

# The Acceptance Model of Intuitive Eating: A Comparison of Women in Emerging Adulthood, Early Adulthood, and Middle Adulthood

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The acceptance model of intuitive eating (Avalos & Tylka, 2006) posits that body acceptance by others helps women appreciate their body and resist adopting an observer's perspective of their body, which contribute to their eating intuitively/adaptively. We extended this model by integrating body mass index (BMI) into its structure and investigating it with emerging (ages 18–25 years old,  $n = 318$ ), early (ages 26–39 years old,  $n = 238$ ), and middle (ages 40–65 years old,  $n = 245$ ) adult women. Multiple-group analysis revealed that this model fit the data for all age groups. Body appreciation and resistance to adopt an observer's perspective mediated the body acceptance by others–intuitive eating link. Body acceptance by others mediated the social support–body appreciation and BMI–body appreciation links. Early and middle adult women had stronger negative BMI–body acceptance by others and BMI–intuitive eating relationships and a stronger positive body acceptance by others–body appreciation relationship than emerging adult women. Early adult women had a stronger positive resistance to adopt observer's perspective–body appreciation relationship than emerging and middle adult women.

*Keywords:* intuitive eating, emerging adulthood, early adulthood, middle adulthood, body appreciation

The philosophical tenets of counseling psychology convey the need to emphasize positive well-being and character strengths, recognize and honor individual differences, prevent distress, and attend to developmental growth (Gelso & Fretz, 2001). Approaching research and practice from such vantage points moves one's understanding beyond simply removing pathology to enhancing flourishing (Fredrickson & Losada, 2005; Seligman & Csikszentmihalyi, 2000) among all individuals. One important area for counseling psychologists to capitalize upon the unique strength-based perspective of their training is the study of body image and eating behavior (Hotelling, 2001). In this study, we attend to counseling psychology's tenets by examining a recently developed model of positive body image and intuitive eating with adult women of diverse ages—representing emerging adulthood, early adulthood, and middle adulthood.

The vast majority of research on body image and eating behavior has been limited by an almost exclusive focus on pathology (Avalos, Tylka, & Wood-Barcalow, 2005; Striegel-Moore & Cachelin, 1999; Tylka, 2006). Many theoretical frameworks have explored how risk variables combine to predict negative body image and disordered eating (e.g., Fredrickson & Roberts, 1997; Stice, Nemeroff, & Shaw, 1996; Tylka & Subich, 2004). Coun-

seling psychologists have begun to infuse hygiology into this research by addressing predictors of positive body image, or body appreciation (Avalos et al., 2005), and adaptive eating behaviors, or intuitive eating (Tylka, 2006). To date, however, only a handful of studies have included these constructs.

*Body appreciation* encompasses four specific characteristics of positive body image uncovered in qualitative research on U.S. college women (Wood-Barcalow, Tylka, & Augustus-Horvath, 2010) and Swedish adolescents (Frisén & Holmqvist, 2010): having favorable opinions of the body despite body size and perceived imperfections, being aware of and attentive to the body's needs, engaging in healthy behaviors to take care of the body, and protecting the body by rejecting unrealistic media body ideals. Body appreciation predicted several indices of psychological well-being (i.e., self-esteem, optimism, life satisfaction, and proactive coping) beyond measures of body dissatisfaction for college women, suggesting that it is more adaptive and complex than low levels of negative body image (Avalos et al., 2005). Preliminary research has found that body appreciation is negatively related to women's age (Swami, Hadji-Michael, & Furnham, 2008), suggesting that in-depth investigations into this relationship would be worthwhile.

*Intuitive eating* is trust in and connection with physiological hunger and satiety cues and eating in response to these cues (Tribble & Resch, 2003; Tylka, 2006). Individuals who eat intuitively are not preoccupied with food and dieting. They often choose foods that help their bodies function well and are pleasing to their palate. They permit themselves to eat foods they desire when they are hungry; they do not ignore their hunger cues or classify food into acceptable and unacceptable categories. They rely on their hunger cues to determine when and how much to eat and respect their satiety cues by ceasing to eat when they are no longer hungry or are comfortably full. Perhaps because intuitive

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eating routinely respects satiety cues, intuitive eating was found to be negatively related to body mass index (BMI) among college women (Tylka, 2006).

Research has supported intuitive eating's adaptive properties among children and college women. Laboratory experiments and correlational studies have revealed that those who eat in response to their internal hunger and satiety cues are less likely to overindulge in food in the absence of hunger (Birch, Fisher, & Davison, 2003), allow emotional (e.g., stress, boredom) or situational (e.g., mere presence of food, food odors) cues guide their food intake (Woody, Costanzo, Leifer, & Conger, 1981), and be preoccupied with food (Faith, Scanlon, Birch, Francis, & Sherry, 2004). The unique properties of intuitive eating have been upheld for college women; intuitive eating was associated with high levels of well-being above and beyond low levels of eating disorder symptoms and thus is worthy of study in its own right (Tylka & Wilcox, 2006). Yet it remains unknown whether intuitive eating is associated with positive functioning in older women. Recently, a model—the acceptance model of intuitive eating—was developed based on the associations between general and body acceptance by others, body appreciation, resistance<sup>1</sup> to adopt an observer's perspective of the body, and intuitive eating. Its tenets were supported among college women (Avalos & Tylka, 2006), suggesting that it holds value and promise. To add to this literature, this study determined the applicability of this model with early and middle adult women.

The acceptance model of intuitive eating (Avalos & Tylka, 2006) contains adaptive constructs that could be used to further enhance counseling psychologists' understanding about preventing negative body image and disordered eating by enhancing healthy versions of these attitudes and behaviors. The tendency to eat intuitively is believed to be inborn (Tribole & Resch, 2003). This process, however, could be thwarted by an environment that lacks acceptance and/or imposes rigid rules for eating that ignore inner experience (Avalos & Tylka, 2006; Carper, Fisher, & Birch, 2000). As such, both humanistic and objectification theory were used as theoretical foundations for the development of the acceptance model of intuitive eating.

Humanistic theory suggests that the perception of unconditional acceptance from significant others helps individuals align themselves with their actualizing tendency, an innate growth-directed process that guides development (Rogers, 1961). Following the actualizing tendency allows individuals to be authentic; they focus less on how they appear to others and more on what their self and body need to thrive. Being that intuitive eating reflects the valuing of inner experiences and honoring of body needs, it may be one indicator of alignment with the actualizing tendency (Avalos & Tylka, 2006). The actualizing tendency, and hence intuitive eating, could be disrupted by an environment that emphasizes and scrutinizes appearance rather than offering social support and body acceptance.

Objectification theory posits that when women are valued primarily for their appearance, they start to view themselves as "sights" via the lens of others (Fredrickson & Roberts, 1997, p. 180). They depart from their actualizing tendency (e.g., awareness of feelings and internal experiences, ability to concentrate on tasks unrelated to appearance) and instead adopt an observer's perspective of their external appearance. They become ashamed of their body, which may translate into disordered eating behaviors. Ob-

jectification theory has received empirical support among college women (Moradi, Dirks, & Matteson, 2005) as well as women ages 25 years and older (Augustus-Horvath & Tylka, 2009).

Conversely, being valued for qualities other than appearance could help women appreciate their bodies. Specifically, being accepted by others (including body shape and weight) could be associated with focusing less (rather than more) on how they appear to others, body appreciation (rather than shame), and intuitive eating (rather than disordered eating).

Almost all women in Avalos and Tylka's (2006) validation study of the acceptance model of intuitive eating were in emerging adulthood (ages 18–25 years old), a developmental stage theoretically and empirically distinct from adolescence and early adulthood (Arnett, 2000; Santrock, 2008). Emerging adults tend to explore a variety of life directions (e.g., college, majors within college), decide little about the future, and have not yet achieved their life goals (Arnett, 2000). Often, they focus on their bodies and experience negative body image, as they are confronted by media messages that portray thin and attractive women their age as successful (Gillen & Lefkowitz, 2009). Perhaps levels of and relationships between variables included within the acceptance model of intuitive eating could be different for women in two subsequent developmental stages, namely, early adulthood (typically between the ages of 26 and 39 years) and middle adulthood (approximately ages 40–65 years), due to developmental changes such as the quality of their relationships, aging-related appearance changes, and varied life roles and responsibilities (Kearney-Cooke & Isaacs, 2004; Santrock, 2008).

Although women's life courses, options, and decisions are highly variable, early adult women tend to have responsibilities that may include balancing the stress of careers, marriage, and motherhood (Arnett, 2000). They tend to be more successful in their careers and relationships and have a more established identity than emerging adult women. Their bodies often begin to change via pregnancy and the natural aging process (e.g., often gaining more body fat in midsection and arms and losing muscle mass, firmness in their breasts, and skin elasticity; Whitbourne & Skultety, 2002). They tend to place less emphasis on appearance due to the importance of their life roles (Arnett, 2000). Results of a 10-year longitudinal study indicated that women in early adulthood reported lower disordered eating and higher body satisfaction compared to when they were in emerging adulthood; yet their desire to lose weight remained high (Heatherton, Mahamedi, Striipe, Field, & Keel, 1997).

