and perform competently in social situations. Repeatedly confirmed children should be able to recognize emotional experiences, navigate negative emotions, articulate and defend their perspective when necessary, develop a wider variety of perspectives, be able to take others' perspectives, and behave in a socially responsible way. In general, they should be better able to successfully navigate social interactions. Taken together, it is reasonable to argue that acceptance and challenge interact in such a way that a combination of high acceptance and high challenge is associated with the highest level of social competence. The following hypothesis is thus proposed:

H4: Parental acceptance and challenge interact to predict social competence, such that a combination of high acceptance and high challenge is related to the highest level of social competence in emerging adults.

### ***Social competence and body image***

Body image literature suggested the link between poor social competence and negative body image. Cross-sectional studies have found that people with problematic eating behaviors have poor social competence, reported by themselves as well as

evaluated by observers, compared to those without problematic eating behaviors. For example, Grisset and Norvell (1992) found that, compared to healthy women, bulimic women reported experiencing more negative interactions and conflict, perceiving less social support from peers and family, and feeling uncomfortable and incompetent in social situations. Moreover, observers rated bulimic women as less socially effective during a social interaction with a confederate. In another study, McFall, Eason, Edmondson, and Treat (1999) argued that social competence is an important antecedent of problematic eating behaviors. McFall et al. (1999) developed the Anorexia and Bulimia Problem Inventory (ABPI), which assessed interpersonal problem-solving competence in different contexts (e.g., rejection by men, conflict with female peers). They found that the ABPI scores differentiated three groups (clinical, subclinical, and control samples of college women), with the clinical group scoring the lowest, the subclinical group in the middle, and the control group scoring the highest. Similarly, Ferrier and Martens (2008) found that disordered eating among male and female college students was associated with their perceived incompetence in social domains.

Literature also suggests that people with negative body image suffer from fear and anxiety in social situations and relationships. People with body dissatisfaction and eating problems often express fear of intimacy (Pruitt, Kappius, & Gorman, 1992) and abandonment (Becker, Bell, & Billington, 1987; Heesacker & Neimeyer, 1990). In their survey among male and female college students, Cash, Theriault, and Annis (2004) found that greater fear of negative evaluation was associated with more negative body image (i.e., greater levels of body dissatisfaction, dysfunctional investment in appearance, and

negative emotions associated with one's body). Similarly, Striegel-Moore, Silberstein, and Rodin (1993, Phase 1) found that non-clinical women who reported greater social anxiety, public self-consciousness, and feeling oneself as a social impostor also reported greater body dissatisfaction.

People with negative body image also report poor quality of, and low satisfaction with, interpersonal relationships (for a review, see Cash & Fleming, 2002). For instance, adolescents who expressed negative body image and eating problems also reported negative qualities in relationships with peers, such as conflict, alienation, and not having friends they can count on (Davison & McCabe, 2006; Schutz & Paxton, 2007). Similarly, adolescent girls' body image concerns (i.e., body fatness, body disparagement, salience of weight and shape) were predicted by their perception of low degrees of peer acceptance, social support from peers, and friendship intimacy (Gerner & Wilson, 2005). A study with first-year female university students found that poor social adjustment to the university (e.g., establishment of close social relationships and involvement in social activities) was associated with an increased likelihood of reporting symptoms of binge eating (Barker & Galambos, 2007). Finally, studies consistently find that individuals with body image concerns and/or eating problems also report perceiving low social support availability from peers and relatives (Gerner & Wilson, 2005; Grissett & Norvell, 1992; Rorty, Yager, Buckwalter, & Rossotto, 1999) and often fail to seek support (Ghaderi & Scott, 2000).

In sum, cross-sectional studies have found that individuals with body dissatisfaction and eating problems often express difficulties in interpersonal

relationships. These studies demonstrate that body dissatisfaction and/or eating problems occur alongside interpersonal difficulties. Such interpersonal difficulties might be a reflection or manifestation of poor social competence.

There are at least two related explanations for why poor social competence might be related to negative body image. First, individuals with limited social competence lack self-efficacy for desired social outcomes and the ability to build a social network to garner social support in coping with stress (Mallinckrodt et al., 1995). These individuals are likely to experience an array of psychological problems including low self-esteem, loneliness, and depression (Arroyo & Segrin, 2013; Segrin, 2001). Arguably, such negative psychological states might transfer to the domain of appearance. In fact, psychological distress (low self-esteem, depression) prospectively predicted negative body image and eating problems (Button, Sonuga-Barke, Davies, & Thompson, 1996; Paxton, Eisenberg, & Neumark-Sztainer, 2006; but see Tiggemann, 2005 for the opposite direction).

A second reason why individuals with limited social competence tend to experience negative body image might be because of their misguided belief that attaining socially idealized bodies will lead to successful interpersonal relationships. Individuals with limited social competence, by definition, have difficulties in developing and maintaining socially rewarding close relationships. Because a sense of belonging or social connection is one of the most fundamental human needs (Bowlby, 1969; Maslow, 1955), these individuals might, knowingly or unknowingly, attempt to improve interpersonal relationships and reconnect with others. When individuals lack (or believe

they lack) social competence, they might attempt to improve interpersonal relationship through other means—namely, by attaining socially idealized bodies.

Physical attractiveness is often presented as a key ingredient of interpersonal success in our society. For instance, being thin is often equated with women's success and happiness in the media (Abbott, 2001; Abbott & Goodheart, 2011). Advertisements depict psychically attractive models who appear to be happy, smiling, and being surrounded by friends and romantic partners. This can lead individuals, especially those who experience interpersonal difficulties, to believe that attaining an ideal body will bring interpersonal success. In fact, adolescent girls who perceive low acceptance from peers tend to believe that being thinner will lead to an improvement in friendships (Gerner & Wilson, 2005). Such a belief that equates idealized body size/shape and interpersonal improvement might orient individuals with limited social competence toward a desire to attain idealized bodies. Because the societal standard of thinness (for women) and muscularity (for men) is unrealistically elevated beyond attainment for the vast majority of individuals (Tiggmann, Gardiner, & Slater, 2000; Tiggemann & Pickering, 1996), such a desire is likely to result in dissatisfaction with one's own body and even dysfunctional weight control behaviors (Dobmeyer & Stein, 2003; Duggan & McCreary, 2004). In fact, Budd (2007), who conducted interviews with 15 college females expressing concerns about eating behaviors, found that these females reported engaging in disordered eating behaviors when feeling isolated and disconnected from others and out of control in their lives as a means to regain a sense of control and social connection. In sum, based on the evidence and reasoning above, limited social

competence (and thus interpersonal difficulties) is likely associated with negative body image. The following hypothesis is thus added:

H5: Social competence is positively associated with healthier body image in emerging adults.

***Mediating role of social competence between confirmation and body image***

The ultimate purpose of this study is to test if social competence mediates the relationship between parental confirmation and body image. At least three studies have examined this potential, and generally supported the mediating role of social competence. Mallinckrodt and his colleagues (Mallinckrodt 2000, 2001; Mallinckrodt, McCreary, & Robertson, 1995) argued that family dynamics directly and indirectly impact children's psychological problems, especially eating disorders, through social competence. Mallinckrodt et al. (1995) hypothesized that dysfunctional family environments lead to insecure childhood attachment, resulting in a deficit in the social competencies that are necessary to develop satisfactory and supportive relationships in adulthood. Mallinckrodt and his colleagues demonstrated that individuals with an insecure childhood attachment possess poorer social support availability and fewer coping resources (Mallinckrodt, 1992, 2000, 2001; Mallinckrodt et al., 1995). They argued that when stressful events such as job loss occur, people with limited social skills cannot garner social support from interpersonal relationships, and thus are more vulnerable to the impact of the stressor (Mallinckrodt, 2000, 2001; Mallinckrodt et al., 1995). They maintained that increased vulnerability to stressors leads to a greater likelihood of psychological and physiological

symptoms including eating disorders (Mallinckrodt, 2000, 2001; Mallinckrodt et al., 1995).

Mallinckrodt et al. (1995) tested this hypothesized model using a sample of women who are receiving treatment for childhood sexual abuse (i.e., incest survivors), and female college students (i.e., non-abused women). Social competence was assessed by social network size, social intimacy, perceived social support availability, and adult attachment (comfort with relying on others and intimacy as well as fear of being abandoned in a relationship). Compared to non-abused women, incest survivors reported greater dysfunctional family environments (e.g., low expressiveness, high conflict) and parental bonds (low care and high control), and lower social competence. Interestingly, the level of social competence separated incest survivors with eating disorders from their counterparts without eating disorders. Incest survivors who developed eating disorders reported less emotional self-awareness, perception of limited social support availability, and smaller social networks than did survivors without eating disorders. Moreover, survivors with eating disorders reported more fear of being abandoned in relationships, less willingness to depend on others, and more discomfort with getting close to others.

Even though Mallinckrodt et al.'s (1995) findings supported all of the hypothesized links of the model, caution has to be taken to interpret the findings of a mediating role of social competence. Statistical analyses Mallinckrodt et al. (1995) employed were based on group comparisons. As Mallinckrodt et al. (1995) pointed out themselves, in order to more accurately examine the potential mediating role of social competence between family dynamics and body image concerns, path analyses or

structural equation modeling needs to be employed.

Although the original focus of Mallinckrodt et al.'s (1995) study centered on clinical populations, this model might also be applied to non-clinical populations. To the best of the author's knowledge, two empirical studies (Arroyo & Segrin, 2013; Taniguchi & Thompson, 2015) have tested Mallinckrodt et al.'s (1995) model. Arroyo and Segrin (2013) examined this model using a sample of female college students. In their study, social competence was assessed by positive relations with others, self-rated social skills, and participants' social skills rated by their mothers. Results from structural equation modeling supported the hypothesized model. Problematic interaction patterns in families (i.e., emotional over-involvement and criticism) were related to daughters' low social competence, and low social competence was associated with psychological distress, which, in turn, was related to disordered eating attitudes (e.g., self-perceptions of body shape, dieting behaviors).

Taniguchi and Thompson (2015) tested whether the perception of social competence mediates the relationship between perceptions of parents' family communication patterns (FCPs; Fitzpatrick & Ritchie, 1994; Ritchie & Fitzpatrick, 1990) and body dissatisfaction among female college students. The structural equation modeling partially supported the hypothesized model. Perception of mothers' conversation orientation was positively associated with females' social competence, which, in turn, was negatively related to their body dissatisfaction. It was also found that the combination of high maternal conversation and low maternal conformity orientation was associated with the greatest social competence, which, in turn, was related to lowest

body dissatisfaction. As for fathers' communication patterns, only fathers' conversation orientation was directly and negatively related to daughters' body dissatisfaction without being mediated by social competence.

Combined, the research reviewed above suggests that social competence can be an important component explaining the influence of family-of-origin experiences on body image. Based on this evidence, it is hypothesized that parental confirmation is related to children's social competence, which, in turn, is related to body image. More specifically, based on the reasoning detailed previously, greater parental acceptance is hypothesized to be related to greater social competence, which, in turn, is related to healthier body image. Because the nature of the main effect of challenge is not clear, the current study poses the question of whether social competence mediates the association between challenge and body image. Finally, this project hypothesizes that the combination of high acceptance and high challenge is related to the greatest degree of social competence, which, in turn, will be related to the healthiest body image compared to other combinations of acceptance and challenge.

H6: Social competence mediates the association between parental acceptance and body image in emerging adults.

RQ3: How, if at all, does social competence mediate the association between parental challenge and body image in emerging adults?

H7: Social competence mediates the association between the interaction of parental acceptance and challenge and body image in emerging adults.

## **Self-concept (Self-identity and Self-esteem)**

### ***Definition of self-concept***

Self-concept is a multi-faceted concept that consists of a wide variety of domains such as creativity, academic ability, and athletic competence (Marsh & O'Neill, 1984; Oyserman, 2007; Shavelson & Bolus, 1982; Shavelson, Hubner, & Stanton, 1976). Self-concept can be also assessed at a more global/general level (Marsh & O'Neill, 1984). The current study examines two aspects of self-concept that are most relevant to the literature of confirmation and body image: self-identity and self-esteem. Therefore, the term self-concept specifically refers to self-identity and self-esteem in this discussion. Self-identity is conceptually embedded in self-concept (Oyserman, Elmore, & Smith, 2012), and it refers to a stable, coherent and integrated sense of self (Erikson, 1968). Self-esteem refers to an overall evaluation of one's worth or value (Harter, 2002, 2012; Rosenberg, 1979).

### ***Confirmation and self-concept***

Confirmation is thought of as a key to understanding oneself, as well as obtaining optimal growth (Buber, 1965; Watzlawick et al., 1967). Confirmation theory predicts that parental confirmation promotes children's self-concept development (Dailey, 2005). Because parental confirmation validates children's self-definition and expression, confirmation should be directly related to a positive development of self-concept (i.e., stronger self-identity and greater self-esteem in this project).

Earlier confirmation scholars argued for the importance of confirmation in children's development of self-identity. Buber (1965) argued that confirmation allows

individuals to feel encouraged to realize their own true identity. Confirming messages recognize a person as an agent, rather than an object (Laing, 1994), and endorse the other's self-definition (Sieburg, 1985). In a confirming climate, children's utterances are taken as a valid expression of their perception, emotion, or cognition. When parents communicate to their children that they accept the way their children perceive the world around them (even though this does not mean parents agree with children's ways of perceiving), children are able to think their experiences and perceptions are valid (Sieburg, 1976).

In contrast, children who are repeatedly disconfirmed experience a false sense of self that conforms to another's perspective (Laing, 1961). Laing (1961) suggested that repeatedly disconfirmed children are likely to distrust their own interpretation of the world. Providing examples from direct observations of schizophrenic families, Laing (1961) argued that the failure to be recognized as agents hampered these children's development of a sense of individual thinking. Disconfirming environments prevent children from freely exploring their thoughts and characteristics, thus stifling a sense of who they are and what they want to become. In sum, such disconfirming environments would lead to underdeveloped identities in children (Buber, 1965; Laing, 1965).

In addition to the development of self-identity, parental confirmation should be also important for children to develop a positive view toward themselves (i.e., self-esteem). Confirming behaviors should evoke feelings that one is worthy, valued, and a capable human being. Therefore, frequent parental confirmation should lead children to develop positive evaluations toward themselves. Conversely, disconfirmation

communicates to children that they are objects (as opposed to agents) who are unworthy of care and attention, and whose interpretations of the world do not matter. In this sense, parental disconfirmation can lead children to develop negative views toward themselves.

Because the current study conceptualizes confirmation as involving acceptance and challenge, the following review addresses individual and interactive contributions of acceptance and challenge to children's self-concept.

*Acceptance.* Available evidence demonstrates that greater parental acceptance is associated with more positive development of children's self-concept (i.e., stronger self-identity and greater self-esteem). At least three studies using the Parent Confirmation Behavior Indicator (PCBI; Ellis, 2002) suggested such an association. Ellis (2002) found that college students who reported greater parental confirmation also reported greater global self-worth. Similarly, Schrodtt, Ledbetter, and Ohrt (2007) found greater perception of mothers' and fathers' confirmation was associated with greater self-esteem among college students. Finally, Dailey (2009) found that perception of both parents' confirmation was positively related to adolescents' self-esteem, identity strength, and autonomy. As mentioned earlier, because Ellis' (2002) PCBI mainly tapped the acceptance dimension of confirmation, these three studies cited above suggest that parental acceptance is beneficial to children's self-concept.

In addition, a relatively large body of developmental literature demonstrates that parenting behaviors proximal to acceptance –warm, loving, and supportive parenting – foster children's development of self-concept, including self-esteem (Forsman, 1989; Sillick & Schutte, 2006) and self-identity strength (Sartor & Youniss, 2002). In fact, the

Dailey and colleagues' studies cited earlier showed that parental acceptance was associated with self-concept (e.g., self-esteem, identity strength, and autonomy) in children (Dailey, 2008b, 2010; Dailey, Imai et al., 2010). Based on this reasoning and evidence, the following hypothesis was created:

H8: Parental acceptance is positively associated with self-concept (i.e., self-identity and self-esteem) in emerging adults.

*Challenge.* Again, it is relatively less clear how parental challenge is related to children's self-concept. Similar to the earlier argument, at least two different predictions can be made. The first prediction argues that challenge, even in the absence of acceptance, is beneficial for children to develop self-concept. In other words, greater challenge should be related to positive self-concept even after controlling for acceptance. This prediction is based on the assumption that children who are pushed and challenged might have enough chance to explore their potential and eventually develop a strong sense of who they are, who they want to become, as well as positive regard toward themselves. Some research shows a main effect of challenge in predicting children's self-concept (Dailey, 2008b, 2010; Dailey, Imai et al., 2010). Dailey (2008b) reported that perception of parental challenge was associated with greater levels of self-esteem and self-identity in college students, even after controlling for other parenting components, including acceptance. Dailey (2010) found that when acceptance and challenge of both parents were entered into the same analysis, mother challenge (as well as father acceptance) was associated with self-concept (e.g., self-esteem and self-identity) in adolescents. Finally, Dailey, Imai et al. (2010) found that mother challenge, but not

mother acceptance, was a significant predictor of college students' self-esteem.

The second prediction is that challenge alone has a negative impact on children's development of self-concept. That is, challenge might be negatively related to self-esteem (i.e., the main effect of challenge). As delineated in the earlier sections, children might interpret parental challenge in absence of acceptance as a reflection of deficiency on their own part, thus leading to lower self-esteem.

Because of the conflicting potential predictions, the following research question is posited:

RQ4: How is parental challenge associated with self-concept (i.e., self-identity and self-esteem) in emerging adults?

***Interaction effect between acceptance and challenge.*** In addition to the separate effects of acceptance and challenge, these two components are hypothesized to interact with each other. With both high acceptance and high challenge, one component should reinforce the effect of the other. Only two studies (Dailey, 2008b, 2010) among the three studies cited above examined this interaction effect, and the results are somewhat mixed. Dailey (2008b) demonstrated initial evidence of the reinforcing effect of the combination of high acceptance and high challenge. Interaction between acceptance and challenge predicted identity strength even after controlling for the individual effects of acceptance and challenge. As expected, the combination of high acceptance and high challenge was associated with the greatest level of identity strength among college students.

On the other hand, Dailey (2010) reported no evidence of interaction between maternal acceptance and maternal challenge, as well as between paternal acceptance and

paternal challenge, in predicting adolescents' self-concepts (i.e., self-esteem, identity strength, and autonomy). However, the same study found that siblings' acceptance and sibling's challenge interacted such that the combination of high acceptance and high challenge was related to the highest level of self-esteem. Even though the available findings are mixed, there is a good theoretical reason to expect an interactive effect between acceptance and challenge. Therefore, the hypothesis below is posited:

H9: Parental acceptance and challenge interact to predict self-concept such that a combination of high acceptance and high challenge will be related to strongest self-concept (i.e., self-identity and self-esteem) in emerging adults.

### ***Self-concept and body image***

Literature suggests the important role of both self-identity and self-esteem in the development and maintenance of body dissatisfaction and eating problems. The first and second halves of this subsection provide a literature review of the respective roles of self-identity and self-esteem in body image problems.

Bruch (1979, 1981, 1982) argued that individuals who lack a clear and strong sense of identity are more inclined to turn to body weight to compensate for the associated feelings of powerlessness. Bruch (1973) also suggested that difficulty in distinguishing and describing one's feelings is often observed among patients with eating disorders, suggesting a link between feeling uncertain about one's internal experience and eating disordered symptoms.

Bruch's (1973, 1981, 1982) theoretical speculation of identity impairment in the development of eating disorders mainly concerned individuals who had developed

pathological eating disorders, but several studies provide evidence consistent with Bruch's speculation in non-clinical samples as well, including college students. A lower level of self-concept clarity was related to body image concerns and dieting behaviors among female college students through thin-ideal internalization as well as appearance-related social comparisons (Vartanian, 2009; Vartanian & Dey, 2013). Other problems surrounding identity, such as identity confusions (i.e., a sense of confusion and inconsistency in individuals' ideas of who they are), diffuse-avoidance identity style (i.e., tendency to avoid the identity crisis), and lack of identity commitment (i.e., avoidance of making commitments associated with identity development), were related to body dissatisfaction and disordered eating among college students (Perry et al., 2008; Schupak-Neuberg & Nemeroff, 1993; Wheeler, Wintre & Polivy, 2003; Wolf & Crowther, 1983).

Most research on the link between identity strength and negative body image has focused on females. Yet, available evidence suggests that identity issues also play an important role in males' body image. For instance, Kamps and Berman (2011) found that identity distress (i.e., being distressed over identity issues in various domains including values and beliefs and long-term goals) was a significant predictor of college students' body image concerns (i.e., appearance evaluation and body area dissatisfaction). This association persisted even after controlling for the effect of sex, suggesting that the link between identity strength and negative body image exists for both males and females.

The reason why weak identity is related to negative body image might be because those with weak identities tend to rely on socially subscribed standards of attractiveness in an effort to search for selfhood. For both men and women, societal standards of

attractiveness is an easily accessible, external source that can be utilized to guide them in defining the self, given the inundation of idealized body images in the media. In fact, research found that individuals with a weak sense of identity are more likely to internalize such societal standards of attractiveness (e.g., Dittmar, 2009; Vartanian, 2009; Vartanian & Dey, 2013) and/or engage in appearance-related social comparison (Cahill & Mussap, 2007; Stice, 1994; Vartanian & Dey, 2013), perhaps in an effort to define the self. Not surprisingly, both the internalization of socio-cultural ideals as well as appearance-related social comparison are associated with body image dissatisfaction (Botta, 2003; Stormer & Thompson, 1996; Thompson & Stice, 2001). Thus, it makes sense that an under-developed self-identity increases the risk of developing negative body image through the internalization of socially subscribed bodies and social comparison.

In sum, regardless of its specific mechanism, literature provides reasoning and evidence to suggest the link between identity strength and body image. Individuals who lack a strong sense of self might be more inclined to rely on culturally prescribed ideals of attractiveness to help them find their sense of identity. Consequently, these individuals may experience negative body image.

In addition to the link between identity strength and body image, the association between self-esteem and negative body image is well-established (see O’Dea, 2012 for a review) in correlational studies among children (Frost & McKelvie, 2004), adolescents (Horn, Newton, & Evers, 2011; van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010), colleges students (Mercurio & Landry 2008; Shea & Pritchard, 2007; Tylka & Sabik, 2010), and older adults (Davison & McCabe, 2006). Such an association

is observed regardless of sex (van den Berg et al., 2010), though the strength of the association is stronger among women than men (Furnham, Badmin, & Sneade, 2002; Grogan, 2006; Wade & Cooper, 1999), perhaps because society attaches value to females' appearances more strongly than males' appearances (Freedman, 1986; Malkin, Wornian & Chrisler, 1999).

The causal direction of this association is mixed and inconclusive, as some research found self-esteem to be a precursor of body dissatisfaction (Park & Epstein, 2013; Paxton, Eisenberg et al., 2006; Wojtowicz & Ranson, 2012), whereas others found the opposite directionality, demonstrating that body dissatisfaction temporarily preceded self-esteem (Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006; Tiggemann, 2005). However, regardless of the directionality of the relationship between self-esteem and body image, there is strong evidence of the link between low self-esteem and negative body image. Taken together with the earlier argument about self-identity, the present study predicts that poor self-concept (i.e., weak self-identity and low self-esteem) is associated with negative body image. On the contrary, healthy self-concept (i.e., strong self-identity and high self-esteem) are likely related to healthier body image. The following hypothesis is added:

H10: Strength of self-concept (i.e., self-identity and self-esteem) is positively associated with healthier body image.

***Mediating role of self-concept between confirmation and body image***

The final purpose of this study is to examine if self-concept mediates the relationship between parental confirmation and body image in children. As delineated

earlier, confirmation should facilitate the development of self-concept (strong self-identity and high self-esteem). Individuals who feel certain and positive about themselves might be less vulnerable to socio-cultural messages highlighting the beauty ideal (i.e., a thin body for females and a muscular body for males). These individuals might have little need to turn to outside criteria regarding attractiveness ideals in an effort to define and feel better about themselves. A strong self-identity and high self-esteem might reduce the likelihood that individuals internalize appearance ideals and engage in appearance-related comparisons. As a result, individuals with strong self-concepts and high self-esteem might be able to develop and maintain positive body image.

On the other hand, when children are repeatedly disconfirmed, they likely develop a weak and negative sense of self. Disconfirmation might create a reliance on sources outside of the self in an attempt to define oneself. In fact, Dailey (2005) argued that disconfirmation might serve to create reliance on the source outside of oneself, including parents, peers, and media, for instance. Possessing a weak sense of self may lead individuals to buy into a societal ideal of appearance to obtain a clearer sense of who they are, and this can make these individuals vulnerable to societal pressures to attain ideal bodies. In addition, low self-esteem might lead individuals to view themselves, including their bodies, more negatively. In this sense, a weak self-identity and low self-esteem might place individuals at risk for the development and maintenance of negative body image.

At least two studies provide empirical evidence that strength of self-concept mediates the association between family factors and children's body image (Cella,

Iannaccone, & Cotrufo, 2014; Perry et al., 2008). Perry et al. (2008) found that parental behaviors characterized by low care and high over-protectiveness was related to eating disturbance among college students, and this association was mediated by poor self-concept (i.e., low levels of self-esteem, self-concept clarity and locus of control). Cella et al. (2014) conducted similar research using a larger sample ( $N > 3000$ ) of high school students in Italy. The authors found that students' perceptions of parental behaviors characterized by low paternal care and maternal overprotection was associated with a greater degree of drive for thinness, and that this association was fully mediated by students' self-concept (i.e., aggregate score of self-concept in six specific contexts such as social, family, and academic).

In sum, it is reasonable to expect that self-concept mediates parental confirmation (acceptance and challenge) and body image in children. More specifically, based on the evidence and reasoning provided previously, greater parental acceptance is hypothesized to be related to more positive self-concept (i.e., stronger self-identity and higher self-esteem), which in turn, will be related to healthier body image. Because the role of challenge in body image as well as self-concept is less clear, the current study generates a research question regarding the mediating role of self-concept in the association between challenge and body image. Finally, this project hypothesizes that the combination of high acceptance and high challenge is related to the most positive self-concept (i.e., the strongest self-identity and highest self-esteem), which, in turn, will be related to the healthiest body image compared to other combinations of acceptance and challenge.

H11: Self-concept (i.e., self-identity strength and self-esteem) mediates the association between parental acceptance and body image in emerging adults.

RQ5: Does self-concept (i.e., self-identity strength and self-esteem) mediate the association between parental challenge and body image in emerging adults?

H12: Self-concept (i.e., self-identity strength and self-esteem) mediates the association between the interaction of parental acceptance and challenge and body image in emerging adults.

Hypotheses 1-12 and Research Questions 1-5 are integrated into one model predicting the relationships between parental acceptance and challenge, self-concept (identity strength and self-esteem), social competence, and body image. Please see Figure 1 for the hypothesized model.

### **SEX-SPECIFIC PARENT-CHILD COMBINATION**

Most body image literature examining the role of parent-child interactions assessed only maternal factors (e.g., Byely et al., 2000), or did not distinguish maternal and paternal factors (e.g., Bearman et al., 2006; Fulkerson et al., 2007; Kenny & Hart, 1992; Neumark-Sztainer et al., 2000). It is important to consider each parent's unique contribution to the family environment because children's perceptions of their interactions with fathers and those with mothers often differ. Children reported perceiving their mothers as more caring, supportive, and easier to talk to about their problems, as compared to fathers (Al Sabbah et al., 2009; Archard et al., 2006; Boutelle et al., 2009; Robinson, 1998). Moreover, mothers are often perceived as more accepting than fathers, and fathers are seen as more encouraging of autonomy than mothers (Kenny

& Gallagher, 2002; McCormick & Kennedy, 1994).

Another reason why it is necessary to distinguish parent sex is that interactions with mothers and with fathers may have distinctive influence on children's development, including body image (e.g., Ellis, 2002; Haudek, Rorty, & Henker, 1999), social competence (Laible & Carlo, 2004; Rice et al., 1997) and self-concept (Gecas & Schwalbe, 1986). Put differently, mothers and fathers might have different roles in fostering children's development. For instance, fathers' behaviors may play a more central role in fostering children's self-esteem than mothers' behaviors (Gecas & Schwalbe, 1986).

In addition to parent sex, it is also important to distinguish child sex because daughters and sons might respond differently to parental behaviors. In general, compared to sons, daughters have been found to be more influenced by parent-child relationships (Barker & Galambos, 2003; Hart et al., 1992). Barker and Galambos (2003) found that adolescent daughters who felt accepted by both mother and father reported less body dissatisfaction, but this association was not evident among sons.

Taken together, parent-child interactions are dependent on the sex composition of parent-child dyads. As some family scholars contend (Collins & Russell, 1991; Cowan, Cowan, & Kerig, 1993), family processes can be better understood by specifying the sex of the parental figure, as well as the sex of children. In fact, previous research showed the association between parental factors and child outcomes is dependent on the sex composition of parent-child dyads. For instance, Rice et al. (1997) found that, for undergraduate sons, attachment to fathers (assessed by care and control) was more

strongly linked to social competence than was attachment to mothers, whereas attachment to both mothers and fathers were associated with undergraduate daughters' social competence. For this reason, this project assesses sex-specific combinations of parent-child dyads. The following includes reviews of literature on the roles of parent sex and the role of children's sex on children's outcomes.

### **Parent Sex Effects**

Psychological and developmental literature suggests that mothers and fathers might have a different role in children's development. The relationship between parental behaviors and child outcomes often varies by the specific parental behaviors and outcomes assessed. The following subsection reviews literature on mothers' roles and fathers' roles on children's development in terms of body image, social competence, and self-concept.

