

Predicting and Improving Body Satisfaction of Asian Women Through Body Type Exposure

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By

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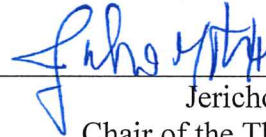
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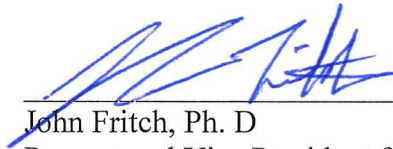
PREDICTING AND IMPROVING BODY SATISFACTION OF ASIAN WOMEN THROUGH  
BODY TYPE EXPOSURE

be accepted in partial fulfillment for the

MASTER OF ARTS DEGREE



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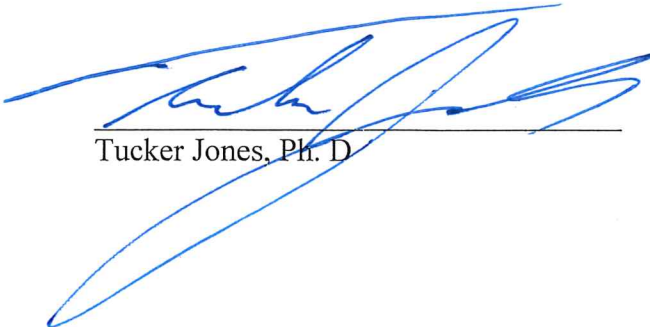
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Sincerely,  
Nida

### **Abstract**

Body dissatisfaction is increasing for women around the world especially in the Asian culture as more women are internalizing the thin ideal (Holmqvist & Frisén, 2010). The influences from peers, family, and media highlighted in the Tripartite Influence Model (Thompson et al., 1999) and misperception of men's preferences of women's bodies (Stojic et al., 2020) contribute to Asian women's body dissatisfaction, but which of these factors has the strongest association with body dissatisfaction remains unclear. Limited research also exists on interventions to address body dissatisfaction for Asian women. The current study replicated and extended Aniulis et al.'s (2021) research intervention to improve women's body satisfaction by examining the effect of exposing Asian women to body arrays increasing in BMI on their preferred body and body dissatisfaction. The current study also analyzed which previously studied factor of body image (i.e., peers, family, media, and misperception of men's preferences) most strongly predicts body dissatisfaction. One hundred and twenty Asian women from the United Kingdom were recruited through Prolific to complete body dissatisfaction measures before and after exposure to ninety body arrays. The average BMI preference and body satisfaction of participants increased as the level of body arrays they were exposed to increased. Media had the strongest influence on body dissatisfaction of Asian women in comparison to peers, family, and misperception of men's preferences. Based on the significant results of the study, exposure to diverse body types can be used as a brief clinical intervention for Asian women to help improve their body image.

*Keywords:* body dissatisfaction, Asian, women, BMI, body image, exposure, body types

## **Predicting and Improving Body Satisfaction of Asian Women Through Body Type Exposure**

Many women experience body dissatisfaction, but for some, body image concerns may lead to severe pathology. Body dissatisfaction refers to having negative thoughts or feelings regarding body image, and those who experience body dissatisfaction usually have a discrepancy between subjective and ideal perception of body size (Stojcic et al., 2020). Body dissatisfaction has shown to increase the risk of eating disorders (Neumark-Sztainer et al., 2006), and is associated with psychological problems like low self-esteem, anxiety, and depression especially for women in Western parts of the world including countries in Europe, North America, South America, Australia, and New Zealand (Duchesne et al., 2017). Moreover, research has shown body dissatisfaction is experienced by women of all cultures including the Asian culture (Holmqvist & Frisé, 2010). Asian women also seemed to have more pressure from their family, peers, and the media to conform to standard beauty norms such as having a thin body, which may have led them to perceive their body size more negatively than other women in the West (Stojcic et al., 2020). Body dissatisfaction of Asian women may be best explained by the Tripartite Influence Model.

### **Tripartite Influence Model**

The Tripartite Influence Model is important for explaining the development of body dissatisfaction (Thompson et al., 1999). More specifically, the Tripartite Influence Model describes three main societal influences that promote the thin ideal in a woman's life: media, peers, and family. These influences are likely to contribute to the belief that in order to be seen as attractive, one must be thin, which is internalization of the thin ideal. After internalizing this thin ideal, some women could compare themselves to other women which may eventually contribute

to the onset of body dissatisfaction (Thompson et al., 1999). Internalization of the thin ideal and eating-disordered behaviors such as restrained eating and bulimic behaviors have a significant positive link for individuals in Asian culture (Shagar et al., 2019). Furthermore, research supports the Tripartite Influence Model among women in Asia (Shagar et al., 2019).

Body image dissatisfaction among Asian women has increased as a result of exposure to Western media that uses thin bodies of women to represent beauty ideals, which may change the perception of the ideal body for Asian women (Shagar et al., 2019). Adolescents and young adults that are Asian may be impacted by Western culture through media more than other age groups, which may increase internalization of the thin ideal (Shagar et al., 2019). For example, young Asian individuals may compare themselves to thin, Western models which may increase their body dissatisfaction if they do not match this ideal. Many Asian women have also adopted new standards of beauty that include extremely thin figures that deviate from traditional cultural attributes such as having a wide jawline and big thighs (Rongmuang et al., 2011). While the media promotes unrealistic body ideals, peer pressure brings the message into Asian women's interpersonal relationships.