Middle adult women tend to be even more established in their careers and family roles (wife/partner, mother). They are often outside of the objectification limelight because their bodies are not considered to be the epitome of sexuality (Fredrickson & Roberts, 1997). The extent to which aging-related body changes impact their body image and eating behavior is associated with their attitude toward aging and investment in appearance (Kearney-Cooke & Isaacs, 2004). If they fear aging and have high invest-

<sup>1</sup> Western society constantly reminds women of the importance of their appearance to others (Fredrickson & Roberts, 1997; Kilbourne, 1999). Women, then, need to determine the extent to which they resist thinking about how others are viewing their body, which may be a conscious or unconscious process.

ment in appearance by defining themselves by their looks and sexuality, they experience more body dissatisfaction, binge eating, detachment from hunger/satiety cues, and favorable cosmetic surgery attitudes (Lewis & Cachelin, 2001; Slevic & Tiggemann, 2010; Whitbourne & Skultety, 2002). Conversely, if middle adult women view aging as an opportunity for personal growth and define themselves largely by their inner qualities, they resist adopting an observer's perspective of their body, take care of their body's needs, and do not commit to drastic means to change their appearance (e.g., cosmetic surgery; Kearney-Cooke & Isaacs, 2004).

Given the developmental changes that coincide with body image and eating behavior, it seems important to compare the acceptance model of intuitive eating with women in emerging adulthood, early adulthood, and middle adulthood. If older women are surrounded by others who do not accept their aging bodies or who value appearance over other qualities, disapproving messages (e.g., negative evaluations, critical comments, harassment, and ridicule) likely are more common. If internalized, these messages may

impact women's views on their body, lower their body appreciation, and focus their attention on their appearance (Augustus-Horvath & Tylka, 2009). These women may devalue their body because of its aging appearance (e.g., increased overall weight, fat placement around midsection and arms, and wrinkles), which then could impact how they care for their body (e.g., rigid dieting, seeking out cosmetic fillers or surgery; Gupta, 1995). Alternatively, if older women have social support networks that accept their bodies, then they may perceive aging more favorably (Kearney-Cooke & Isaacs, 2004; Lewis & Cachelin, 2001). Theoretical and empirical support for each model path (see Figure 1) is presented next.

Avalos and Tylka (2006) surmised that women who receive unconditional acceptance and support from significant others would resist adopting an observer's perspective of their body, as they would feel valued and loved for who they are and not how they look. Yet this proposition was not supported with young adult college women. Avalos and Tylka reflected that their measure of

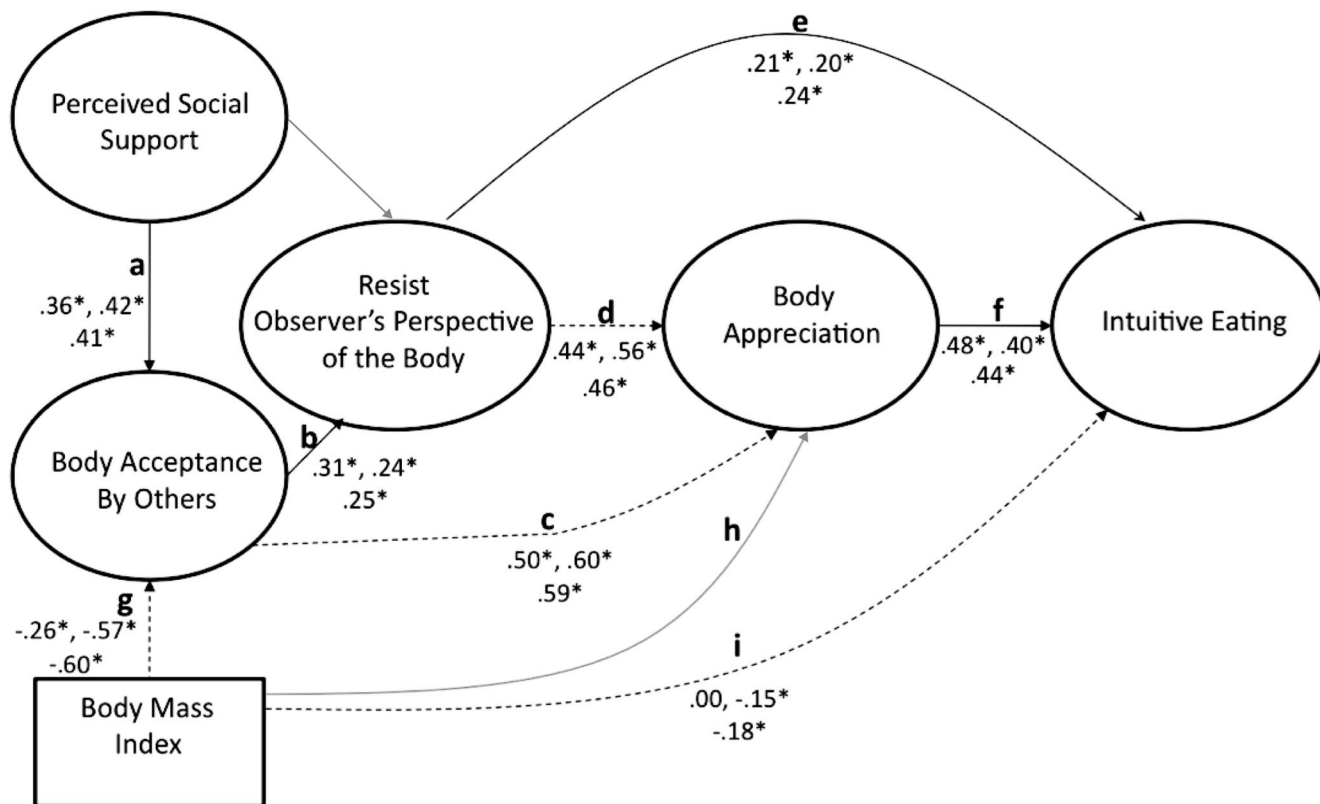


Figure 1. Acceptance model of intuitive eating (Paths a–f) with body mass index and its proposed links added (Paths g–i). The path coefficients presented in this final structural model were obtained by multiple group analysis of the full data set. For each significant path, coefficients are located on the top left for women in emerging adulthood (18–25 years old,  $n = 318$ ), top right for women in early adulthood (26–39 years old,  $n = 238$ ), and bottom middle for women in middle adulthood (40–65 years old,  $n = 245$ ). Dark solid lines indicate that the path is not significantly different between age groups; dashed lines indicate the path is significantly different between age groups. Light solid paths without accompanying path coefficients are not significant for any age group and have been trimmed (i.e., excluded) from the analysis of this final model. Comparative fit index = .96, root-mean-square error of approximation = .07, standardized root-mean-square residual = .07,  $\chi^2(276, N = 801) = 643.75, p < .001$ . All standard error estimates for the paths range from .00 to .06 for each age group. Unstandardized path estimates are available from Tracy L. Tylka. \*  $p < .05$ .

unconditional acceptance (i.e., having women report the level of acceptance from the most influential person in their life while growing up) may have been unable to capture the overall level and quality of acceptance. Given that perceived social support tends to be stable over time and across relationships (Laursen, Furman, & Mooney, 2006), it may be a more comprehensive and appropriate indicator of unconditional acceptance, especially when studying developmental stages of adulthood. Thus, we assessed women's perceived support from significant others and considered its prediction of resistance to adopt an observer's perspective of the body exploratory for all age groups.

The six paths detailed below were empirically supported in Avalos and Tylka's (2006) study with emerging adult women. Kearney-Cooke and Isaacs (2004) emphasized that these associations likely occur for adult women regardless of developmental stage. Thus, we predicted that these six paths would be significant for each age group.

A general sense of social support may elicit women's perception that others accept specific aspects about them, such as their body (Path a; Kearney-Cooke & Isaacs, 2004). Body acceptance by others, however, may be more subtle than body unacceptance, which often consists of pressures to lose weight or messages to change appearance (Stice et al., 1996; Wood-Barcalow et al., 2010). Women who perceive body acceptance by others may not be directly complimented about their appearance but instead believe that others think their body is acceptable and fine as it is (e.g., their partner caresses their body in a loving manner, their family does not criticize aging-related body changes about their body). Women are taught to hold others' opinions of their appearance in high regard (Fredrickson & Roberts, 1997; Pipher, 1994). If they perceive body acceptance by others, they may not feel that others are closely critiquing how they look and feel free to focus on aspects of themselves other than their appearance. Thus, they may not feel that they need to adopt an observer's perspective and habitually monitor their body (Path b). Body acceptance from others also may predict women's acceptance and appreciation of their own body (Path c); women with positive body image have reported that unconditional body acceptance from others contributed to their love, respect, and admiration toward their own body (Wood-Barcalow et al., 2010). Resistance to adopt an observer's perspective of the body may further help women appreciate their bodies (Path d); indeed, refusing to obsess about how the body appears to others is characteristic of women who endorse a positive body image (Wood-Barcalow et al., 2010). Resistance to adopt an observer's perspective of the body also may free up women's attention to focus on their body's needs (e.g., food), and internal cues (i.e., hunger and satiety), an awareness critical for intuitive eating (Path e; Tribble & Resch, 2003; Tylka, 2006). Women who appreciate their body report awareness of their body's needs, including their hunger and satiety cues, and eat in response to these cues (Wood-Barcalow et al., 2010); thus, body appreciation may predict intuitive eating (Path f).