#### ***Mothers***

Developmental literature consistently suggests the important role of mother-child interactions in child outcomes (Urry, Nelson, & Padilla-Walker, 2011). Some studies even suggested a stronger impact of mothers over fathers on children's body image, social competence, and self-concept (Haudek et al., 1999; Laible & Carlo, 2004; Swanson et al., 2010). At least two cross-sectional studies (Sira & Ballard, 2011; Taniguchi & Aune, 2013) and one longitudinal study (Beato-Fernández et al., 2004) examined all four combinations of parent-child dyads and suggested stronger maternal influences over paternal influences on both sons' and daughters' body image and disordered eating.

Some argue that mothers might be influential especially to their daughters. These scholars often refer to eating disorder literature that highlights impaired mother-daughter relationships as one of the main factors leading to problematic eating and body image (e.g., Mushquash & Sherry, 2013). The significance of mothers' roles to daughters' body image is also reported among non-clinical samples: Maternal factors (e.g., maternal control, conflict) were associated with body dissatisfaction and weight concerns among adolescent and undergraduate females, but no evidence of such an association was found among adolescent and undergraduate males (Al Sabbah et al., 2009; May et al., 2006; Sira & White, 2010).

The significance of the role of mothers to their daughters might be because mothers, as a same-sex parent, serve as daughters' points of reference as they develop their gender identities (Chodorow, 1978, 2004, 2012; Firestone, Firestone, & Catlett, 2013). Scholars inclined toward this line of thought argue that children are more sensitive to the quality of the interactions with the same-sex parent rather than the opposite-sex parent, especially during adolescence. Therefore, any impairment in a child's relationship with a same-sex parent is hypothesized to lead to negative consequences in the child. (However, there are far fewer studies on father-son interactions, making it difficult to generalize the findings).

### ***Fathers***

Compared to maternal influence, less literature focuses on paternal impacts upon children's development, especially in the field of body image. Yet, some existing studies suggest that fathers do play an important role in children's development of body image

(Al Sabbah et al., 2009; May et al., 2006; Miller-Day & Marks, 2006), social competence (Lam, McHale, & Crouter, 2012), and self-concept (Gecas & Schwalbe, 1986). For example, May et al. (2006) demonstrated that conflict with fathers was linked to weight concerns for both adolescent boys and girls. Al Sabbah et al. (2009) reported that both adolescent boys and girls who expressed difficulties in talking about their problems with their fathers also reported greater body dissatisfaction.

Some studies even suggested that paternal influences might be greater on children's development in certain domains, compared to maternal influences (Lamb & Lewis, 2010; see Khaleque & Rohner 2012 for a meta-analysis). Perceptions of fathers (e.g., support, emotional availability), but not those of mothers, were associated with disordered eating among adolescent and undergraduate daughters (Cole-Detke & Kobak, 1996; McVey et al., 2002; Miller-Day & Marks, 2006). Similar results highlighting the importance of fathers over mothers have been also reported in the domain of children's self-esteem and social competence (Gecas & Schwalbe, 1986; Lam et al., 2012).

Studies cited above suggested the importance of fathers to both sons and daughters. A limited but a growing amount of body image research suggests fathers might be especially influential to daughter's body image. Daughters with eating disorders often report perceiving their fathers as emotionally distant, less caring, and over-protective (Bardone-Cone et al., 2010; Calam, Waller, Slade & Newton, 1990; Enten & Golan, 2009; Kog & Vandereycken, 1989; Pole, Waller, Stewart, & Parkin-Feigenbaum, 1998). Similar findings have been observed among non-clinical samples (for a review, see Gale, Cluett, & Laver-Bradbury, 2013). Undergraduate females'

perception of problematic communication with fathers predicted disordered eating (Kluck, 2008). Sheldon (2013) reported that higher conformity orientation in fathers was related to greater body dissatisfaction among undergraduate daughters (but not among undergraduate sons). One potential reason for the relative importance of fathers over mothers to daughters' body image is provided by Maine (1991, 2004). She argues that because fathers are the closest men among growing daughters, being nurtured and cared for by fathers fosters daughters' feelings of acceptance and attractiveness, which might protect them against a societal pressure to be thin. However, more studies are required to identify specific factors that determine if fathers play a more important role for their daughters.

Considerably less attention has been paid to the role of fathers upon sons' development, especially in the domain of body image. When paternal influences on sons are assessed, it is often centered on the transmission of a socio-cultural ideal of muscularity from fathers to sons through fathers' values, attitudes, and behaviors surrounding body weight and shape (e.g., McCabe & Ricciardelli, 2003; Ricciardelli & McCabe, 2001; Ricciardelli, McCabe, Lillis, & Thomas, 2006) rather than sons' interpersonal experiences with their fathers.

Yet, early clinical evidence shows that impairments in father-son relationships (e.g., conflict and paternal control) are associated with sons' eating disorders (Hamlett & Curry, 1990; Nelson, Hughes, Katz, & Searight, 1999). Available research with non-clinical samples also suggests the role of impaired father-son relationships in sons' body image problems. Adolescent son's negative perceptions of fathers (e.g., high control, low

care, and low intimacy) were related to concerns over food and dieting, muscle preoccupation, and unhealthy weight control behaviors (Archard et al., 2006; Meester et al., 2007; Mueller et al., 1995).

Taken together, the literature has produced somewhat inconsistent findings regarding the effect of parent sex on sons' and daughters' outcomes in terms of body image, social competence, and self-concept. Some studies highlighted the importance of mothers in children's development of body image, self-concept and social competence (Beato-Fernández et al., 2004; Laible & Carlo, 2004), whereas other studies demonstrated a unique contribution of fathers to these same developmental domains (Gecas & Schwalbe, 1986; Lam et al., 2012; Miller-Day & Marks, 2006). Even though inconsistency exists, the literature reviewed above points to the possibility that mothers and fathers contribute to their children differently. Most relevant to the current study, Dailey (2010) reported that mother challenge (but not mother acceptance) and father acceptance (but not father challenge) were associated with adolescents' self-concept (e.g., self-esteem, self-identity). Dailey (2010) reasoned that because nurturance from mothers and challenge from fathers are culturally normative and thus expected, when these expectations are met, such parental behaviors had less impact on children. Given that previous literature, including confirmation research, suggests relatively unique roles by mothers and fathers, this project differentiates mothers and fathers in examining how confirmation from each parental figure might be related to children's outcomes.

### **Child Sex Effects**

In addition to parental sex, it is also important to take child sex into consideration

because daughters and sons might respond differently to parental behaviors. Prior research indicated that, compared to sons, daughters are more strongly impacted by (perceptions of) parental behaviors in terms of their socio-emotional adjustment (e.g., Atkinson, Dadds, Chipuer, & Dawe, 2009; Choquet, Hassler, Morin, Falissard, & Chau, 2008; Davies & Lindsay, 2004; Hart et al., 1992; McKinney et al., 2011).

Several studies on body image (e.g., Barker & Galambos, 2003; Crespo, Kiehlkowski, Jose, & Pryor, 2010; Leon, Fulkerson, Perry, & Dube, 1994; Wertheim et al., 1992) found that the association between parent-child relationships and body image were found only among daughters and not among sons (see Meester et al., 2007 for an exception that showed the opposite pattern). These studies found that negative perceptions of parents and family, such as parental overprotection, family dissatisfaction, and low family connectedness and cohesion, were linked to body dissatisfaction and eating disorders symptoms among adolescent daughters, but not among adolescent sons (Crespo et al., 2010; Leon et al., 1994; Wertheim et al., 1992).

Studies examining the role of parents on children's social competence also suggest that daughters are more strongly impacted by parental behaviors than sons. Perceptions of family experiences including parenting style, parental acceptance, and family cohesion were shown to be more consequential to daughters' social competence than sons' (Chen et al., 1997; Hsu, 1998). It is less clear if child sex moderates parental effects on children's self-concept (identity strength and self-esteem). Some studies suggested parental behaviors impact sons' and daughters' self-concept in a different way (Grotevant & Cooper, 1985; McKinney et al., 2011; Sartor & Youniss, 2002), whereas

other studies found no such differences by child sex (Allen, Hauser, Bell, & O'Connor, 1994).

The reason that daughters might be generally more sensitive to familial communication quality than sons might be related to gender socialization. Females are often socialized to value connectedness and interdependence whereas males are taught to be autonomous and independent (Davies & Lindsay, 2001, 2004; Lee & Robbins, 2000, for a review, see Cross & Madson, 1997). In this sense, how well they are doing interpersonally is often central to self-worth among females (Cross & Madson, 1997). Because females are often socialized to feel responsible for the emotional climate of relationships (Nolen-Hoeksema & Jackson, 2001; Wethington, McLeod, & Kessler, 1987), they might be more likely than males to attribute difficulties in interpersonal relationships, including those with parents, to the self. If this is the case, it is not surprising that females are more strongly impacted than males by negative parental behaviors.

It is also important to note that there are studies showing no evidence of child sex differences in terms of the link between parental behaviors and body image (e.g., Bearman et al., 2006; Fulkerson et al., 2007; Perry et al., 2008), social competence (Engels et al., 2002), and self-concept (Allen et al., 1994). The link between negative parental behaviors (e.g., parental support deficit, low care and high over-protectiveness) and body dissatisfaction and eating disturbance did not differ by child sex (Bearman et al., 2006; Perry et al., 2008). Similarly, child sex did not moderate the association between parental behaviors and social competence (Engels et al., 2002) nor the

association between parental factors and self-concepts (Allen et al., 1994; Perry et al., 2008).

In sum, this review shows mixed findings of the impact of parent sex and child sex. The results seem to depend on: (a) the developmental stage of the samples (e.g., adolescence versus college-aged), (b) the specific child outcomes being assessed (e.g., body satisfaction versus eating behaviors), and (c) the specific parental behaviors assessed (e.g., parental attachment versus communication orientation).

Relevant to this project is Ellis' (2002) study, which examined the role of parental confirmation (with an emphasis on acceptance component) on college students among all four sex-specific dyads. Both parents' confirmation predicted college students' global self-worth, but mothers and fathers played a different role in self-concept within specific domains (e.g., appearance). For sons, both mothers' and fathers' confirmation was related to perception of appearance as well as global self-worth, whereas for daughters, even though both parents' confirmation was related to global self-worth, only fathers' (but not mothers') confirmation was related to perception of appearance (Ellis, 2002).

Ellis' study (2002) as well as previous literature suggests the utility of examining sex-specific parent-child combinations. Considering the paucity of prior confirmation research using sex-specific parent-child combinations, and the mixed findings of existing developmental literature, this project posits the following research question:

RQ6: How, if at all, do the hypothesized associations vary depending on the sex-composition of the parent-child dyad?

## **SUMMARY OF THE STUDY**

This research investigates the role of parental communication on emerging adults' body image through the lens of confirmation theory (Dailey, 2010). This project has three specific goals. The first goal is to examine how two components of parental confirmation – acceptance and challenge – are individually and interactively related to body image in emerging adults. Second, this study aims to examine two potential mediators that might explain the link between parental confirmation and body image: social competence and self-concept (identity strength and self-esteem). Finally, this project seeks to test if the hypothesized model differs depending on the parent-child sex-composition.

The current study will contribute to the literature on body image. The first contribution of this study regards the systematic examination of several body image predictors at different levels at the same time. Many of the hypothesized links between predictors and body image (e.g., the link between self-esteem and body image) in the current study are relatively well supported by previous studies. However, it is unknown as to the contribution of each predictor to emerging adults' body image when other predictors of body image are entered into the same equation. Previous studies tended to investigate risk factors of poor body image in isolation by examining, for instance, a few individual risk factors (e.g., low self-esteem, perfectionism) or a few parental factors (e.g., parental care and control). It is important to look at factors at different levels (e.g., individual and parental levels) at the same time, rather than in isolation, in order to

uncover a more complex interplay between parental and individual factors, on one hand, and body image on the other.

Another contribution of this study centers on its consideration of the sex composition of parent-child dyads. Despite the abundance of evidence for the link between parental behaviors and body image issues, most studies have focused on mother-daughter relationships, making it difficult to understand fathers' roles and sons' experiences. It is also unclear as to how mothers and fathers might contribute differently to their daughters' and sons' development. Studies that examined sex-specific parent-child dyads suggest the importance of distinguishing mothers and fathers, as well as daughters and sons (Ellis, 2002; Laible & Carlo, 2004; Paulson & Sputa, 1996). The current project will contribute to the existing body of knowledge by providing a more detailed picture of how mothers and fathers might have different roles in children's body image.

## Chapter 3: Method

This chapter first provides information about participants and the procedure, and measurements utilized in this project. It also reports the results of preliminary analyses regarding the normality of the data, followed by an overview of the data analyses plan.

### **PARTICIPANTS AND PROCEDURES**

Participants were recruited (see Appendix A for the recruitment advertisements) after this project was approved by the local college's Institutional Review Board. The sample consisted of 447 undergraduate students (319 females, 127 males, one recorded no response) from the University of Texas at Austin. The majority of participants ( $n = 403$ ) were enrolled in undergraduate courses offered by the Department of Communication Studies and offered extra credit points for their participation. In order to increase the amount of male participants, 44 male students were recruited from departments outside of Communication Studies and offered an opportunity to win a \$30 Amazon gift card (one in every 30 participants) for their participation.

The survey questionnaire was developed using *Qualtrics* software and posted online for an approximate duration of two month. Once participants accessed the main page of this project online, they were first presented with a consent form before participation began (See Appendix B for the consent form). This survey took about 30 minutes to complete. Participants averaged 20.20 ( $SD = 1.38$ ) years of age and ranged from 18 to 25 years of age. Participants were largely White/Caucasian (60%), followed by Hispanic/Latino(a) (20%), Asians (13%), African American/Black (3%), Middle

Eastern (1%), and other (3%). The basic demographic information of participants is summarized below (See Appendix C for demographic items).

## **Characteristics of Participants**

### ***Body Mass Index (BMI)***

Participants' self-reported height and weight were collected to calculate their body mass index (BMI). Average BMI for males and female participants were 22.65 ( $SD = 4.07$ ,  $Range = 16-48$ ) and 23.49 ( $SD = 3.98$ ,  $Range = 17-38$ ), respectively. Individuals with BMIs under 18.5 are classified as underweight, those with BMIs ranging from 18.5 to 24.9 are classified as normal weight, those with BMIs ranging from 25 to 29.9 are considered overweight, and individuals with BMIs over 30 are considered as obese (World Health Organization, 2016). Based on this classification, 23 (5%) of the participants are underweight, 300 (70%) of the participants are normal weight, 36 (19%) of the participants can be classified as overweight, and 24 (6%) are obese. Male participants' BMI was significantly greater than females' BMI,  $t(439) = 1.98$ ,  $p < .05$ .

### ***Current and past living arrangement***

The majority of participants (91%,  $n = 406$ ) reported that they were currently living away from home. Among participants who were currently living with their parents (9%,  $n = 41$ ), 34 indicated that they were currently residing with both of their biological mothers and biological fathers, two reported they were living with their biological mother only, four reported their biological father only, and one reported his/her stepmother only and one reported his/her stepfather only.

When asked about whom they lived with during their formative years, the vast

majority of participants (86%,  $n = 384$ ) indicated that they resided with both their biological mother and biological father. Among them, 13 individuals also lived with their stepmother ( $n = 6$ ), stepfather ( $n = 3$ ), or both stepmother and stepfather ( $n = 4$ ). Fifty-six individuals reported they have lived with their biological mother only. Of these, 17 also indicated that they lived with their stepfather. Five indicated living with their biological father only; of these, two reported that they also lived with their stepmother. Finally, two individuals indicated that they have lived with guardians only.

### ***Siblings***

Most participants (94%,  $n = 421$ ) reported they have at least one sibling. Among those who have siblings, 43% ( $n = 179$ ) reported having one sibling, 34% ( $n = 143$ ) reported having 2 siblings, 14% ( $n = 58$ ) reported having 3 siblings, 6% ( $n = 24$ ) reported having 4 siblings, and 4% ( $n = 18$ ) reported having 5 or more siblings.

## **MEASURES**

Unless otherwise stated, measures asked participants to answer on a 7-point scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*. The order of the scales was randomized to minimize order effects. Cronbach alpha reliabilities, and means and standard deviations can be found in Table 1. Correlations among the variables are presented in Table 2. Rather than using the averaged scores of all items in each scale, factor scores for each scale were used in analyses (see Data Analyses Overview for more detail).

### **Parental Confirmation**

Participants' perceptions about parental confirmation were assessed by two

measures: acceptance and challenge. For both measures, participants were asked to respond to the same measure twice, one for mothers, and another for fathers. In the case that participants had a stepparent, they were asked to choose the parental figure (i.e., biological mother or stepmother; biological father or stepfather) that has been most influential upon their development. Participants were asked to keep the parental figure they selected in mind when responding to questions. The vast majority of participants chose their biological mother (96%,  $n = 427$ ) and biological father (90%,  $n = 407$ ) as a parental figure.

### ***Acceptance***

Perceptions of parental acceptance were assessed by eight items adapted from Schaefer's (1965) parental support subscale of the Child Report of Parent Behavior Inventory (CRPBI). These eight items were used by previous confirmation research (Dailey, 2010; Dailey, Imai et al., 2010). Examples of the items include "My mother [father] smiles at me often" and "My mother [father] speaks to me in a warm and friendly voice." See Appendix D for the items for acceptance from mothers. Previous uses of this 8-item scale by Dailey and her colleagues in parent-child contexts generated reliability coefficients ranging from .90-.93 (Dailey, 2010; Dailey, Imai et al., 2010). In the present study, reliability was .91 and .92 for mother acceptance and father acceptance, respectively.

### ***Challenge***

Dailey's (2008b) 10-item Parental Challenge Questionnaire (PCQ) was used to assess participants' perception of parental challenge (see Appendix E for challenge from

mothers). Dailey (2008b) chose ten items from the 30-item PCQ items based on their correlations with parental support and their content so that the 10-item PCQ maintains various aspects of challenge. The 10-item PCQ highly correlates with the 30-item measure ( $r = .94$ ; Dailey, 2008b). Both 30-item and 10-item measures provided a high reliability coefficient: the 30-item PCQ produced a reliability coefficient of .95 (Dailey, 2008b) and the reliability coefficient of 10-item PCQ ranged from .77 to .86 (Dailey, 2008b, 2010; Dailey, Imai et al., 2010). In order to minimize the fatigue effect, and given the validity of the 10-item PCQ and its substantial overlap with the 30-item PCQ, the current project used the 10-item PCQ. Example items included “My mother [father] helped me channel my negative emotions into more positive actions” and “My mother [father] discussed different perspectives with me regarding complex issues.” Reliability for mother challenge and father challenge were .90 and .92, respectively.

### **Body Image**

The Body-Esteem Scale for Adolescents and Adults (BESAA; Mendelson, White, & Mendelson, 2001) was used to assess participants’ attitudes and feeling regarding their bodies and appearance. This scale was administered for both males and females, as the content applies to both sexes. This 23-item scale consists of three subscales: appearance, weight, and attribution. The first subscale, BE–Appearance (10 items), pertains to general feelings about appearance (e.g., “I’m pretty happy about the way I look”). BE–Weight (eight items) assesses satisfaction with weight (e.g., “I am satisfied with my weight”). Finally, BE–Attribution (five items) taps one’s perceptions regarding how others evaluate his or her body and appearance (e.g., “Other people consider me good

looking”). See Appendix F for all the items in this scale. The original scale by Mendelson et al. (2001) uses a 5-point scale ranging from 1 = *never* to 4 = *always*. The current project used a 6-point scale ranging from 1 = *never* to 6 = *always* in order to be consistent with other body image measures.

Previous studies showed this scale is valid and reliable for both males and females over a wide age range (Mendelson et al., 2001), including emerging adults (e.g., Jones & Buckingham, 2005; Strelan & Hargreaves, 2005). Reliability coefficients evaluated by Mendelson et al. (2001) ranged from .85-.94, .86-.96, and .74-.88 for BE–Appearance, BE–Weight, and BE-Attribution, respectively. The current study provided reliabilities of .94 for the entire scale, and that of each subscale was .91, .83, and .92 for BE–Appearance, BE–Weight, and BE-Attribution, respectively. Higher scores reflect more positive attitudes and feelings toward one’s own appearance and weight.

### **Social Competence**

Three different scales assessed social competence: the Dyad Subscale of Personal Report Communication Apprehension (PRCA; McCroskey, 1982), the Positive Relationships with Others subscale in Scales of Psychological Well-being (SPWB; Ryff, 1989), and the Interpersonal Competence Questionnaire (ICQ; Buhrmester et al., 1988).

### ***Communication apprehension***

Participants’ levels of concern and anxiety in interpersonal contexts were measured using the Dyad Subscale of Personal Report Communication Apprehension (PRCA; McCroskey, 1982). The PRCA consists of 24 items that assess trait anxiety in four communication contexts: group discussions, meetings, dyads (i.e., interpersonal

conversations), and public speaking. Each subscale consists of six items. The PRCA-24 has been shown to have a high internal consistency, content validity, and criterion validity (McCroskey, 1984; McCroskey, Beatty, Kearney, & Plax, 1985). Each communication context has been shown to act as a distinct dimension (Levine & McCroskey, 1990).

Because the current project focuses on competence in an interpersonal context, only the dyadic subscale (six items) was used (see Appendix G). Example items include “Ordinarily I am very tense and nervous in conversations” and “While conversing with a new acquaintance, I feel very relaxed” (reverse coded). Even though the original PRCA used a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*, the current project used a 7-point Likert rating to be consistent with other measures. The reliability of the 6-item dyadic subscale was .90 in the current study.

### ***Relationships with others***

The nine-item Positive Relationships with Others subscale from Ryff’s Scales of Psychological Well-being (SPWB; Ryff, 1989) was used to assess participants’ self-rated ability to establish positive and mutually supportive relationships with others. The SPWB was designed to measure six dimensions of well-being: (1) autonomy, (2) environmental mastery, (3) personal growth, (4) positive relationships with others, (5) purpose in life, and (6) self-acceptance. There are currently three versions of the Ryff’s SPWB. The longest version consists of 84 items (14 items per scale), the mid-length version consists of 54 items (nine items per scale) and the shortest version consists of 18 items (three items per scale). The SPWB’s strong reliabilities and validity have been

evidenced by a number of previous studies (e.g., Gallagher, Lopez, Preacher, 2009; Ryff, 2013; Ryff & Keyes, 1995; Ryff & Singer, 2006). The reliabilities of subscales ranged from .83 - .91 (Ryff, 1989; Ryff & Keyes, 1995).

The current project used the Positive Relationships with Others subscale from the mid-length version of the SPWB (see Appendix H). Sample items include “I have not experienced many warm and trusting relationships with others” (reverse coded) and “I know I can trust my friends, and they know they can trust me.” Even though the original SPWB uses a 6-point response scale, ranging from *strongly disagree* = 1 to *strongly agree* = 6, the current project employed a 7-point scale to be consistent with other scales. The present study showed a reliability of .88.

### ***Social competence in five domains***

Participants were asked to respond to the Interpersonal Competence Questionnaire (ICQ; Buhrmester et al., 1988). The ICQ includes 40 items assessing five domains of communication competence for both same-sex friendships and opposite-sex relationships (date or romantic partner): (a) initiating relationships (e.g., “Asking or suggesting to someone new that you get together and do something, e.g., go out together”), (b) asserting displeasure with others (e.g., “Telling a companion that he or she has done something to hurt your feelings”), (c) self-disclosure (e.g., “Letting a new companion get to know the real you.”), (d) providing emotional support and advice (e.g., “Helping a close companion get to heart of a problem s/he is experiencing”) and (e) conflict management (e.g., “When having a conflict with a close companion, really

listening to his or her complaints and not trying to read his/her mind”). See Appendix I for the items in this scale.

Participants reported how comfortable they are at handling each situation using a 5-point rating scale, ranging from 1 = *Poor at this; would be so uncomfortable and unable to handle this situation that it would be avoided if possible* to 5 = *Extremely good at this; would feel very comfortable and could handle this situation very well.*”

Buhrmester et al. (1988) reported Cronbach’s reliabilities that ranged from .77 to .86 for each domain. Many studies have used the ICQ with college students, and supported acceptable reliabilities of each domain ranging from .81 to .92 (e.g., Festa, McNamara Barry, Sherman, & Grover, 2012; Koesten, 2004; McGaha & Fitzpatrick, 2005). In the present study, the reliability of the entire scale was .94, and that of subscales was .90, .89, .88, .93, and .89 for initiating relationships, asserting displeasure, self-disclosure, providing emotional support and advice, and conflict management, respectively.

### **Self-concept**

This study focused on two aspects of self-concept: identity strength and self-esteem.

#### ***Identity strength***

Participants’ identity strength was assessed by the identity subscale of the Erikson Psychosocial Inventory (EPSI) scale (Rosenthal, Gurney, & Moore, 1981). The EPSI scale consists of 6 subscales: trust, autonomy, initiative, industry, identity, and intimacy. The current study utilized the identity subscale (see Appendix J), which included 12 items such as “I know what kind of person I am” and “The important things in life are

clear to me.” The original scale used a five point scale for each item ranging from *hardly ever true* = 1 to *almost always true* = 5. To be consistent with other scales, the current project used a 7-point Likert scale ranging from *strongly disagree* = 1 to *strongly agree* = 7. Higher scores indicate a stronger self-concept.

Rosenthal et al. (1981) demonstrated strong reliabilities of the EPSI. Previous studies used this subscale among college students and yielded reliability coefficients that ranged from .74 to .89 (Schwartz et al., 2011; Schwartz, Zamboanga, Weisskirch, & Rodriguez, 2008). Reliability was .85 in the current study.

### ***Self-esteem***

Self-esteem was measured by Rosenberg self-esteem scale (RSES; 1965). The RSES is one of the most widely used measures of global self-esteem (Byrne, 1996). This scale is a 10-item self-report measure of an individual’s feelings toward themselves (see Appendix K). Sample items include “On the whole, I am satisfied with myself” and “I feel that I have a number of good qualities.” Even though the original RSES was assessed with a 4-point Likert scale ranging from *strongly disagree* = 1 to *strongly agree* = 4, the current project used a 7-point scale to be consistent with other scales. Higher scores represent higher self-esteem.

The RSES has demonstrated high one-week test-retest reliability ( $r = .82$ ) and internal consistency (Cronbach’s alpha = .77-.88; Blascovich & Tomaka, 1991). The current study showed a reliability of .91. There is general agreement that the RSES is one-dimensional. Even though some studies found that the RSES has two factors, these two factors correspond to positively- and negatively-worded items, suggesting that two

factors result mainly from the method effect, and that the RSES measures a single construct as intended (Corwyn, 2000; Hensley & Roberts, 1976; Schmitt & Allik, 2005).

The RSES has been used extensively with college student samples (e.g., Conseur, Hathcote, & Kim, 2008; Chung et al., 2014; Steinfield, Ellison, & Lampe, 2008).

## **PRELIMINARY ANALYSES**

### **Normality**

Preliminary analyses were conducted to assess the normality of all key variables. All variables were checked in terms of skewness and kurtosis through SPSS. Distribution is significantly different from a normal distribution if skewness statistics or kurtosis statistics (ignoring the minus sign) are greater than twice their standard error (Miles & Shevlin, 2011). Although an examination of the data showed that all variables exceeded the aforementioned criteria in terms of both skewness and kurtosis, thus suggesting that the departure from normality is statistically significant, the impact of non-normality diminishes when there is a large sample size (Miles & Shevlin, 2011; Tabachnick, Fidell, & Osterlind, 2013). The shape of the distribution for each variable was visually examined using histograms and suggested that all variables do not depart from normal distribution in an extreme way. Further, Maximum Likelihood Robust (MLR) estimators were used for analyses. MLR is a maximum likelihood estimator with robust standard errors, and is robust to non-normality of the data (Muthén & Asparouhov, 2002).

## **DATA ANALYSIS OVERVIEW**

Ideally, a full structural equation modeling would be conducted to test the hypothesized model. However, the current project used factor scores instead of all of the

observed variables. This is due to a smaller sample size than the size required to adequately run a full SEM. There should be at least 10 cases per each parameter, with some researchers recommending 20 in order to obtain accurate results (Jackson, 2003, 2007; Kline, 2011). Running a full SEM for the current project involves 167 parameters to be estimated, and thus requires a sample size of at least 1,670 ( $167 \times 10$ ).

Using factor scores is a useful step in the current project because it reduces the number of parameters that had to be estimated in the structural analyses. Moreover, using factor scores rather than simply summing or averaging items is advantageous in that measurement error is “removed.” In other words, factor scores are considered as more reliable than observed scores (Hershberger, 2005).

Confirmatory factor analyses (CFAs) for each measure were conducted for the purpose of creating factor scores. Fit indices of CFAs for each measure can be found in Tables 3a and b. Factor scores were computed and saved through MPlus, which uses the regression method called the model posterior estimator (Muthén, 2005; Lawley & Maxwell, 1971). Factor scores produced by MPlus are not centered (i.e., means are not subtracted), but factor scores have a mean of zero or very close to zero (Muthén, 2015). See Table 1 for the mean, range and standard deviation of each factor score. For each case, a single factor score was produced for each observed variable, resulting in 16 factor scores per case: Factor scores for mother acceptance, mother challenge, father acceptance, father challenge, relationships with others, communication apprehensions, five domains of the ICQ (i.e., relationship initiation, asserting displeasure, self-disclosure, providing support, and conflict management), identity strength, self-esteem, and three

subscales of body esteem (i.e., appearance, attribution, and weight). Interaction between mother acceptance and mother challenge was generated by creating a product of the factor scores of mother acceptance and mother challenge. The same procedure was used to create interaction terms between father acceptance and father challenge.

### **Two-step Modeling**

The current study followed two-step modeling procedures by first performing a measurement model and then a structural model. The measurement model included (a) nine stand-alone variables (i.e., mother acceptance, father acceptance, mother challenge, father challenge, interaction between mother acceptance and mother challenge, interaction between father acceptance and father challenge, BE-Appearance, BE-Attribution, and BE-Weight) and (b) three latent variables (i.e., ICQ, social competence, and self-concept).