In Asian culture, influence of peers (i.e., classmates, colleagues, and friends) has a significant and positive association with body dissatisfaction (Shagar et al., 2019). Many Asian peers engage in body image victimization, which is bullying and teasing associated with physical appearance (Chen et al., 2020). Examples of body image victimization include fat talk (e.g., criticism of food and weight intake), insults, name-calling, and negative comments associated with appearance. Teasing and comments about appearance made by peers are common among Asian women (Menzel et al., 2010). Experiencing body image victimization often pushes Asian women to be more attentive to their own body image and engage in disordered eating behaviors

to change their appearance. Therefore, body image victimization experiences for Asian women tend to have a positive association with disordered eating behaviors (Chen et al., 2020). Body image victimization experiences are also associated with a reduced self-esteem and poorer emotional health in young Asian women (Chen et al., 2020). In addition to negative comments from peers, criticism from family members can further exacerbate an Asian woman's body dissatisfaction.

Influence from immediate and extended family members has a significant and positive association with internalization of the thin ideal for Asian women, but not for White women (Shagar et al., 2019). This difference could be due to the collectivistic culture of Asian societies (Shagar et al., 2019) in which people tend to prioritize their family members over themselves, and in which the family plays an important role in an individual's identity. For example, respect for elders (e.g., parents, grandparents, aunts, uncles) is prevalent in Asian cultures in which young individuals are expected to never argue with or talk back to older family members regardless of the comments or criticism they receive about body shape or size (Shagar et al., 2019). These elders also often pressure Asian women to be of a certain shape or size for reducing the chances of being unmarried, as well as negatively compare their appearances to other women in their society (Javier & Belgrave, 2019). As a result, Asian individuals, especially young women, may internalize these comments or criticism which could exacerbate body dissatisfaction (Shagar et al., 2019). The influences from peers, family, and media work together to contribute to body dissatisfaction. Thus, the question remains of which out of these outside influences has the strongest association with body dissatisfaction. Moreover, a fourth factor outside the Tripartite Influence Model exists, further complicating our understanding of

preexisting factors that predict Asian women's body dissatisfaction: misperception of men's preferences for women's bodies.

### **Misperception of Men's Preferences for Women's Bodies**

Most women of both Asian and Western cultures tend to misperceive men's preferences for women's bodies, which in turn increases women's body dissatisfaction (Bergstrom et al., 2004; Brewis et al., 1998; Cohen & Adler, 1992; Fallon & Rozin, 1985; Furnham et al., 1990; Gualdi-Russo et al., 2022; Lamb et al., 1993). Most women tend to believe men prefer a woman that is disproportionately thin compared to men's actual preference (Rozin & Fallon, 1988). As a result, women of Asian and Western cultures often prefer thinner bodies for women than the figures chosen as most attractive by men (Stojcic et al., 2020). Having a misperception of men's preferences for women's bodies has a significant association with low self-esteem, eating disorders, and higher body dissatisfaction for women (Bergstorm et al., 2004).

While this literature clearly demonstrates that misperceptions of men's preferences is another major factor to consider in predicting Asian women's body dissatisfaction, research has shown inconsistent effect sizes on body dissatisfaction for the factors of peers, family, media, and misperception of men's preferences for women's bodies (Bergstrom et al., 2004; Stojcic et al., 2020; Xu et al., 2010; see Table 1 for a representative sample of effect sizes from recent literature). The current study brought all these four components together and examined which of them influenced body dissatisfaction the most. Given that negative body image has such a wide variety of sources, some interventions with exposure to different body types have been developed to decrease body dissatisfaction of women in the West. This study also examined whether exposure to diverse body types produced positive outcomes for Asian women as well.

### **Exposure to Different Body Types**

One intervention to reduce body dissatisfaction, specifically in women, is the body positivity movement on social media (Cwynar-Horta, 2016; Davies et al., 2020; Lazuka et al., 2020; Sastre, 2014; Tiggemann et al., 2020). In particular, the body positivity movement promotes all body types instead of one body ideal (Cwynar-Horta, 2016; Sastre, 2014). Research has shown exposure to average-sized women improves satisfaction of one's own body compared to viewing thin models (Diedrichs & Lee, 2011; Mulgrew et al., 2020; Tiggemann et al., 2020).

Furthermore, research demonstrates the ideal body size of North American women can be changed through exposure to bodies larger than the thin ideal. In a recent study, Aniulis et al. (2021) studied how perceptions of the ideal body of a woman can change when presented with different body types. Aniulis et al. collected data through Amazon Mechanical Turk (MTurk) and included 115 women aged 19-75 years old who lived in North America. They exposed women to ninety arrays of bodies of women that ranged from physically small to physically large, and participants selected the body that was the most similar to their ideal body type for each array. According to results of the study, the Body Mass Index (BMI) of the ideal body selected by participants increased as participants were exposed to body arrays with larger (versus smaller) bodies. Participants were also less likely to select an underweight ideal body if they saw larger (versus smaller) bodies. Overall, Aniulis et al. (2021) concluded that perceptions of the ideal body size can be shifted. Aniulis et al. (2021) also encouraged more exposure to diverse body types to increase satisfaction among women, which means women are more likely to choose a larger ideal body when given exposure to diverse body types of women. Exposure to different body types has shown an increase in body satisfaction for women in the West. The

current study examined to what extent exposure to different body types affects body dissatisfaction for Asian women.

### **Overview of the Current Study**

As previously discussed, having body dissatisfaction can negatively impact an individual's physical and mental health (Duchesne et al., 2017; Neumark-Sztainer et al., 2006). Body dissatisfaction is increasing around the world, but perhaps especially for Asian women as more of them are internalizing the thin ideal through the influence of Western media, peers, and family (Thompson et al., 1999). Furthermore, constant exposure to the thin ideal has led to many women overestimating the degree of thinness men prefer in the ideal body for a woman (Bergstrom et al., 2004). Additionally, some interventions with exposure to different body types have been conducted in the West to increase the extent to which women are satisfied with their own bodies (Aniulis et al., 2021; Cwynar-Horta, 2016; Davies et al., 2020; Lazuka et al., 2020; Sastre, 2014; Tiggemann et al., 2020).