Perceived social support also may predict body appreciation. Indeed, perceived emotional support and responsiveness from mothers predicted body satisfaction in college women (Cheng & Mallinckrodt, 2009). Yet, body acceptance by others may account for this relationship: Avalos and Tylka (2006) found that the direct bivariate relationship between unconditional acceptance and body appreciation was no longer significant once body acceptance by

others was considered as a mediator of this link. Thus, we examined whether body acceptance by others mediates the relationship between perceived social support and body appreciation for each age group.

Because women's BMI tends to increase with age (Whitbourne & Skultety, 2002) and theoretically could be related to the level of body acceptance they receive as well as their body attitudes and eating behavior, we integrated BMI into the model. We anticipated that women's BMI would negatively predict their perception that others accept their body (Path g). Societal messages to lose weight for both appearance and health-related reasons are prevalent and influential (Blaine & McElroy, 2002) and seem to be directed more toward women than men (Kilbourne, 1999). Significant others may internalize these messages that women's beauty and health are defined by their weight (Fredrickson & Roberts, 1997). Women who are not heavy, then, may receive more accepting messages about their body (or no mention of their weight), whereas women who are heavy may receive disapproving and critical messages about their weight. Many adult women may also internalize negative societal messages about weight (Lewis & Cachelin, 2001). Among these women, those who are not heavy are more likely to appreciate their body, whereas those who are heavy are less likely to appreciate their body (Swami et al., 2008). Thus, we expected that BMI would negatively predict body appreciation in our model (Path h). Women who are not heavy may feel that their weight is more acceptable, healthy, and desirable, so they can trust their body's natural ability to regulate eating and eat according to their internal hunger and satiety cues. In contrast, many women who have higher BMI may feel that their size is not acceptable, healthy, or desirable, so they may distrust their self-regulatory hunger and satiety cues and eat according to external rules (e.g., a diet plan). We therefore proposed that BMI would negatively predict intuitive eating (Path i).

We also investigated whether women's resistance to adopt an observer's perspective of their body and body appreciation mediated the perceived body acceptance by others-intuitive link for each age group. The extent to which body acceptance by others is connected to women's intuitive eating is likely to be dependent on their positive body orientation—which includes women's resistance to adopt an observer's perspective of their body and their appreciation of their body (Avalos et al., 2005; Wood-Barcalow et al., 2010). These two mediational links have been empirically supported for emerging adult women (Avalos & Tylka, 2006) but have yet to be tested in samples of early adult and middle adult women.

### Summary of Hypotheses

*Hypothesis 1:* The model in Figure 1 would fit the data for women in emerging adulthood, early adulthood, and middle adulthood, and the specified paths (a–i) would be significant for each age group.

*Hypothesis 2:* Body acceptance by others would mediate the link between perceived social support and body appreciation for each age group.

*Hypothesis 3:* Resistance to adopt an observer's perspective of the body and body appreciation would mediate the relationship between body acceptance by others and intuitive eating for each age group.



We also examined whether each model path was similar in strength for emerging, early, and middle adult women. Given the paucity of theory and research attending to how each model path may be similarly or differentially related based on women's age, we considered these tests exploratory.

## Method

### Participants and Procedure

We recruited only women, as the aging process is likely to impact the body image of women and men differently (Fredrickson & Roberts, 1997; Kearney-Cooke & Isaacs, 2004). First, we attempted to recruit more diverse samples by sending e-mail messages to members of organizations and Listservs comprised of historically underrepresented and marginalized populations such as multicultural centers and gay/lesbian/bisexual/transgender student services. Second, via e-mail, we targeted female members of other organizations and Listservs, such as student affairs, our university's multiple organizations for women (e.g., women in engineering, women in technology), and nontraditional student organizations. Third, we presented a description of our study on the introductory psychology research website for our university and four local community colleges to obtain diversity in age, socioeconomic status, and education; students who participated received extra credit toward their class. Last, we e-mailed recruitment messages to five colleagues, six friends, and four family members who were encouraged to forward it along to other women. All participants received a description of the study, an entreaty for the recipient to forward the message to other women, and a direct URL link to a Web page that hosted details needed for informed consent.

After providing consent, women were directed to the survey Web page, where the measures and demographic information form were hosted. Two different orderings of the survey (containing opposite sequences of the measures) were administered to offset possible ordering effects. We used several strategies to detect duplicate and erroneous data. First, we screened date and time of submission to avoid duplicate surveys (no duplicate surveys were detected). Second, we embedded three validity questions within the items of three measures, each of which instructed participants to choose certain responses to control for inattentiveness, random responding, and careless responding (e.g., "To ensure that you are paying attention, please choose Strongly Agree for this item"). Participants who failed any of the validity items were not included in the data set. Because participants were instructed at the commencement of the survey that they could exit at any point without penalty, we had 104 women who terminated early. These women also were not included in the data set.

After these initial screening procedures, we categorized 801 women into an emerging adulthood group (18–25 years old,  $n = 318$ ), an early adulthood group (26–39 years old,  $n = 238$ ), or a middle adulthood group (40–65 years old,  $n = 245$ ). For ease of comparison, Tables 1 and 2 include sample and demographic characteristics for all three age groups.

### Latent Variables and Measures

**Perceived social support.** The 24-item Social Provisions Scale (SPS; Cutrona & Russell, 1987) assesses perceived social support and

acceptance within respondents' relationships. Items (e.g., "I have close relationships that provide me with a sense of emotional security and well-being") are rated on a 4-point scale that ranges from 1 (*strongly disagree*) to 4 (*strongly agree*). After reverse-scoring the appropriate items, item ratings are averaged to yield a total score. Although six subscales can be calculated from the SPS, we used only the total score because we wanted to gauge overall support from influential others. Higher scores reflect greater overall support. Coefficient alpha estimates have ranged from .82 to .92 in various samples (e.g., postpartum women, the elderly, and college students), demonstrating the internal consistency reliability of its scores (see Cutrona & Russell, 1987). Its scores were reasonably stable over a 2-week period for a sample of elderly community residents ( $r = .66$ ; Cutrona, Russell, & Rose, 1986). In terms of construct validity, total SPS scores were correlated positively with other measures of social support and life satisfaction, negatively with depression, and negligibly with social desirability among samples of working adult women and college students (Cutrona & Russell, 1987). In the present sample, Cronbach's coefficient alphas for the SPS items were .92 for both emerging and early adult women and .94 for middle adult women.

**Body acceptance by others.** The Body Acceptance by Others Scale (BAOS; Avalos & Tylka, 2006) assesses overall environmental acceptance regarding body shape and weight. Two items (i.e., "I've felt acceptance from XX regarding my body shape and/or weight" and "XX have/has sent me the message that my body shape and weight are fine") are each presented for five environmental sources: friends, family, partners/people dated, society, and the media. Within each question, the specific source is listed rather than XX. This yields a total of 10 items, each of which are rated on a 5-point scale that ranges from 1 (*never*) to 5 (*always*). Items responses are averaged, with higher scores indicating greater perceived acceptance of body shape and/or weight. The internal consistency reliability of its scores has been supported via coefficient alpha estimates of .90 and .91 for two samples of college women (Avalos & Tylka, 2006). Among a pilot sample of college women (see Avalos & Tylka, 2006), its scores demonstrated test-retest reliability over a 3-week period ( $r = .85$ ), convergent validity via its negative relationship with pressure for thinness, and discriminant validity via its nonsignificant relationship with impression management. In the present sample, its Cronbach's coefficient alphas were .92 for emerging adult women, .90 for early adult women, and .91 for middle adult women.

**Resisting an observer's perspective of the body.** Similar to Avalos and Tylka (2006), we assessed this variable via the Body Surveillance subscale of the Objectified Body Consciousness Scale (McKinley & Hyde, 1996), which contains eight items that are rated on a scale that ranges from 1 (*strongly disagree*) to 7 (*strongly agree*). This subscale was intended to measure the degree to which a woman has internalized an "observer's perspective" of her body (Fredrickson & Roberts, 1997, p. 177). We assert that low surveillance suggests that a woman has resisted the adoption of an observer's perspective of her body, attending less to how it appears to others.