As discussed in the next chapter, this study conducted multi-group analyses to examine the hypothesized model and to explore how the hypothesized associations in the model might differ between males and females. The author first ran a baseline model separately for males and females to establish a well-fitting model for each group. After the establishment of well-fitting models, a configural model (a model with no constraints) was run, which was used as a model to be compared with succeeding models with structural paths constrained to be equal between males and females.

For all measurement and structural models, four common fit indices were used to assess model fit: (a) model chi-square, (b) the comparative fit index (CFI), (c) the root mean square error of approximation (RMSEA) and (d) the standardized root mean square

residual (SRMSR; Kline, 2011). Models demonstrating goodness of fit have (a) the relative chi-square ( $\chi^2/df$ ) of 3 or less (Kline, 2004), (b) a RMSEA as well as SRMR of 0.08 or less, and (c) a CFI of 0.9 or greater (Bentler & Bonett, 1980; Hu & Bentler, 1999). The use of relative chi-square, instead is the significant test of chi-square, is used here because the latter is sensitive to sample size (Bentler & Bonett, 1980). When deciding which model to retain between a nested model and a comparison model (i.e., a more parameterized model), a chi-square difference test with the Satorra-Bentler scaled chi-square ( $SB\chi^2$ ; Satorra & Bentler, 1988) was used<sup>1</sup>. This is because when an MLR estimator is used, the standard chi-square difference testing cannot be used in order to determine a preferred model (Muthen & Muthen, 2016). The  $SB\chi^2$  allows for better approximation of chi-square with non-normal data (Curran, West, & Finch, 1996).

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<sup>1</sup> See <http://www.uoguelph.ca/~scolwell/diffest.html>

## Chapter 4: Results

### DESCRIPTIVE STATISTICS

#### Differences in Key Variables between Females and Males

Comparisons of means between females and males were performed on all key variables using independent samples *t*-tests (see Table 1). Significant differences were found on approximately half of the variables (i.e., mother acceptance, father acceptance, ICQ, relationships with others, and body esteem). Differences in mother acceptance as well as father acceptance between males and females will be discussed in the subsequent subsection. First, female participants reported a greater level of ICQ (i.e., interpersonal communication questionnaire) and more positive relationships with others,  $t(442) = -2.58, p < .01$  and  $t(439) = -3.71, p < .01$ , respectively. Second, male participants reported a greater level of body esteem compared to female participants,  $t(443) = 2.83, p < .01$ . Approximately 10% of males reported body dissatisfaction (scoring less than 3 out of 7 in BE-Total<sup>2</sup>) whereas roughly 20% of females expressed body dissatisfaction. More specifically, males reported greater satisfaction with general appearance (BE-Appearance) as well as weight (BW-Weight) than females,  $t(441) = 2.26, p < .05$  and  $t(441) = 4.20, p < .001$ , respectively. Males and females did not significantly differ in terms of their evaluations attributed to others about one's appearance (BE-Attribution),  $t(441) = .93, p = .35$ .

#### Acceptance and Challenge

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<sup>2</sup> The value of 3 was used as a cut off in this study because the value 3 stands for "Sometimes" in responding to items asking how positively they feel about their appearance (e.g., "I like what I look like in pictures").

A 2 (child sex)  $\times$  2 (parent sex)  $\times$  2 (acceptance or challenge) repeated-measures ANOVA was conducted to compare (a) differences in acceptance as well as challenge between males and females (b) differences in acceptance as well as challenge between mothers and fathers and (c) difference between acceptance and challenge within each parental figure. A repeated-measures ANOVA was chosen over multiple *t*-tests in order to reduce the risk of committing a Type I error. The differences reported below are based on the pairwise comparisons results.

In focusing on child sex, males and females differed in terms of their perceptions of parental acceptance as well as challenge. Compared to males, females reported perceiving mothers as more accepting,  $t(342) = 2.12, p < .05$ , as well as more challenging,  $t(342) = 2.22, p < .05$ . On the other hand, sons reported perceiving fathers as equally accepting as daughters did,  $t(342) = 1.88, p = .06$ . Similarly, sons reported perceiving fathers as challenging as daughters did,  $t(342) = 1.02, p = .31$ .

In focusing on parent sex, mothers and fathers differed in terms of their level of acceptance and challenge. Mothers were perceived as more accepting than fathers by both sons and daughters,  $t(101) = 3.90, p < .001$  and  $t(241) = 5.36, p < .001$ , respectively. Sons perceived mothers and fathers as equally challenging,  $t(101) = 1.26, p = .21$ , whereas daughters reported perceiving mothers as more challenging than fathers,  $t(241) = 3.92, p < .001$ .

There are some differences between the levels of acceptance and challenge within each parental figure. Sons perceived mothers as equally accepting as challenging,  $t(101) = 1.59, p = .11$ , and fathers as more challenging than accepting,  $t(101) = 2.46, p < .05$ .

On the other hand, daughters perceived mothers as more challenging than accepting,  $t(242) = 2.54, p < .05$ , and fathers as equally accepting as challenging,  $t(320) = 1.35, p = .24$ .

### **CORRELATION AND REGRESSION ANALYSES (H1-2, RQ1)**

H1-2 and RQ1 examined if acceptance (H1) and challenge (RQ1) were individually and interactively (i.e., interaction effect, H2) associated with body image. Correlation and regression analyses were conducted as initial tests of H1-2 and RQ1, but H1-2 and RQ1 will be ultimately tested within a hypothesized model using SEM.

#### **Correlation Analyses**

H1 predicted that parental acceptance was positively related to healthy body image in emerging adults. Mother acceptance was significantly and positively correlated to all three subscales of body image (BE-appearance, BE-Attribution, and BE-Weight) among males,  $r(103) = .34, p < .01$ .,  $r(102) = .32, p < .01$ .,  $r(102) = .30, p < .01$ ., respectively, as well as among females,  $r(240) = .26, p < .01$ .,  $r(240) = .14, p < .01$ .,  $r(240) = .17, p < .01$ , respectively. Similarly, father acceptance was significantly and positively associated with all three subscales of body image among females,  $r(317) = .28, p < .01$ .,  $r(317) = .18, p < .01$ .,  $r(317) = .17, p < .01$ . For males, father acceptance was significantly and positively associated with BE-appearance and BE-Weight,  $r(125) = .34, p < .01$  and  $r(125) = .32, p < .01$ , respectively, but not with BE-attribution,  $r(125) = .15, p = .10$ . Therefore, correlation analyses provide general support for H1.

RQ1 asked how parental challenge is related to body image. Among males, mother challenge was significantly and positively associated with BE-Appearance,  $r(103)$

= .31,  $p < .05$  and BE-Attribution,  $r(102) = .33, p < .01$ , but not with BE-Weight,  $r(103) = .19, p = .06$ . Father challenge was significantly and positively associated with male's BE-Appearance,  $r(125) = .28, p < .01$  and BE-Weight  $r(125) = .21, p < .05$ , but only approached significance with BE-Attribution,  $r(125) = .19, p = .07$ .

For females, mother challenge as well as father challenge were significantly and positively related to BE-Appearance,  $r(240) = .24, p < .001$  and  $r(317) = .27, p < .001$ , respectively, and BE-Weight,  $r(240) = .21, p < .001$  and  $r(317) = .18, p < .001$ , respectively. Females' BE-Attribution was significantly and positively related to only father challenge,  $r(317) = .20, p < .001$ , but not mother challenge,  $r(240) = .10, p = .11$ .

### **Regression Analyses**

Separate multiple regression analyses were conducted predicting each of the three body image measures to assess the interaction effects: BE-Appearance, BE-Attribution, and BE-Weight. Mother acceptance, mother challenge, father acceptance, and father challenge were mean-centered. An interaction between mother acceptance and mother challenge (MAcc  $\times$  MChall hereafter) was created by multiplying mean-centered mother acceptance and mother challenge. Similarly, an interaction between father acceptance and father challenge (FAcc  $\times$  FChall hereafter) was created based on the product of mean-centered father acceptance and father challenge. All predictors (mother acceptance, mother challenge, MAcc  $\times$  MChall, father acceptance, father challenge, and FAcc  $\times$  FChall) were entered in the same regression equation simultaneously.

Regression results can be found in Tables 4a, 4b, and 4c. Only mother acceptance and father acceptance were significant predictors of BE-Appearance,  $\beta = .19, p < .05$  and  $\beta =$

.19,  $p < .05$ , respectively (Table 4a). The reason why other parental confirmation variables were not significant predictors is likely due to high correlations among parental confirmation variables. For instance, the correlation between mother acceptance and mother challenge ( $r = .76, p < .001$ ) as well as between father acceptance and father challenge ( $r = .79, p < .001$ ) were high. The regression analyses predicting BE-Attribution (Table 4b) as well as BE-Weight (Table 4c) showed that none of the variables were significant predictors. Again, non-significant results were likely due to high a correlation among predictor variables.

In sum, regression results revealed that (a) mother acceptance, but not father acceptance, was a significant predictor of body image (H1), (b) challenge was not a significant predictor of body image (RQ1) and (c) there is a non-significant interaction effect between acceptance and challenge in predicting body image (H2).

Because these correlation and regression analyses do not take into account the role of hypothesized mediators as well as inter-connectedness among variables of interests, the findings based on correlation and regressions can be potentially misleading and should be interpreted with caution. In fact, as discussed below, the results from SEM revealed a significant direct effect of the interaction between father acceptance and father challenge on BE-Appearance and BE-Weight. Because examining a full model that includes potential mediators (social competence and self-concepts) provides a more complete picture of the inter-relationships between variables, H1-2 and RQ1 will be also examined within the full model.

## **MULTIPLE-SAMPLE STRUCTURAL EQUATION MODELING (H3-12, RQ2-6)**

This study ultimately examines (a) if social competence as well as self-concept mediates the relationship between parental confirmation and body image, and (b) if the hypothesized links might vary depending on the sex-composition of the parent-child dyad. All hypotheses and research questions (including H1-2 and RQ1) were tested and examined within a proposed model (see Figure 1).

The proposed model included six stand-alone exogenous variables, which are mother acceptance, mother challenge, interaction between mother acceptance and mother challenge, father acceptance, father challenge, interaction between father acceptance and father challenge. The three subscales of the BE served as stand-alone endogenous variables<sup>3</sup>. The two hypothesized mediators in the model (i.e., social competence and self-concept) were represented as latent factors. The latent factor of social competence was indicated by communication apprehension, positive relationship with, and a latent factor of ICQ (which was indicated by five indicators: initiating relationships, asserting displeasure, self-disclosure, providing emotional support and advice, and conflict management). The latent factor of self-concept was indicated by identity strength and self-esteem.

To test the proposed model, structural equation modeling (SEM) was performed through *MPlus* 7.0 (Muthén, & Muthén, 1998-2012) with the MLR (maximum-likelihood

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<sup>3</sup> Originally, the researcher attempted to run a measurement model as well as a structural model using three subscales (in a form of factor scores) as indicators of a latent factor of body satisfaction. However, *MPlus* produced a warning message when this procedure was used, and the reason for this issue is unknown (Through personal e-mail exchanges with Dr. Muthén, May, 2016). When three subscales were used as stand-alone variables instead, this warning message was solved. Therefore, the current study uses three subscales as stand-alone variables rather than the indicators of the body satisfaction factor.

robust) estimator. Because some participants lacked complete data, full information maximum likelihood (FIML) was used. To examine whether there were differences in the hypothesized links between males and females, a multiple-group SEM was conducted. As delineated below, before running the multiple-group test of the structural model, a baseline model was first created separately for males and females.

### **Baseline Model for Males and Females**

It is necessary to establish a well-fitting baseline model structure for each group before testing for multi-group invariance (Byrne, 2012). The baseline model refers to the one that best fits the data from the perspectives of parsimony and substantive meaning (Byrne, 2012). The estimation of baseline models is group-specific, and involves no between-group constraints (Byrne, 2012). A two-step procedure (i.e., measurement model and structural model) was used to establish a baseline model. Fit indices of the baseline model for male and females can be found in Table 5.

#### ***Measurement model for males***

The original measurement model demonstrated an inadequate fit,  $\chi^2(78) = 177.87, p < .01, \chi^2/df = 2.29, RMSEA = 0.10$  (90% CI = 0.08 – 0.12), CFI = 0.93, SRMR = .04. Post hoc model modifications were performed in order to develop a better fitting model. On the bases of the Lagrange Multiplier Test, two correlations between the error terms of some of the variables were added. Based on the recommendation for re-specification of the model (Byrne, 2012), only one new parameter at a time has been included. First, the error covariance between two indicators was added: communication apprehension and initiating relationships. The resultant model provided an improved fit

to the data,  $\chi^2 (77) = 156.99, p < .001, \chi^2/df = 2.04, RMSEA = 0.09$  (90% CI = 0.07 – 0.11), CFI = 0.95, SRMR = 0.04. Based on further inspection of modification indices, an error covariance between two indicators of ICQ (i.e., support provision and conflict management) were added, which improved the model fit,  $\chi^2 (76) = 142.48, p < .001, \chi^2/df = 1.87, RMSEA = 0.083$  (90% CI = 0.06 – 0.10), CFI = 0.95, SRMR = 0.04. Finally, based on the modification indices, an error correlation between two indicators (i.e., asserting discomfort and relationship quality) was added. This improved the fit to the data,  $\chi^2 (75) = 128.81, p < .001, \chi^2/df = 1.72, RMSEA = 0.075$  (90% CI = 0.05– 0.10), CFI = 0.95, SRMR = 0.04.

### ***Structural model for males***

The hypothesized structural model demonstrated a poor fit,  $\chi^2 (86) = 183.76, p < .001, \chi^2/df = 2.14, RMSEA = 0.10$  (90% CI = 0.08 – 0.13), CFI = 0.91, SRMR = 0.11. After the inspection of the Lagrange Multiplier Test, a correlation between the error terms of two latent variables (social competence and self-concept) was added. The resultant model improved the fit to the data,  $\chi^2 (86) = 146.94, p < .01, \chi^2/df = 1.71, RMSEA = 0.08$  (90% CI = 0.06 – 0.11), CFI = 0.94, SRMR = .04. This model was used as a baseline model for males.

### ***Measurement model for females***

The original model demonstrated adequate fit to the data,  $\chi^2 (78) = 230.73, p < .01, \chi^2/df = 2.96, RMSEA = 0.08$  (90% CI = 0.07 – 0.09), CFI = 0.94, SRMR = .05.

### ***Structural model for female***

The original structural model produced poor fit,  $\chi^2 (89) = 290.69, p < .01, \chi^2/df =$

3.27, RMSEA = 0.10 (90% CI = 0.09 – 0.11), CFI = 0.87, SRMR = .11. On the bases of the Lagrange Multiplier Test, one correlation between the error terms of two latent variables was added: social competence and self-concept. Specifying the error covariance between these two latent variables improved the resultant model fit,  $\chi^2$  (88) = 205.45,  $p < .01$ ,  $\chi^2/df = 2.33$ , RMSEA = 0.07 (90% CI = 0.06 – 0.09), CFI = 0.92, SRMR = .05. This model was used as a baseline model for females.

### **Configural Invariance**

Having established separate baseline models that reflect a satisfactory good fit to the data for each group, a configural model was examined. The first step to test group invariance (i.e., testing the configural model) requires that the structure of what is measured by the test shows the same configuration across groups (Keith, 2015). In other words, this model simply specifies that the same model holds for both groups. There is no specification that the values of factor loadings, for instance, must be the same across the groups. No parameters were constrained to be equal across males and females (i.e., all parameters were freely estimated within each group). The model therefore represents the least constrained model possible.

Naturally, tests of configural invariance reproduces overlapping information as the one obtained when establishing baseline models for each group. Yet, this process of testing a configural model is important because (a) it allows invariance tests to be performed across the two groups simultaneously and (b) the fit of a configural model provides baseline values against which the comparison of the subsequent model is made (Bryne, 2012). This unconstrained model fit well to the data (see Table 6),  $\chi^2$  (174)

=353.82,  $p < .001$ ,  $\chi^2/df = 2.03$ , RMSEA = 0.08 (90% CI = 0.07 – 0.09), CFI = 0.93, SRMR = 0.05.

### **Structural Invariance**

Because the current project's focus is to test if hypothesized structural regression paths might differ depending on sex-specific parent-child dyads, an invariance test was conducted only in terms of structural paths. The configural model established earlier was compared with a structural invariance model that constrained all structural paths to be equal for males and females. The model in which all structural paths were constrained to be equal across groups fit significantly worse than the original freely estimated model,  $\Delta SB\chi^2 = 55.00$ ,  $df = 36$ ,  $p < .05$ . This suggested variations in structural paths for males and females; that is, at least some structural paths were not equal in the samples of males and females. The researcher investigated which parameters may not be equivalent between females and males by examining the multivariate Lagrange Multiplier (LM) Test. The LM Test indicated the improvement of fit by releasing only one constraint on a structural path from social competence to body esteem. A resulting model with one parameter (a path from social competence to body esteem) freely estimated demonstrated a significantly better fit to data compared to the constrained model,  $\Delta SB\chi^2 = 17.47$ ,  $df = 1$ ,  $p < .001$ . This model with one parameter freely estimated did not significantly differ from the configural model,  $\Delta SB\chi^2 = 43.66$ ,  $df = 35$ ,  $p > .05$ . Therefore, this model was retained and used to test all hypotheses and answer the research questions. A summary of model fit for multi-group invariance can be found in Table 6. Figure 2 represents a final structural model.

## Examining Hypotheses and Research Questions

Unstandardized, standardized, and significance levels for the all hypothesized paths in the model can be found in Table 7. Table 8 describes the summary of the tests of hypothesized indirect effects including the confidence intervals.

### *Relationship of social competence with parental confirmation (H3-4, RQ2) and body image (H5-6, RQ3)*

H3 stated that parental acceptance is positively related to social competence. In the model, mother acceptance was significantly associated with social competence ( $B = .31, \beta = .31, p < .01$ ) for female as well as for males ( $B = .31, \beta = .34, p < .01$ ). However, the association of father acceptance with social competence was non-significant for both females and males,  $B = .11, \beta = .44, p = .22$  and  $B = .11, \beta = .13, p = .22$ , respectively. Therefore, H3 was partially supported.

RQ2 asked how parental challenge is related to social competence. Neither mother challenge nor father challenge significantly predicted a latent variable of social competence. In the model, mother challenge was not significantly associated with social competence for both males ( $B = .08, \beta = .02, p = .35$ ) and females ( $B = .08, \beta = .10, p = .35$ ). Similarly, father challenge was not significantly related to social competence for both males ( $B = .08, \beta = .02, p = .26$ ) and females ( $B = .08, \beta = .12, p = .26$ ).

H4 stated that parental acceptance and challenge interact to predict social competence such that a combination of high acceptance and high challenge is related to the highest level of social competence. This hypothesis was supported only in terms of interaction between mother acceptance and mother challenge.  $MAcc \times MChall$  was

significantly associated with social competence,  $B = .11$ ,  $\beta = .26$ ,  $p < .01$  for males and  $B = .11$ ,  $\beta = .21$ ,  $p < .01$  for females.

The nature of the interaction was probed by the LOOP option in Mplus, which uses a method called the Johnson-Neyman (J-N) Technique (Johnson & Neyman, 1936). This method allows for identifying the values of a moderator under which the simple slope is statistically significant. The use of the J-N Technique is recommended over the traditional methods of splitting the data into categories (e.g., High vs Low) to probe interaction effects (Preacher, Curran, & Bauer, 2006)<sup>4</sup>. Figure 3a plotted mother challenge as a moderator of the relationship between mother acceptance and social competence, and conversely, Figure 3b plotted mother acceptance as a moderator of the relationship between mother challenge and social competence.

Two different interaction figures (in which the predictor and the moderator were switched) were plotted for each significant interaction effect throughout this project. This is in order to better understand the nature of the interaction effect. For instance,

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<sup>4</sup> In addition to interaction plots based on the J-N Technique, this project also included a commonplace approach for creating interaction figures to plot all interaction effects that were significant (see Figure 3c, 4c, 5c, and 6c). For this approach, the regression analyses were run with the predictors (in the current study, acceptance, challenge and an interaction between acceptance and challenge). Predictors were mean-centered. Then the interaction was plotted using predicted outcome values for individuals who are one standard deviation above the mean, at the mean, and one standard deviation below the mean for the predictor (i.e., acceptance) as well as the moderator (i.e., challenge).

This approach is primarily used in multiple regression analyses that included continuous predictors and interaction between these predictor variables (Aiken & West, 1991). However, it should be noted that the interaction plots created using this commonplace approach does not allow capturing the inter-relations among observed variables and latent factors in the hypothesized model. Therefore, interaction plots based on this commonplace approach were provided as supplemental materials, given that the J-N technique better illustrates the nature of the interaction effect.

when mother challenge was plotted as a moderator (Figure 3a), the figure shows a simple slope of mother acceptance on social competence as a function of mother challenge values. This figure reveals when (i.e., under what mother challenge values) this simple slope becomes significant. However, naturally, this figure does not inform us of how a simple slope of mother challenge on social competence might vary as a function of the mother acceptance score, nor when (i.e., under what mother acceptance scores) the effect of mother challenge becomes significant. Such information can be only revealed when mother challenge was plotted as a moderator of the relationship between mother acceptance and social competence (Figure 3b). Therefore, in order to fully understand the nature of an interaction effect, it is useful to plot the interaction effect interchanging the predictor and moderator.

For the value range of the x-axis, a specific range corresponding to each moderator was used throughout this project to better match the range of observed data. For instance, -5 and +2 was used as the values of mother challenge as a moderator (Figure 3a). When mother challenge was plotted as a moderator, the region of significance on the moderator (i.e., mother challenge) ranges from -5.00 to -1.4, indicating that any given simple slope (i.e., the effect of mother acceptance on social competence at a given value of mother challenge) outside this range is statistically significant. This indicates that the simple slope of social competence regressed on mother acceptance is significantly different from zero for those who scored higher than -1.4 on mother challenge (in factor scores). The effect of mother acceptance on social competence was significant for the majority of participants in the current study (88% of

participants,  $n = 303$ ) who scored higher than -1.4 on mother challenge. For these participants, the greater the mother acceptance, the greater the social competence. More simply, for these participants, the positive effect of mother acceptance on social competence becomes more pronounced as the degree of mother challenge increased. The enhanced effect is captured by the red line in the figures, which depicts the increasing value of the simple slope (i.e., the y axis) as the value of mother challenge (i.e., the x-axis) increases. Thus, the level of social competence was the highest when high mother acceptance was combined with high challenge.

When mother acceptance was plotted as a moderator (Figure 3b), the effect of mother challenge on social competence increased as the level of mother acceptance increased. Yet, the positive effect of acceptance on social competence was significant only when it was combined with high challenge (i.e., scoring one or higher), which was applicable to only 7% of participants ( $n = 25$ ). For these participants, the greater the challenge, the greater the social competence. For the rest of participants who scored lower than 1 on mother acceptance, (93%,  $n = 320$ ), the effect of mother challenge on social competence (i.e., the simple slope of mother challenge on social competence) was not significant.

Unlike the interaction for mothers,  $F_{Acc} \times F_{Chall}$  did not significantly predict social competence,  $B = -.02$ ,  $\beta = -.04$ ,  $p = .59$  for males and  $B = -.02$ ,  $\beta = -.06$ ,  $p = .51$  for females. In sum, H4 was only partially confirmed for mothers.

H5 stated that social competence is positively associated with healthier body image. There were significant associations between social competence and the subscales

of body image. For males, social competence was significantly associated with BE-Appearance ( $B = .17, \beta = .24, p < .05$ ) and BE-Attribution ( $B = .30, \beta = .34, p < .001$ ), but not BE-Weight ( $B = .08, \beta = .10, p = .40$ ). For females, social competence was significantly associated with BE-Attribution ( $B = .30, \beta = .35, p < .001$ ), but not with BE-Appearance ( $B = .06, \beta = .09, p = .37$ ) or BE-Weight ( $B = .08, \beta = .09, p = .40$ ).

Therefore, H5 was partially supported.

***A mediating role of social competence between parental confirmation and body image (H6-7 and RQ3)***

H6-7 and RQ3 involved testing a potential mediating role of social competence between parental confirmation and body image. In order to determine whether there are significant indirect effects of parental confirmation on body image through social competence, bootstrapping analyses were conducted to obtain standard error estimates, 95% confidence intervals (CIs), and effect size estimates with 5000 samples (Hayes, 2009).

H6 hypothesized that social competence mediates the association between parental acceptance and body image in emerging adults. Because social competence was significantly associated with mother acceptance ( $B = .31, \beta = .34, p < .01$  for males,  $B = .31, \beta = .31, p < .01$  for females) but not with father acceptance ( $B = .11, \beta = .13, p = .22$  for males,  $B = .11, \beta = .14, p = .22$  for females), this hypothesis was tested only in terms of mother acceptance.

Bootstrapping methods showed a significant indirect effect of mother acceptance on BE-Attribution through social competence for both males ( $B = .09, \beta = .12, p < .05$ )

and females ( $B = .09, \beta = .11, p < .05$ ). This provides evidence that social competence mediates the relationship between mother acceptance and BE-Attribution. On the other hand, there was a non-significant indirect effect of mother acceptance on BE-Appearance through social competence ( $B = .05, \beta = .08, p = .09$  for males,  $B = .05, \beta = .03, p = .09$  for females). Similarly, there was a non-significant indirect effect of mother acceptance on BE-Weight through social competence ( $B = .03, \beta = .03, p = .49$  for males,  $B = .03, \beta = .03, p = .49$  for females). Therefore, there is no evidence to suggest that social competence mediates the relationship between mother acceptance and BE-Appearance or between mother acceptance and BE-Weight. Therefore, H6 was only partially supported.

RQ3 posited a question of how social competence might mediate the association between parental challenge and body image in emerging adults. Because the association between parental challenge (both mother challenge and father challenge) and social competence was non-significant in the model, it naturally follows that there is no evidence for social competence to mediate the association between father challenge and body image.

H7 hypothesized that social competence mediates the association between the interaction of parental acceptance and challenge and body image. Because social competence was significantly associated with  $M_{Acc} \times M_{Chall}$  but not with  $F_{Acc} \times F_{Chall}$  (see results for H4), this hypothesis was tested only in terms of  $M_{Acc} \times M_{Chall}$ .

There was a non-significant indirect effect of  $M_{Acc} \times M_{Chall}$  on all three body image variables (i.e., BE-Appearance, BE-Attribution, and BE-Weight) through social competence. More specifically, the indirect effect of  $M_{Acc} \times M_{Chall}$  on BE-Appearance

through social competence was non-significant ( $B = .02$ ,  $\beta = .06$ ,  $p = .11$  for males,  $B = .01$ ,  $\beta = .02$ ,  $p = .46$  for females). The indirect effect of  $M\text{Acc} \times M\text{Chall}$  on BE-Attribution through social competence was non-significant ( $B = .03$ ,  $\beta = .09$ ,  $p = .06$  for males,  $B = .03$ ,  $\beta = .07$ ,  $p = .06$  for females). Finally, the indirect effect of  $M\text{Acc} \times M\text{Chall}$  on BE-Weight through social competence was non-significant ( $B = .01$ ,  $\beta = .03$ ,  $p = .49$  for males,  $B = .01$ ,  $\beta = .02$ ,  $p = .49$  for females). Therefore, H7 was not supported.

***Relationship of self-concept with parental confirmation (H8-9, RQ4) and body image (H10-11, RQ5)***

H8 predicted that parental acceptance is positively associated with self-concept (i.e., self-identity and self-esteem) in emerging adults. In the model, mother acceptance was significantly associated with self-concept ( $B = .21$ ,  $\beta = .50$ ,  $p < .001$  for males,  $B = .21$ ,  $\beta = .38$ ,  $p < .001$  for females). Father acceptance was also significantly correlated with self-concept ( $B = .09$ ,  $\beta = .21$ ,  $p < .05$  for males,  $B = .09$ ,  $\beta = .20$ ,  $p < .05$  for females). Therefore, H8 was confirmed by the data.

RQ4 asked how parental challenge is associated with self-concept. There was a non-significant association between mother challenge and self-concept ( $B = .01$ ,  $\beta = .02$ ,  $p = .88$  for males,  $B = .01$ ,  $\beta = .01$ ,  $p = .99$  for females). Similarly, there was a non-significant association between father challenge and self-concept ( $B = .01$ ,  $\beta = .02$ ,  $p = .77$  for males,  $B = .01$ ,  $\beta = .03$ ,  $p = .77$  for females). Therefore, parental challenge was not associated with self-concept.

H9 stated that parental acceptance and challenge interact to predict self-concept, such that a combination of high acceptance and high challenge will show the strongest

association with self-concept. H9 was supported only in terms of the interaction between mother acceptance and mother challenge.  $M_{Acc} \times M_{Chall}$  predicted the level of self-concept ( $B = .06, \beta = .31, p < .01$  for males,  $B = .06, \beta = .21, p < .01$  for females). Again, the nature of the interaction was probed by creating two plots: one in which mother challenge was plotted as a moderator (Figure 4a) and another one in which mother acceptance was plotted as a moderator (Figure 4b).

Figure 4a shows that, consistent with the hypothesized nature of the interaction, the effect of mother acceptance on self-concept was enhanced when it was combined with a higher level of mother challenge. The combination of high mother acceptance and high challenge produced the greatest level of self-concept. The critical region is -5 to -2, suggesting that the simple slope of mother acceptance on self-concept is significantly different from zero when the moderator (i.e., mother challenge) is outside of this range. Considering that 93% of the participants ( $n = 324$ ) scored -2 or greater on mother acceptance, the simple slope of mother acceptance is positive for the majority of participants.

Figure 4b revealed that there was a negative effect of mother challenge on self-concept for those who scored -2 or lower for mother acceptance (6.1% of participants,  $n = 20$ ). For these participants, the greater mother challenge they reported, the lower self-concept they reported. For the rest of participants who scored higher than -2 on mother acceptance (93.9% of participants,  $n = 325$ ), the level of mother challenge did not have a significant effect on self-concept. In other words, for participants with really low

acceptance, challenge had a negative impact on certain outcomes (e.g., self-concept and BE-Appearance).