The current study replicated and extended Aniulis et al.'s (2021) research on exposure to body arrays as an effective intervention to improve body satisfaction of specifically Asian women living in the West. One of the limitations of Aniulis et al.'s (2021) study was that it did not exclusively focus on a specific ethnicity or race. Moreover, limited research exists on interventions in general to improve body image for Asian populations. The current study aimed to increase generalizability of the findings by using specifically Asian women living in the United Kingdom as participants through Prolific to determine if exposure to diverse body types of women impacts ideal body size as an effective intervention among another population who suffers from Western thinness ideals—a major contribution to this limited area of the literature. To extend Aniulis et al.'s (2021) research beyond replication with a specific ethnic or cultural

population, the current study also examined the relative predictive strength of pre-existing factors of body image (i.e., family, peers, media, and misperception of men's preferences of women's bodies) for Asian women's body dissatisfaction.

The goal of the current study was to answer the following questions: 1) what is the association between exposure to body arrays and preference for the ideal body and body satisfaction for Asian women?, and 2) which of the pre-existing factors of body image (i.e., peers, family, media, and misperception of men's preferences of women's bodies) has the strongest predictive association with body dissatisfaction? While the second research question was answered exploratorily as the effect sizes for the effect of the four pre-existing factors on body image have been inconsistent across research (Bergstrom et al., 2004; Stojcic et al., 2020; Xu et al., 2010), the primary hypothesis of this study was as follows:

1) Based on interventions with exposures to different body types to decrease body dissatisfaction (Aniulis et al, 2021; Cwynar-Horta, 2016; Sastre, 2014), the BMI of Asian women's ideal body preference and their body satisfaction will increase as the level of body arrays to which they are exposed also increases.

### **Standpoint Statement**

As a South Asian, I feel quite connected to the topic I researched. I was raised with a cultural background in which only a fair-skinned and thin woman with straightened hair was considered the ideal appearance. I never fit this ideal since I have brown skin with wavy hair and an average weight for my age which negatively affected my self-esteem. I would always feel I needed to change my appearance to be better. People in my community would also give me body-shaming comments such as "You need to lose weight." These comments would be hurtful and often make me feel like I was not good enough. Seeing models and actresses have perfect

thin figures also made me feel insecure about my looks and avoid getting into a relationship until I fit that ideal appearance. However, I gradually understood that beauty is not defined by having an ideal body appearance, and many people of all sizes and shapes are beautiful. One of the things that helped me reach this realization was looking at celebrities that did not fit this ideal appearance and seeing them confidently embrace their bodies. I want to see to what extent is exposure to photos of figures that do not fit the ideal appearance helpful for other Asians. Specifically, I want to have Asian women look at figures of women with different sizes and study how that exposure affects their satisfaction of their own body type.

In terms of training, I have led groups for the Body Project at Washburn University. The Body Project is a cost-free, research-backed, and group-based body acceptance intervention designed to help women resist sociocultural pressures to conform to the thin ideal. The Body Project provides a forum for college women to confront unrealistic beauty ideals and develop a healthy body image through verbal, written, and behavioral exercises. This group is designed to decrease eating disorder risk and reduce eating disordered behaviors. Leading groups for the Body Project helped me become familiar with some positive-focused interventions to increase appreciation of women for their bodies including exposure to women of different body types as done in this study.

## **Method**

### **Participants**

One hundred and twenty participants that identified as Asian and women were recruited. Contrasting with Aniulis et al. (2021), the data in the present study was collected using Prolific instead of MTurk due to the former providing higher quality of data and resulting in lower levels of dishonesty amongst the participants than the latter (Douglas et al., 2023; Peer et al., 2017).

Since there were not enough eligible participants available from Asian countries, the participants were recruited from the United Kingdom. The sample size was a little more than the number of participants in the first study of Aniulis et al.'s (2021) study to allow for a similar, moderate effect size. Fifteen participants were unable to proceed further with the study due to at least one of the following reasons: refusing to give informed consent, not meeting the demographic criteria, failing the English comprehension test, and failing at least two of the three attention checks, and these participants were redirected to an incompletion link on Prolific which requested them to return their submissions and allowed other participants to replace them. After those fifteen participants were replaced, the study collected having a total of one hundred and twenty participants that successfully completed all parts of the study and were redirected to a completion link on Prolific that recorded their submissions.

Similar to the original study by Aniulis et al. (2021), participants in the current study were not restricted against past history of eating disorders. Ages of the participants ranged from 18-72 ( $M = 33.47$ ,  $SD = 10.33$ ). The average BMI of the sample was 23.86 ( $SD = 4.53$ ), which falls into the healthy weight category (Aniulis et al., 2021). Participants reported their sexual orientation as the following: heterosexual (87.5%), homosexual (0.8%), bisexual (9.2%), asexual (0.8%), and prefer not to say and/or other (1.7%).

Similar to Aniulis et al. (2021), the current study only included women as participants: participants were asked their gender identity in the beginning of the study. One of the measures, the figure rating scale, is gender-specific and has not been established for non-binary participants yet. To account for this measure, the current study did not include any non-binary participants. Even though participants filled out self-report measures during the study, research has found self-report reliable when the participants are anonymous (Davis, 1990). Participants in the

current study were paid \$12 for approximately 1 hour of work through Prolific, which is the recommended fair pay per hour for Prolific workers (Denison, 2023). A research grant of \$1,000 provided by the researcher's university was used to partially pay the participants, and the rest of the money (\$920) was provided by the researcher.