Six items were framed by McKinley and Hyde (1996) in the direction of non-surveillance (e.g., "I am more concerned with what my body can do than how it looks," "I rarely worry about how I look to other people," "I think it is more important that my clothes are comfortable than whether they look good on me"). In the original scoring procedure, these six items are reverse-scored and added to the two items that are framed in the direction of body surveillance (e.g., "During the day, I think about how I look many

Table 1  
*Sample and Demographic Characteristics for Emerging Adult, Early Adult, and Middle Adult Women*

Variable	Emerging adult women: 18–25 years old	Early adult women: 26–39 years old	Middle adult women: 40–65 years old
<i>n</i>	318	238	245
Average age (years)			
<i>M</i> ( <i>SD</i> )	19.47 (1.90)	32.63 (4.06)	51.38 (7.07)
Median	19.00	33.00	52.00
Mode	18.00	36.00	54.00
Ethnic identification: <i>n</i> (%)			
White/European American	256 (80.5)	198 (83.1)	206 (84.1)
Black/African American	22 (6.9)	14 (5.9)	14 (5.7)
Asian American	19 (6.0)	8 (3.3)	8 (3.2)
Latina or Hispanic	9 (2.8)	4 (1.7)	6 (2.4)
Native American	1 (0.3)	4 (1.7)	2 (0.8)
Multiracial	3 (1.0)	3 (1.3)	2 (0.8)
International	2 (0.6)	3 (1.3)	5 (2.0)
Did not report	3 (0.9)	2 (0.8)	1 (0.4)
Socioeconomic identification: <i>n</i> (%)			
Working class	39 (12.3)	30 (12.6)	28 (11.4)
Middle class	252 (79.2)	184 (77.3)	194 (79.2)
Upper class	23 (7.2)	24 (10.1)	19 (7.8)
Did not report	4 (1.3)	0 (0.0)	4 (1.6)
Relationship status: %			
Single	89.6	28.5	17.1
Partnered	2.5	7.1	4.5
Married	1.3	59.7	62.9
Divorced or separated	0.3	3.4	9.8
Widowed	0.0	0.0	3.7
Did not report	6.3	1.2	2.0
Highest education level: %			
Completed some high school	0.0	0.0	0.8
Completed high school	15.4	0.8	2.4
Some college education	74.5	43.2	55.9
Completed college	4.4	12.2	13.4
Some graduate education	3.8	9.7	6.5
Completed graduate school	0.9	34.1	19.4
Did not report	0.9	0.0	1.6
Current college student: %			
First-year student	56.3	12.6	19.6
Sophomore	14.8	14.7	15.5
Junior	9.7	2.5	1.6
Senior	7.9	2.5	2.0
Graduate student	3.7	4.2	2.4

times”). Instead of reverse-scoring the six items framed in the direction of nonsurveillance, we reverse-scored the two items framed in the direction of body surveillance and then averaged all items. Therefore, higher total scores reflected more resistance to adopt an observer’s perspective of the body rather than body surveillance. Among college women, this subscale demonstrated internally consistent scores (coefficient  $\alpha$ s = .86–.89), stable scores over a 2-week period ( $r = .79$ ), and construct validity via its association with public self-consciousness (McKinley & Hyde, 1996). Among a sample of women ages 25 years and older, its scores also demonstrated internal consistency reliability (coefficient  $\alpha = .88$ ; Augustus-Horvath & Tylka, 2009). In the present sample, Cronbach’s coefficient alphas for its items were .83 for emerging adult women, .85 for early adult women, and .87 for middle adult women.

**Body appreciation.** We assessed this construct using the Body Appreciation Scale (BAS; Avalos et al., 2005), which contains 13 items (e.g., “Despite its imperfections, I still like my

body”) that are rated on a scale that ranges from 1 (*never*) to 5 (*always*). Item responses are averaged; higher scores reflect greater body appreciation. Research with samples of college women (Avalos et al., 2005) has supported the BAS’s unidimensional factor structure, the internal consistency reliability (coefficient  $\alpha$ s = .91–.94) and 3-week test–retest reliability ( $r = .90$ ) of its scores, its convergent validity via its positive association with appearance evaluation and negative association with body dissatisfaction, and its discriminant validity via its nonsignificant relationship to impression management. In the present sample, Cronbach’s coefficient alphas for the BAS items were .93 for emerging adult women, .94 for early adult women, and .93 for middle adult women.

**Intuitive eating.** We used the 21-item Intuitive Eating Scale (IES; Tylka, 2006) to measure this construct. The IES assesses the three components of intuitive eating: unconditional permission to eat (e.g., “If I am craving a certain food, I allow myself to have it”; nine items), eating for physical rather than emotional reasons (e.g., “I stop eating when I feel full [not overstuffed]”; six items), and

Table 2  
*Number and Percentage of Participants at Each Year of Age*

Emerging adult women			Early adult women			Middle adult women		
Age (years)	<i>n</i>	% of group	Age (years)	<i>n</i>	% of group	Age (years)	<i>n</i>	% of group
18	132	41.5	26	17	7.1	40	11	4.5
19	80	25.2	27	18	7.6	41	13	5.3
20	43	13.5	28	15	6.3	42	11	4.5
21	14	4.4	29	21	8.8	43	10	4.1
22	17	5.3	30	9	3.8	44	8	3.3
23	10	3.1	31	17	7.1	45	8	3.3
24	11	3.5	32	20	8.4	46	12	4.9
25	11	3.5	33	14	5.9	47	11	4.5
			34	14	5.9	48	5	2.0
			35	10	4.2	49	14	5.7
			36	30	12.6	50	9	3.7
			37	25	10.5	51	6	2.4
			38	14	5.9	52	10	4.1
			39	14	5.9	53	10	4.1
						54	21	8.6
						55	18	7.3
						56	6	2.4
						57	12	4.9
						58	10	4.1
						59	8	3.3
						60	6	2.4
						61	7	2.9
						62	0	0.0
						63	0	0.0
						64	8	3.3
						65	11	4.5

reliance on internal hunger and satiety cues (e.g., “I trust my body to tell me when to eat”; six items). Item responses are rated on a scale that ranges from 1 (*strongly disagree*) to 5 (*strongly agree*). After appropriate items are reverse-scored, item responses are averaged to arrive at a total score. Higher total scores correspond with higher levels of intuitive eating. Subscales also can be calculated. Tylka (2006) upheld its factor structure, the internal consistency reliability (coefficient  $\alpha$ s = .85–.89) and 3-week test–retest reliability ( $r = .90$ ) of its scores, its convergent validity via its negative relationship to eating disorder symptomatology, and its discriminant validity as it was not associated with impression management. In the present sample, Cronbach’s coefficient alphas for the IES total items were .87 for emerging adult women, .89 for early adult women, and .89 for middle adult women.

**Demographic variables.** Participants reported their age and classified themselves into a group for each of the following variables: ethnic identification, socioeconomic status, highest education level completed, school status (if applicable), and relationship status. Table 1 includes possible group classifications from which they could select. They estimated their weight (in pounds) and height (in feet and inches); we converted these estimates to metric units to compute BMI ( $\text{kg}/\text{m}^2$ ).

### Creation of Measured/Observed Variables

We followed Russell, Kahn, Spoth, and Altmaier’s (1998) recommendations on constructing three parcels (measured indicators) for each of our five latent variables in Figure 1. Specifically, for each scale or subscale, an exploratory factor analysis using the

total sample was first performed using the maximum-likelihood (ML) method of extraction, and a single factor was extracted. The factor loadings from this analysis were then rank ordered and successively assigned (from the highest to the lowest factor loading) to one of three parcels; this process equalized the average loadings of each parcel on its respective latent factor. Items within each parcel were averaged to obtain a total parcel score, which was used to estimate their respective latent variable within the structural equation modeling (SEM) analyses. Even though the IES contains three subscales, we followed this procedure (a) to be consistent with the parceling method of the other measures and Avalos and Tylka’s (2006) study and (b) because the IES subscales are less than strongly correlated, unstable and unacceptable parameter estimates would likely result if the subscales were used (Little, Cunningham, Shahar, & Widaman, 2002). Indeed, in the present study,  $r$ s ranged from .37–.52 for the IES subscales but were much higher (i.e., .61–.77) for the IES parcels.

## Results

### Preliminary Analyses

We examined our data for normality of distribution. Researchers testing structural equation models should transform variables that have absolute values of skewness  $> 3$  and kurtosis  $> 10$  (Kline, 2005). Skewness and kurtosis values for BMI and the 15 parcels were lower than these values (skewness range =  $-0.83$  to  $0.39$ , kurtosis range =  $-0.71$  to  $0.22$ ); therefore, we did not transform

any variable. Next, for each age group, we calculated the variable means, standard deviations, and partial correlations controlling for relationship status (single vs. partnered/married) and highest level of education attained given the unequal distributions between age groups. These values are presented in Table 3. We also calculated bivariate correlations between the measures without controlling for relationship status and highest level of education attained; no differences were found between the bivariate and partial correlations (all  $ps > .05$  for the Fisher's  $z$  tests). For the total sample, we calculated partial correlations (controlling for relationship status and highest level of education attained) between age (as a continuous variable) and the study variables. Age was moderately related in a positive direction to BMI ( $r = .29, p < .001$ ), slightly related in a positive direction to resistance to an observer's perspective of the body ( $r = .15, p < .001$ ), slightly related in a negative direction to body acceptance by others ( $r = -.21, p < .001$ ) and intuitive eating ( $r = -.15, p < .001$ ), negligibly related to body appreciation ( $r = -.08, p < .05$ ), and unrelated to social support ( $r = -.04, ns$ ).