F<sub>Acc</sub> × F<sub>Chall</sub> did not significantly predict social competence for both males and females,  $B = -.01$ ,  $\beta = -.04$ ,  $p = .51$  and  $B = -.02$ ,  $\beta = -.05$ ,  $p = .51$ , respectively.

Therefore, H9 was partially confirmed by the data.

H10 predicted that self-concept (i.e., self-identity and self-esteem) is positively associated with healthier body image. Self-concept was significantly associated with all three variables representing body image: BE-Appearance ( $B = .70$ ,  $\beta = .47$ ,  $p < .001$  for males,  $B = .70$ ,  $\beta = .59$ ,  $p < .001$  for females), BE-Attribution ( $B = .44$ ,  $\beta = .24$ ,  $p < .01$  for males,  $B = .44$ ,  $\beta = .30$ ,  $p < .01$  for females), and BE-Weight ( $B = .69$ ,  $\beta = .38$ ,  $p < .001$  for males,  $B = .69$ ,  $\beta = .41$ ,  $p < .001$  for females). Therefore, H10 was supported.

***A mediating role of self-concept between parental confirmation and body image (H11-12 and RQ5)***

H11 hypothesized that self-concept mediates the association between parental acceptance and body image in emerging adults. The indirect effects of mother acceptance on all three subscales of body image through self-concept were significant. More specifically, indirect effects of mother acceptance on BE-Appearance was  $B = .02$ ,  $\beta = .23$ ,  $p < .01$  for males, and  $B = .02$ ,  $\beta = .22$ ,  $p < .01$  for females. The indirect effects of mother acceptance on BE-Attribution was  $B = .02$ ,  $\beta = .12$ ,  $p < .05$  for males, and  $B = .02$ ,  $\beta = .11$ ,  $p < .05$  for females. Finally, the indirect effects of mother acceptance on BE-Weight was  $B = .15$ ,  $\beta = .19$ ,  $p < .01$  for males, and  $B = .15$ ,  $\beta = .15$ ,  $p < .01$  for females.

The results also showed significant indirect effects of father acceptance on BE-Appearance ( $B = .06, \beta = .10, p < .01$  for males,  $B = .06, \beta = .12, p < .01$  for females) and BE-Weight ( $B = .06, \beta = .08, p < .05$  for both males and females) through self-concept. However, there was a non-significant indirect effect of father acceptance on BE-Attribution through self-concept ( $B = .04, \beta = .05, p = .09$  for males,  $B = .04, \beta = .04, p = .09$  for females). In sum, there is evidence to suggest that self-concept mediates the association between parental acceptance and body image. Thus, H11 was generally supported.

RQ5 asked if self-concept (i.e., self-identity strength and self-esteem) mediates the association between parental challenge and body image. As addressed earlier, there was a non-significant main effect of parental challenge (both mother challenge and father challenge) on the mediator (self-concept). Therefore, it is not possible for self-concept to mediate the association between parental challenge and body image.

H12 hypothesized that self-concept (i.e., self-identity strength and self-esteem) mediates the association between the interaction of parental acceptance and challenge and body image in emerging adults. Because there was a non-significant association between  $F_{Acc} \times F_{Chall}$  and a moderator, H12 was not supported for fathers.

Considering the interaction for mothers, there was a significant indirect effect of  $M_{Acc} \times M_{Chall}$  on two body image subscales (BE-Appearance and BE-Weight) through self-concept. More specifically, the indirect effect of  $M_{Acc} \times M_{Chall}$  on BE-Appearance ( $B = .04, \beta = .15, p < .01$  for males,  $B = .04, \beta = .13, p < .01$  for females) as well as on BE-Weight ( $B = .04, \beta = .12, p < .05$  for males,  $B = .04, \beta = .19, p < .05$  for

females) through self-concept was significant. This provides evidence that self-concept mediates the association between  $M_{Acc} \times M_{Chall}$  and body image (BE-Appearance and BE-Weight).

Finally, the indirect effect of  $M_{Acc} \times M_{Chall}$  on BE-Attribution through self-concept only approached significance,  $B = .03$ ,  $\beta = .07$ ,  $p = .08$  for males, and  $B = .03$ ,  $\beta = .06$ ,  $p = .08$  for females. Considering that  $M_{Acc} \times M_{Chall}$  had a significant indirect effect on two other subscales of body image (BE-Appearance and BE-Weight) through self-concept, it seems that the same pattern exists for the BE-Attribution, but is not as strong. Taken together, H12 was largely supported for mothers.

### ***Revisiting H1-2 and RQ1***

H1 predicted that parental acceptance was positively related to a healthy body image. SEM analyses showed that mother acceptance had a significant indirect effect on body image through social competence (H6) as well as through self-concept (H11). Father acceptance also had a significant indirect effect on body image through self-concept (H11). These results provide evidence that parental acceptance is associated with body image, and the mechanism of such an association differed depending on parental sex. Therefore, in addition to correlation and regression analyses, SEM analyses also provided evidence to largely support H1.

RQ1 asked how parental challenge is related to body image. The SEM demonstrated that there was a non-significant main effect of challenge in predicting body image. Instead, in general, challenge moderated the association between acceptance and body image (H12; also see H2 below) such that the positive effect of acceptance was

enhanced as the level of challenge increased.

H2 predicted that there was an interaction effect between acceptance and challenge, such that the positive impact of acceptance on body image is enhanced as the level of challenge increases. Even though the initial regression analyses showed a non-significant interaction effect between acceptance and challenge to predict body image, the SEM revealed a somewhat different picture.  $F_{Acc} \times F_{Chall}$  significantly predicted BE-Appearance ( $B = .04$ ,  $\beta = .09$ ,  $p < .01$  for males,  $B = .04$ ,  $\beta = .06$ ,  $p < .01$  for females) as well as BE-Weight ( $B = .06$ ,  $\beta = .13$ ,  $p < .05$  for males,  $B = .06$ ,  $\beta = .17$ ,  $p < .05$  for females) without being mediated by hypothesized latent variables. However,  $F_{Acc} \times F_{Chall}$  was not significantly associated with BE-Attribution ( $B = .03$ ,  $\beta = .05$ ,  $p = .25$  for males,  $B = .05$ ,  $\beta = .08$ ,  $p = .25$  for females).

Figure 5a represents the nature of an interaction effect when father challenge was plotted as a moderator. The positive effect of father acceptance on BE-Appearance was enhanced when a greater level of father acceptance was combined with a greater level of father challenge. In other words, when high father acceptance was combined with high father challenge, the level of BE-Appearance was the greatest. The region of significance on the moderator (father challenge) ranged from -5.00 to 0.6 indicating that any given simple slope outside this range is statistically significant. Therefore, for those who scored 0.6 or higher on father challenge (38% of the participants,  $n = 169$ ), the greater father acceptance they experienced, the more appearance satisfaction they reported.

Figure 5b depicts the nature of the interaction effect when father acceptance was plotted as a moderator. For participants who scored -2.2 or lower on father acceptance

(7.6% of participants,  $n = 30$ ), father challenge had a negative impact on appearance satisfaction. For these participants, the greater father challenge they experienced, the less appearance satisfaction they reported. For the remaining participants (i.e., those who scored greater than -2.2 on father acceptance, 92.4%,  $n = 416$ ), the level of father challenge did not have a significant impact on BE-Appearance. Therefore, in general, the nature of the interaction effect between FAcc  $\times$  FChall in predicting BE-Appearance was consistent with H2.

The nature of the interaction between FAcc  $\times$  FChall in predicting BE-Weight was also in line with H2. When father challenge was plotted as a moderator (see Figure 6a), the simple slope of father acceptance on BE-Weight is greater when a greater degree of father acceptance is accompanied by a greater degree of father challenge. The region of significance on the moderator (i.e., father challenge) ranges from -5.00 to +1.6, indicating that any given simple slope outside this range is statistically significant. That is, for participants who scored 1.6 or higher on father challenge (9% of participants,  $n = 40$ ), the simple slope of father acceptance on BE-Weight was significant. That is, for these participants, the greater father acceptance they reported, the more satisfied they were with their weight.

Plotting father acceptance as a moderator (see Figure 6b) revealed that, regardless of the level of father acceptance (i.e., for all participants), the effect of father challenge on weight satisfaction was not significant. Taken together, H2 was only partially supported.

### *Difference by sex composition of parent-child dyad (RQ6)*

RQ6 asked how, if at all, the hypothesized associations vary depending on the sex composition of parent-child dyad. The results of the multi-group analyses revealed no significant sex difference for each hypothesized link except for the link between social competence and BE-Appearance: Social competence was positively associated with appearance satisfaction only among males, but not among females. In other words, the results showed structural invariance across sex groups in terms of all hypothesized links except for one path that did not involve parental confirmation. This suggests little effect of children's sex; how parental acceptance and challenge were associated (or not associated) with children's outcomes did not differ by children's sex.

RQ6 also involved the effect of parental sex. There are at least three key differences between mothers' and fathers' contributions in predicting hypothesized mediators (social competence and self-concept) and body image. The first key difference pertains to how acceptance was related to social competence and body image. Mother acceptance was related to social competence, and this association was moderated by mother challenge. Moreover, mother acceptance was associated with body image through social competence. On the other hand, father acceptance was not associated with social competence.

The second key difference between mothers and fathers pertains to the moderating role of challenge in the relationship between acceptance and self-concept. Both mother acceptance and father acceptance were associated with self-concept. The relationship between mother acceptance and self-concept, however, was moderated by

mother challenge, whereas father challenge did not moderate the association between father acceptance and self-concept.

Finally, mothers and fathers differed in terms how the interaction between acceptance and challenge was associated with body image. For mothers, the interaction between acceptance and challenge was associated with body image through self-concept. On the other hand, for fathers, the interaction between acceptance and challenge was directly associated with body image without being mediated by self-concept.

### **SUPPLIMENTAL ANALYSES: ALTERNATIVE MODEL**

The model in the current study is based on the causal inferences that parental confirmation influences social competence and self-concept, which in turn, influences body image. However, the current data are correlational, and the opposite direction of causal relationship between hypothesized mediators (i.e., social competence and self-concept) and body image cannot be denied: Parental confirmation might impact body image, and body image might influence social competence as well as self-concept. In order to explore this possibility, an alternative model was run in which the direction of paths from the hypothesized mediators (i.e., social competence and self-concept) to endogenous variables (BE-Appearance, BE-Attribution, and BE-Weight) were switched. See Figure 7 for the alternative model.

The alternative model was compared with the hypothesized model based on the fit indices of the structural model in order to examine which model – the hypothesized model or alternative model – is a better-fitting model. Because the measurement model of the alternative model is the same as the one for the hypothesized model, only a

structural model was tested. See Table 9 for the fit indices of the alternative model. The initial structural phase (without adding any error covariance between factors to make the models as similar as possible) was compared between the hypothesized model and the alternative model.

### **Alternative Structural Model for Males**

The initial structural model for males' alternative model produced poor fit to the data,  $\chi^2(88) = 378.40, p < .001, \chi^2/df = 4.30, RMSEA = 0.18$  (90% CI = 0.16 – 0.20), CFI = 0.72, SRMR = .15. See Figure 8a for significant path coefficients and the variance explained by the model. These fit indices are worse than the counterpart hypothesized model,  $\chi^2(86) = 183.76, p < .001, \chi^2/df = 2.14, RMSEA = 0.10$  (90% CI = 0.08 – 0.13), CFI = 0.91, SRMR=0.11. Therefore, the results suggest that the hypothesized model fits the data of the current male sample better than the alternative model.

### **Alternative Structural Model for Females**

Initial structural model for females' alternative model also produced poor fit to the data,  $\chi^2(91) = 669.85, p < .001, \chi^2/df = 7.36, RMSEA = 0.16$  (90% CI = 0.15 – 0.17), CFI = 0.62, SRMR = .13. See Figure 8b for significant structural regression coefficients and the variance explained by the model. These fit indices are worse than the counterpart hypothesized model,  $\chi^2(89) = 290.69, p < .001, \chi^2/df = 3.27, RMSEA = 0.10$  (90% CI = 0.09 – 0.11), CFI = 0.87, SRMR = 0.11. The results, therefore, suggest that the hypothesized model is a better fitting model for the current female sample compared to the alternative one.

## **SUMMARY OF THE MAIN FINDINGS**

This section provides a brief summary of main findings based on the model. The findings listed below are based on multi-group SEM and therefore applicable to both males and females unless otherwise noted.

### **Main effect of acceptance**

- Mother acceptance was positively associated with social competence (H3) as well as self-concept (H8).
- Father acceptance was positively associated with self-concept (H8).

### **Interaction effect between acceptance and challenge**

- Mother acceptance and mother challenge interacted to predict social competence such that the positive relationship between mother acceptance and social competence was more pronounced when combined with a greater level of mother challenge (H4).
- Mother acceptance and mother challenge interacted to predict self-concept such that the positive association between mother acceptance and self-concept was enhanced as the level of mother challenge increased (H9).
- Father acceptance and father challenge interacted to predict body image (BE-Appearance and BE-Weight) such that the positive association between father acceptance and healthy body image was more pronounced when higher father challenge was involved (H2).

### **Relationship between social competence and body image**

- Social competence was positively associated with body image (BE-Attribution for both males and females, and BE-Appearance only for males) (H5).

#### **Relationship between self-concept and body image**

- Self-concept was positively associated with body image (BE-Appearance, BE - Attribution and BE-Weight) (H10).

#### **Mediating role of social competence**

- Social competence mediated the association between mother acceptance and body image (BE-Attribution); mother acceptance was positively associated with social competence, which, in turn, was related to a healthier body image (H6).

#### **Mediating role of self-concept**

- Self-concept mediated the association between mother acceptance and body image (BE-Appearance, BE-Attribution and BE-Weight), as well as the association between father acceptance and body image (BE-Appearance, BE-Attribution and BE-Weight). Mother acceptance as well as father acceptance were positively associated with self-concept, which, in turn, was associated with healthier body image (H11).
- Self-concept also mediated the association between  $M_{Acc} \times M_{Chall}$  and body image (BE-Appearance and BE-Weight). The positive association between mother acceptance and social competence was more pronounced when a greater level of mother challenge was involved. A greater level of social competence was, in turn, associated with healthier body image (H12).

## **Chapter 5: Discussion**

Negative body image is a prevalent issue in the U.S, and has significant psychological and physical consequences (Cafri et al., 2005; Stice, 2002). Identifying the potential causes of this problem is warranted. Previous body image research examining the role of family factors has paid only tangential attention to parental communication behaviors in examining the development of body image issues. Building on confirmation theory (Dailey, 2010), the current project sought to demonstrate the utility of examining communication behaviors in explaining the development of body image among emerging adults. More specifically, this project examined (a) how each component of parental confirmation (acceptance and challenge) individually and interactively was associated with body image, (b) how this association was mediated by social competence as well as self-concept and (c) how the hypothesized associations differed depending on the sex composition of parent-child dyads.

To this end, multi-group analyses for structural equation modeling were conducted. Results provided a general support for the model in which parental confirmation was associated with emerging adults' body image through social competence and self-concept. The results provided a somewhat complex picture of associations among key variables: How each component of confirmation (acceptance and challenge) was related to which components of body image (appearance satisfaction, perceived appearance evaluation from others, and/or weight satisfaction) and through which mediator (social competence, self-concept, or both) varied depending on parental sex.

Unlike parental sex, child sex played a minimal role in the current study. Multi-group analyses showed invariance of the model structure across males and females except for one path (i.e., the link between social competence and appearance satisfaction), demonstrating that there were very few differences between males and females regarding the hypothesized associations among variables of interest. Importantly, how mothers' and fathers' confirmation components were associated with body image through hypothesized mediators did not differ between males and females. This chapter first elaborates the summary of the results, which is comprised of three parts: (a) a mediating role of social competence as well as (b) a mediating role of self-concept in the relationship between confirmation and body image, and (c) the direct effect of the interaction between father acceptance and father challenge to predict body image. In delineating the mediating roles of social competence and self-concept, findings on each possible path in the mediation process (i.e., predictor to mediator, mediator to outcome, predictor to outcome) as well as the overall indirect effects will be presented. Following the summary of the results, the identification of several theoretical considerations and practical implications will be discussed. Finally, the study's limitations are discussed followed by directions for future research.

## **SUMMARY OF RESULTS**

Ultimately, this project sought to identify the effects of parental acceptance and challenge on children's body image through two mediators: social competence and self-concept. The data provided general support for the proposed model. Although there was a high correlation between a social competence factor and a self-concept factor ( $r = .61$

for males and  $r = .70$  for females), both social competence and self-concept functioned as mediators that explained the link between parental confirmation and body image, demonstrating the utility of simultaneously estimating both mediators in a single model.

At a general level, parental acceptance was positively associated with healthy body image through social competence and self-concept. However, the association between acceptance and the components of body image (BE-Appearance, BE-Attribution or BE-Weight) as well as the mediating roles of social competence and self-concept varied by parental sex.

Unlike acceptance, challenge had non-significant main effects on all of the endogenous variables (i.e., social competence, self-concept, and body image). Importantly, acceptance and challenge interacted to predict certain outcomes, namely, self-concept, appearance satisfaction, and weight satisfaction. The combination of high acceptance and high challenge was associated with the greatest level of the aforementioned outcomes, which is in line with previous confirmation research demonstrating interaction effects (Dailey, 2008b, 2010; Dailey et al. 2010). On the other hand, for individuals who received low levels of acceptance, challenge was negatively related to self-concept and appearance satisfaction.

### **Social Competence as a Mediator between Confirmation and Body Image**

#### ***Confirmation and social competence***

Consistent with expectations, mother acceptance was positively associated with social competence. This might suggest that warm, caring, and supportive parental behaviors (i.e., acceptance) provide a safe environment that is conducive for children to

explore different ideas and practice expressing emotions, opinions, and thoughts to others. Practicing communication in a supportive environment might help children foster self-efficacy in social contexts. In addition, consistently accepted children might develop a positive orientation toward the world and others, which might help them feel comfortable when interacting with others.

More importantly, mother acceptance and mother challenge interacted such that the positive effect of mother acceptance on social competence was enhanced as the level of mother challenge increased. Because challenge involves fostering components that are useful for social interactions – coaching children through negative emotions, encouraging them to explore new ideas, pushing them to defend their ideas, and to consider other people’s perspectives (Dailey, 2008b) – it seems reasonable that children who experience high challenge in a supportive environment develop skills and abilities that are necessary to navigate interpersonal lives.

Unlike mothers, neither father acceptance nor father challenge was associated with social competence. The reason for this parental sex difference might be related to the frequency of parent-child interactions. Compared to fathers, mothers spend more time communicating with their children (Leaper et al., 1998; Milkie, Raley, & Bianchi, 2009; Noller, & Callan, 2015). Naturally, mothers might have more opportunities to impact children’s social competence.

The current results are similar to previous studies (Laible & Carlo, 2001; Taniguchi & Thompson, 2015) showing that maternal behaviors (e.g., communication pattern, psychological control), but not paternal behaviors, were associated with

children's social competence (but see Lam et al., 2012 for the opposite result). However, it would be a mistake to conclude that father behaviors are not important to children's development of social competence. In fact, on a bivariate level, father acceptance as well as father challenge was correlated with most of the three indicators of the social competence factor (ranging from  $r = .16$  to  $r = .42$ ; See Table 1). The reason why neither father acceptance nor father challenge was related to social competence was perhaps due to the high correlations between mother acceptance and father acceptance ( $r = .50$  for males,  $r = .40$  for females) and between mother challenge and father challenge ( $r = .73$  for males and  $r = .49$  for females).

### ***Social competence and body image***

The data revealed that social competence, in general, was positively associated with a healthy body image. For both males and females, social competence was positively related to perceived opinions of others regarding their own appearances (BE-Attribution). That is, when individuals perceived possessing higher social competence, they were more likely to believe that their appearances were positively evaluated by others. This finding might suggest that when individuals have inadequate social competency, they might believe that others negatively evaluate them, including their appearances. Because BE-Attribution taps into more public and social dimensions of body image (i.e., beliefs about others' opinion), rather than how individuals inwardly feel about their own appearance, its association with social competence is not surprising. Even though males and females were similar in terms of the association between social competence and BE-Attribution, males and females differed on BE-Appearance in that

social competence was positively associated with appearance satisfaction for males, whereas this association was not significant for females. This was the only sex difference found in the current model. A potential reason for the sex difference in the association between social competence and appearance satisfaction might be related to the sex difference of attractiveness affirmed by Western social standards. Compared to the attractiveness standard of men's physique, there seems to be more clearly and narrowly defined, stringent and strict standards of beauty placed on female bodies, which have been characterized by thinness (Swami, Neto, Tovee, & Furnham, 2007). Through magazines, television and other media, the beauty standard for women is clearly defined, widely spread, and easily accessible. Social competence, then, might have little influence on females' appearance satisfaction. Therefore, females might already "know" how they should inwardly feel about their physical appearance based on a socially subscribed beauty standard.

On the other hand, for men, even though there is an increasing societal emphasis on muscle and slenderness for an ideal male body (Grogan, 2008), there seems to be more leeway for males to be considered as attractive. That is, the standard of men's attractiveness seems less stringent and is more variable than the beauty standard placed on females. For instance, a recent fad for the slang "dad bod," which is a male body type that looks formerly fit but presently entails a "beer gut" characteristic of a father (Moylan, 2015) has a positive connotation. This might be one example to suggest greater latitude in terms of what male body size and shape are considered attractive. Therefore, for males, there might be space for other factors to impact how they inwardly feel about

their appearance. How competent males perceive themselves to be in social contexts (i.e., social competence) might be one of such factors.

### ***Mediating role of social competence between confirmation and BE-Attribution***

Finally, social competence mediated the association between mother acceptance and perceived others' opinions about appearance (BE-Attribution). This result suggests that highly supportive and warm mothers tend to foster their children's development of social competence, which, in turn, positively influences children's perceived evaluations from others about their appearance. This pattern in which social competence plays a mediating role between family factors and body image has been reported in previous communication research with college-aged daughters (Arroyo & Segrin, 2012; Taniguchi & Thompson, 2015). The current project provided evidence that the same process is applicable to males.

Taken as a whole, the results seem to suggest that mothers who are supportive, warm, and loving tend to help their children cultivate social competence to successfully form and maintain close interpersonal relationships, which in turn, help them believe that their appearances are positively evaluated by others.

### **Self-concept as a Mediator between Confirmation and Body Image**

In addition to social competence, this project also showed that self-concept functioned as a mediator that explained the association between parental confirmation and body image.

### ***Confirmation and self-concept***

Confirmation theory states that because parental confirmation validates children's self-definition and expression, parental confirmation should facilitate optimal development of children's self-concept, including self-identity and self-esteem (Dailey, 2005, 2008b, 2010). Consistent with the tenant of confirmation theory, parental confirmation was largely related to children's self-concept.

Mother acceptance as well as father acceptance was positively associated with children's self-concept. Having a warm, supportive, and loving parent, regardless of whether it is a mother or father, seems conducive to the development of strong identity and positive self-regard. In addition, there was a significant interaction effect between mother acceptance and mother challenge. Mother acceptance and mother challenge interacted to predict self-concept, such that the combination of high mother acceptance and high mother challenge was associated with the greatest level of self-concept. This parallels Dailey and her colleagues' research (e.g., Dailey 2008b), which showed that the combination of high acceptance and high challenge was associated with the greatest level of identity strength.

The data further showed a *negative* impact of challenge on self-concept in the presence of little or no acceptance. For individuals who reported experiencing low mother acceptance (bottom 6.1%,  $n = 20$ ), mother challenge had a negative impact on self-concept. Such a compromised outcome associated with high challenge in the absence of acceptance has been documented in the developmental research tapping parental behaviors similar to acceptance and challenge (e.g., Rathunde, 1996, 2001). Specific to confirmation theory, the positive effect of acceptance on adolescents' identity

strength was smaller in the presence of low challenge as compared to high challenge (Dailey, 2008b). Moreover, sibling acceptance and sibling challenge interacted such that the combination of low acceptance and high challenge was related to *the lowest* level of identity strength and autonomy (Dailey, 2010).

A compromised effect of high challenge in the absence acceptance is not particularly surprising. In fact, confirmation theory clarifies that challenge does not always have to be enjoyable and pleasant experiences that are intentionally enacted by parents (Dailey, 2008b). Challenge can arise from “frustrating and conflictual interactions” (Dailey, 2008b, p.645). After all, challenging experiences only provide opportunity for growth and development in skills, and do not necessarily result in the development and advancement of abilities (Dailey, 2008b).

The reason for the negative effect of challenge in the absence of acceptance might be because children interpret challenging messages differently depending on the degree to which they experience warmth and support (Rathunde, 1996). Without feeling loved and supported, children might interpret challenging messages as criticism motivated by parental frustration and attempt to change or “fix” children. These children might also feel looked upon as incapable individuals, which might impair the healthy development of self-concept.

Unlike the interaction between mother acceptance and mother challenge, father acceptance and father challenge did not interact to predict children’s self-concept. Further, father challenge did not have a main effect on social competence. There are at least two potential interpretations for this. First, the non-significant association between

father challenge and self-concept might be because the variance in self-concept was mostly explained by father acceptance, considering that father challenge was highly correlated with father acceptance ( $r = .77$  for males and  $r = .80$  for females). Therefore, it might be a statistical artifact that the effect of father challenge was non-significant. In fact, on a bivariate level, father challenge was moderately correlated to each indicator of self-concept: identity strength ( $r = .25$  for males and  $r = .29$  for females) and self-esteem ( $r = .34$  for males and  $r = .33$  for females).

The second potential reason pertains to the normative nature of father challenge. Previous confirmation research reported the important role of father acceptance (rather than father challenge) in predicting children's self-concept (Dailey, 2010; Dailey, Imai et al., 2010). As Dailey (2010) reasoned, because challenge from fathers are culturally normative and thus expected, when these expectations are met, such parental behaviors might have less impact on children's self-concept including identity strength and self-esteem. Some might wonder, then, why mother acceptance was significantly associated with self-concept despite the cultural expectation that mothers are nurturing and accepting (e.g., Bem, 1981; Bentley & Fox, 1991). Because acceptance from parents is fundamental and necessary for children's healthy growth and development, mother acceptance might still be significantly associated with self-concept despite the normative nature of mother acceptance. However, what seems more important here is that mother challenge enhanced the effect of mother acceptance on self-concept. If mother challenge is seen as less normative and less expected, these behaviors might be salient when implemented.

### ***Self-concept and body image***

Self-concept was positively related to all three domains of body image. This finding suggests that individuals with a stronger self-identity and higher self-esteem tend to feel satisfied with their appearance and weight, and perceive their appearance to be positively evaluated by others. This result parallels previous research showing that problems with self-concept (e.g., weak identity, poor self-esteem) often co-occur with body image problems (e.g., Vartanian, 2009; Vartanian & Day, 2013). Individuals with poor self-concept might be more vulnerable to socio-cultural messages promoting thinness or muscularity. These individuals might be more likely to internalize socially subscribed standards of attractiveness and/or engage in social comparisons (Dittmar, 2009; Vartanian & Dey, 2013), both of which are consistent predictors of body dissatisfaction (Thompson & Stice, 2001).

Overall, compared to social competence, self-concept might be a more stable or consistent predictor of body image. Social competence was associated with only one (for female) or two (for males) of the subscales of body image, whereas self-concept was associated with all three subscales of body image. This might be because self-concept is a more general and broader concept compared to social competence, which is a narrower construct specific to social contexts. Due to the global nature of the self-concept construct, it might have a greater capacity to predict outcomes in a wider variety of areas, including body image.

### ***Mediating role of self-concept between confirmation and body image***

In general, self-concept mediated the associations between components of confirmation and body image. As mentioned earlier, how each component of confirmation was related to body image through self-concept varied by parental sex. Mothers' contributions were mostly consistent with the expectations. Mother acceptance was positively related to self-concept, which, in turn, was positively associated with healthy body image (all three domains of body image). In addition, mother acceptance and mother challenge interacted to predict self-concept, such that mother challenge enhanced the positive impact of mother acceptance on self-concept. Self-concept, in turn, was positively associated with satisfaction with appearance and weight. The indirect effect of interaction between mother acceptance and mother challenge on BE-Attribution through self-concept approached significance ( $p = .08$ ). Therefore, the data seem to suggest a general pattern where a combination of high acceptance and high challenge has a positive indirect effect on all three domains of body image through self-concept.

Father acceptance was also positively associated with self-concept, which, in turn, was positively associated with body image (appearance and weight satisfaction). This suggests that fathers' warm and supportive behaviors help children develop a strong and positive sense of self, which, in turn, promotes positive feelings toward their appearance and weight.

### **Direct Effect of the Interaction between Father Acceptance and Challenge on Body Image**

In addition to the indirect effect on body image (satisfaction with appearance and weight) through self-concept, fathers also directly contributed to the variance in these two aspects of body image without being mediated by social competence and self-concept. Specifically, father acceptance and father challenge interacted to predict appearance satisfaction and weight satisfaction.

First, among children with highly challenging fathers (the top 38% of father acceptance score,  $n = 169$ ), the slope of father acceptance on appearance satisfaction was steeper as the level of father challenge increased (Figure 5a). That is, the positive effect of father acceptance on appearance satisfaction was enhanced as the level of challenge increased, but this was the case only under the condition in which fathers provided highly stimulating and challenging environments. In other words, when fathers did not provide highly stimulating and challenging environments for children (i.e., for the rest of participants,  $n = 276$ ), father acceptance does not have a positive impact on appearance satisfaction (i.e., the simple slope of father acceptance on appearance satisfaction was not statistically significant from zero).