## **Materials**

### ***English Comprehension Measure***

All study materials were provided in English. After completing the informed consent form (see Appendix A) and the demographics questionnaire (see Appendix B), the participants were assessed for comprehension in English when they begin the study (see Appendix C). The language comprehension test is a part of the reading portion from a set of Test of English as a Foreign Language (TOEFL) practice questions (ETS, 2022), and consists of a sample passage with seven multiple choice questions about the passage (e.g., "Why is Bill upset?"). The participants who got at least five out of the seven questions correct were able to pass the language comprehension test and complete the rest of the study. According to Alderson (2019), the reading portion of the TOEFL has a good test-retest reliability ( $r = 0.78$ ) and content validity ( $r = 0.56$ ).

### ***Body Arrays***

Aniulis et al. (2021) provided the ninety body arrays (see Appendix D) from their study to the researchers. The body arrays were used to represent different types of bodies of women according to BMI which were underweight ( $<18.5$ ), healthy weight (18.5-24.9), overweight (25.0-29.9), and obese ( $\geq 30.0$ ; Aniulis et al., 2021). Participants were provided with each of the ninety body arrays. Each body array consisted of nine bodies. These bodies included four ideal bodies: Underweight Ideal 1 (UI1; BMI of 16.64; body 8 in level 1, body array 1 of Appendix

D), Underweight Ideal 2 (UI2; BMI of 18.29; body 1 in level 1, body array 1 of Appendix D), Healthy Weight Ideal 1 (HW1; BMI of 19.79; body 9 in level 1, body array 1 of Appendix D), and Healthy Weight Ideal 2 (HW2; BMI of 23.35; body 6 in level 1, body array 1 of Appendix D). Also included were five other bodies, which included small bodies, large bodies, or a combination of small and large bodies. Similar to the original study (Aniulis et al., 2021), level 1 of body arrays depicted the smallest body array which had four ideal body types and five smaller body types. Level 6 of body arrays depicted the largest body array which had four ideal body types and five larger body types. Each of the levels of body arrays had four ideal body types. The levels of body arrays in between levels and 1 and 6 gradually increased in heaviness of the five other body types depicted. The ninety body arrays were presented in a randomized order, and participants selected the body in each array that was the most similar to their preference for the ideal body and the body they think men prefer. This instrument was used to expose participants to different body types of women and assess their preferred body type and its association with the body type they think men prefer. According to Moussally et al. (2017), the body arrays are a good instrument to include because it has a high test-retest reliability ( $r = 0.89$ ) and good internal validity ( $\alpha = .99$ ). The participants in Moussally et al. (2017)'s study perceived the thin images as thinner and heavy images as heavier in the study using a 9-point scale ranging from 1 (*fat*) to 9 (*thin*), and their ratings highly matched the actual image itself. Moussally et al. (2017) also reported that this scale had a large effect size (Cohen's  $d = > 0.8$ ), which provides further support for participants correctly perceiving the general differences of the models in thinness/heaviness.

### ***Figure Rating Scales***

Figure rating scales (FRS) were the first of four measures used to measure body dissatisfaction (see Appendix E). In the current study, participants were provided a figure rating

scale which contains nine bodies in ascending order from smallest to largest (Mutale et al., 2016). Participants were provided with a figure rating scale of body stimuli of women.

Participants saw this scale twice. First, the participants chose the body in the scale that is the most similar to their actual body type. Next, the participants chose the body in the scale that is the most similar to their ideal body type. In order to score this measure, the actual body chosen was subtracted from the ideal body chosen for each participant. The potential total scores ranged from -8 to +8. A negative score represented a participant's desire for a body smaller than their actual body. A positive score represented a participant's desire for a body larger than their actual body. A score of 0 represented satisfaction of a participant with their actual body. According to Swami et al. (2012), figure rating scales for body dissatisfaction have good test-retest reliability (all  $r_s > 0.87$ ). Consistent with prior research (Swami et al., 2012), figure rating scales for body dissatisfaction also have good convergent validity as expected with self-reported BMI ( $r = 0.65$ ) and Body Shape Questionnaire ( $r = 0.55$ ) and good divergent validity with Body Appreciation Scale ( $r = -0.40$ ).

### ***Visual Analogue Scales***

Visual analogue scales (VAS) were the second of four scales used to measure body dissatisfaction—specifically, to measure state body dissatisfaction changes over a small amount of time (see Appendix F). Each visual analogue scale had a horizontal scale with the end marks ranging from 0 (*not at all*) and 100 (*very much*; Aniulis et al., 2021). Participants used a sliding bar on Qualtrics from 0-100 and were asked to physically drag that bar to make a vertical mark on the line of each visual analogue scale to represent how they feel right now. Participants were given four VAS scales which represent the following dimensions: feeling fat, feeling strong, weight and shape dissatisfaction, and overall appearance dissatisfaction. To get the

overall score, participants' responses to the four dimensions (strength dimension reverse coded) were averaged. VAS scores range from 0-100, with higher scores representing higher body dissatisfaction, and lower scores representing lower body dissatisfaction. VAS for body dissatisfaction has a good reliability represented by its internal consistency ( $\alpha = .86$ ; Tiggemann & Zaccardo, 2015). VAS for body dissatisfaction also has good convergent validity with Eating Disorder Inventory-Body Dissatisfaction subscale ( $r = 0.66$ ; Hogue & Mills, 2019).