We then performed analysis of covariance (ANCOVA) tests to determine whether emerging, early, and middle adult women differed on the measured variables. We controlled for relationship status and highest level of education attained. Age-group differences were found within each variable: perceived social support,  $F(4, 716) = 12.45, p < .001$ ; body acceptance by others,  $F(4, 716) = 12.95, p < .001$ ; resisting an observer's perspective of the body,  $F(4, 716) = 6.40, p < .001$ ; body appreciation,  $F(4, 716) = 3.94, p < .01$ ; intuitive eating,  $F(4, 716) = 5.41, p < .001$ ; and BMI,  $F(4, 716) = 19.70, p < .001$ . We also ran these analyses with the covariates removed (ANOVA), and the same pattern emerged. Early adult women perceived greater social support than

emerging adult women ( $p < .001$ ). Middle adult women did not differ from the other groups in their reported levels of social support (both  $ps > .05$ ). All groups differed in their perceived body acceptance by others and BMI: Middle adult women perceived the lowest body acceptance and the highest BMI all  $ps < .05$ , whereas emerging adult women perceived the greatest body acceptance by others and the lowest BMI (all  $ps < .05$ ). Middle adult women were more likely to resist adopting an observer's perspective of their body but reported lower intuitive eating than emerging adult and early adult women (all  $ps < .05$ ); the two younger groups did not differ in their reports of resisting to adopt an observer's perspective of the body or intuitive eating (both  $ps > .05$ ). Middle adult women were less appreciative of their body than emerging adult women ( $p < .05$ ); early adult women did not differ from the other groups in their reported level of body appreciation (both  $ps > .05$ ).

We probed into which sources of perceived body acceptance (i.e., friends, family, partner, media, and society) explained age-group differences. To do this, we averaged the two BAOS items that corresponded with each source and entered these values, along with age group, into five ANCOVAs (controlling for relationship status and highest level of education attained). Each source revealed age-group differences: friend,  $F(4, 716) = 10.60, p < .001$ ; family,  $F(4, 716) = 6.70, p < .001$ ; partner,  $F(4, 716) = 8.40, p < .001$ ; media,  $F(4, 716) = 8.56, p < .001$ ; and society,  $F(4, 716) = 9.93, p < .001$ . When the covariates were removed, the same pattern emerged. Middle adult women reported significantly lower body acceptance from friends, partners, and society than did emerging adult and early adult women (all  $ps < .05$ ). Emerging adult and early adult women did not differ in their levels of perceived body accep-

Table 3

Means (SDs) and Partial Correlations (Controlling for Level of Education and Relationship Status) Among Study Measures and Body Mass Index for Women in Emerging, Early, and Middle Adulthood

Measure	<i>M</i> ( <i>SD</i> )	Response range	1	2	3	4	5	6
Emerging adult women (18–25 years old)								
1. SPS (perceived social support)	3.43 (0.38)	1–4	—					
2. BAOS (body acceptance by others)	3.78 (0.77)	1–5	.45**	—				
3. OBC (resist observer's perspective of the body)	3.31 (1.09)	1–7	.03	.25**	—			
4. BAS (body appreciation)	3.59 (0.76)	1–5	.35**	.69**	.51**	—		
5. IES (intuitive eating)	3.24 (0.57)	1–5	.23**	.45**	.44**	.56**	—	
6. Body mass index	23.95 (6.89)		-.10	-.24**	.07	-.13*	-.07	—
Early adult women (26–39 years old)								
1. SPS (perceived social support)	3.58 (0.35)	1–4	—					
2. BAOS (body acceptance by others)	3.56 (0.66)	1–5	.38**	—				
3. OBC (resist observer's perspective of the body)	3.28 (1.10)	1–7	.11	.28**	—			
4. BAS (body appreciation)	3.51 (0.71)	1–5	.27**	.66**	.65**	—		
5. IES (intuitive eating)	3.20 (0.61)	1–5	.30**	.46**	.45**	.51**	—	
6. Body mass index	25.55 (5.54)		-.06	-.56**	-.13	-.39**	-.34**	—
Middle adult women (40–65 years old)								
1. SPS (perceived social support)	3.50 (0.41)	1–4	—					
2. BAOS (body acceptance by others)	3.36 (0.73)	1–5	.41**	—				
3. OBC (resist observer's perspective of the body)	3.70 (1.27)	1–7	.19**	.26**	—			
4. BAS (body appreciation)	3.43 (0.72)	1–5	.33**	.61**	.56**	—		
5. IES (intuitive eating)	3.04 (0.59)	1–5	.14*	.37**	.42**	.65**	—	
6. Body mass index	28.86 (6.84)		-.07	-.61**	-.02	-.43**	-.37**	—

Note.  $N = 801$ ; emerging adult  $n = 318$ ; early adult  $n = 238$ ; middle adult  $n = 245$ . SPS = Social Provisions Scale; BAOS = Body Acceptance by Others Scale; OBC = Objectified Body Consciousness Scale; BAS = Body Appreciation Scale; IES = Intuitive Eating Scale.

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



tance from friends, partners, and society (all  $ps > .05$ ). Emerging adult women reported greater perceived body acceptance from their family and from the media than early adult and middle adult women (all  $ps < .01$ ). Early adult women and middle adult women did not differ in their levels of perceived body acceptance from family and media (both  $ps > .05$ ).

Also, because age-group differences were found in intuitive eating, we investigated which of the three components of intuitive eating (unconditional permission to eat, eating for physical hunger rather than emotional reasons, and reliance on internal hunger and satiety cues) explained this difference. Three ANCOVAs (controlling for relationship status and highest level of education attained) revealed that unconditional permission to eat,  $F(4, 716) = 4.47, p < .01$  and reliance on internal hunger and satiety cues,  $F(4, 716) = 6.99, p < .001$  were different for the age groups, whereas eating for physical hunger rather than emotional reasons was not,  $F(4, 716) = 1.31, p > .05$ . When the covariates were excluded, the pattern of findings was the same. Middle adult women reported lower unconditional permission to eat and reliance on internal hunger and satiety cues than emerging adult women (both  $ps < .01$ ). Middle adult women also relied less on their internal hunger satiety cues than early adult women ( $p < .01$ ), but both groups reported similar levels of unconditional permission to eat ( $p > .05$ ). Emerging adult and early adult women did not differ in their levels of unconditional permission to eat or reliance on internal hunger and satiety cues (both  $ps > .05$ ).

### Test of the Hypothesized Acceptance Model

For all latent variable SEM analyses, we used Mplus Version 4.1 (Muthén & Muthén, 2006) with ML estimation and the covariance matrix as input. We determined the adequacy of model fit using consensus among three indices recommended by Hu and Bentler (1999): the comparative fit index (CFI), the standardized root-mean-square residual (SRMR), and the root-mean-square error of approximation (RMSEA). CFI values of .95 and higher, SRMR values of .08 or lower, and RMSEA values of .06 and lower indicate a relatively good fit of the model to the data, whereas CFI values of .90–.94, SRMR values of .09–.10, and RMSEA values of .07–.10 indicate an acceptable fit. Values outside of these ranges suggest an unacceptable fit.

**Examination of the measurement model.** We first evaluated our measurement model, or the parcel-factor loadings and relationships among latent variables, using confirmatory factor analysis. The measurement model provided an acceptable to good fit to the data (CFI = .97, SRMR = .05, RMSEA = .07). Significant parcel factor loadings ranged from .89 to .95 for perceived social support parcels, .81 to .98 for body acceptance by others parcels, .75 to .89 for resistance to adopt an observer's perspective of the body parcels, .88 to .94 for body appreciation parcels, and .85 to .91 for intuitive eating parcels (all  $ps < .001$ ), indicating that all latent factors were operationalized adequately for each age group. Therefore, this measurement model was used to test the hypothesized structural model. The relationships between the latent variables are presented in Table 4.

### Multiple Group Analysis

**Examination of the structural model.** The sample size for each age group exceeded the 205 participants needed for the minimum case-to-parameter ratio of 5:1 (i.e., 41 parameters were estimated; Kline, 2005). Because the variable relationships did not significantly change when the covariates were considered in the correlational analyses, we did not include relationship status and highest level of education attained as covariates in the model. In support of Hypothesis 1, the structural model in Figure 1 provided an acceptable to good fit to the data for all age groups, CFI = .96, SRMR = .06, RMSEA = .07,  $\chi^2(258, N = 801) = 618.21, p < .001$ . All but two paths were significant; the path from perceived social support to resistance to adopt an observer's perspective of the body and the path from BMI to body appreciation were not significant for any age group. To obtain a more parsimonious model, these nonsignificant paths were deleted, and the structural model was reexamined. The original model did not provide a better fit to the data than the trimmed model for emerging adult women,  $\chi^2_{\text{difference}}(2, N = 318) = 0.85, ns$ ; early adult women,  $\chi^2_{\text{difference}}(2, N = 238) = 1.94, ns$ ; or middle adult women,  $\chi^2_{\text{difference}}(2, N = 245) = 4.80, ns$ . Fit indices for the trimmed model for all age groups were CFI = .96, SRMR = .06, RMSEA = .07,  $\chi^2(264, N = 801) = 625.80, p < .001$ .<sup>2</sup>

**Exploration of group differences in model paths.** We used structural invariance analysis to determine whether the eight paths among the latent variables in the trimmed model were similar in strength for the three age groups. Two multiple-groups models were tested. In the first (i.e., variant) model, we allowed the values of the eight structural paths to vary, which permits the estimation of different structural paths for the three age groups. In the second (i.e., invariant) model, we constrained the eight structural paths to be equal, which does not allow the estimation of different structural paths. If these two models do not differ in fit, then all structural paths would be similar in strength between the age groups. If the models differ in fit, then one or more structural paths would be different in strength. For each model, we held the factor loadings between the groups invariant, which ensured that the

<sup>2</sup> The paths between our model variables were theoretically determined per Avalos and Tylka (2006). Yet it is plausible that other orderings of the model variables also would provide a good fit to the data, given that our correlational study design prevents any conclusions about the best sequence of the model variables and SEM cannot differentiate among models that provide alternative explanations for the pattern of relationships. To explore this possibility, we examined two alternative models. First, we specified body appreciation to predict resistance of adopting an observer's perspective of the body in lieu of the reverse association (all other paths were specified in the same manner as in our final structural model). Perhaps appreciating their body may help women concentrate less on how others view their body. This alternative model also fit the data (CFI = .96, SRMR = .07, RMSEA = .06). Second, intuitive eating was specified to predict body appreciation instead of the reverse association (all other paths were specified in the same manner as in our final structural model). It is plausible that body appreciation may be predicted by a consistent pattern of honoring the body's physiological hunger and satiety cues. This alternative model also fit the data (CFI = .96, SRMR = .08, RMSEA = .08). Therefore, other orderings of the model variables result in acceptable fit statistics comparable to the original theoretical model.