The results also revealed that, for individuals who reported rather low father acceptance (the bottom 7.6%,  $n = 30$ ), father challenge had a *negative* impact on appearance satisfaction (Figure 5b). For these participants, as the level of acceptance declined, the negative impact of challenge on appearance satisfaction increased. This result suggests that when fathers push and challenge their children without expressing love and care, these children might feel criticized generally but also more specifically with respect to their appearance .

A somewhat similar pattern emerged for the interaction between father acceptance and father challenge to predict weight satisfaction (BE-Weight). The level of father challenge enhanced the positive effect of father acceptance on weight satisfaction, but this was only the case when participants reported high father challenge (the top 9%,  $n = 40$ ; Figure 6a). On the other hand, for the rest of the participants (91%,  $n = 405$ ), father acceptance was not related to their weight satisfaction (i.e., a non-significant simple slope of father acceptance on weight satisfaction). Unlike appearance satisfaction, weight satisfaction was not negatively influenced by high father challenge even in the absence of father acceptance.

Taken together, these results seem to suggest that having fathers who are both highly accepting and challenging might contribute to a healthy body image. On the other hand, having fathers who are highly challenging without showing warmth and support might hamper the development of a healthy body image.

A question that follows is, why did the interaction between father acceptance and father challenge relate directly to body image without being mediated by the hypothesized mediators? A somewhat similar pattern was reported in previous research (Taniguchi & Thompson, 2015), which found that mother communication patterns were associated with college-aged daughters' body image through social competence, whereas father communication patterns were directly associated with body image without being mediated by social competence. Together with the current results, there seems to be something unique about father communication in how it is related to body image. Future

research might benefit from examining the reason why father communication tends to directly predict body image.

Taken as a whole, the current findings showed that parental acceptance and challenge played an important role in children's body image in a parent sex-specific manner. Mothers' accepting and warm communication is linked with children's social competence and a strong and positive self-concept, both of which are related to a healthy body image in turn. Moreover, mother challenge seems to enhance the association of mother acceptance and the development of a healthy body image (through self-concept). Fathers' communication is also linked with children's body image, but in a somewhat different manner than mothers'. Fathers' accepting and warm communication seems to be more relevant to a strong and positive self-concept (rather than social competence), which, in turn, is linked with a positive body image. Further, fathers' highly confirming behaviors (i.e., a combination of high acceptance and high challenge) seem directly related to their children's healthy body image. Finally, regardless of the parental sex, pushing and challenging in the absence of acceptance was adversely related to body image.

## **THEORETICAL CONTRIBUTIONS**

The findings of this project contribute to existing literature in four important ways. First, this study extended confirmation research by demonstrating that parental confirmation plays an important role in emerging adults' body image. Parental confirmation theory has been successfully applied to examine the development of identity strength and self-esteem within the construct of self-concept (Dailey, 2008b, 2010;

Dailey, Imai, et al., 2010). Though a few studies applied confirmation theory to examine children's body image (Bruns, 2006; Ellis, 2002), these studies focused on the acceptance component of parental confirmation, leaving the role of challenge as well as the combined effect of acceptance and challenge unexplored. The current study extended confirmation research by showing that parental confirmation – both acceptance and challenge – played an important role in emerging adults' body image. In addition, parental confirmation (specifically mothers') was also related to social competence, which is also a relatively unexplored domain from a confirmation perspective. Therefore, the present study provides support for the premise of confirmation theory that parental confirmation should facilitate child development in a wide variety of domains (Dailey, 2005).

Second, this study contributes to the existing literature by providing a systematic investigation of multiple key predictors of body image at two different levels: parental factors (confirmation) and individual factors (social competence and self-concept). Aside from some notable exceptions (e.g., Miller-Day & Marks, 2006), most previous body image studies have examined a few risk factors in isolation: Some investigated a few individual risk factors (e.g., perfectionism, low self-esteem) while others examined a few family factors (e.g., Family Communication Patterns). This study adds to this body of literature in the area of body image by examining multiple predictors at two different levels simultaneously, rather than in isolation, to obtain a more complete picture of the phenomena.

Third, this study contributed to the existing literature by demonstrating the utility of differentiating mothers and fathers rather than treating them as an aggregate (a parental unit) when examining parental impact on children's outcomes. For example, mothers were perceived as more accepting than fathers by both sons and daughters, which is consistent with previous literature (Archard et al., 2006; Boutelle et al., 2009; McCormick & Kennedy, 1994). Further, this study demonstrated the utility of differentiating mothers and fathers: The mechanism of how each component of parental confirmation (acceptance and challenge) was related to body image through the proposed mediators differed depending on parent sex. Social competence and self-concept together fully mediated the association between mother acceptance and body image. In addition, mother challenge played an important role by enhancing the positive impact of mother acceptance on healthy body image (i.e., interaction effect) through self-concept. Father acceptance, on the other hand, was associated with body image only through self-concept (and not through social competence). Another important difference between mothers and fathers was that father acceptance and father challenge interacted to directly predict body image (without being mediated by social competence or self-concept), such that the positive impact of father acceptance on body image was enhanced as the level of father challenge increased. Taken together, the current study provides support for the notion that communication from different family members is related to children's' development in different ways (Dailey, 2009).

Last, another related contribution this study makes to the existing literature pertains to differences and similarities between males and females. This study found that

males and females differed in their perceptions of parental confirmation. Females perceived mothers more accepting and challenging than males did, but the opposite pattern (i.e., males perceiving fathers as more accepting and challenging than females) was not observed. This is in line with the view that the mother-daughter relationship is a unique relationship (Rossi, 1993; Rossi & Rossi, 1990; Sutor & Pillemer, 2006; Troll, 1987). Perhaps more importantly, however, males and females were similar in terms of the associations among parental confirmation, social competence, self-concept and body image. Multi-group analyses showed that only one path (not related to parental confirmation -- a link between social competence and appearance satisfaction) differed between males and females. This appears to suggest that parental confirmation impacts children's body image outcomes in a similar manner regardless of the child sex. In studies examining family influence on child psycho-social outcomes, findings on the impact of child sex are inconsistent, some reporting no evidence of child sex difference (Bearman et al., 2006; Perry et al., 2008) while others suggesting daughters might be more influenced by parental behaviors than sons (Baker & Galambos, 2003; Hart et al., 1992). Although the current research provided no evidence that daughters are more (or less) influenced by parental behaviors than sons, future research might examine the condition under which parental influences differ by child sex (e.g., specific developmental outcomes, child's developmental stage).

## **PRACTICAL IMPLICATIONS**

Based on the results, there are several practical implications for parents as well as practitioners who work for intervention and prevention programs against negative body image.

### **Implications for Parents**

In general, the current results suggest that both mothers' and fathers' acceptance and challenge are important to their children's body image. Regardless of parental sex, highly nurturing as well as challenging (i.e., highly confirming) parental behaviors seem most conducive to the development of children's positive body image, even though the specific mechanism might vary by parental sex. Mothers' highly confirming behaviors seem to promote healthy body image through the development of self-concept whereas fathers confirming behaviors appear to directly promote healthy body image.

Therefore, parents could be advised to employ confirming messages that validate children's self-expressions and acknowledge them as unique, worthy, and capable individuals.

Further, regardless of parental sex, warm, supportive, and nurturing behaviors seem to be beneficial to the development of a healthy body image. Again, however, mechanisms which may explain this phenomenon appear to be different by parent sex. Mothers' supportive and warm behaviors might be particularly beneficial to healthy body image through the development of social competence. Similarly, fathers' warm and accepting behaviors might also contribute to healthy body image through the development of a strong and positive self-concept.

It seems particularly important for parents to be aware of the potential disadvantage of employing challenging behaviors without displaying love, warmth, and support. Regardless of parents' intentions, pushing and challenging children without showing validation and care could potentially lead to negative child outcomes (negative self-concept and body image). More specifically, the current data suggested that when mothers push and test children's ability without support and love, children's development of self-concept might be compromised, which might hamper the development of healthy body image. Similarly, when fathers employ highly challenging messages without showing warmth, love, and acceptance, children's development of healthy body image might be hindered. Children might interpret parental challenge in the absence of acceptance as motivated by parental frustration and anger, and they might feel criticized and not trusted as capable and valuable individuals. Therefore, it seems advisable that parents display love, warmth, and support, especially when pushing and challenging so that children feel they are loved, trusted, and capable individuals who can attain greater potential.

### **Implications for Intervention and Prevention Programs**

The results from the current project also have implications for practitioners or therapists working with intervention and prevention programs against negative body image. First, practitioners working with younger children might consider encouraging parents to display the confirming behaviors as described above. Second, even though family interactions already experienced in the past cannot be altered, social competence and self-concept (i.e., mediators in the current study) can be still changed. Practitioners

might consider incorporating approaches to improving social competence, and particularly self-concept, into intervention and prevention programs for body image issues.

First, helping individuals improve the ability to form and maintain socially rewarding interpersonal relationships might be beneficial given the positive association between social competence and body image. As individuals leave home when entering college, some of them experience loneliness, isolation, and low support availability (Cutrona, 1982; Larose & Boivin, 1998), making them more susceptible to developing a negative body image and eating problems (Budd, 2006; Mallinckrodt et al., 1995). Helping high school children to build social competence in advance of making the transition into college might have a preventive value. Further, based on the current results, enhancing social competence might be useful in improving appearance satisfaction for males especially.

Second, assisting individuals improve their self-concept (self-identity and self-esteem) might also be useful. Intervention and prevention programs focusing on improving self-concept, and more specifically, self-esteem, have consistently shown success in improving body image after implementation (see O’Dea, 2004 for review)<sup>5</sup>.

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<sup>5</sup> As other scholars (e.g., Armitage, 2000) have cautioned, it should be kept in mind that these intervention programs contained multiple components that could have contributed to the improvement of body image. For instance, most intervention programs that are labeled as “self-esteem approach” (e.g., McVey & Davis, 2002; O’Dea & Abraham, 2000) contained elements of stress management, improving communication skills, in addition to self-esteem building. Because the component of self-esteem boosting has rarely been tested in isolation, caution has to be taken to conclude the role of self-esteem from intervention programs.

Further, the negative association between self-concept and body image may be because individuals with poor social concept (weak identity and low self-esteem) might be more likely to turn to outside sources (e.g., media, peers), making them more vulnerable to the internalization of the societal attractiveness ideal (Vartanian, 2009; Vartanian & Dey, 2013). By extension, intervention and prevention efforts to reduce the internalization of thin- or muscular- ideals appears effective (e.g., Yager & O’Dea, 2008). Improving the level of internalization might be more realistic for individuals to attain as compared to altering their self-concept.

## **LIMITATIONS**

This study sought to contribute to scholarship on family influence on body image from a communicative perspective. The findings of the current study, however, should be taken in the context of several limitations.

### **Self-report Data**

The current study used children’s self-report of parental confirmation rather than an observational assessment of actual parent-child interactions or parents’ perception of their own confirmation toward their children. Because the vast majority of the participants were not currently residing with their parents, their self-report of parental behaviors might be under the influence of memory bias. For instance, the current quality of relationships with parents might influence children’s recollection of the level of parental confirmation during their formative years. Individuals who currently have a positive (or negative) relationship with their parents might tend to recall information in a way that confirms positive (or negative) parental behaviors (i.e., confirmation bias).

Yet, the use of self-report data is still meaningful because, in line with Feeney and Noller (2013), children's perceptions of family interactions might have a greater impact on their current socio-psychological situations than the "objective reality." In fact, previous studies showed that children's perceptions of parental behaviors (i.e., self-report assessments) were more stable and stronger predictors of child outcomes compared to observational assessments or parents' self-report (e.g., Dailey, 2005, Gecas & Schwalbe, 1986).

However, the utility of observational data should not be overlooked in future research. Observing parent-child interactions would provide deeper insight into how each component of confirmation is operative between parents and children. Observational data might be more important when examining younger children who might not be even aware of parental disconfirmation (Laing, 1961). In this sense, observational assessments shed light on the role of parent-child communication in child outcomes (e.g., Dailey, 2008a; Isberg et al., 1989) in a way that self-report assessments might not be able to provide.

### **Causality**

Even though the current study's model suggests a certain causal direction, causal claims cannot be made due to the correlational nature of the data. In terms of the causality between hypothesized mediators (social competence and self-concept) and body image, the current study showed that the original model fits better than the alternative model in which body image was modeled as a predictor of social competence and self-

concept. Yet, a better model fit does not provide strong enough evidence that high social competence or self-concept actually causes healthy body image.

Another limitation germane to causal ordering involves the association between parental confirmation and children's body image. It is possible that children's body image influences the nature of interactions with their parents. In fact, Kenny and Hart (1992) argued that parental support deficit and negative affect often reported by bulimic daughters might be reflective of family stress resulting from the daughter's bulimic symptoms, rather than contributing to the symptoms.

As demonstrated by the current study as well as previous research (Johnson & Wardle, 2005; Presnell, Stice, Seidel, & Madeley, 2009), children with body image issues tend to suffer from other psychological and interpersonal issues including depressive symptoms, interpersonal difficulties, and poor self-concept (i.e., low levels of identity strength and self-esteem). Less positive parent-child interactions, including low parental confirmation, might be partly due to these pre-existing difficulties experienced by children having body image issues. These children might act detached, defensive, or conflictual, and as a result, they might feel less connected with their parents (Boutelle et al., 2009) as well as less confirmed by parents.

It seems most likely that parental confirmation both influences and is influenced by children. In fact, Dailey's conceptualization of confirmation addresses this idea of bi-directionality, noting that children contribute to family climates as well as to their own development (Dailey, 2006, 2008a, 2008b). To the best of the author's knowledge, Boutelle et al. (2009) are the first to longitudinally examine this potential, and they have

found a bi-directional relationship between parent-child connectedness and adolescents' emotional functioning, including body satisfaction, over five years. Future research would benefit from examining potential reciprocal relationships among parental confirmation, social competence, self-concept, and children's body image. Understanding the complex nature of such relationships may help break the cycle of negative family interactions that might influence and be influenced by children's negative body image.

### **Samples**

The current sample was collected from undergraduate students at the University of Texas at Austin, where the majority of students come from families with middle- to high- socioeconomic status or SES (Stuart, 2010). High SES backgrounds might partially explain why most participants reported high levels of acceptance and challenge (i.e., negatively skewed data of acceptance and challenge). Considerable evidence exists that parenting style varies as a function of SES (Hoff, Laursen, & Tardif, 2002; Kotchick & Forehand, 2002). In general, regardless of ethnicity, parent SES (using indicators of income, education, or occupation) is positively related to parental behaviors similar to confirmation (e.g., warmth, affection, authoritative parenting) and negatively correlated with parental behaviors close to disconfirmation, such as psychological control, criticism, and authoritarian parenting (e.g., Belsky, Bell, Bradley, Stallard, & Stewart-Brown, 2007; Bradley, Corwyn, McAdoo, & Garcia-Coll, 2001; Glasgow, Dornbusch, Troyer, & Steinberg, 1997; von der Lippe, 1999). Therefore, there is a good reason to assume that if the current study used a more socioeconomically diverse sample, the data of acceptance

and challenge might have been more normally distributed. With greater variability in acceptance and challenge, research with socioeconomically diverse samples might be able to detect more salient effects of parental confirmation on child outcomes.

Relatedly, participants were predominantly White (60%), with an additional 20% being Latinos. Parent-child interactions, norms of such interactions, and the ways these interactions influence children's developmental outcomes might vary depending on the family's cultural/ethnic background. Therefore, the current results might not be applicable to non-White populations. Future research might benefit from examining how one's cultural background plays a role in explaining children's body image from a confirmation perspective. For instance, authoritative parenting (high support and high challenge), which is considered to be closest to confirmation, has been reported as most beneficial to child outcomes (Hart et al., 2003). Yet, authoritarian parenting (low support and high challenge) were reportedly more common among ethnic/cultural minorities including African American and Latino families, showing no relationships with negative child outcomes, which were typically found in European American families (e.g., Dixon, Graber, & Brooks-Gunn, 2008; Garcia Coll, Meyer, & Brillon, 1995; Jambunathan, Burts, & Pierce, 2000). Given this, the combination of low acceptance and high challenge might not have as negative of an impact on these children if such parental practices are culturally normative.

The U.S. has been experiencing a significant demographic shift. The percentage of what is considered the minority population (any groups other than non-Hispanic White) is estimated to account for over half the U.S. population by 2044 (Colby &

Ortman, 2014). Given the rise of minority populations in the U.S., examining the role of parental confirmation across ethnically/culturally diverse samples would benefit the future direction of research by serving an increasingly ethnically diverse U.S. population. (See subsequent section for more discussion on cultural variability).

### **Only One Mother Figure and One Father Figure**

In the current study, participants were asked to choose one mother figure as well as one father figure who were most influential to their own development. In reality, individuals might have more than one mother figure and/or more than one father figure who were influential in their lives. Annually, over one million children under 18 years old in the United States experience the divorce of their parents (Kreider, 2008). When children go through parental divorce, their formative years might be influenced by more than two parental figures (e.g., biological mother, biological father and stepfather) or only one parental figure (e.g., single mother). That is, parental confirmation (or disconfirmation) influencing children's development might not necessarily be composed of one maternal figure and one paternal figure. Taking confirmation into consideration from multiple parental figures might be a necessary next step to better understand the family influence on the development of children living in increasingly diverse family forms (Walsh, 2012),

### **Body Image Variables**

The model would have been more parsimonious if a single factor for body image were used, rather than three stand-alone body image variables (i.e., BE-Appearance, BE-Attribution, BE-Weight). However, it appears that having three separate body image

variables provided some insight into the relationships among variables in a way that would not have been possible if a single body image factor were used. For example, the results showed that social competence was related to perceived opinions from others about appearance (i.e., BE-Attribution) for both males and females, whereas self-concept was associated with all three domains of body image (i.e., BE-Appearance, BE-Attribution, and BE-Weight) for both males and females. If a single body image factor were used, the results would have simply shown that self-concept had a stronger association with a body image factor, and this complexity would not have been revealed.

## **FUTURE DIRECTIONS**

### **Inter-parental Consistency in Confirmation**

Parenting literature, though limited, suggests that mothers and fathers tend to be moderately similar in terms of parenting behaviors (Simons & Conger, 2007; Winsler, Madigan, & Aquilino, 2005). In this study, the correlations were moderately high between mother acceptance and father acceptance ( $r = .59$  for males,  $r = .40$  for females) as well as between mother challenge and father challenge ( $r = .73$  for males,  $r = .49$  for females). However, compared to fathers, mothers were perceived as more accepting (by sons and daughters) and more challenging (by daughters).

It would be meaningful for future research to examine the degree to which inter-parental discrepancies in components of confirmation might be related to children's developmental outcomes, including body image, social concept and self-concept. Evidence, though limited, suggests that inter-parental discrepancy in parenting behaviors might have compromised effects on children's outcomes (Simons & Conger, 2007;

Gable, Crnic, & Belsky, 1994). It is reasonable to argue that inter-parental inconsistency in parental behaviors might cause confusion and stress in children, which might have negative impact on socio-psychological adjustment. Yet, it also seems likely that children who have one parent showing low confirmation and the other parent displaying high confirmation (i.e., high inter-parental discrepancy) would experience better psychological outcomes compared to children who have both parental figures displaying low confirmation. Regardless, examining the effect of inter-parental discrepancy in confirmation will enrich our understanding of the theory of confirmation.

### **Cultural Variability and Universality of Confirmation Theory**

Confirmation theory was born, developed and refined within the context of Western cultures (Dailey, 2005). In Western societies, where people tend to be individualistic and possess highly developed independent self-construal (Markus & Kitayama, 1991), developing a unique, strong, and positive sense of self and establishing autonomy and independence are highly valued features (Hofstede, 1980). These features, which are argued to be fostered through parental confirmation (Buber, 1965; Sieburg, 1976; 1985), are not core values in East Asian or other societies. Instead, in countries where people tend to be collectivistic and possess interdependent self-construal, belonging or fitting in, inter-dependence, and conformity are valued features (Gudykunst et al., 1996; Kim, 2005; Markus & Kitayama, 1991).

Even though the core assumption of confirmation theory, that is, human beings have a fundamental and innate need to be validated by others so that they can achieve personal development (Buber, 1965; Laing, 1961; Watzlawick et al., 1967), seems most

likely to be universal across cultures, there might be certain aspects that are more cultural-specific. More specifically, (a) what it means to be accepting and challenging parents (i.e., specific parental behaviors of acceptance and challenge) and (b) what the ideal of personal development comprises might be different in non-Western cultures.

How acceptance and challenge are represented in parental behaviors might look different in other countries. For example, considering high-context communication and the tendency toward an indirect manner of communication in East Asian societies (Gudykunst & Nishida, 1994; Hall, 1976), parents (as well as children) might not explicitly show affection through verbal and/or non-verbal means (e.g., smiling, hugging, and saying “I love you”). If the acceptance measure were to be used in East Asian countries, the results might need to be interpreted carefully because lower scores might not necessarily reflect low parental acceptance.

Similarly, how parental challenge is exemplified might differ in East Asian cultures. For instance, in Japanese, *sunao* refers to the cooperative receptivity that parents aim to instill in children. Even though this might be seen as sacrificing or giving up the self from a Western perspective (Lewis, 1996; White & Levine, 1986), *sunao* is considered as a means to fulfill the self in Japan (Rothbaum, Pott, Azuma, Miyake, & Weisz, 2000). In addition, the Confucian value of filial piety (i.e., loyalty, obligation, and respect to parents) is considered as virtuous in Japan as well as other East Asian countries (Maeda, 2004). Therefore, parents might be motivated to push and challenge children, not so much to develop their own unique individuality and autonomy, but more to establish inter-dependency and to foster an ability to fit into the society, which might

be more functional to survival in collectivistic societies. It might be beneficial to adjust the measurement of challenge when it is used among non-Western populations.

In addition to how parental acceptance and challenge operate, what is considered to be ideal human development, and thus, what types of developments are desired to be instilled in children, might differ in other societies. For instance, in some East Asian societies, the ideal development parents try to realize in their children involves establishing the ability to accommodate others (e.g., empathy and compliance) and maintain harmony within a social context (e.g., Rothbaum et al., 2000). In fact, East Asians tend to have less clear and consistent self-concept across situations (Heine & Lehman, 1997). Having multiple, indeterminate and fluctuating self-concepts might be seen negatively in the West, but it might be functional to East Asian cultures where self is expected to adjust to the contexts. It might be the case that parental confirmation fosters children's sense of self that is functional to the society they are situated. That is, parental confirmation in the West tends to foster a strong and consistent sense of self whereas parental confirmation in the East Asian cultures might foster flexible and multiple self-concepts.

Finally, it is not clear to what degree the hypothesized model in this study is applicable to non-Western populations. It might be possible, however, that considering mental and physical closeness with parents in certain East Asian countries, even after children grow up (Rothbaum et al., 2000), the impact of parents on emerging adult children's outcomes might be even greater than what was found in the current study.

Future research examining the aforementioned aspects would illuminate the universality and cultural-specificity of the premises of confirmation theory.

### **Influence from Multiple Family Members**

The current study focused on the role of parental confirmation. Future research might benefit from assessing confirmation from different family members (e.g., siblings, members of extended families), in addition to parents, to examine if each family member, when assessed simultaneously, makes unique contributions to the outcome of interest. Even though the confirmation level from different family members is likely to be positively correlated (e.g., Dailey, 2009), it is meaningful to examine if different family members still make unique contributions to body image in emerging adults, and if social competence and self-concept mediates such an effect on body image.

Sibling confirmation might have a unique contribution to the outcomes of interest here. Previous research demonstrated contributions of positive sibling relationships on psychosocial adjustment among adolescents (e.g., Gass, Jenkins, & Dunn, 2007; Yeh & Lempers, 2004) and emerging adults (Milevsky, 2005; Stocker, Lanthier, & Furman, 1997). Specific to confirmation, research by Dailey and her colleagues showed that sibling acceptance was related to college grades (Dailey, Imai et al., 2010), and the combination of high acceptance and high challenge was associated with a high level of self-esteem (Dailey, 2010).

Of particular interest is the examination of whether sibling confirmation makes a unique contribution above and beyond parental confirmation. Dailey (2009) provided initial evidence that sibling confirmation (focusing on an acceptance component)

contributed to adolescents' positive adjustment above and beyond the contribution of parents. It would be interesting to examine if sibling challenge as well as an interaction between sibling acceptance and challenge would contribute independently. As Dailey (2009, 2010) noted, siblings are different from parents in terms of equality in power, and confirmation from siblings might not be as expected as confirmation from parents. Therefore, when siblings display highly confirming behaviors, such behaviors might be more salient and thus have unique contributions to outcomes of interest.

In addition to siblings, assessing confirmation from extended family members might also be beneficial for future research. African American families, for example, tend to have close ties with extended family members including grandparents, aunts and uncles (Johnson & Staple, 2005). This means that children have more frequent interactions with these extended family members, and they might have unique contributions to children's developmental outcomes.

Future research might examine if having a highly confirming family member (e.g., sibling, aunt, uncle, grandparent) might buffer against the negative effect of having a disconfirming parent. In fact, in the aforementioned study examining confirmation from parents and siblings, Dailey (2009) found that psychosocial adjustment (i.e., self-esteem, self-concept, and autonomy) for adolescents with lower overall family confirmation was greater when these adolescents also experience more variance among family members. Dailey (2009) reasoned the possibility that when overall confirmation is low, experiencing high confirmation from at least one family member might provide some protection from the low level of confirmation. Examining if siblings as well as

extended family members have unique contributions independent of parents, and how they might even provide protection from disconfirming parents, would further enrich our understanding of confirmation theory.

### **Potential Buffering Effect of Parental Confirmation against Negative Media Impact**

Future research might also benefit from examining if parental confirmation might provide protection from socio-cultural pressure, especially the media. The mass media is argued to be one of the most powerful and pervasive transmitters of the socio-cultural ideal of attractiveness (Field, Austin, Camargo, Taylor, Striegel-Moore, Loud, & Colditz, 2005; Tiggemann et al., 2000). Correlational and experimental studies consistently demonstrate that exposure to mass media depicting the ideal body (i.e., the ideal thin body for females and the muscular body for males) is linked to body image disturbance both in women and men (for a review, see Grabe, Ward, & Hyde, 2008 for women and Barlett, Vowels, & Saucier, 2008 for men). Media messages are so pervasive in most individuals' everyday life that it is virtually impossible to completely escape from such messages.

Importantly, parental confirmation might function as a “buffer” against the negative impact of media messages. Individuals with more confirming parents might be less vulnerable to socio-cultural messages highlighting the importance of the ideal body. Children who feel validated, acknowledged, and recognized by parents might be less susceptible to the external criteria of attractiveness in order to be accepted and positively evaluated by others. Examining if and how children with confirming parents are less vulnerable to the impact of media messages emphasizing idealized body images would

extend the extant body image literature. Experimental as well as longitudinal research could examine if parental confirmation moderates the negative impact of media exposure on children's body image.

## **CONCLUSION**

Building on confirmation theory (Dailey, 2010), this study yielded insight into the mechanisms through which parental communication behaviors are linked to emerging adults' body image. Although more work is needed before definitive conclusions can be reached, there is evidence to suggest that parental confirmation is positively linked to healthy body image through social competence and self-concept. The findings of this study also provide insight into the unique roles of mothers and fathers in emerging adults' body image. The positive association between mother acceptance and healthy body image appears to be mediated by social competence, such that mother acceptance is associated with emerging adults' social competence, which is also linked with a healthy body image. Mother challenge enhances the positive effect of mother acceptance on self-concept, which, in turn, is associated with a healthier body image.

The positive association between father acceptance and body image seems to be mediated by self-concept, such that father acceptance is associated with emerging adults' self-concept, which, in turn, is linked with a healthy body image. Further, a combination of high father acceptance and high father challenge appears to directly contribute to healthy body image. Even though multiple disciplines should continue to identify factors influencing body image, this study represents one that underscore the value of applying a

communication perspective, namely parental confirmation theory, to research on body image.

## Tables

**Table 1. Mean, Standard Deviations, and Range of Raw Scores and Factor Scores for Key Variables**

Key Variables	Raw Scores					Factor Scores	
		All Participants ( <i>n</i> = 446)		Males ( <i>n</i> = 126)	Females ( <i>n</i> = 320)	All Participants ( <i>n</i> = 446)	
	<i>α</i>	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>Range</i>	<i>M</i> ( <i>SD</i> )	<i>Range</i>
Mother Acceptance	.91	5.47 (1.30)	5.24 <sub>a</sub> (1.24)	5.57 <sub>b</sub> (1.30)	1-7	0 (1.07)	-4.48 – 1.47
Mother Challenge	.90	5.34 (1.21)	5.11 (1.25)	5.44 (1.18)	1-7	0 (1.25)	-4.46 – 1.93
Father Acceptance	.92	4.98 (1.41)	4.78 <sub>a</sub> (1.41)	5.06 <sub>b</sub> (1.41)	1-7	0 (1.29)	-3.70 – 2.07
Father Challenge	.92	5.08 (1.33)	4.97 (1.25)	5.13 (1.36)	1-7	0 (1.36)	-4.15 – 1.92
Body Esteem - Total	.94	3.68 (0.85)	3.86 <sub>a</sub> (0.89)	3.61 <sub>b</sub> (0.83)	1.13-6	0 (0.68)	-2.40 – 1.82
BE-Appearance	.91	3.77 (0.92)	3.93 <sub>a</sub> (0.99)	3.72 <sub>b</sub> (0.89)	1-6	0 (0.89)	-2.53 – 2.24
BE-Attribute	.83	3.63 (0.95)	3.56 (1.13)	3.66 (0.87)	1-6	0 (0.91)	-2.49 – 2.08
BE-Weight	.92	3.56 (1.00)	3.92 <sub>a</sub> (1.00)	3.45 <sub>b</sub> (1.09)	1-6	0 (0.98)	-3.06 – 2.30
ICQ	.94	3.47 (0.60)	3.35 <sub>a</sub> (0.73)	3.52 <sub>b</sub> (0.53)	1.08-5	0 (0.47)	-1.74 – 1.13
Communication Apprehension	.90	3.34 (1.31)	3.40 (1.44)	3.32 (1.26)	1-7	0 (1.33)	-2.30 – 4.00
Relationships with Others	.88	5.16 (1.21)	4.82 <sub>a</sub> (1.31)	5.29 <sub>b</sub> (1.14)	1.33-7	0 (1.32)	-3.49 – 1.86
Identity Strength	.85	4.77 (0.99)	4.69 (1.12)	4.81 (0.94)	1.58-7	0 (0.68)	-2.03 – 1.36
Self-Esteem	.91	5.03 (1.19)	4.89 (1.37)	5.15 (1.10)	1-7	0 (0.68)	-3.65 – 1.60
BMI	-	22.89 (4.06)	23.49 <sub>a</sub> (3.98)	22.65 <sub>b</sub> (4.07)	16 - 48	--	--

*Note.* Means with different subscripts are significantly different from each other. ICQ = Interpersonal Competency Questionnaire. Scales assessing mother challenge and mother acceptance were not presented to about 22% of participants ( $n = 100$ ) due to an error in online survey construction.