### ***Body Shape Questionnaire***

The Body Shape Questionnaire (BSQ) was the third of four scales used to measure body dissatisfaction—specifically, to measure trait body dissatisfaction. The original BSQ was used to measure trait body dissatisfaction in women. The Body Shape Questionnaire is a 34-item scale, and participants responded using a 6-point Likert scale ranging from 1 (*never*) to 6 (*always*). Participants' responses to the BSQ were summed with higher scores representing a greater body dissatisfaction and lower scores showing a lower body dissatisfaction. The Body Shape Questionnaire assessed how often participants have certain thoughts about their bodies (e.g., “Have you noticed the shape of other women and felt that your own shape compared unfavourably?”) within the past four weeks (Coope et al., 1987). Research from Sala et al. (2023) shows this measure has good reliability represented by its excellent internal consistency (baseline  $\alpha = .95$ ; follow-up  $\alpha = .97$ ). The BSQ also has good convergent validity to Body Dysmorphic Disorder Examination ( $r = 0.78$ ; Rosen et al., 1996; see Appendix G).

### ***Sociocultural Attitudes Towards Appearance Questionnaire-4***

The Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4) was the fourth of four measures used to measure body dissatisfaction—specifically, to measure the internalization of the ideal appearance (e.g., “I want my body to look like it has little fat.”) and

pressure from outside influences to change one's appearance (e.g., "I feel pressure from family members to improve my appearance."). This measure consists of 22 items and uses a 5-point Likert scale that ranges from 1 (*definitely disagree*) to 5 (*definitely agree*; Schaefer et al., 2015). Participants' responses to the SATAQ-4 were summed with higher scores representing higher internalization and/or pressures, and lower scores showing lower internalization and/or pressures. This measure has good reliability represented by its internal consistency ( $\alpha = .84$ ; McLean et al., 2015). According to Schaefer et al. (2015), this measure has good convergent validity with the Eating Disorder Examination Questionnaire for non-U.S. females for the following sections: internalization of thin/low body ( $r = 0.71$ ) and muscular/athletic ideal ( $r = 0.25$ ) and pressures from family ( $r = 0.34$ ), peers ( $r = 0.40$ ), and media ( $r = 0.49$ ). Including this measure helped further test for convergent validity by seeing if responses of participants for the internalization items on SATAQ-4 correlated positively with their responses on the body dissatisfaction measures listed above. The SATAQ-4 helped in understanding to what extent participants experience unacceptance from the people in their lives and the media for how they look (see Appendix H).

### ***Body Appreciation Scale-2***

The Body Appreciation Scale-2 (BAS-2) was used to measure the inverse of body dissatisfaction. This measure was included to validate the findings on body dissatisfaction by measuring it a second way. This measure has 10 items (e.g., "I feel good about my body.") and uses a 5-point Likert scale consisting of responses from 1 (*never*) to 5 (*always*) for each of the items. In order to score the responses on BAS-2, item responses were summed, and higher scores represented higher body appreciation, and low scores represented lower body appreciation (Zarate et al., 2021). This measure has good reliability represented by its excellent internal

consistency ( $\alpha = .97$ ; Mutale et al., 2016), and it consists of good construct validity (Tylka & Wood-Barcalow, 2015). Regarding construct validity, the measure has a positive correlation as expected with the tendency to view one's appearance in a favorable way ( $r = 0.68$ ), and negative correlations as expected with body preoccupations ( $r = -0.79$ ) and eating disorder symptomology ( $r = -0.60$ ). Including this measure in the study helped further test for divergent validity by seeing if the responses of participants on BAS-2 correlated negatively with their responses on the body dissatisfaction measures listed above. The BAS-2 also assesses body acceptance in a gender-neutral way (Tylka & Wood-Barcalow, 2015) to remove any type of gender bias (see Appendix I).

### **Design and Procedure**

Following Institutional Review Board approval, the researcher posted a Prolific advertisement for women living the United Kingdom to reach out if interested in participating in the study. Each participant completed a consent form before starting the study. After providing informed consent, participants entered their Prolific ID and filled out the demographic questionnaire consisting of items regarding their age, gender identity, sexual orientation, height, weight, and asking if they identified as Asian. The height and weight were used to calculate the BMI of each participant. The participants were then assessed for language comprehension in English. The participants that passed the test in English continued the study. The participants then completed the following measures: Figure Rating Scales, Visual Analogue Scales, Body Shape Questionnaire, Sociocultural Attitudes Towards Appearance Questionnaire-4, and Body Appreciation Scale-2. After these measures, participants were provided with ninety body arrays and selected the body in each array that is the most similar to their preference of their ideal body and the body they think men prefer. After viewing the body arrays, the participants then

completed the same measures they did at the beginning of the study except for the BSQ and sections regarding pressures from others of the SATAQ-4 since a change was not expected in their scores on those sections after viewing the body arrays. At the end of the study, the participants were thanked and debriefed for their time (see Appendix J).

### **Results**

As a preliminary analysis of the data, a bivariate correlation analysis was computed to measure the association between the scores of participants on the body dissatisfaction measures (i.e., FRS, VAS, BSQ, and internalization items on SATAQ-4) and Body Appreciation Scale-2 (see Table 2). The results showed a moderate, significant positive correlation between body dissatisfaction on the Figure Rating Scales and body appreciation on Body Appreciation Scale-2. The results showed strong, significant negative correlations as expected between body dissatisfaction on the Visual Analogue Scales and body appreciation on the Body Appreciation Scale-2, and between the Body Shape Questionnaire and the Body Appreciation Scale-2. The results showed no relationship between body dissatisfaction on the internalization items of the Sociocultural Attitudes Towards Appearance Questionnaire-4 and body appreciation on the Body Appreciation Scale-2.