Table 4  
Correlations Between the Manifest (Body Mass Index) and Latent Variables From the Measurement Model

Variable	1	2	3	4	5	6
Emerging adult women ( <i>n</i> = 318)						
1. Perceived social support	—					
2. Body acceptance by others	.46**	—				
3. Resist observer's perspective of the body	.06	.27**	—			
4. Body appreciation	.39**	.70**	.60**	—		
5. Intuitive eating	.24**	.43**	.52**	.60**	—	
6. Body mass index	-.10	-.29**	.08	-.14*	-.06	—
Early adult women ( <i>n</i> = 238)						
1. Perceived social support	—					
2. Body acceptance by others	.50**	—				
3. Resist observer's perspective of the body	.15*	.31**	—			
4. Body appreciation	.35**	.77**	.72**	—		
5. Intuitive eating	.35**	.50**	.53**	.56**	—	
6. Body mass index	-.11	-.64**	-.09	-.39**	-.34**	—
Middle adult women ( <i>n</i> = 245)						
1. Perceived social support	—					
2. Body acceptance by others	.46*	—				
3. Resist observer's perspective of the body	.06	.28*	—			
4. Body appreciation	.38*	.72**	.60*	—		
5. Intuitive eating	.23*	.45*	.52*	.60*	—	
6. Body mass index	-.16*	-.73**	-.09	-.51**	-.42**	—

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

constructs were being measured similarly between groups, while allowing the error variances to vary.

The variant model provided an acceptable to good fit to the data, CFI = .97, SRMR = .07, RMSEA = .07,  $\chi^2(268, N = 801) = 635.35, p < .001$ . However, for the invariant model, the fit indices were mixed: The CFI (.96) and the RMSEA (.07) suggested an acceptable fit, but the SRMR (.10) revealed a mediocre fit,  $\chi^2(284, N = 801) = 697.51, p < .001$ . The variant model provided a significantly better fit to the data,  $\chi^2_{\text{difference}}(16, N = 801) = 62.16, p < .001$ , indicating that at least one structural path was different in strength between the age groups. We then compared the invariant model with eight different models, each allowing only one path to vary (the other seven paths were held invariant), to detect the different path(s) between the age groups. For each of these model comparisons, we conducted three chi-square difference tests: (a) comparing emerging adults with early adults, (b) comparing emerging adults with middle adults, and (c) comparing early adults with middle adults.<sup>3</sup> For each pairing of age groups, if the model with one path varied is significantly different from the invariant model, then the strength of the structural path that was allowed to vary would be different between the two age groups.

Four structural paths varied between the age groups. The path from resistance to adopt an observer's perspective of body to body appreciation was significantly stronger for early adult women than it was for emerging adult women,  $\chi^2_{\text{difference}}(1, N = 556) = 3.87, p < .05$ , and middle adult women,  $\chi^2_{\text{difference}}(1, N = 483) = 8.73, p < .05$ , while this path was similar in strength for emerging and middle adult women,  $\chi^2_{\text{difference}}(1, N = 563) = 1.36, ns$ . The path from body acceptance by others to body appreciation was significantly weaker for emerging adult women than for early adult women,  $\chi^2_{\text{difference}}(1, N = 556) = 6.80, p < .05$ , and middle adult women,  $\chi^2_{\text{difference}}(1, N = 563) = 4.0, p < .05$ ; however, this path was similar in strength for early and middle adult women,  $\chi^2_{\text{difference}}(1, N = 483) = 0.12, ns$ . The path from BMI to body

acceptance by others was significantly stronger for early adult women than emerging adult women,  $\chi^2_{\text{difference}}(1, N = 556) = 19.35, p < .05$ ; significantly stronger for middle adult women than emerging adult women,  $\chi^2_{\text{difference}}(1, N = 563) = 30.11, p < .05$ ; but similar in strength for early and middle adult women,  $\chi^2_{\text{difference}}(1, N = 483) = 0.37, ns$ . The path from BMI to intuitive eating was significantly stronger for early adult women than emerging adult women,  $\chi^2_{\text{difference}}(1, N = 556) = 5.96, p < .05$ ; significantly stronger for middle adult women than for emerging adult women,  $\chi^2_{\text{difference}}(1, N = 563) = 6.52, p < .05$ ; but similar in strength for early and middle adult women,  $\chi^2_{\text{difference}}(1, N = 483) = 0.02, ns$ . The remaining four structural paths were similar in strength for each age group. The model in which these four paths were allowed to vary, CFI = .96, RMSEA = .07, SRMR = .07,  $\chi^2(276, N = 801) = 643.75, p < .001$ , reflected a significant improvement in fit over the model in which all paths were held invariant,  $\chi^2_{\text{difference}}(8, N = 801) = 53.76, p < .05$ , and did not differ in model fit from the model in which all paths were allowed to vary,  $\chi^2_{\text{difference}}(8, N = 801) = 8.41, ns$ .

Figure 1 contains the structural coefficients for our final model. Perceived social support and BMI accounted for 21.8% (emerging adult women), 55.1% (early adult women), and 68.0% (middle adult women) of the variance in body acceptance by others. Body acceptance by others accounted for 9.5% (emerging adult women), 6.3% (early adult women), and 5.9% (middle adult women) of the variance in resistance to adopt an observer's perspective of the body. Resistance to adopt an observer's perspective of the body and body acceptance by others accounted for 67.2% (emerging adult women), 83.5% (early adult women), and 70.0% (middle

<sup>3</sup> To obtain chi-square values and degrees of freedom for these model comparisons, please contact Tracy L. Tylka.

adult women) of the variance in body appreciation. Last, resistance to adopt an observer's perspective of the body, body appreciation, and BMI accounted for 40.0% (emerging adult women), 40.2% (early adult women), and 50.8% (middle adult women) of the variance in intuitive eating.<sup>4</sup>

## Mediation

Next, we explored whether (a) body acceptance by others mediated the link between perceived social support and body appreciation and (b) resisting an observer's perspective of the body and body appreciation mediated the link from body acceptance by others to intuitive eating. Also, because the direct path from BMI to body appreciation was not significant, we did a post hoc analysis to explore whether body acceptance by others mediated the BMI–body appreciation link. All proposed predictors, mediators, and criterion variables were related to one another for each age group (see Table 4), meeting the preconditions for mediation. Thus, we proceeded with the analyses.

We used Shrout and Bolger's (2002) bootstrap procedures to estimate the significance of the indirect effects. We specified Mplus to create 10,000 bootstrap samples from the data set by random sampling with replacement and to generate the indirect effects and bias-corrected confidence intervals (CIs) around the indirect effects when analyzing the final structural model. Indirect effects are significant if the 95% CI does not include zero. For each test of mediation, we added a predictor–criterion direct path to the model and compared it against the final structural model without this direct path. Significant indirect effects and a nonsignificant direct path suggest mediation.

When body acceptance by others was examined as a mediator of the relationship between perceived social support and body appreciation, the 95% CIs for the indirect effects did not contain zero, ranging from .34 to .53 for emerging adult women, .40 to .62 for early adult women, and .34 to .53 for middle adult women. The standardized indirect effects were .18 (.36 × .50) for emerging adult women, .25 (.42 × .60) for early adult women, and .24 (.41 × .59) for middle adult women. When resistance to adopt an observer's perspective of the body was examined as a mediator between body acceptance by others and intuitive eating, the 95% CIs for the indirect effects did not contain zero, ranging from .03 to .08 for all three age groups. The standardized indirect effects were .07 (.31 × .21) for emerging adult women, .05 (.24 × .20) for early adult women, and .06 (.25 × .24) for middle adult women. When body appreciation was examined as a mediator of this relationship, the 95% CIs for the indirect effects did not contain zero, ranging from .16 to .28 for emerging adult women, .20 to .34 for early adult women, and .17 to .29 for middle adult women. The standardized indirect effects were .24 (.50 × .48) for emerging adult women, .24 (.60 × .40) for early adult women, and .26 (.59 × .44) for middle adult women. Last, when body acceptance by others was explored as a mediator of the relationship between BMI and body appreciation, the 95% CIs for the indirect effects did not contain zero, ranging from  $-.04$  to  $-.01$  for emerging adult women and  $-.05$  to  $-.03$  for both early and middle adult women. The standardized indirect effects were  $-.13$  ( $-.26 \times .50$ ) for emerging adult women,  $-.34$  ( $-.57 \times$

.60) for early adult women, and  $-.35$  ( $-.60 \times .59$ ) for middle adult women.