**Table 2. Correlation among the Key Variables**

	1	2	3	4	5	5a	5b	5c	6.	7	8	9	10
1. M Acceptance	-	.74**	.50**	.59**	.32**	.34**	.30**	.21*	.30*	-.34**	.46**	.32**	.43**
2. M Challenge	.76**	-	.51**	.73**	.31**	.31**	.33**	.19	.37**	-.41**	.48**	.31*	.36**
3. F Acceptance	.40**	.40**	-	.77**	.33**	.34**	.15	.32**	.16	-.19*	.31**	.14	.29**
4. F Challenge	.39**	.49**	.80**	-	.26*	.28**	.16	.21*	.23*	-.28*	.42**	.25*	.34**
5. BE-Total	.23**	.24**	.25**	.25**	-	.93**	.73**	.88**	.54**	-.47**	.51**	.58**	.66**
5a. BE-Appearance	.26**	.24**	.28**	.27**	.93**	-	.55**	.73**	.54**	-.44**	.49**	.56**	.66**
5b. BE-Attribution	.14*	.10	.18**	.20**	.65**	.49**	-	.46**	.47**	-.46**	.49**	.40**	.53**
5c. BE-Weight	.17**	.21**	.17**	.18**	.91**	.75**	.41**	-	.37**	-.33**	.35**	.46**	.47**
6. ICQ	.28**	.31**	.30**	.31**	.38**	.36**	.38**	.27**	-	-.60**	.65**	.49**	.52**
7. Com App	-.13*	-.11	-.18	-.16*	-.26**	-.29**	-.30**	-.12*	-.53**	-	-.60**	-.54**	-.49**
8. Relationships	.34**	.30**	.39**	.33**	.28**	.43**	.23**	.29**	.51**	-.45**	-	.56**	.59**
9. Identity Strength	.32**	.30**	.36**	.29**	.41**	.47**	.25**	.30**	.45**	-.40**	.61**	-	.81**
10. Self Esteem	.32**	.31**	.38**	.33**	.61**	.67**	.42**	.44**	.47**	-.40**	.58**	.75**	-

*Note:* Correlations for female participants ( $n = 318$ ) are presented below the diagonal, and correlations for male students ( $n = 126$ ) are presented above the diagonal. M = Mother; F = Father; BE = Body Esteem; ICQ = Interpersonal Competence Questionnaire; Com App = Communication Apprehension.

\*  $p < .05$  \*\* $p < .001$

**Table 3a. Confirmatory Factor Analysis of Key Variables for Males**

	$SB\chi^2$	<i>df</i>	<i>p</i>	CFI	TLI	SRMR	RMSEA	RMSEA 90% C.I.
Mother Acceptance	86.04	20	<. 001	0.86	0.81	0.07	0.18	0.14 – 0.22
Mother Challenge	109.90	35	<. 001	0.88	0.85	0.06	0.14	0.11 – 0.18
Father Acceptance	62.52	20	<. 001	0.93	0.91	0.05	0.13	0.10 – 0.17
Father Challenge	78.02	35	<. 001	0.94	0.92	0.05	0.10	0.07 – 0.13
Body Esteem	905.26	228	<. 001	0.71	0.68	0.13	0.15	0.14 – 0.17
ICQ	1414.30	735	<. 001	0.82	0.81	0.08	0.09	0.08 – 0.09
Communication Apprehension	41.96	9	<. 001	0.93	0.89	0.04	0.17	0.12 – 0.23
Relationships with Others	140.62	27	<. 001	0.82	0.76	0.09	0.19	0.16 – 0.22
Identity Strength	166.24	54	<. 001	0.81	0.77	0.08	0.13	0.11 – 0.15
Self Esteem	250.91	35	<. 001	0.77	0.71	0.10	0.22	0.20 – 0.25

*Note.*  $SB\chi^2$  = Satorra-Bentler rescaled  $\chi^2$ ; CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual

**Table 3b. Confirmatory Factor Analysis of Key Variables for Females**

	SB $\chi^2$	<i>df</i>	<i>p</i>	CFI	TLI	SRMR	RMSEA	RMSEA 90% C.I.
Mother Acceptance	100.21	20	<.001	0.94	0.91	0.04	0.13	0.10 – 0.15
Mother Challenge	109.67	35	<.001	0.94	0.92	0.04	0.09	0.07 – 0.11
Father Acceptance	174.07	20	<.001	0.91	0.87	0.05	0.16	0.14 – 0.18
Father Challenge	93.64	35	<.001	0.97	0.96	0.03	0.07	0.06 – 0.09
Body Esteem	1283.00	227	<.001	0.80	0.78	0.09	0.12	0.12 – 0.13
ICQ	1831.86	735	<.001	0.84	0.83	0.07	0.07	0.07 – 0.07
Communication Apprehension	110.41	9	<.001	0.91	0.86	0.05	0.19	0.16 – 0.22
Relationships with Others	261.19	27	<.001	0.81	0.74	0.09	0.17	0.15 – 0.19
Identity Strength	353.20	54	<.001	0.77	0.72	0.08	0.13	0.12 – 0.15
Self Esteem	326.64	35	<.001	0.84	0.79	0.08	0.16	0.15 – 0.18

*Note.* SB $\chi^2$  = Satorra-Bentler rescaled  $\chi^2$ ; CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; ICQ = Interpersonal Competence Questionnaire

**Table 4a. Regression Results for Predicting BE-Appearance**

	$\beta$	$t$	$p$
Mother Acceptance	.19	2.16	<.05
Mother Challenge	.02	0.26	.79
M Acceptance $\times$ M Challenge	.04	0.55	.58
Father Acceptance	.19	2.21	<.05
Father Challenge	.08	0.78	.44
F Acceptance $\times$ F Challenge	.08	1.15	.25

*Note.* Overall Model:  $F(6, 335) = 7.19, R^2 = .12, p < .001$ .

**Table 4b. Regression Results for Predicting BE-Attribution**

	$\beta$	$t$	$p$
Mother Acceptance	.15	1.70	.09
Mother Challenge	.04	0.47	.64
M Acceptance $\times$ M Challenge	.08	1.03	.30
Father Acceptance	.09	1.00	.32
Father Challenge	.08	0.82	.41
F Acceptance $\times$ F Challenge	.04	0.60	.55

*Note.* Overall Model:  $F(6, 335) = 3.97, R^2 = .07, p < .001$ .

**Table 4c. Regression Results for Predicting BE-Weight**

	$\beta$	$t$	$p$
Mother Acceptance	.05	0.55	.58
Mother Challenge	.06	0.66	.51
M Acceptance $\times$ M Challenge	.01	0.06	.95
Father Acceptance	.14	0.14	.12
Father Challenge	.09	0.90	.37
F Acceptance $\times$ F Challenge	.12	1.73	.08

*Note.* Overall Model:  $F(6, 335) = 3.74, R^2 = .06, p < .001$ .

**Table 5a. Summary of Fit Statistics for Baseline Models for Males**

Model	SB $\chi^2$	df	p	CFI	TLI	SRMR	RMSEA	RMSEA 90% C.I.
Measurement model								
Initial measurement model	177.872	78	<.001	0.93	0.87	0.04	0.10	0.08 – 0.12
Revised measurement model	156.99	77	<.001	0.95	0.89	0.04	0.09	0.07 – 0.11
Revised measurement model	142.48	76	<.001	0.95	0.91	0.04	0.08	0.06 – 0.10
Final measurement model	128.81	75	<.001	0.96	0.92	0.04	0.08	0.05 – 0.10
Structural model								
Initial structural model	183.76	87	<.001	0.91	0.85	0.11	0.10	0.08 – 0.13
Final structural model	146.94	86	<.001	0.94	0.91	0.04	0.08	0.06 – 0.11

**Table 5b. Summary of Fit Statistics for Baseline Models for Females**

Model	SB $\chi^2$	df	p	CFI	TLI	SRMR	RMSEA	RMSEA 90% C.I.
Measurement model								
Initial and final measurement model	230.73	78	<.001	0.94	0.89	0.04	0.08	0.07 – 0.09
Structural model								
Initial structural model	290.69	89	<.001	0.87	0.79	0.11	0.10	0.09 – 0.11
Final structural model	205.45	88	<.001	0.92	0.89	0.05	0.07	0.06 – 0.09

*Note.* SB $\chi^2$  = Satorra-Bentler rescaled  $\chi^2$ ; CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residuals

**Table 6. Summary of model fit for baseline model and multi-group invariance**

Model	SB $\chi^2$	df	p	CFI	TLI	SRMR	RMSEA	RMSEA 90% C.I.
<b>Baseline Model</b>								
Male	146.94	86	<.001	0.94	0.91	0.04	0.08	0.06 – 0.11
Female	205.45	88	<.001	0.92	0.89	0.05	0.07	0.06 – 0.09
<b>Multi-group Invariance</b>								
Configural (no constraints)	353.82	174	p <.001	0.93	0.89	0.05	0.08	0.07-0.09
Male	143.01							
Female	210.81							
Structural invariance (All structural paths constrained)	409.28	210	p <.001	0.92	0.90	0.05	0.07	0.06-0.09
Male	180.41							
Female	228.87							
Partial structural invariance	397.94	209	p <.001	0.93	0.90	0.05	0.07	0.06-0.08
Male	173.39							
Female	224.54							

*Note.* SB $\chi^2$  = Satorra-Bentler rescaled  $\chi^2$ ; CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean

**Table 7. Unstandardized, Standardized, and Significance Levels for Predicted Model**

Hypothesized Path	Male			Female		
	<i>B</i>	$\beta$	<i>p</i>	<i>B</i>	$\beta$	<i>p</i>
H3						
MAcc → Social competence	0.31	.34	< .01	0.31	.31	< .01
FAcc → Social competence	0.11	.13	.22	0.11	.14	.22
RQ2						
MChall → Social competence	0.08	.09	.35	0.08	.10	.35
FChall → Social competence	0.08	.08	.26	0.08	.12	.26
H4						
MAcc × MChall → Social competence	0.11	.26	< .01	0.11	.21	< .01
FAcc × FChall → Social competence	-0.02	-.04	.59	-0.02	-.06	.59
H5						
Social competence → BE-Appearance	0.17	.24	< .05	0.06	.09	.37
Social competence → BE-Attribution	0.30	.34	< .001	0.30	.35	< .001
Social competence → BE-Weight	0.08	.10	.40	0.08	.09	.40
H8						
MAcc → Self-concept	0.12	.50	< .001	0.12	.38	< .001
FAcc → Self-concept	0.09	.21	< .05	0.09	.20	< .05
RQ4						
MChall → Self concept	0.01	.02	0.88	0.01	.01	.88
FChall → Self-concept	0.01	.02	0.77	0.01	.03	.77
H9						
MAcc × MChall → Self-concept	0.06	.31	< .01	0.06	.21	< .01
FAcc × FChall → Self-concept	-0.01	-.04	.51	-0.01	-.05	.51
H10						
Self concept → BE-Appearance	0.70	.47	< .001	0.70	.59	< .001
Self concept → BE-Attribution	0.44	.24	< .01	0.44	.30	< .01
Self concept → BE-Weight	0.69	.38	< .001	0.69	.41	< .001

*B* = unstandardized indirect effect;  $\beta$  = standardized indirect effect

**Table 8. Tests of Indirect Effects in Structural Model**

Hypothesized Indirect effect	Male				Female				
	<i>B</i>	$\beta$	Bias-corrected bootstrap Estimates		<i>B</i>	$\beta$	Bias-corrected bootstrap Estimates		
			SE ( $\beta$ )	95% CI			SE ( $\beta$ )	95% CI	
<b>H6</b>									
M <sub>Acc</sub> → Social competence → BE-Appearance	0.05	.08	.05	.01 – .21	0.02	.03	.05	-.07 – .12	
M <sub>Acc</sub> → Social competence → BE-Attribution	0.09*	.12	.06	.04 – .26	0.09*	.11	.07	-.01 – .22	
M <sub>Acc</sub> → Social competence → BE-Weight	0.03	.03	.05	-.05 – .15	0.03	.03	.05	-.08 – .12	
F <sub>Acc</sub> → Social competence → BE-Appearance	0.02	.03	.03	-.01 – .13	0.01	.01	.03	-.01 – .09	
F <sub>Acc</sub> → Social competence → BE-Attribution	0.03	.04	.04	-.02 – .16	0.03	.05	.05	-.03 – .18	
F <sub>Acc</sub> → Social competence → BE-Weight	0.01	.01	.03	-.01 – .10	0.01	.01	.03	-.02 – .10	
<b>RQ3</b>									
M <sub>Chall</sub> → Social competence → BE-Appearance	0.05	.02	.03	-.02 – .10	0.01	.01	.02	-.01 – .08	
M <sub>Chall</sub> → Social competence → BE-Attribution	0.02	.03	.04	-.03 – .12	0.02	.04	.04	-.04 – .14	
M <sub>Chall</sub> → Social competence → BE-Weight	0.01	.01	.02	-.01 – .08	0.01	.01	.02	-.01 – .08	
F <sub>Chall</sub> → Social competence → BE-Appearance	0.01	.02	.02	-.01 – .07	0.01	.01	.02	-.01 – .07	
F <sub>Chall</sub> → Social competence → BE-Attribution	0.02	.03	.03	-.02 – .09	0.02	.04	.03	.00 – .15	
F <sub>Chall</sub> → Social competence → BE-Weight	0.01	.01	.02	-.01 – .06	0.01	.01	.02	-.01 – .08	

**Table 8. Continued**

H7

M <sub>Acc</sub> × M <sub>Chall</sub> → Social competence → BE Appearance	0.02	.06	.04	.01 – .16	0.01	.02	.04	-.06 – .09
M <sub>Acc</sub> × M <sub>Chall</sub> → Social competence → BE-Attribution	0.03	.09	.04	.03 – .21	0.03	.07	.05	-.02 – .16
M <sub>Acc</sub> × M <sub>Chall</sub> → Social competence → BE-Weight	0.01	.03	.04	-.03 – .12	0.01	.02	.04	-.07 – .09
F <sub>Acc</sub> × F <sub>Chall</sub> → Social competence → BE-Appearance	-0.01	-.01	.02	-.06 – .02	-0.01	-.01	.01	-.06 – .01
F <sub>Acc</sub> × F <sub>Chall</sub> → Social competence → BE-Attribution	0.01	-.01	.03	-.07 – .03	0.01	-.02	.03	-.11 – .03
F <sub>Acc</sub> × F <sub>Chall</sub> → Social competence → BE-Weight	-0.01	-.01	.01	-.05 – .01	-0.01	-.01	.01	-.06 – .01

H11

M <sub>Acc</sub> → Self-concept → BE-Appearance	0.02 <sup>**</sup>	.23	.08	.11 – .42	0.02 <sup>**</sup>	.22	.10	.05 – .36
M <sub>Acc</sub> → Self-concept → BE- Attribution	0.10 <sup>*</sup>	.12	.06	.03 – .29	0.10 <sup>*</sup>	.11	.07	-.03 – .24
M <sub>Acc</sub> → Self-concept → BE-Weight	0.15 <sup>**</sup>	.19	.08	.08 – .39	0.15 <sup>**</sup>	.15	.08	.03 – .28
F <sub>Acc</sub> → Self-concept → BE-Appearance	0.06 <sup>*</sup>	.10	.05	.03 – .21	0.06 <sup>*</sup>	.12	.06	.02 – .24
F <sub>Acc</sub> → Self-concept → BE- Attribution	0.04	.05	.03	.01 – .13	0.04	.06	.04	.01 – .15
F <sub>Acc</sub> → Self-concept → BE-Weight	0.06 <sup>*</sup>	.08	.04	.02 – .19	0.06 <sup>*</sup>	.08	.04	.01 – .18

RQ5

M <sub>Chall</sub> → Self-concept → BE-Appearance	0.01	.01	.05	-.08 – .11	0.01	.01	.06	-.10 – .13
M <sub>Chall</sub> → Self-concept → BE- Attribution	0.01	.01	.03	-.04 – .07	0.01	.01	.03	-.05 – .08

**Table 8. Continued**

MChall → Self-concept → BE-Weight	0.01	.01	.04	-.07 – .09	0.01	.01	.04	-.07 – .10
FChall → Self-concept → BE-Appearance	0.01	.01	.03	-.06 – .08	0.01	.02	.04	-.06 – .10
FChall → Self-concept → BE- Attribution	0.01	.01	.02	-.03 – .05	0.01	.01	.02	-.03 – .06
FChall → Self-concept → BE-Weight	-0.01	.01	.03	-.05 – .07	-0.01	.01	.03	-.04 – .07
<b>H12</b>								
M <sub>Acc</sub> × MChall → Self concept → BE-Appearance	0.04*	.15	.01	.05 – .33	0.04*	.13	.09	.00 – .26
M <sub>Acc</sub> MChall → Self concept → BE-Attribution	0.03	.07	.05	.01 – .22	0.03	.06	.06	.00 – .17
M <sub>Acc</sub> × MChall → Self concept → BE- Weight	0.04*	.12	.06	.03 – .30	0.04*	.09	.07	.00 – .20
F <sub>Acc</sub> × FChall → Self concept → BE-Appearance	-0.01	-.02	.03	-.09 – .03	-0.01	-.03	.04	-.14 – .03
F <sub>Acc</sub> × FChall → Self concept → BE-Attribution	-0.01	-.01	.02	-.06 – .01	-0.01	-.02	.02	-.09 – .01
F <sub>Acc</sub> × FChall → Self concept → BE- Weight	-0.01	-.02	.03	-.08 – .03	-0.01	-.02	.03	-.10 – .02

*Note.* *B* = unstandardized indirect effect; β = standardized indirect effect; M<sub>Acc</sub> = mother acceptance; MChall = mother

challenge; F<sub>Acc</sub> = father acceptance; FChall = father challenge. \**p* <.05 \*\**p* <.01 \*\*\**p* <.001

**Table 9. Summary of Fit Statistics for Alternative Models**

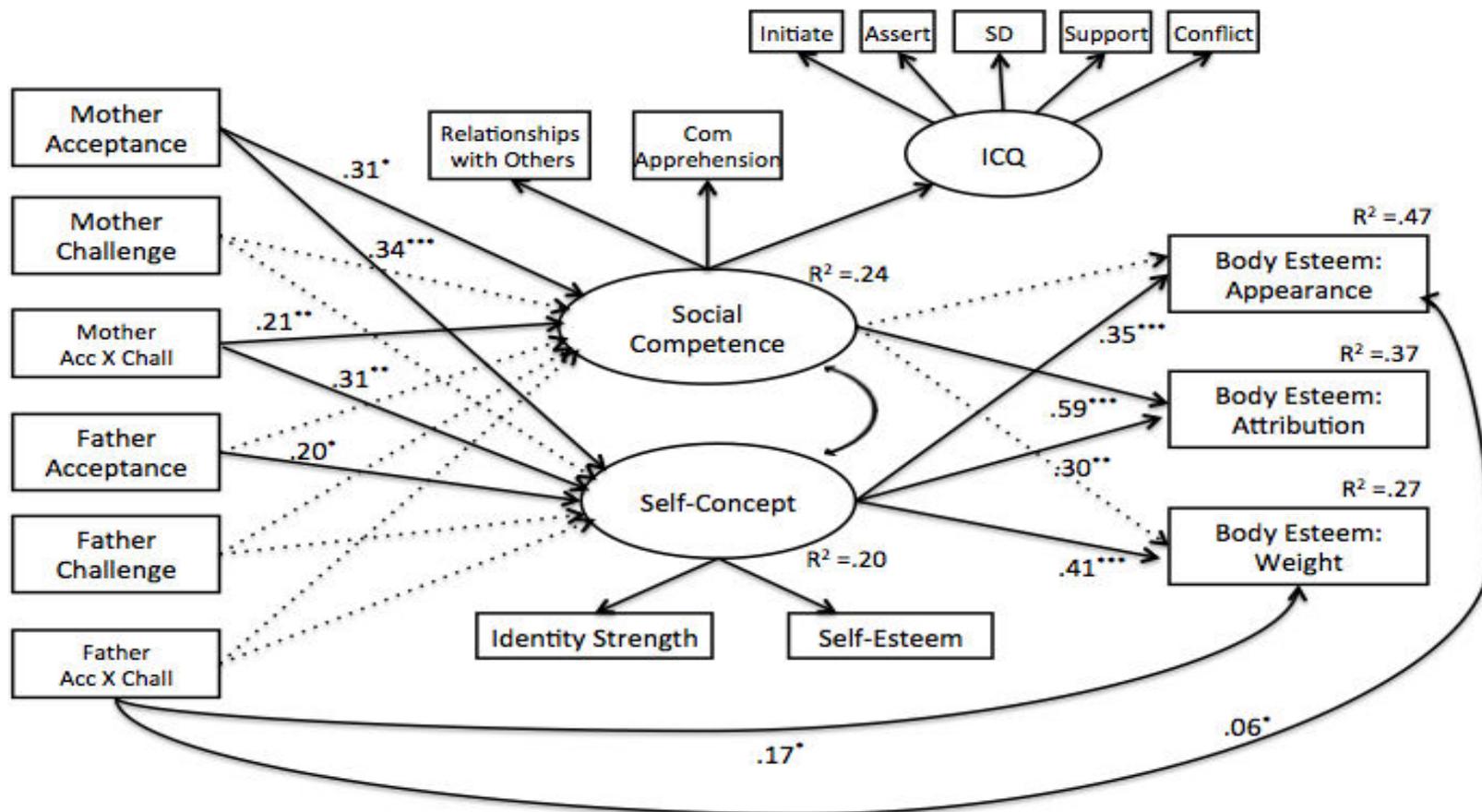
Alternative Structural Model	$SB\chi^2$	<i>df</i>	<i>p</i>	CFI	TLI	SRMR	RMSEA	RMSEA 90% C.I.
Males	378.40	88	<.001	0.72	0.56	0.15	0.18	0.16 – 0.20
Females	669.85	91	<.001	0.62	0.42	0.13	0.16	0.15 – 0.17

*Note.*  $SB\chi^2$  = Satorra-Bentler rescaled  $\chi^2$ ; CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residuals.



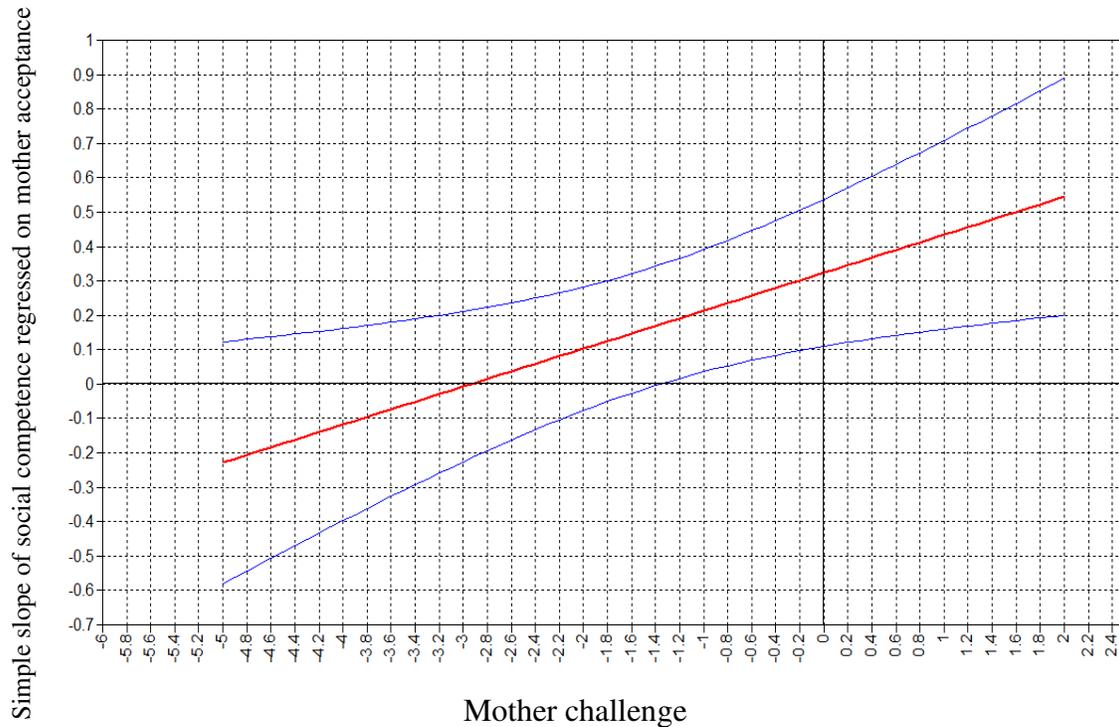


**Figure 2b. Final Structural Model for Females with Standardized Regression Coefficients and Percentage of Variance Explained**



*Note.* The dotted lines represent non-significant paths. Solid lines represent significant paths.

**Figure 3a. Interaction between Mother Acceptance and Mother Challenge Predicting Social Competence (H4) Using the J-N Technique (Mother challenge as a moderator)**



*Note.* The Y-axis<sup>6</sup> represents a simple slope of social competence regressed on mother acceptance (i.e., the effect of mother acceptance on social competence at a given moderator). The x-axis depicts a continuous range of the values of the moderator (i.e., mother challenge). The straight red plot line represents values of simple slope of mother acceptance on social competence that correspond to the full range of all continuous values of mother challenge. The red line captures the enhanced effect of the combination of high acceptance and high challenge on social competence: The value of the simple slope increases as the value of mother challenge (the x-axis) increases. The blue, curved lines above and below the red plot line represent 95% confidence bands around the effect of mother acceptance on social acceptance. When the confidence bands includes  $y = 0$  (i.e., when mother challenge ranges from -5 to -1.4 in the above plot), the simple slope of mother acceptance on social competence is non-significant.

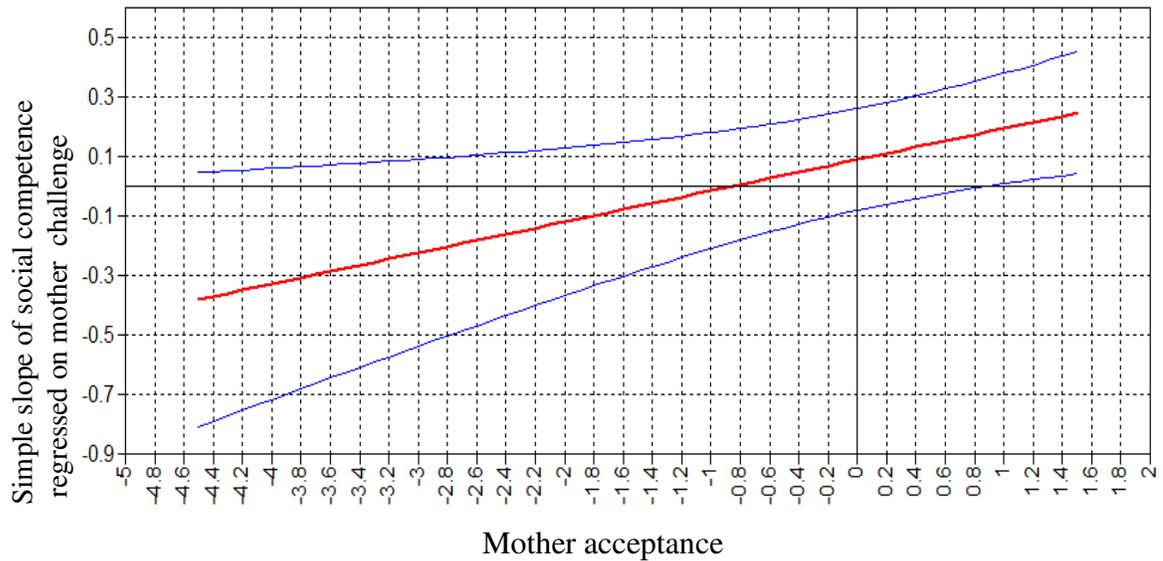
<sup>6</sup> Y-axis in the above plot represents a simple slope of a predictor on the outcome at a given value of the moderator. More specifically, consider the following regression equation.

$$Y' = B_0 + B_1X_1 + B_2X_2 + B_3X_1*X_2 \quad \text{----- Equation 1}$$

$$Y' = B_0 + (B_1 + B_3*X_2) X_1 + B_2X_2 \quad \text{----- Equation 2}$$

Equation 2 is simply a mathematical re-arrangement of Equation 1. The x-axis represents the value of the moderator (i.e.,  $X_2$ ). The coefficient of  $X_1$  in Equation 2 (i.e.,  $B_1 + B_3*X_2$ ) represents the simple slope of  $X_1$  on  $Y$ , which is plotted on the y-axis.