#### **Effect of Array Level on BMI of Selected Ideal Body**

To test the hypothesis that the level of body arrays would be associated with an increase in the Body Mass Index (BMI) preference of participants for their ideal body, first we calculated the average BMI preference for each level, then these average scores were used as the dependent variable in a series of one-way repeated-measures analyses of variance (ANOVAs) with level of body arrays as the independent variable. A Bonferroni test was conducted to probe significant effects. Mauchly's test of sphericity indicated the assumption of sphericity was violated,  $\chi^2$  (14)

= 349.70,  $p < .001$ . The repeated measures ANOVA using a Greenhouse-Geiser correction to account for the violation in Mauchly's test of sphericity was significant,  $F(2.02) = 78.70$ ,  $p < .001$ ,  $\eta_p^2 = .40$ , indicating a large effect. Significant differences emerged at all levels ( $ps < .05$ ) in the expected direction indicating that as body arrays increased, so did participants' BMI preferences (see Figure 1). These results support the hypothesis.

Consistent with Aniulis et al. (2021), the hypothesis was tested a second way in which a 6 (levels: 1-6) x 4 (ideal body: Underweight Ideal 1, Underweight Ideal 2, Healthy Weight Ideal 1, Healthy Weight Ideal 2) chi-square test of independence was conducted with cases for the total amount of selections of the four ideal bodies. This analysis assessed if participants were less likely to select the underweight ideal body types at higher body array levels. The chi-square test of independence was significant,  $\chi^2(14) = 57.23$ ,  $p < .001$ ,  $V = .05$ , indicating a small effect, such that participants made fewer selections of underweight ideal bodies 1 and 2 as the body array levels increased (see Figure 2). The majority of the levels including levels 1, 3, 5, and 6, showed fewer observed than expected counts for selections of underweight ideal bodies 1 and 2. Starting with level 4, the observed counts of healthy weight ideal 2 started exceeding the expected counts through level 6. The greatest difference between the observed and expected counts was for healthy weight ideal 1 at level 1, such that participants selected more healthy weight ideal 1 bodies at level 1 than expected. These results support the hypothesis and are consistent with Aniulis et al. (2021).

### **Effect of Body Arrays on Body Satisfaction**

To test the hypothesis that body satisfaction would increase as level of body arrays increased, a repeated measures  $t$ -test was conducted to assess for a significant difference in the participants' scores before and after exposure to the body arrays. This analysis compared the

scores of the participants from the body dissatisfaction measures (i.e., VAS, FRS, and internalization items on SATAQ-4) and the Body Appreciation Scale-2 before (time 1) and after (time 2) their exposure to the body arrays. Failing to support the hypothesis, no significant differences were found for FRS, VAS, and BAS-2. However, changes in mean scores as shown in Table 3 across FRS and VAS indicated body dissatisfaction scores tended to decrease from time 1 to time 2, and changes in mean scores across BAS-2 indicated body appreciation scores tended to increase from time 1 to time 2, though these results are not generalizable beyond the current sample. Showing partial support for the hypothesis and consistent with these trends, a significant difference for the internalization items on SATAQ-4 between time 1 and 2 emerged, also indicating that body dissatisfaction scores tended to decrease from time 1 to time 2. See Table 3 for means, standard deviations, and *t*-test results.

### **Strongest Influence on Body Dissatisfaction from Pre-existing Factors of Body Image**

To test which of the four pre-existing components of body image (i.e., peers, family, media, and misperception of men's preference of women's bodies) had the strongest influence on body dissatisfaction, a multiple linear regression was conducted to show which of the four factors accounted for the most variance in body dissatisfaction. The predictor variables included participants' standardized SATAQ-4 scores representing pressures from family, peers, and media. Misperception of men's preferences of women's bodies was calculated by averaging participants' selections of the bodies they thought men preferred for each body array, then standardized and entered as another predictor variable in the model. The dependent variable was body dissatisfaction, which was measured by using participants' scores on the BSQ due to its high prevalence in clinical and nonclinical populations from different countries (Rosen et al., 1996).

The multiple linear regression was significant,  $F(4,115) = 22.67, p < .001, R^2 = .44$ , indicating that approximately 44% of variance in participants' body dissatisfaction scores was accounted for by the predictor variables as a whole. Prediction by pressures from family and media were significant, and indicated media was a unique predictor of body dissatisfaction above and beyond family pressures. Prediction by pressures from peers and misperception of men's preferences were not significant, indicating that these variables offered no predictive value for individuals' body dissatisfaction. See Table 4 for regression results.

### **Discussion**

This study aimed to examine the effect of a brief body array intervention on Asian women's body dissatisfaction, as well as to understand which commonly observed contributors to women's body dissatisfaction (i.e., peers, family, media, and misperception of men's preference of women's bodies) emerged as the strongest relative explanation for Asian women's body dissatisfaction. Consistent with expectations, participants' body dissatisfaction scores on the two of the four body dissatisfaction measures (VAS and BSQ) used in this study showed strong, significant associations with body appreciation (BAS-2), such that an increase in body dissatisfaction was associated with a decrease in body appreciation.

However, contrasting with these results, the association between a third measure of body dissatisfaction (FRS) and body appreciation (BAS-2) was positive, such that an increase in body dissatisfaction was associated with an increase in body appreciation. One possible explanation for this unexpected significant, positive correlation could be that FRS accuracy varies by race, so a culturally adapted scale could have tested body dissatisfaction of Asian women more precisely as opposed to a silhouette scale which is typically used for White populations (Thurston et al., 2021). Finally, participants' scores on the internalization items of SATAQ-4 and their scores on

the BAS-2 showed no relationship, such that there was not a significant association between body dissatisfaction and body appreciation on these measures.