The direct path from perceived social support to body appreciation was not significant for early adult women,  $\beta = -.01$ ,  $t(237) = -0.13$ , *ns*, or middle adult women,  $\beta = .04$ ,  $t(244) = 0.65$ , *ns*; however, it was significant for emerging adult women,  $\beta = .11$ ,  $t(317) = 2.66$ ,  $p < .05$ . The model with this direct path did not provide a significantly better fit to the data than the final structural model without the added path for early adult women,  $\chi^2_{\text{difference}}(1, N = 238) = -0.05$ , *ns*, or middle adult women,  $\chi^2_{\text{difference}}(1, N = 245) = 0.61$ , *ns*, but did for emerging adult women,  $\chi^2_{\text{difference}}(1, N = 318) = 6.39$ ,  $p < .05$ . The direct path from body acceptance by others to intuitive eating was not significant for emerging adult women,  $\beta = .06$ ,  $t(317) = 0.95$ , *ns*; early adult women,  $\beta = .05$ ,  $t(237) = 0.50$ , *ns*; or middle adult women,  $\beta = -.04$ ,  $t(244) = -0.45$ , *ns*. This model did not provide a significantly better fit to the data than the final structural model without the added path for emerging adult women,  $\chi^2_{\text{difference}}(1, N = 318) = 1.46$ , *ns*; early adult women,  $\chi^2_{\text{difference}}(1, N = 238) = 0.78$ , *ns*; or middle adult women,  $\chi^2_{\text{difference}}(1, N = 245) = -0.68$ , *ns*. Last, the direct path from BMI to body appreciation was not significant for emerging adult women,  $\beta = .01$ ,  $t(317) = 0.30$ , *ns*; early adult women,  $\beta = .08$ ,  $t(237) = 1.37$ , *ns*; or middle adult women,  $\beta = -.12$ ,  $t(244) = -1.83$ , *ns*. This model also did not provide a significantly better fit to the data than the final structural model without the added path for emerging adult women,  $\chi^2_{\text{difference}}(1, N = 318) = 0.22$ , *ns*; early adult women,  $\chi^2_{\text{difference}}(1, N = 238) = 1.98$ , *ns*; or middle adult women,  $\chi^2_{\text{difference}}(1, N = 245) = 2.70$ , *ns*. Therefore, our findings partially support Hypotheses 2—body acceptance by others mediated the link from perceived social support to body appreciation for early and middle adult women but only partially mediated this link for emerging adult women. Data uphold Hypothesis 3, given that resisting an observer's perspective of the body and body appreciation mediated the link from body acceptance by others to intuitive eating for each age group. The post hoc analysis

<sup>4</sup> We also performed all SEM analyses on a truncated data set ( $N = 717$ ) which included only women age 18–24 years ( $n = 307$ ) as the emerging adult group, women age 28–38 years ( $n = 189$ ) as the early adult group, and women age 42–65 years ( $n = 221$ ) as the middle adult group. We conducted these additional analyses to obtain clearer separations between age groups—women on the cusps of our original age groupings were not considered because they were not clearly differentiated from other women close to them in age but in another developmental stage. Findings from the analyses with this truncated data set were similar to the findings from the analyses of the full data set (i.e., the trends in the data were the same). Fit statistics did not change, and the path coefficients were comparable, ranging from a difference of  $-.06$  (the path from BMI to body acceptance by others was reduced from  $-.26$  to  $-.20$  for emerging adult women) to  $.03$  (the path from perceived social support to body acceptance by others increased from  $.36$  to  $.39$  for emerging adult women). The absolute value of the average change in the path coefficients from the full data set to the truncated data set was  $.01$ .



suggested that body acceptance by others mediated the link from BMI to body appreciation for each age group.<sup>5</sup>

### Discussion

In keeping with the strength-based tenets of counseling psychology (Gelso & Fretz, 2001) and positive psychology (Seligman & Csikszentmihalyi, 2000), the acceptance model of intuitive eating (Avalos & Tylka, 2006) explores predictors of a positive body orientation and adaptive eating in lieu of negative body orientation and disordered eating. This study has extended the research on this model by incorporating BMI into its structure and comparing the levels of and relationships between the model's constructs for emerging adult women, early adult women, and middle adult women. This model fit to the data for all age groups, accounting for sizable percentages of variance in intuitive eating for emerging adult women (40.0%), early adult women (40.2%), and middle adult women (50.8%). The percentages for emerging adult and early adult women are similar to the percentages accounted for in previous research on this model with emerging adult women (i.e., 34.6%–42.5%; Avalos & Tylka, 2006), while the percentage for middle adult women exceeds this range.

Similar paths were upheld between our study and Avalos and Tylka's (2006) study, lending more confidence in the generalizability of the acceptance model to early and middle adult women. For all age groups, an increase in perceived social support was associated with higher levels of body acceptance by others. When women perceived that others accepted their body, they were more resistant to adopt an observer's perspective of their body and felt more appreciative toward their body. Resistance to adopt an observer's perspective of the body was uniquely associated with body appreciation and intuitive eating; women were more likely to appreciate their bodies and eat according to their hunger and satiety cues when they did not focus on how their body appeared to others. Body appreciation was uniquely and positively related to intuitive eating.

The exploratory path from perceived social support to resistance to adopt an observer's perspective of the body was not supported for any age group. This path also was not supported by Avalos and Tylka (2006). Thus, mounting evidence suggests that perceived general unconditional acceptance, either from the most influential other in childhood or from overall social support in their life, is not directly associated with women's resistance to adopt an observer's perspective of their body. Rather, perceived acceptance/social support seems to predict body acceptance by others, which then predicts resistance to adopt an observer's perspective of the body. Perceiving that others accept their body, then, may help women resist habitually monitoring their appearance for others.

A positive body orientation accounted for the relationship between women's perceived body acceptance from others and intuitive eating for each age group. Body acceptance by others predicted resistance to adopt an observer's perspective of the body, which predicted women's tendency to appreciate their body and eat in accordance with their internal hunger and satiety cues. Interestingly, the path from body acceptance from others to body appreciation was stronger for early and middle adult women than for emerging adult women, suggesting that, as women age, the extent to which they appreciate their bodies is more reliant on others' acceptance of their bodies. Body acceptance by others

mediated the relationship between perceived social support and body appreciation for early and middle adult women, but not emerging adult women. Social support is associated with body appreciation only to the extent that early and middle adult women perceive that others accept their bodies but seems to be related uniquely to emerging adult women's body appreciation.

As anticipated, BMI negatively predicted body acceptance by others. This link was stronger for early and middle adult women than for emerging adult women. Therefore, heavier early and middle adult women were more likely to perceive that others did not accept their body than heavier emerging adult women. Adult women of various ages report appearance-related pressures (Allaz, Bernstein, Rouget, Archinard, & Morabia, 1998; Ferraro et al., 2008); however, as heavier women age, they may receive a greater number of health- and appearance-related pressures from significant others to lose weight due to societal messages linking weight, age, beauty, and disease susceptibility.

Unexpectedly, BMI did not predict unique variance in body appreciation. Instead, body acceptance by others mediated this link for all age groups. It is not necessarily BMI that predicts women's body appreciation but the perception that their body is viewed as acceptable by significant others and society. BMI directly predicted intuitive eating for early adult and middle adult women, but not emerging adult women. Perhaps early and middle adult women are less likely to trust their body's ability to regulate food intake as they witness their bodies becoming heavier with age. Indeed, media outlets promulgate messages that heavy people cannot control their food intake and should not trust their body (Tribole & Resch, 2003).

Resistance to adopt an observer's perspective of the body predicted body appreciation more strongly for early adult women than for emerging adult and middle adult women. Early adult women tend to be more likely to experience pregnancy than the other age groups—pregnancy and breastfeeding are opportunities for women to witness the various capabilities of their body. Women who do not habitually monitor their appearance may instead appreciate their body's ability to become pregnant as well as deliver and nurse their children. In contrast, early adult women who hold an observer's perspective of their body may experience body dissatisfaction due to weight gain and other changes in appearance that often accompany pregnancy.

When exploring mean differences in the model variables, middle adult women had the highest BMI but the lowest body acceptance from friends, partners, and society of the three groups and less body acceptance from family and media than emerging adult

<sup>5</sup> When the truncated data set was analyzed, findings from the mediation analyses were also very similar to the full data set (significance trends were the same). No confidence interval contained zero, and only one direct effect was significant: the path from perceived social support to body appreciation for emerging adult women (the same pattern emerged when the full data set was analyzed). The standardized indirect effects from social support to body acceptance by others to body appreciation increased .02 (from .18 to .20) for emerging adult women and .01 for both early adult and middle adult women (from .25 to .26 and .24 to .25, respectively). The standardized indirect effects from (a) body acceptance by others to resisting an observer's perspective of the body to intuitive eating and (b) body acceptance by others to body appreciation to intuitive eating did not increase or decrease.



women. They appreciated their bodies less than emerging adult women. Yet they resisted adopting an observer's perspective of the body to a greater degree than the other age groups. Perhaps stepping outside of the objectification limelight (Fredrickson & Roberts, 1997) helps middle adult women focus on other characteristics about themselves than appearance. However, in a culture that devalues women who are heavy and show signs of aging, it may be hard for them to appreciate their bodies when they have above-average weight, perceive that important others do not accept their body, believe that their partners do not view them as desirable, and start noticing age-related changes in their appearance. Furthermore, middle adult women reported lower intuitive eating, relying less on their internal hunger and satiety cues to guide their eating, and granting themselves less permission to eat when hungry. Perhaps this is an attempt, albeit faulty, to compensate for weight gain that often accompanies aging.