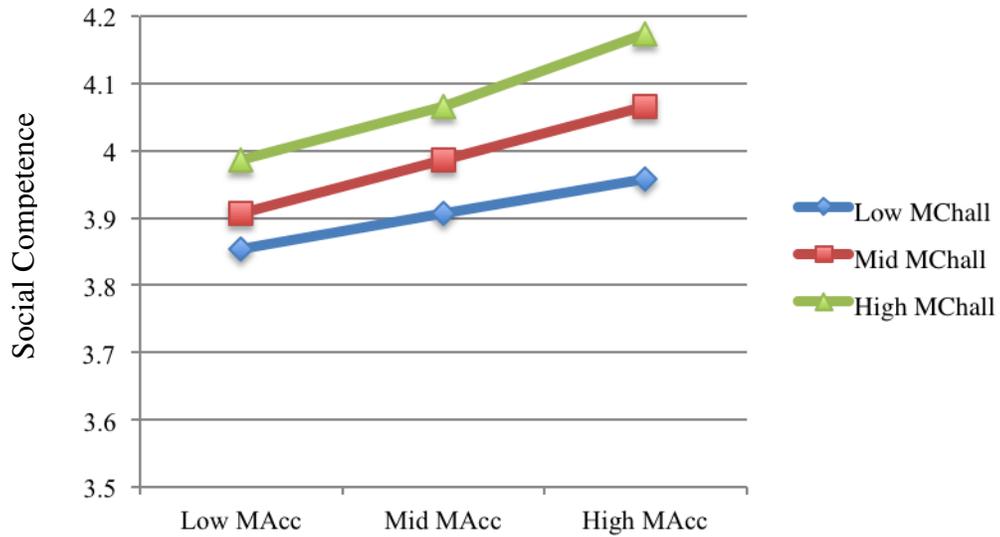
**Figure 3b. Interaction between Mother Acceptance and Mother Challenge Predicting Social Competence (H4) Using the J-N Technique (Mother acceptance as a moderator)**



*Note.* The Y-axis represents a simple slope of social competence regressed on mother challenge (i.e., the effect of mother challenge on social competence at a given score of mother acceptance). The x-axis depicts mother acceptance.

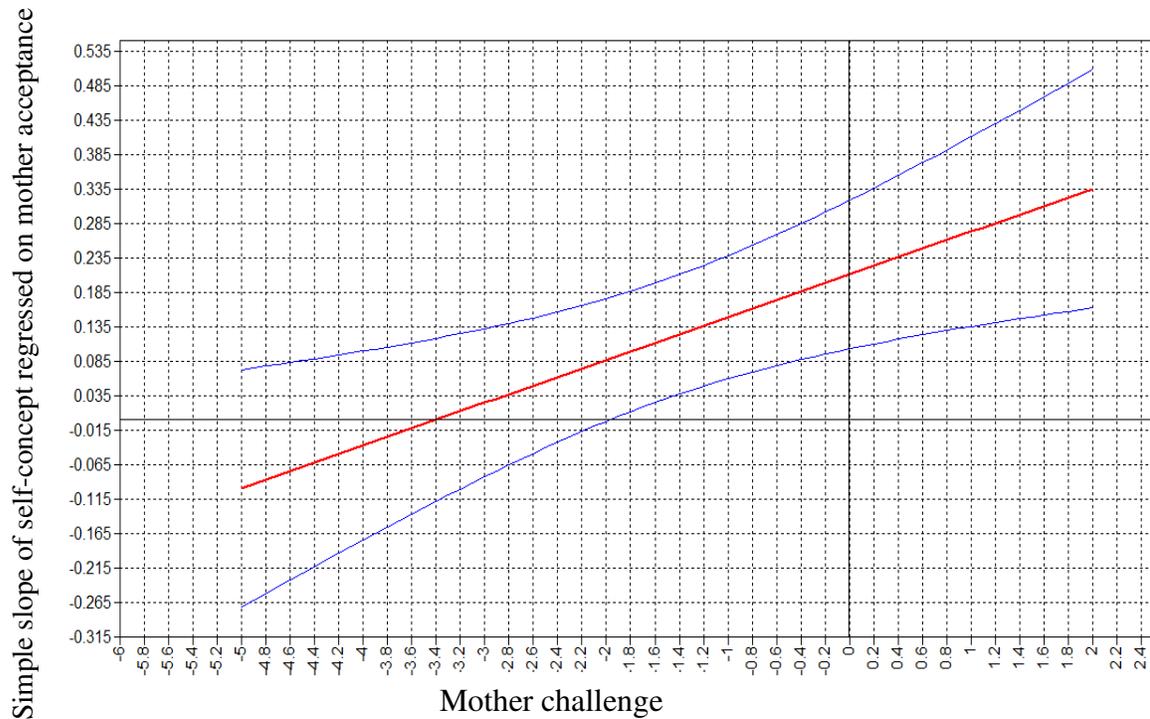
This shows that the mother challenge has a positive impact on social competence only when mother acceptance is high (1 or higher). Only 7% of participants ( $n = 25$ ) scored 1 or higher for mother acceptance (in factor scores). For the rest of participants (93%,  $n = 320$ ), the level of mother challenge did not have a significant impact on social competence (i.e., simple slope of mother challenge on social competence was not significantly from zero).

**Figure 3c. Interaction between Mother Acceptance and Mother Challenge Predicting Social Competence (H4)**



*Note.* MAcc = mother acceptance; MChall = mother challenge. The value of social competence for each participant was calculated by averaging scores of all three scales measuring social competence: Relationship with others, communication apprehension and ICQ (Interpersonal Competency Questionnaire).

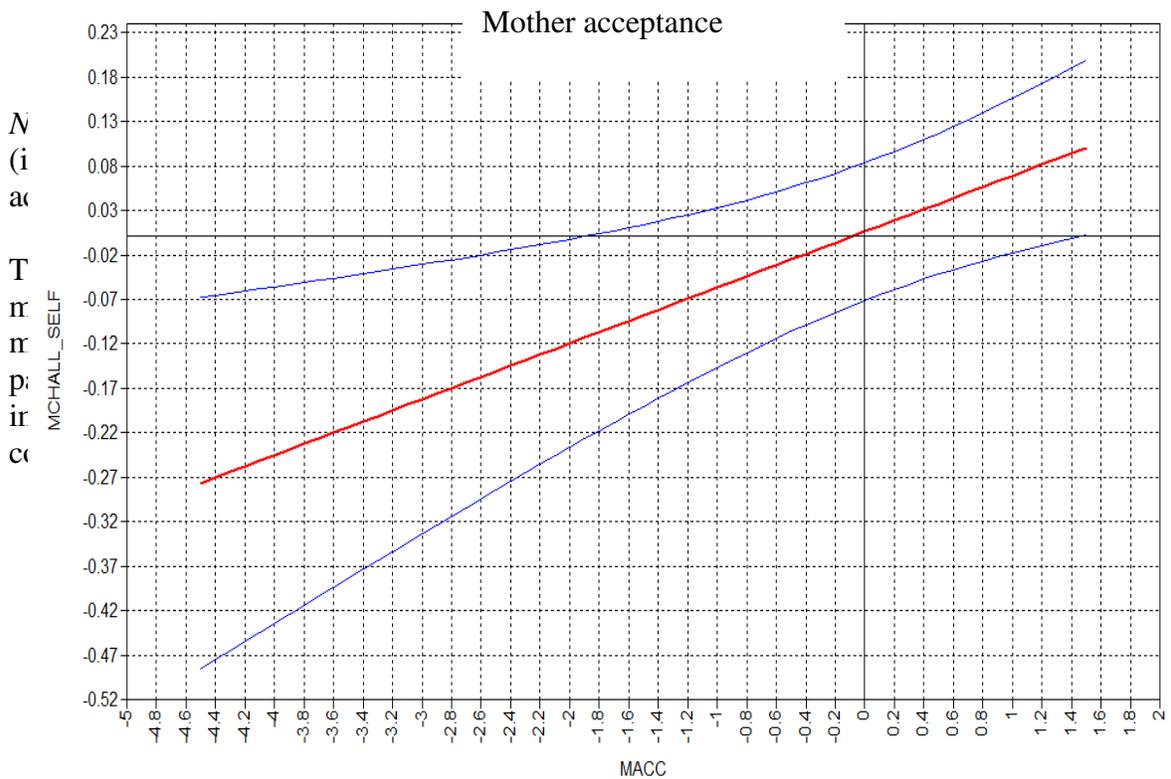
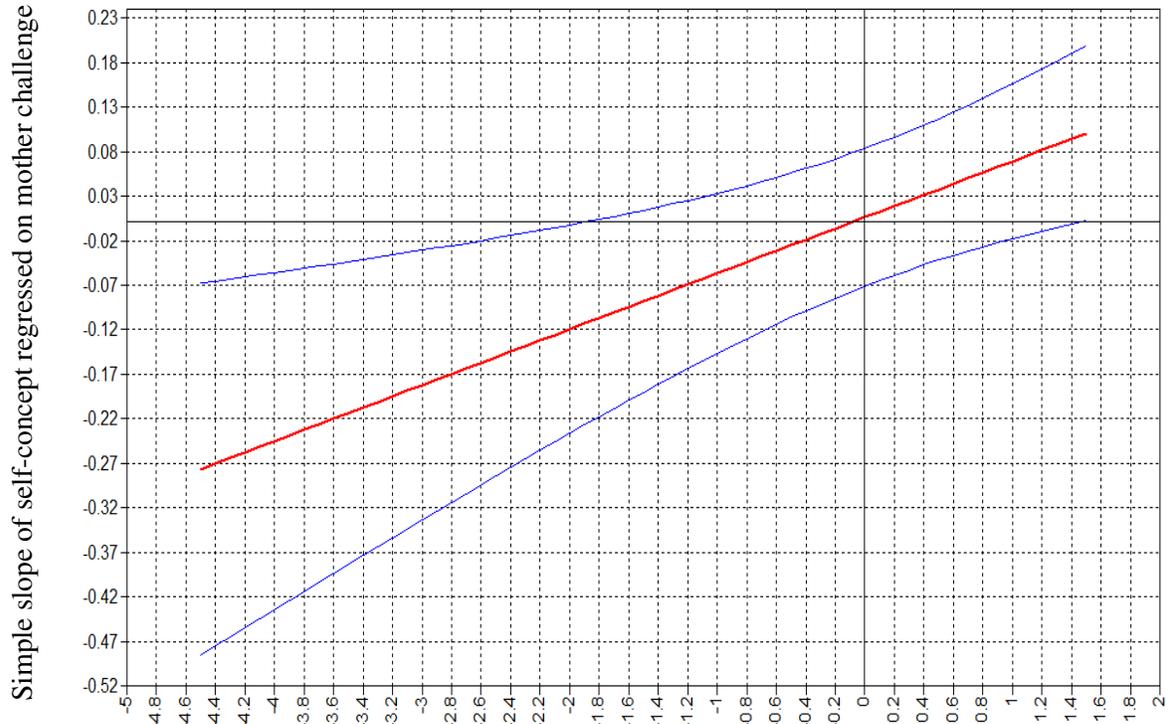
**Figure 4a. Interaction between Mother Acceptance and Mother Challenge Predicting Self-concept (H9) Using the J-N Technique (Mother acceptance as a moderator)**



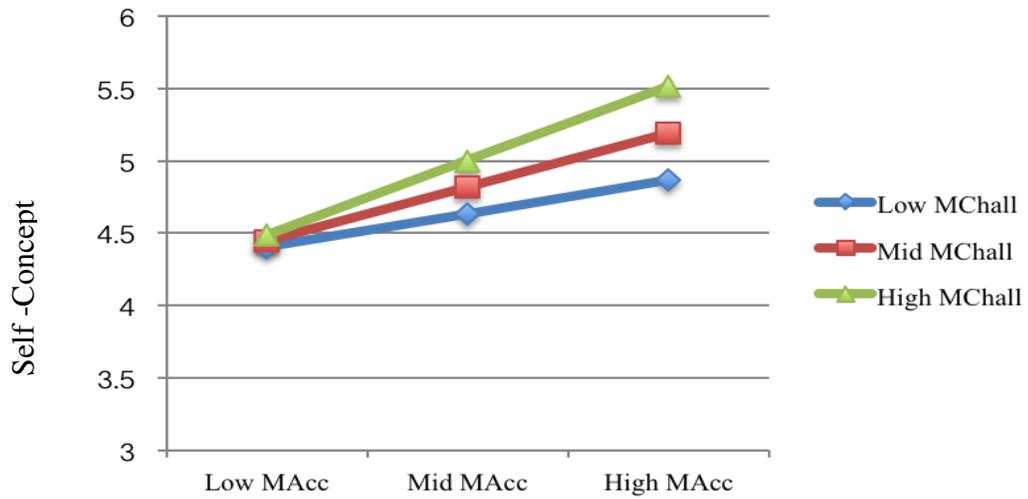
*Note.* The Y-axis represents a simple slope of self-concept regressed on mother acceptance (i.e., the effect of mother acceptance on self-concept at a given value of moderator). The X-axis depicts a continuous range of the moderator (i.e., mother challenge) values. The straight red plot line represents values of simple slope of mother acceptance on self-concept that correspond to the full range of all continuous values of mother challenge.

The red line captures the enhanced effect of the combination of high acceptance and high challenge on self-concept: The value of the simple slope increases as the value of mother challenge (X-axis) increases. The blue, curved lines above and below the red plot line represent 95% confidence bands around the effect of mother acceptance on self-concept. When the confidence bands includes  $y = 0$  (i.e., when mother challenge ranges from -5 to -2 in the above plot), the effect of mother acceptance on self-concept is not significant.

**Figure 4b. Interaction between Mother Acceptance and Mother Challenge Predicting Social Competence (H4) Using the J-N Technique (Mother acceptance as a moderator)**

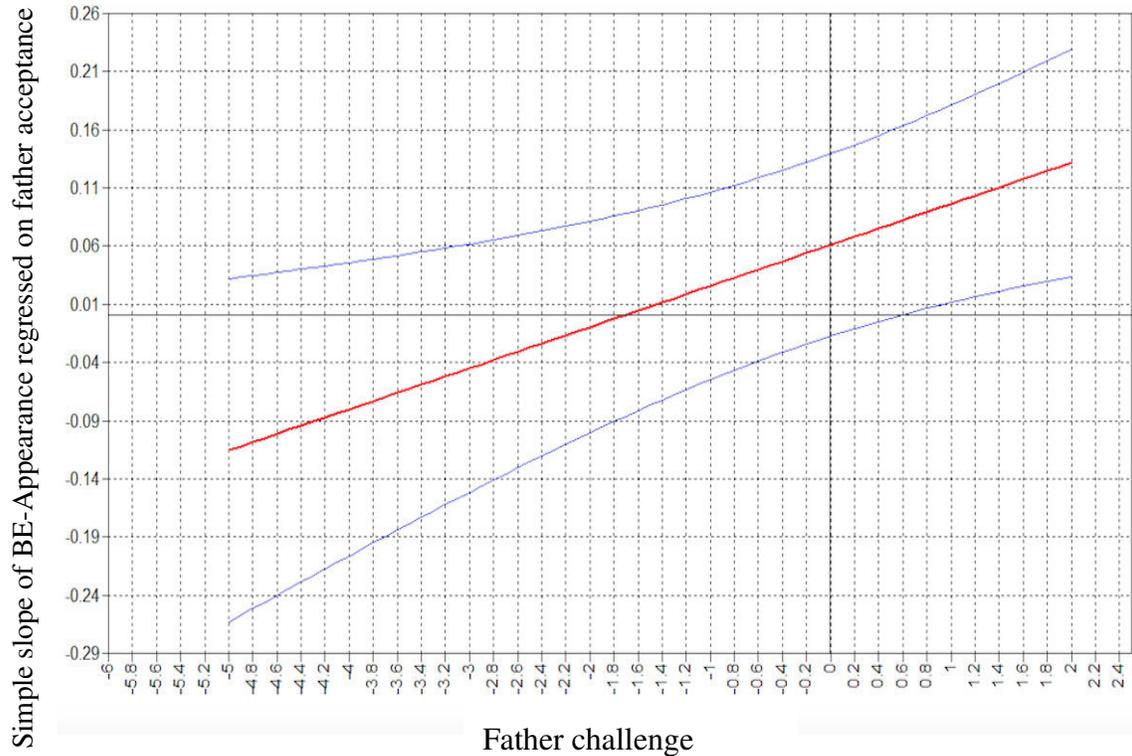


**Figure 4c. Interaction between Mother Acceptance and Mother Challenge Predicting Self-concept (H9)**



*Note.* MAcc = mother acceptance; MChall = mother challenge. The value of self-concept for each participant was calculated by averaging the scores of two scales assessing self-concept (i.e., identity strength and self-esteem).

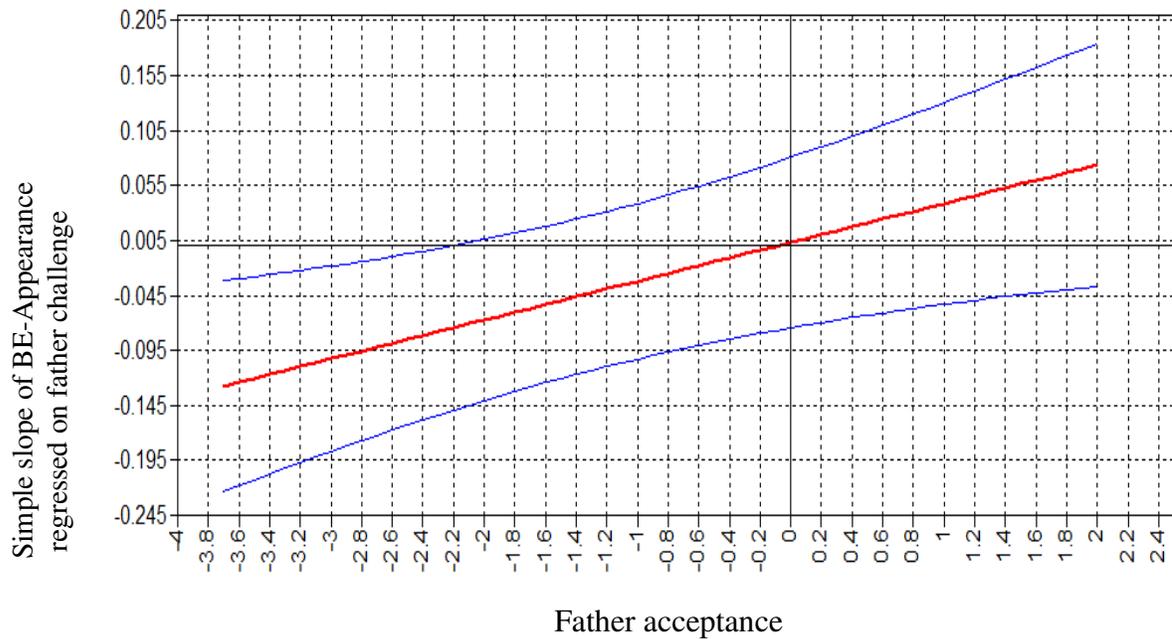
**Figure 5a. Interaction between Father Acceptance and Father Challenge Predicting BE-Appearance (H2) Using the J-N Technique (Father challenge as a moderator)**



*Note.* The Y-axis represents a simple slope of BE-Appearance regressed on father acceptance (i.e., the effect of father acceptance on BE-Appearance at a given value of the moderator). The X-axis depicts a continuous range of the moderator (i.e., father challenge) values. The straight red plot line represents values of simple slope of father acceptance on BE-Appearance that correspond to the full range of all continuous values of father challenge. The red line captures the enhanced effect of the combination of high acceptance and high challenge on BE-Appearance: The value of the simple slope increases as the value of father challenge (X-axis) increases. The blue, curved lines above and below the red plot line represent 95% confidence bands around the effect of father acceptance on BE-Appearance.

When the confidence bands includes  $y = 0$  (i.e., when Father Challenge ranges from -5 to +0.6 in the above plot), the effect of father acceptance on BE-Appearance is not significant.

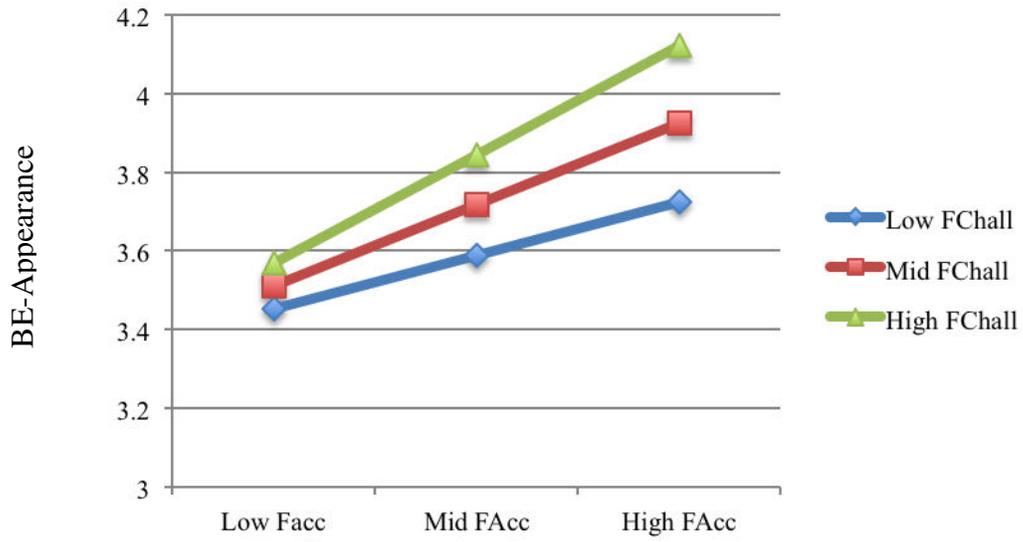
**Figure 5b. Interaction between Father Acceptance and Father Challenge Predicting BE-Appearance (H2) Using the J-N Technique (Father acceptance as a moderator)**



*Note.* The Y-axis represents a simple slope of BE-Appearance regressed on father challenge (i.e., the effect of father challenge on BE-Appearance at a given value of the moderator). The X-axis depicts father acceptance.

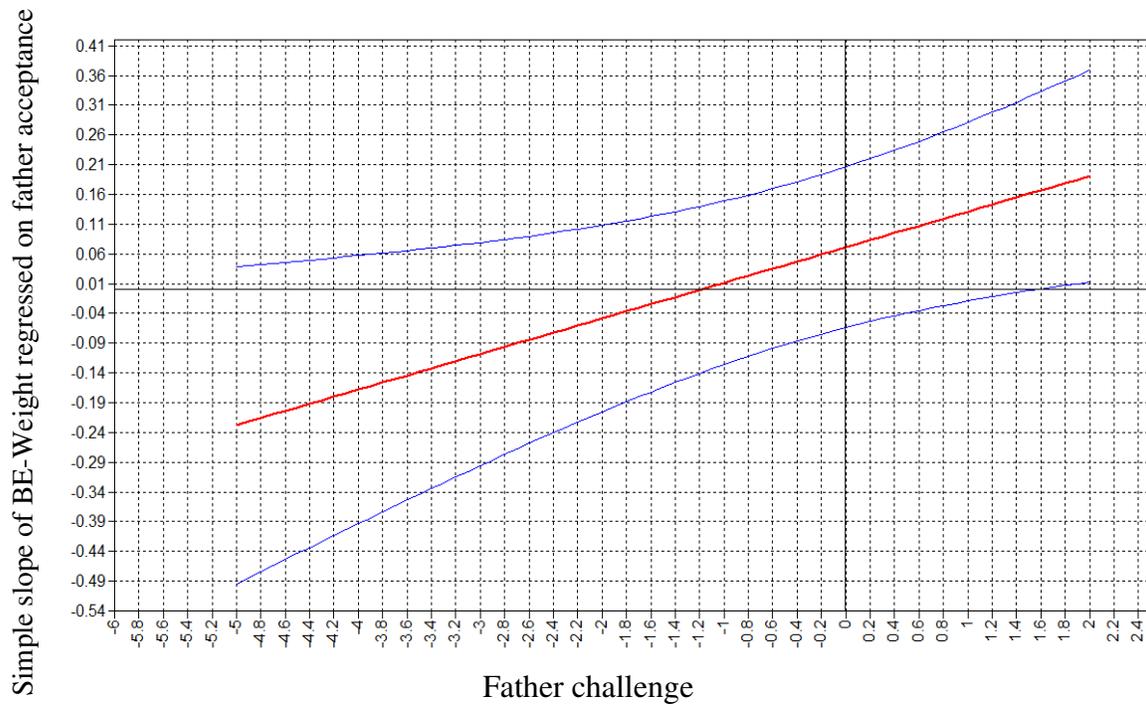
This shows that the father challenge has a negative impact on appearance satisfaction (BE-Appearance) when father acceptance is low (-2.2 and lower in factor scores). 7.6% of participants ( $n = 30$ ) scored -2.2 and lower on father acceptance. For these participants, the level of father challenge had a negative impact on BE-Appearance. For the rest of participants (92.4%), the level of father challenge did not have a significant impact on BE-Appearance (i.e., simple slope of father challenge on BE-Appearance was not significantly from zero).

**Figure 5c. Interaction between Father Acceptance and Father Challenge Predicting BE-Appearance (H2)**



*Note.* FAcc = father acceptance; FChall = father challenge.

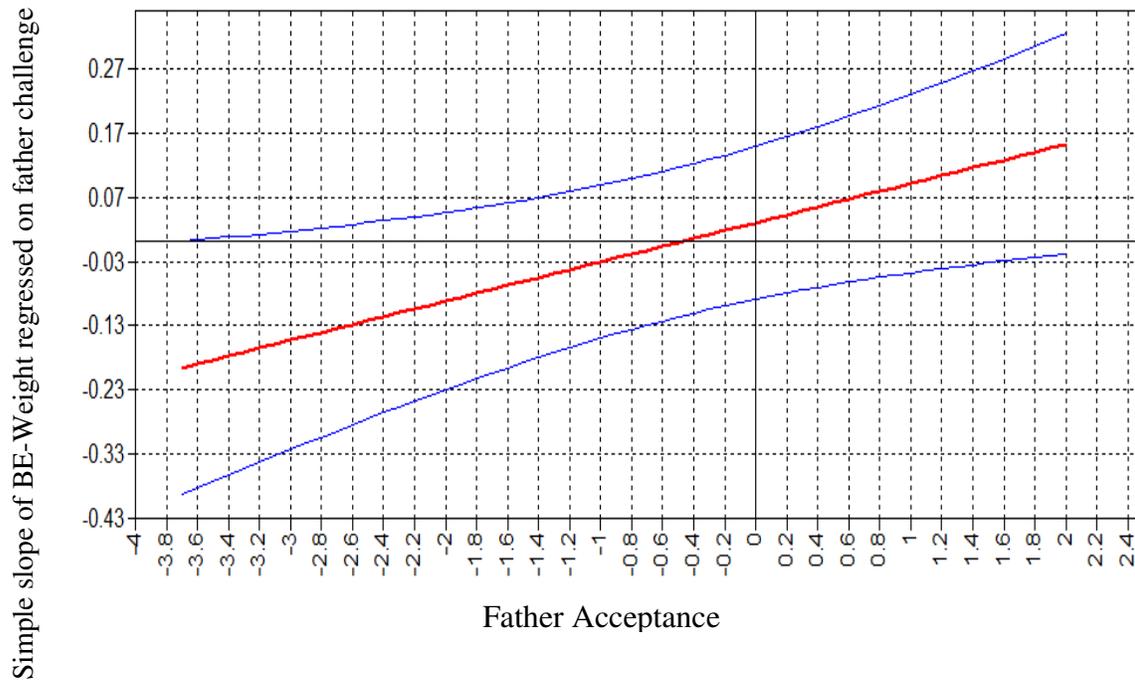
**Figure 6a. Interaction between Father Acceptance and Father Challenge Predicting BE-Weight (H2) Using the J-N Technique (Father challenge as a moderator)**



*Note.* The Y-axis represents a simple slope of BE-Weight on father acceptance (i.e., effect of Father Acceptance on BE-Weight). The X-axis depicts a continuous range of the moderator (i.e., father challenge) values. The straight red plot line represents values of the simple slope of father acceptance on BE-Weight that correspond to the full range of all continuous values of father challenge. The red line captures the enhanced effect of the combination of high acceptance and high challenge on BE-Weight: The value of the simple slope increases as the value of father challenge (X-axis) increases. The blue, curved lines above and below the red plot line represent 95% confidence bands around the effect of father acceptance on BE-Weight.

When the confidence bands includes  $y = 0$  (i.e., when father challenge ranges from -5 to +1.6 in the above plot), the effect of father acceptance on BE-Weight is non-significant.

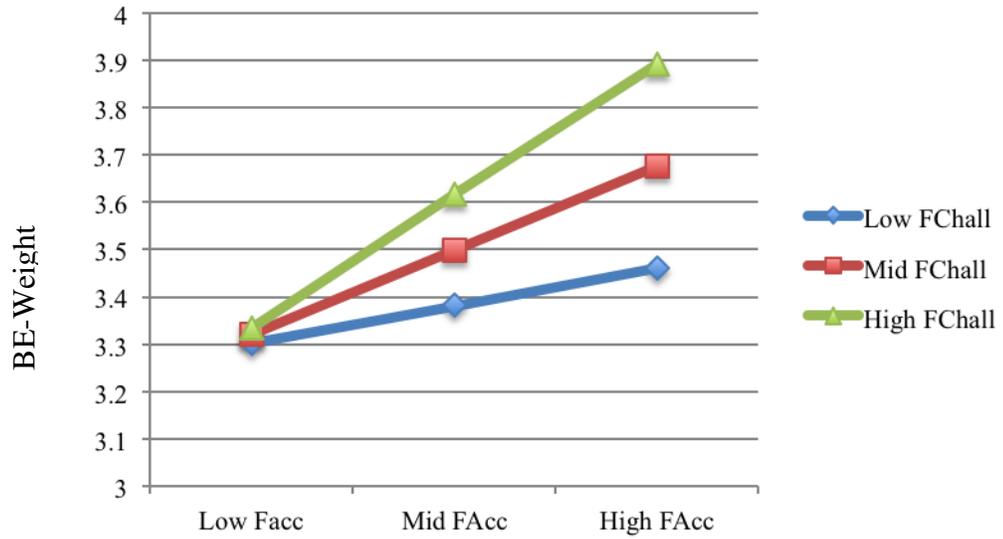
**Figure 6b. Interaction between Father Acceptance and Father Challenge Predicting BE-Weight (H2) Using the J-N Technique (Father acceptance as a moderator)**



*Note.* Y-axis represents a simple slope of BE-Weight regressed on father challenge (i.e., effect of father challenge on BE-Weight at a given value of father acceptance). The X-axis depicts father acceptance.