We hypothesized that the level of body arrays would be associated with an increase in the Body Mass Index (BMI) preference of participants for their ideal body. Both tests of this hypothesis showed support. In particular, the analysis examining the effect of increasing body array level on participants' average BMI preferences showed a large effect, such that participants preferred higher (versus lower) BMI bodies with every increase in body array level. Similarly, the analysis examining the association between body array level and participants' selections of either of the two underweight or two healthy weight ideal bodies showed a small effect, such that participants' selections of the underweight ideal bodies decreased as body array levels increased. These results were consistent with Aniulis et al. (2021), in that both studies showed a shift in ideal body size of participants through exposure to bodies larger than the thin ideal.

We also hypothesized that body satisfaction would increase as level of body arrays increases. The analysis for this hypothesis showed partial support, such that the participants' body dissatisfaction (i.e., VAS and FRS scores) *tended* to decrease and body appreciation (i.e., BAS-2 scores) *tended* to increase from time 1 to time 2 (though neither of these effects were statistically significant), but only the decrease in their internalization of the thin and/or muscular ideal (i.e., SATAQ-4 scores) emerged as a significant difference. Future researchers should investigate what about internalization and pressures as measured by SATAQ-4 might be more prone to decreasing in a generalizable way after exposure to body arrays compared to participants' feelings of being fat versus strong as measured by the VAS and their actual versus ideal perceptions as measured by the FRS.

The exploratory analysis of the relative contributions made to body dissatisfaction by the four pre-existing elements of body image (i.e., peers, family, media, and misperception of men's preferences) showed pressures from media had the strongest influence on body dissatisfaction of Asian women, followed by pressures from family (as indicated by these factors' respective beta weights). Results indicated that body ideals portrayed in media and family members' comments about one's body shape contribute to body dissatisfaction of Asian women, while pressures from peers and misperception of men's preferences of women's bodies may be less generalizable in their respective influences.

#### *Limitations and Future Directions*

One of the limitations of the study was its inclusion of participants only 18 years of age and older due to the age requirements of Prolific workers. Research has shown that girls also experience body dissatisfaction, especially during middle adolescence as they transition from middle school to high school (Bucchianeri et al., 2013). Furthermore, children may be more susceptible to pressures from peers and family to change their body appearances than young adults since they may interact more frequently with their parents and classmates (Helfert & Warschburger, 2011). Future research could examine the effect of exposing young girls to diverse body types on their body (dis)satisfaction.

Another limitation of this study was its recruitment of Asian women living in a western country as opposed to an Asian country. Research has shown body dissatisfaction for women in Asian countries is higher in comparison to women of western countries (Holmqvist & Frisén, 2010; Stojcic et al., 2020). Asians living in Asian countries have also reported decreased satisfaction with body image compared to Asians living in the West (Holmqvist & Frisén, 2010). Asians living in the West may not have full exposure to their culture and could be partially or

more influenced by the cultures of the countries they live in through acculturation. Future research could expose Asians living in Asian countries to various body types and assess whether this intervention would have significant results in creating a shift of their ideal body size.

This study is also a one-shot intervention which only shows short-term changes in ideal body size, whether these changes remain the same after the study is unknown. However, research *has* shown that other brief interventions to decrease body dissatisfaction have produced long-term efficacy at follow ups at least 10 weeks post-treatment (Aspen et al., 2015; Ines et al., 2017; O'Hara et al., 2021). Future research could conduct a follow up for participants to examine consistency of the ideal body size and body satisfaction at least 10 weeks after the study.

Besides replicating Aniulis et al.'s (2021) findings in a novel sample to demonstrate the cross-cultural validity of those results, another major contribution of the present research was showing that media and family have the strongest influence on Asian women's body dissatisfaction compared to peer influences and misperceptions of men's preferences. Consistent with the limitations of one-shot interventions, we suspect that participants could resume their original state of body dissatisfaction due to continuing exposure to thin and underweight ideals in media and family pressures. A fruitful direction for future research to build on this important finding could be to target these influences of media and family on Asian women's body dissatisfaction. For example, researchers could use exercises from interventions like the Body Project (Stice et al., 2022) to teach participants how to identify costs of pursuing the thin ideal depicted in the media, as well as how to respond productively to body-shaming comments from loved ones.

## **Conclusions**

To conclude, this study adds to the research area by assessing body dissatisfaction specifically of Asian women, a population who suffers from Western thinness ideals, and showing significant support for the exposure of diverse body types as an intervention in increasing body satisfaction and ideal body size for this population. This study also showed that media has the strongest influence on body dissatisfaction of Asian women, followed by family in comparison to the other two factors of body image (i.e., peers and misperception of men's preferences of women's bodies). Extensions and replications of this study could further solidify the findings of this study, as well as aid in the understanding of the effect of body type exposure on girls and Asian women living in Asian countries that may be more influenced by the collectivistic culture than Asians living in the West. Future research could also assess for long-term efficacy of body type exposure and target influences of family and media to improve Asian women's body dissatisfaction. Based on the significant results of the study, exposure to diverse body types can be used as a brief clinical intervention for Asian women to help improve their body image.