Early adult women reported the highest social support of all age groups, which is consistent with developmental theory that early adults tend to strive for success within their relationships (Arnett, 2000). Yet they also reported lower body acceptance by friends, family, partners, society, and media than emerging adult women, perhaps because of their higher BMI. Early and emerging adult women shared similar levels of resistance to adopt an observer's perspective of their body, body appreciation, and intuitive eating. Differences in these latter three variables were apparent in middle adult women.

### Clinical Implications

Counseling psychologists and other mental health professionals need to design environmental interventions to encourage individuals to embrace a wide variety of body types. The fact that body acceptance by others accounted for the relationship between BMI and body appreciation highlights the necessity of promoting body acceptance within media and interpersonal interactions. Professionals need to campaign for companies to incorporate women with diverse body types and ages into their portrayals of women. One way to convince companies to make this change is to release evidence that this marketing strategy not only is less detrimental to women's well-being but also is profitable (e.g., the Dove Campaign for Real Beauty). Having a social system that accepts their body is only one of many characteristics that shape women's positive body image—others include having a cognitive schema that blocks out images and messages that could endanger (and internalizes information that preserves) their positive body image, having friends and family members who accept their bodies (e.g., do not engage in fat talk or dieting talk), holding the belief that they were designed to be special and unique, engaging in movement that emphasizes the functionality of their body, being media literate (e.g., able to critique unrealistic images of women), and believing that beauty is represented in a variety of body shapes (Wood-Barcalow et al., 2010).

It is important to recognize that overarching power systems instruct women to base their body image on other's opinions of their bodies (Fredrickson & Roberts, 1997; Pipher, 1994); these systems need to be challenged. For instance, individuals need to be aware that appearance-related commentary, even if it is meant to be complimentary, can have negative associations with women's body image (Calogero, Herbozo, & Thompson, 2009). *Compli-*

*mentary weightism* (e.g., "You look like you lost weight; congratulations," "I wish I had a body like yours") judges women by their appearance, which is likely to lower their positive body orientation. This type of discourse may be especially detrimental to women as they age and possibly gain weight.

Intrapersonal interventions are also needed. Women need to be informed that higher body appreciation and their resistance to adopt an observer's perspective of the body are associated with higher adaptive eating and psychological well-being, whereas body dissatisfaction and having an observer's perspective of the body are associated with psychological distress (Stice et al., 1996). This knowledge may help increase commitment to and involvement in treatment for women with body image and eating issues. Working to enhance embodiment (i.e., body awareness and responsiveness), can also help clients have a more positive body orientation. Hatha yoga, a movement-based form of meditation that combines physical postures, exercises, and breathing techniques, has been shown to help promote embodiment (Impett, Daubenmier, & Hirschman, 2006). It is imperative to help women construct a contextualization schema (Tylka & Augustus-Horvath, 2011) whereby they learn to identify the pressure to be attractive as a problem within society and challenge society's propaganda that beauty equals happiness. This schema could help women view aging as an opportunity for personal growth and define themselves by their inner qualities.

### Limitations and Suggestions for Future Research

We used a correlational and cross-sectional design. No causal interpretations, then, can be made about the sequence of model variables. SEM cannot differentiate among models that provide alternative explanations for the pattern of relationships. It is important that future researchers determine whether our results can be generalized to other samples. It also is unknown whether our findings, if they are indeed accurate representations of reality, are due to generational differences, aging-related processes, or both. Hence, longitudinal investigations of how development and age impact the model constructs would be a logical extension of this study.

Multiple group analysis is the best way to compare whether the fit of an entire model and the strength of its paths are altered based on sample characteristics (R. C. MacCallum, personal communication, November 14, 2009). However, a drawback to this analysis is that sample characteristics that are continuous, such as age, need to be categorized. We divided women into groups based on their developmental stage, as defined by Santrock (2008). As with any stage model, variance is present within each stage (e.g., women's life choices, options, decisions, personality), and our categorization could not detect potential age differences within groups. We encourage researchers to explore individual differences within each age group, including ethnic differences, as beauty ideals differ across cultures (Parker et al., 1995; Wood-Barcalow et al., 2010).

We exclusively used self-report measures to assess the model constructs. This method is limited because it relies on accurate and honest responding. Women's perceptions and social desirability may have shaped their responses on these measures. Yet we wished to assess women's perceptions of social support and body acceptance by others, as they reflect how they interpret their

environment and could shape their body orientation and eating behavior more so than what actually has happened (Kelly, 1955). Nevertheless, research is needed to determine whether actual levels of social support and body acceptance by others behave in a similar manner to perceived levels of these variables. Also, it is encouraging that socially desirable responding was unrelated to the SPS, BAOS, BAS, and IES in previous studies (Avalos & Tylka, 2006; Avalos et al., 2005; Cutrona & Russell, 1987; Tylka, 2006), so it may also be unrelated to these measures in this study.

Intuitive eating is likely associated with variables that were not measured in this study. Perhaps self-esteem, proactive coping, and positive affect would positively predict body appreciation and intuitive eating (Avalos & Tylka, 2006). In addition, because intuitive eating is associated with flexibility (i.e., willingness to attend to often unpredictable hunger and satiety cues) and not rigidly following external rules about when, what, and how much to eat (Tribole & Resch, 2003; Tylka, 2006), it may be negatively associated with rigidity and rule conformity, or acceptance of and obedience to societal norms. Thus, these variables could be integrated into the model to determine if they explain incremental variance in women's intuitive eating.

Our study is further limited by the snowball sampling method we used to attain a portion of our sample. We are unable to estimate the percentage of women who were recruited through this method; however, our main method of recruitment was through psychology classes as well as campus (i.e., large university, regional campuses, and community colleges) and community services, organizations, and centers. Nevertheless, snowball sampling has advantages and disadvantages, as it both includes and excludes individuals (Browne, 2005). For this study, it was inclusive in that it allowed access to women from various geographic regions who may not be affiliated with the campus or community organizations or services we targeted. It was exclusive in that others not affiliated with the social group who had access to the study link, as well as others who did not have Internet access, could not complete the study. Clearly, the best way to collect data is not via family and friends. However, only 10 of our family and friends were contacted—mainly for their ability to disseminate the survey to their friends and family. If all participated, their responses accounted for only 1.2% of our sample and likely did not impact the trend of our findings.

We did not assess whether our participants were pregnant currently or had been previously. Body-related changes accompany pregnancy and may account for variable differences and interrelationships between the age groups (Santrock, 2008). Many of our emerging adult participants were first-year students. Perhaps women undergo body-related and body image-related changes as they progress through college. A closer examination within this group is an important direction for future research.

Even though we attempted to gather data from diverse populations, our sample was mainly White and middle class. We needed a large sample size and thus collected a large proportion of our data from introductory psychology classes at a primarily White university and community colleges in the midwestern United States. The ethnic composition of our sample approximated the ethnic composition of our university, the community colleges, and the midwestern United States. Solely recruiting from multicultural centers may be an option for a more diverse sample. Perhaps working-class women did not have regular Internet access or time

to fill out the survey without compensation. More attempts to make the survey available to working-class women (e.g., targeting low-paid service occupations) are needed. Because introductory psychology classes contain mostly first-year students, more attempts should be made to recruit from upper level classes to obtain sophomores, juniors, and seniors.

Intuitive eating appears to be positively associated with emerging adult's psychological well-being (Tylka, 2006; Tylka & Wilcox, 2006), but the extent to which intuitive eating is a reflection of early, middle, and late adults' psychological and physiological functioning and not simply a reflection of how young women process calories is not understood. On the basis of the present study's findings, intuitive eating seems to be associated positively with two adaptive variables—body appreciation and resistance to adopt an observer's perspective of the body—to a similar degree as in emerging adult women. Additional research on the connection between intuitive eating, psychological functioning, and physiological functioning with early, middle, and late adult women and men is imperative.

## Conclusion

The acceptance model of intuitive eating is a promising framework based on body acceptance from others, positive body attitudes, and adaptive eating behaviors. We found evidence that this model can be applied to emerging adult, early adult, and middle adult women and that BMI can be meaningfully integrated into its structure. However, the levels of the variables and strength of several paths do not appear to be identical for each age group. Among the paths that differed between the age groups, it is notable that early and/or middle adult women had stronger relationships between the variables than emerging adult women—suggesting that these variables and associations may be highly relevant for them. Because research exploring the acceptance model has just begun, we encourage researchers to determine its generalizability by investigating its constructs with a wide range of individuals, such as women of diverse ethnic identifications and sexual orientations, female athletes, and men.

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