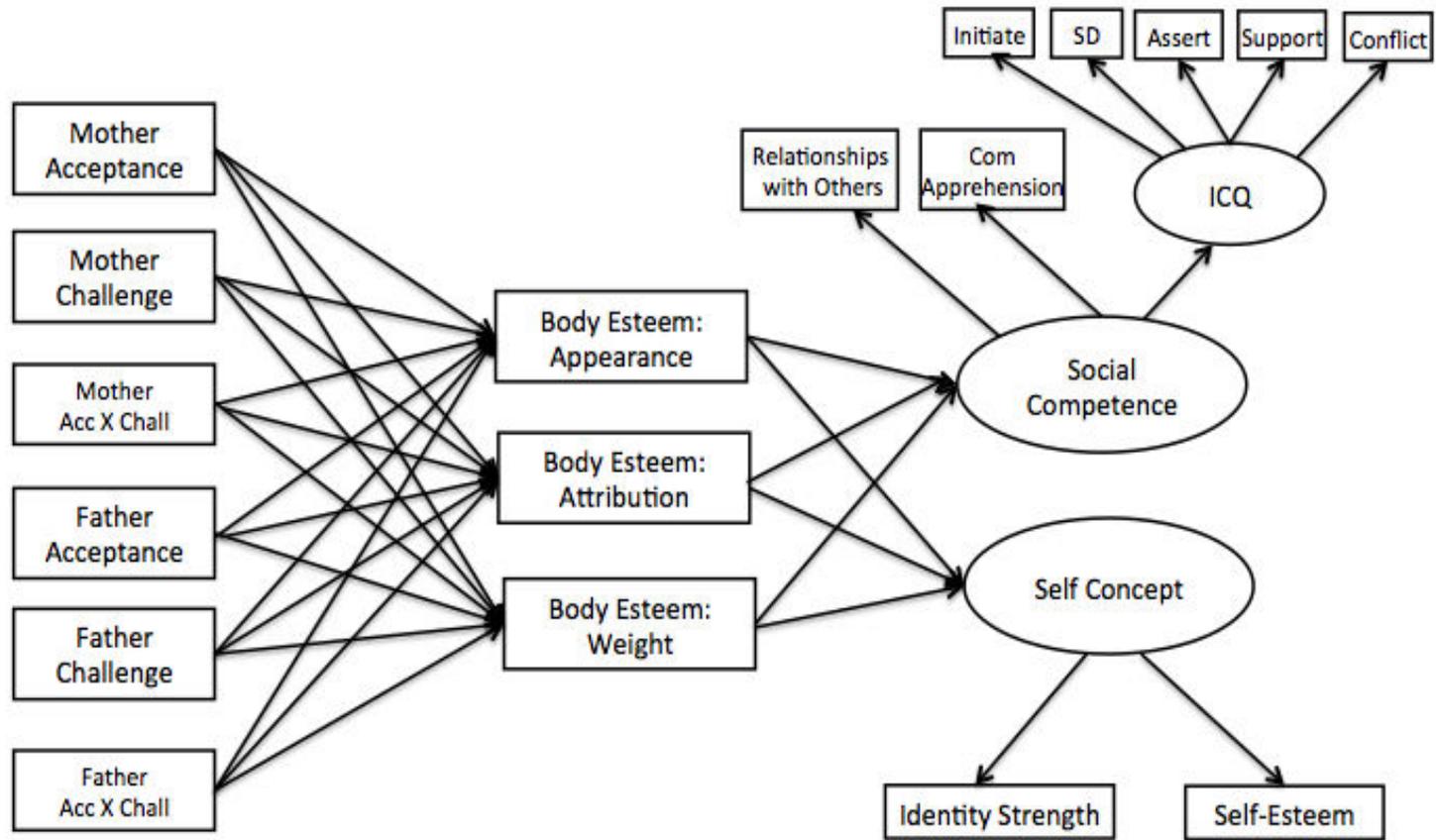
95% confidence bands include zero at all ranges of observed father acceptance. Even though the simple slope of father challenge on BE-Weight (the effect of father challenge on BE-Weight) increases as father challenge increases, the effect of father challenge on BE-Weight is not significant from zero.

**Figure 6c. Interaction between Father Acceptance and Father Challenge Predicting BE-Weight (H2)**

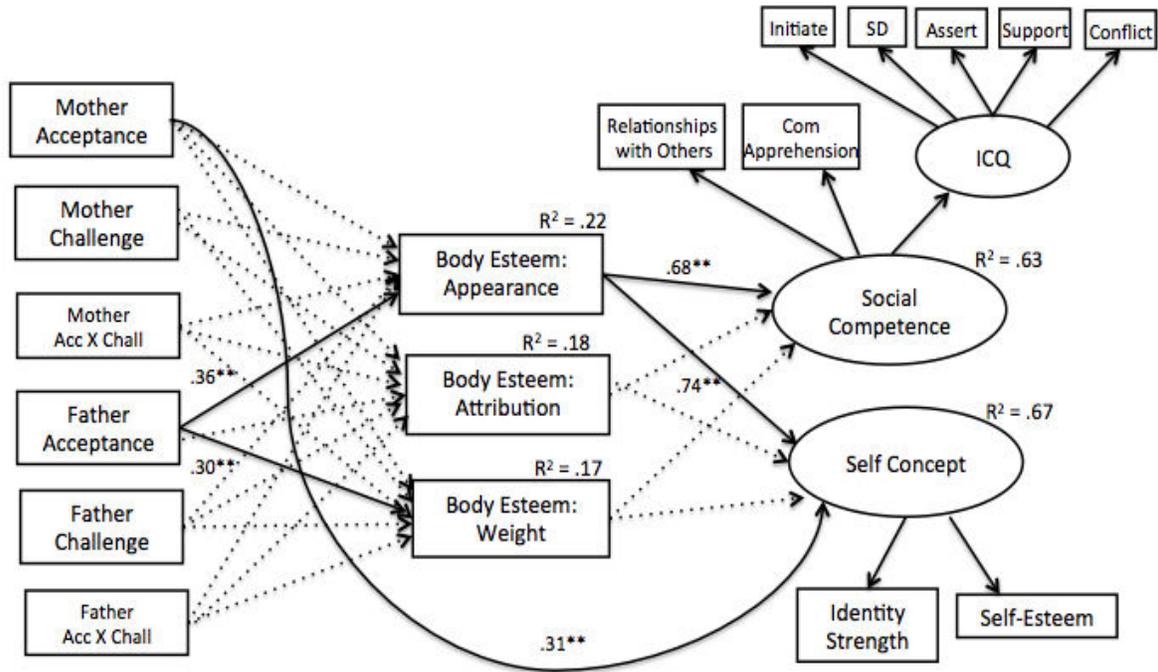


*Note.* FAcc = father acceptance; FChall = father challenge.

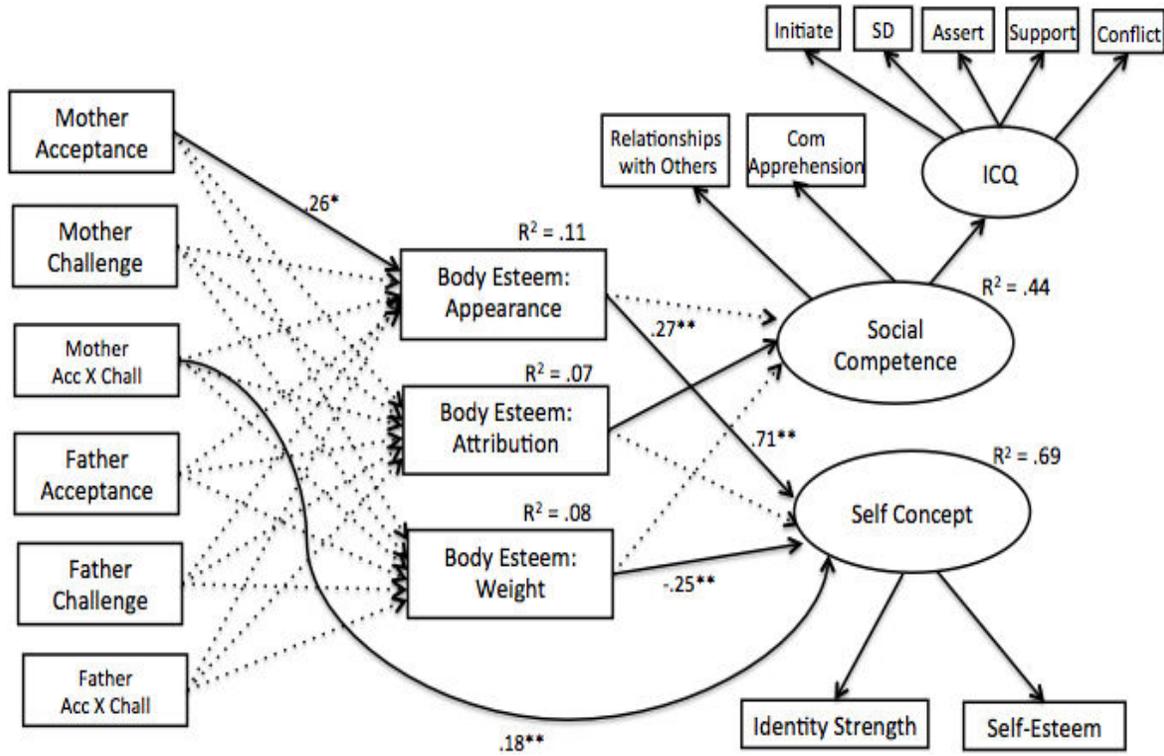
Figure 7. Alternative Model



**Figure 8a. Male Alternative Model Results: Structural Model**



**Figure 8b. Female Alternative Model Results: Structural model**



## Appendices

### APPENDIX A: Recruitment Advertisement

#### 1. For students enrolled in classes offered by the Department of Communication

##### Studies

##### Abstract:

This study asks participants to complete an online survey, which takes about 30 minutes to complete. The purpose of this research study is to examine your communication with your parents, your experience in social situations, and perception of yourself. Your participation is completely voluntary.

##### Description:

You are eligible to participate if you are 18 years of age or older.  
This survey will take approximately 40 minutes to complete.  
Students can earn 0.75 credits in the SONA system.

To access the survey, please click on the study website.

We appreciate your help, and please contact Emiko Taniguchi at [emikotan@utexas.edu](mailto:emikotan@utexas.edu) if you have any questions. Thank you!

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Emiko Taniguchi  
Ph.D. Candidate  
Department of Communication Studies  
University of Texas at Austin  
[emikotan@utexas.edu](mailto:emikotan@utexas.edu)

## 2. For male students from outside of the Department of Communication Studies

E-mail Subject tile: Participate in an Online Survey (**Males Only**) and Win \$30 Amazon Gift Card

Hello Students,

My name is Emiko Taniguchi and I am looking for male students who can participate in 30-minute online survey. **Participants have a chance to win \$30 Amazon gift card.** The deadline for the participation is **April 15<sup>th</sup>**. If you are interested in participating in this study please see below:

### Who is eligible?

You are eligible to participate if you are a **male** between **18 – 24** years of age.

### Basic information about the study

- This study asks participants to complete an online survey, which takes about 30 minutes to complete.
- The purpose of this research study is to examine your communication behaviors, your experience in social situations, and perceptions of yourself.
- One in 30 participants will be randomly selected to win a \$30 Amazon gift card.
- This study will close on April 15th.
- Your participation is completely voluntary.

To access the survey, please click on the study website below:

[Study link appears here]

I appreciate your help, and please contact Emiko Taniguchi at emikotan@utexas.edu if you have any questions. Thank you!

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Emiko Taniguchi  
Ph.D. Candidate  
Department of Communication Studies  
University of Texas at Austin  
emikotan@utexas.edu

## **APPENDIX B: Informed Consent Documents**

### **1. For students enrolled in classes offered by the Department of Communication**

#### **Studies**

##### **Identification of Investigator and Purpose of Study**

You are invited to participate in a research study, entitled “Communication and self-perception.” The study is being conducted by Emiko Taniguchi (address: CMA5.172, Department of Communication Studies of The University of Texas at Austin, Austin, Texas 78712-0115; e-mail: [emikotan@utexas.edu](mailto:emikotan@utexas.edu), Tel. 512-969-0193).

The purpose of this research study is to examine your communication in your family, your experience in social situations, and perception of yourself. Your participation in the study will contribute to a better understanding of family communication. You are free to contact the investigator at the above address and phone number to discuss the study. You must be at least 18 years old to participate.

If you agree to participate:

- The online survey will take about 40 minutes to complete.
- You will receive course credit by participating in this study for one CMS course in which the instructor offers extra credit.
- If you would like to receive credit but do not want to participate in this study, please talk to your instructor about completing the alternative assignment. The alternative assignment should be equivalent in time and effort that would be needed to participate in this study.

##### **Risks/Benefits/Confidentiality of Data**

There are no known risks. The potential risk to the participants is no greater than everyday life. This study may, however, involve risks that are currently unforeseeable. If you wish to discuss the information above or any other risks you may experience, you may contact the principal investigator listed above. Or, if you would like to seek professional assistance regarding any concerns this questionnaire elicits or about any other issue, you can contact UT’s Counseling and Mental Health Center located on the 5<sup>th</sup> floor of the Student Services Building (SSB), 100 W. Dean Keeton St. Their phone number is (512)-471-3515. You can also receive Telephone Counseling at 471-CALL. These services are free to students currently enrolled in courses.

There will be no costs for participating, nor will you benefit from participating. Your name and email address will not be collected during the data collection phase. The data will be secured in the researcher’s computer, which is a password-secured. A limited number of research team members will have access to the data during data collection.

**Participation or Withdrawal**

Your participation in this study is voluntary. Your response is completely anonymous. You may decline to answer any question and you have the right to withdraw from participation at any time. Withdrawal will not affect your relationship with The University of Texas in anyway. If you do not want to participate either simply stop participating or close the browser window.

**Contacts**

If you have any questions about the study or need to update your email address contact the researcher Emiko Taniguchi at 512-471-5251 or send an email to [emikotan@utexas.edu](mailto:emikotan@utexas.edu). This study has been reviewed by The University of Texas at Austin Institutional Review Board and the study number is [2015-12-0049].

**Questions about your rights as a research participant.**

If you have questions about your rights or are dissatisfied at any time with any part of this study, you can contact, anonymously if you wish, the Office of Research Support by phone at (512) 471-8871 or email at [orsc@uts.cc.utexas.edu](mailto:orsc@uts.cc.utexas.edu).

Thank you.

**Please print a copy of this document for your records.**

**Because this is an online survey, written signatures cannot be used to give your consent to participate. For this study, *your consent is GIVEN when you click “next” to begin the survey.***

**I have read the above information and have sufficient information to make a decision about participating in this study. By clicking on “next,” I am giving my consent to participate in the study.**

## **2. For male students from outside of the Department of Communication Studies**

### **Identification of Investigator and Purpose of Study**

You are invited to participate in a research study, entitled “Communication and self-perception.” The study is being conducted by Emiko Taniguchi (address: CMA5.172, Department of Communication Studies of The University of Texas at Austin, Austin, Texas 78712-0115; e-mail: [emikotan@utexas.edu](mailto:emikotan@utexas.edu), Tel. 512-969-0193).

The purpose of this research study is to examine your communication in your family, your experience in social situations, and perception of yourself. Your participation in the study will contribute to a better understanding of family communication. You are free to contact the investigator at the above address and phone number to discuss the study. You must be at least 18 years old to participate.

If you agree to participate:

- The online survey will take about 30 minutes to complete.
- You have a chance to win a \$30 Amazon gift card.
- 1 out of every 30 participants will be randomly selected to win a \$30 Amazon gift card. If you'd like to be considered for selection to win a prize, please provide your e-mail address as prompted at the end of the survey. E-mail address will be used only for the purpose of contacting the prize winners.

### **Risks/Benefits/Confidentiality of Data**

There are no known risks. The potential risk to the participants is no greater than everyday life. This study may, however, involve risks that are currently unforeseeable. If you wish to discuss the information above or any other risks you may experience, you may contact the principal investigator listed above. Or, if you would like to seek professional assistance regarding any concerns this questionnaire elicits or about any other issue, you can contact UT's Counseling and Mental Health Center located on the 5<sup>th</sup> floor of the Student Services Building (SSB), 100 W. Dean Keeton St. Their phone number is (512)-471-3515. You can also receive Telephone Counseling at 471-CALL. These services are free to students currently enrolled in courses.

There will be no costs for participating, nor will you benefit from participating. Your name and email address will not be collected during the data collection phase. The data will be secured in the researcher's computer, which is a password-secured. A limited number of research team members will have access to the data during data collection.

### **Participation or Withdrawal**

Your participation in this study is voluntary. Your response is completely anonymous. You may decline to answer any question and you have the right to withdraw from participation at any time. Withdrawal will not affect your relationship with The University of Texas in anyway. If you do not want to participate either simply stop participating or close the browser window.

**Contacts**

If you have any questions about the study or need to update your email address contact the researcher Emiko Taniguchi at 512-471-5251 or send an email to [emikotan@utexas.edu](mailto:emikotan@utexas.edu). This study has been reviewed by The University of Texas at Austin Institutional Review Board and the study number is [2015-12-0049].

**Questions about your rights as a research participant.**

If you have questions about your rights or are dissatisfied at any time with any part of this study, you can contact, anonymously if you wish, the Office of Research Support by phone at (512) 471-8871 or email at [orsc@uts.cc.utexas.edu](mailto:orsc@uts.cc.utexas.edu).

Thank you.

**Please print a copy of this document for your records.**

**Because this is an online survey, written signatures cannot be used to give your consent to participate. For this study, *your consent is GIVEN when you click “next” to begin the survey.***

**I have read the above information and have sufficient information to make a decision about participating in this study. By clicking on “next,” I am giving my consent to participate in the study.**

## APPENDIX C: Demographic Information

This section asks for background information about yourself.

1. Age: \_\_\_\_\_ years old
2. Sex: \_\_\_\_\_ Male  
          \_\_\_\_\_ Female
3. Are you an American citizen?  
    \_\_\_\_\_ Yes  
    \_\_\_\_\_ No → Please specify your nationality \_\_\_\_\_
4. What is your ethnic background?  
    \_\_\_\_\_ Caucasian  
    \_\_\_\_\_ Asian  
    \_\_\_\_\_ Middle Eastern  
    \_\_\_\_\_ Mexican /Latino(a)/Hispanic  
    \_\_\_\_\_ African American/Black  
    \_\_\_\_\_ Others → Please specify \_\_\_\_\_
5. Do you currently live with your parent(s)?  
    \_\_\_\_\_ No  
    \_\_\_\_\_ Yes → Who do you live with? (Please check all that apply)  
                  \_\_\_\_\_ Biological Mother  
                  \_\_\_\_\_ Biological Father  
                  \_\_\_\_\_ Step Mother  
                  \_\_\_\_\_ Step Father
6. During your formative years (i.e., childhood, adolescent), with whom did you live?  
(Please check all that apply)  
    \_\_\_\_\_ Biological Mother  
    \_\_\_\_\_ Biological Father  
    \_\_\_\_\_ Step Mother  
    \_\_\_\_\_ Step Father  
    \_\_\_\_\_ Sibling(s)  
    \_\_\_\_\_ Relative(s) (e.g., aunt, uncle, grandparent, cousin)  
    \_\_\_\_\_ Guardian
7. How many siblings do you have (including step-siblings and half-siblings)? \_\_\_\_\_
8. Height: \_\_\_\_\_ foot \_\_\_\_\_ inches
9. Weight: \_\_\_\_\_ pound

## APPENDIX D: Acceptance

(Dailey, 2010)

Directions: With your **MOTHER [FATHER]** in mind, please identify the number that best describes how much you agree with the following statements regarding general conversations with your mother. **If you have a stepmother [stepfather], please choose the one who is most influential to your development (i.e., either biological mother [father] or stepmother [stepfather]).**

Strongly Disagree	Moderately Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

During conversations, my **mother [father]**...

1. smiled at me often
2. gave me a lot of attention
3. was judgmental (R)
4. showed she understood how I feel
5. was easy to talk to
6. accepted my feelings or views even when she disagreed with me
7. was emotionally cold (R)
8. used a friendly voice

Which mother figure are you referring to in responding to the questions above?

- \_\_\_\_\_ Biological mother [father]  
\_\_\_\_\_ Stepmother [Stepfather]

## APPENDIX E: Parental Challenge Questionnaire

(PCQ; Dailey, 2008b)

Directions: With your **MOTHER [FATHER]** in mind, please identify the number that that best describes your agreement with each statement based on your experiences with your mother [father]. **If you have a stepmother [stepfather], please choose the one who is most influential to your development (i.e., either biological mother [father] or stepmother [stepfather]).**

Strongly Disagree	Moderately Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1. My mother [father] helped me channel my negative emotions into more positive actions.
2. My mother [father] asked me what I learned from my failures.
3. My mother [father] asked me to explain the reasoning behind my decisions.
4. My mother [father] pushed me to set goals in my sports activities.
5. My mother [father] discussed different perspectives with me regarding complex issues.
6. My mother [father] pushed me to resolve problems rather than just complain about them
7. My mother [father] exposed me to different experiences.
8. My mother [father] allowed me to make my own decisions even though I might make a few mistakes.
9. My mother [father] and I had playful arguments about ideas.
10. My mother [father] made me deal with the consequences of my decisions or behaviors.

## APPENDIX F: Body-Esteem Scale for Adolescents and Adults

(BESAA; Mendelson, Mendelson, & White, 2001)

Direction: Please indicate the degree of your agreement with each statement.

Never	Rarely	Sometimes	Often	Very often	Always
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1. I like what I look like in pictures.
2. Other people consider me good looking.
3. I'm proud of my body.
4. I am preoccupied with trying to change my body weight. (R)
5. I think my appearance would help me get a job.
6. I like what I see when I look in the mirror.
7. There are lots of things I'd change about my looks if I could. (R)
8. I am satisfied with my weight.
9. I wish I looked better. (R)
10. I really like what I weigh.
11. I wish I looked like someone else. (R)
12. People my own age like my looks.
13. My looks upset me. (R)
14. I'm as nice looking as most people.
15. I'm pretty happy about the way I look.
16. I feel I weigh the right amount for my height.
17. I feel ashamed of how I look. (R)
18. Weighing myself depresses me. (R)
19. My weight makes me unhappy. (R)
20. My looks help me to get dates.
21. I worry about the way I look. (R)
22. I think I have a good body.
23. I'm looking as nice as I'd like to.

**Note:** Factor structure

BE–Appearance: Item 1, 6, 7, 9, 11, 13, 15, 17, 21, 23

BE–Attribution: Item 2, 5, 12, 14, 20

BE–Weight: item 3, 4, 8, 10, 16, 19, 18, 22

(R) = reverse-scored

## APPENDIX G: Dyad Subscale of Personal Report Communication Apprehension

(PRCA; McCroskey, 1982)

Instruction (adapted from McCroskey, 1982): This instrument is composed of 6 statements concerning your feelings about communication with other people. Please indicate the degree to which each statement applies to you. There are no right or wrong answers. Work quickly, just record your first impression.

Strongly Disagree	Moderately Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1. While participating in a conversation with a new acquaintance, I feel very nervous.
2. I have no fear of speaking up in conversations. (R)
3. Ordinarily I am very tense and nervous in conversations.
4. Ordinarily I am very calm and relaxed in conversations. (R)
5. While conversing with a new acquaintance, I feel very relaxed. (R)
6. I'm afraid to speak up in conversations.

(R) = reverse-scored

## APPENDIX H: Positive Relationships with Others

(Ryff, 1989)

Direction: Please indicate the degree of your agreement with each statement.

Strongly Disagree	Moderately Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1. I don't have many people who want to listen when I need to talk. (R)
2. I enjoy personal and mutual conversations with family members and friends.
3. I often feel lonely because I have few close friends with whom to share my concerns. (R)
4. It seems to me that most other people have more friends than I do. (R)
5. People would describe me as a giving person, willing to share my time with others.
6. Most people see me as loving and affectionate.
7. I know I can trust my friends, and they know they can trust me.
8. Maintaining close relationships has been difficult and frustrating for me. (R)
9. I have not experienced many warm and trusting relationships with others. (R)

(R) = reverse-scored

## APPENDIX I: Interpersonal Competence Questionnaire

(ICQ; Buhrmester, Furman, & Wittenberg, 1988)

Direction: Please indicate your level of comfort and confidence in handling each of the following situations. Rate each item twice, 1 rating to indicate how you would react with a (non-romantic) same-sex friend and another to indicate how you would react with a romantic partner or date.

1 = I'm poor at this; I'd feel so uncomfortable and unable to handle this situation, I'd avoid it if possible

2 = I'm only fair at this; I'd feel uncomfortable and would have lots of difficulty handling this situation

3 = I'm OK at this; I'd feel somewhat uncomfortable and have some difficulty handling this situation

4 = I'm good at this; I'd feel quite comfortable and able to handle this situation

5 = "I'm EXTREMELY good at this; I'd feel very comfortable and could handle this situation very well.

1. Asking or suggesting to someone new that you get together and do something, e.g., go out together.
2. Finding and suggesting things to do with new people whom you find interesting and attractive.
3. Carrying on conversations with someone new whom you think you might like to get to know.
4. Being an interesting and enjoyable person to be with when first getting to know people
5. Introducing yourself to someone you might like to get to know (or date).
6. Calling (on the phone) a new date/acquaintance to set up a time to get together and do something.
7. Presenting good first impressions to people you might like to become friends with (or date).
8. Going to parties or gatherings where you don't know people well in order to start up new relationships.
9. Telling a companion you don't like a certain way s/he has been treating you.
10. Saying "no" when a date/acquaintance asks you to do something you don't want to do.
11. Turning down a request by a companion that is unreasonable.

12. Standing up for your rights when a companion is neglecting you or being inconsiderate.
13. Telling a date/acquaintance that he or she is doing something that embarrasses you.
14. Confronting your close companion when he or she has broken a promise.
15. Telling a companion that he or she has done something to hurt your feelings.
16. Telling a date/acquaintance that he or she has done something that made you angry.
17. Revealing something intimate about yourself while talking with someone you're just getting to know.
18. Confiding in a new friend/date and letting him or her see your softer, more sensitive side.
19. Telling a close companion things about yourself that you're ashamed of.
20. Letting a new companion get to know the real you.
21. Letting down your protective "outer shell" and trusting a close companion.
22. Telling a close companion about the things that secretly make you feel anxious or afraid.
23. Telling a close companion how much you appreciate and care for him or her.
24. Knowing how to move a conversation with a date/acquaintance beyond superficial talk to really get to know each other.
25. Helping a close companion work through his or her thoughts and feelings about a major life decision, e.g., a career choice.
26. Being able to patiently and sensitively listen to a companion let off steam about outside problems s/he is having.
27. Helping a close companion get to heart of a problem s/he is experiencing.
28. Helping a close companion cope with family or roommate problems.
29. Being a good and sensitive listener for a companion who is upset.
30. Being able to say and do things to support a close companion when s/he is feeling down.
31. Being able to show genuine empathetic concern even when a companion's problem is uninteresting.
32. When a close companion needs help and support, being able to give advice in ways that are well received.
32. Being able to admit that you might be wrong when a disagreement with a close companion begins to build into a serious fight.
34. Being able to put begrudging (resentful) feelings aside when having a fight with a close companion.
35. When having a conflict with a close companion, really listening to his or her complaints and not trying to read his/her mind.
36. Being able to take a companion's perspective in a fight and really understand his or her point of view.
37. Refraining from saying things that might cause a disagreement to build into a big fight.

38. Being able to work through a specific problem with a companion without resorting to global accusations (“you always do that”).
39. When angry with a companion, being able to accept that s/he has a valid point of view even if you don’t agree with that view.
40. Not exploding at a close companion (even when its justified) in order to avoid a damaging conflict.

**Note:** Factor structure

Initiating relationships: 1-8

Asserting displeasure with others: 9-16

Self-disclosure: 17-24

Providing emotional support and advice: 25-32

Conflict management: 34-40

## APPENDIX J: Identity Subscale of Erikson Psychosocial Inventory Scale

(Rosenthal, Gurney, & Moore, 1981)

Direction: Please indicate the degree of your agreement with each statement.

Strongly Disagree	Moderately Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1. I change my opinion of myself a lot. (R)
2. I've got a clear idea of what I want to be.
3. I feel mixed up. (R)
4. The important things in life are clear to me.
5. I've got it together.
6. I know what kind of person I am.
7. I can't decide what I want to do with my life. (R)
8. I have a strong sense of what it means to be female/male.
9. I like myself and am proud of what I stand for.
10. I don't really know what I'm on about. (R)
11. I find that I have to keep up a front when I'm with people. (R)
12. I don't really feel involved. (R)

(R) = reverse-scored

## APPENDIX K: Self-Esteem

(Rosenberg, 1965)

INSTRUCTIONS: Below is a list of statements dealing with your general feelings about yourself. Please indicate your level of agreement with the statements below.

Strongly Disagree	Moderately Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1. On the whole, I am satisfied with myself.
2. At times, I think I am no good at all. (R)
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of. (R)
6. I certainly feel useless at times. (R)
7. I feel that I'm a person of worth, at least on an equal plane with others.
8. I wish I could have more respect for myself. (R)
9. All in all, I am inclined to feel that I am a failure. (R)
10. I take a positive attitude toward myself.

(R) = reverse-scored

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