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**Table 1***Effect Sizes of Peers, Family, Media, and Misperception of Men's Preference of Women's**Bodies on Women's Body Dissatisfaction*

Pre-existing Factors	Cohen's <i>d</i>	
	Stojcic et al. (2020)	Bergstrom et al. (2004); Xu et al. (2010)
Family	1.04	0.41
Peers	2.09	0.46
Media	0.41	0.55
Misperception of Men's Preference of Women's Bodies	0.30 (Chinese women); 0.65 (Croatian women)	0.78

**Table 2**

*Correlations Between Body Dissatisfaction Measures (Figure Rating Scale (FRS), Visual Analogue Scale (VAS), Body Shape Questionnaire (BSQ), and Internalization Items on Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4)) and Body Appreciation Scale-2 (BAS-2) Before (Time 1) Exposure to Body Arrays*

Measures	$r$ ( $p$ )
FRS & BAS-2	.38 (<.001)
VAS & BAS-2	-.63 (<.001)
BSQ & BAS-2	-.55 (<.001)
Internalization Items on SATAQ-4 & BAS-2	-.14 (.134)

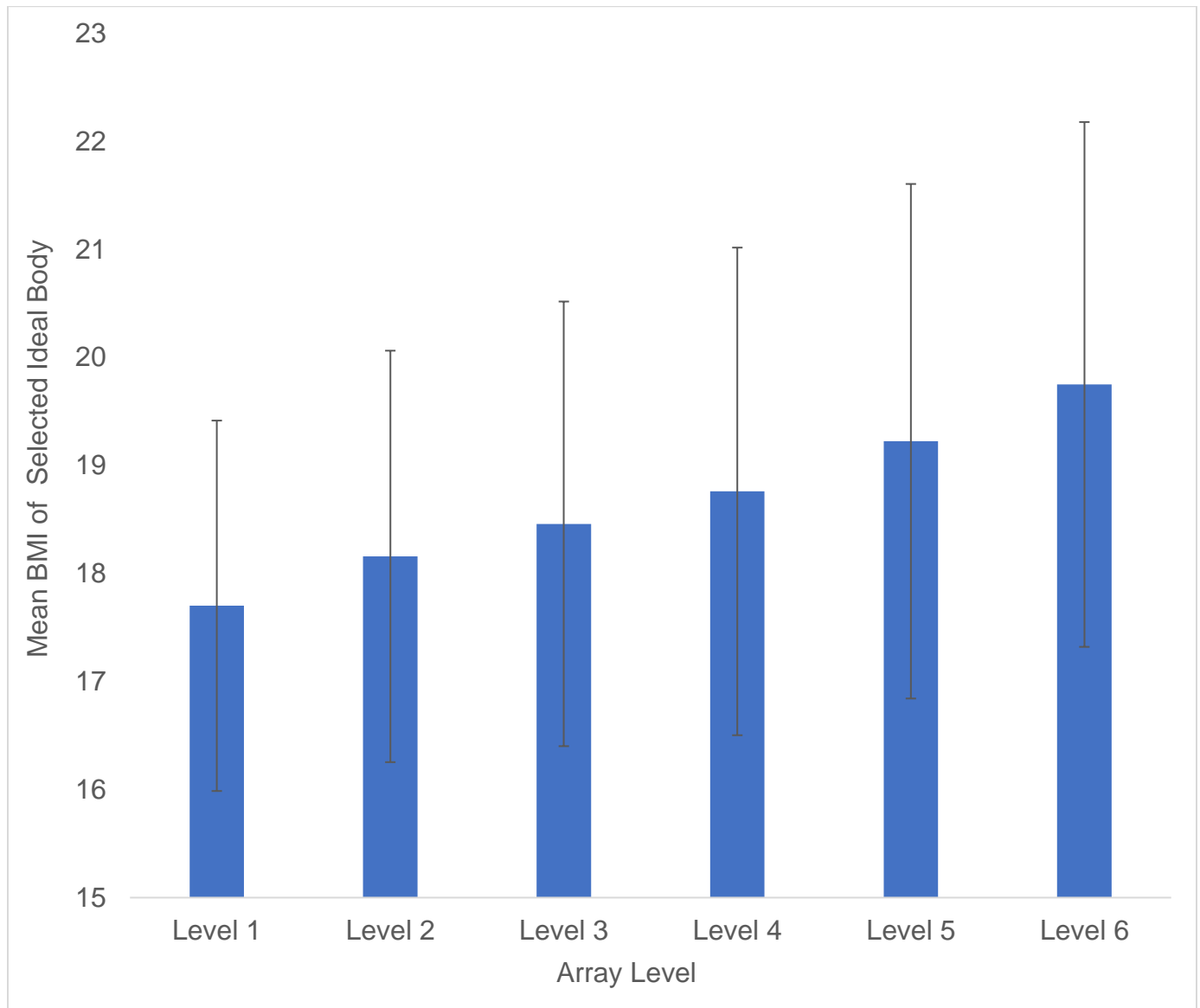
**Table 3**

*Means and Standard Deviations for Figure Rating Scale (FRS), Visual Analogue Scale (VAS), Body Appreciation Scale-2 (BAS-2), and Internalization Items on Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4) Before (Time 1) and After (Time 2) Exposure to Body Arrays*

Measure	Time 1 <i>M</i> ( <i>SD</i> )	Time 2 <i>M</i> ( <i>SD</i> )	<i>t</i> ( <i>p</i> )
FRS	-1.38 (1.54)	-1.28 (1.85)	-.95 (.171)
VAS	57.27 (22.34)	56.21 (24.25)	1.29 (.100)
BAS-2	30.99 (9.62)	31.17 (10.00)	-.65 (.258)
Internalization Items on SATAQ-4	27.56 (7.70)	26.73 (8.61)	2.48 (.007)

**Table 4***Regression Results for Influences of Family, Peers, Media, and Misperception of Men's**Preference of Women's Bodies on Women's Body Dissatisfaction*

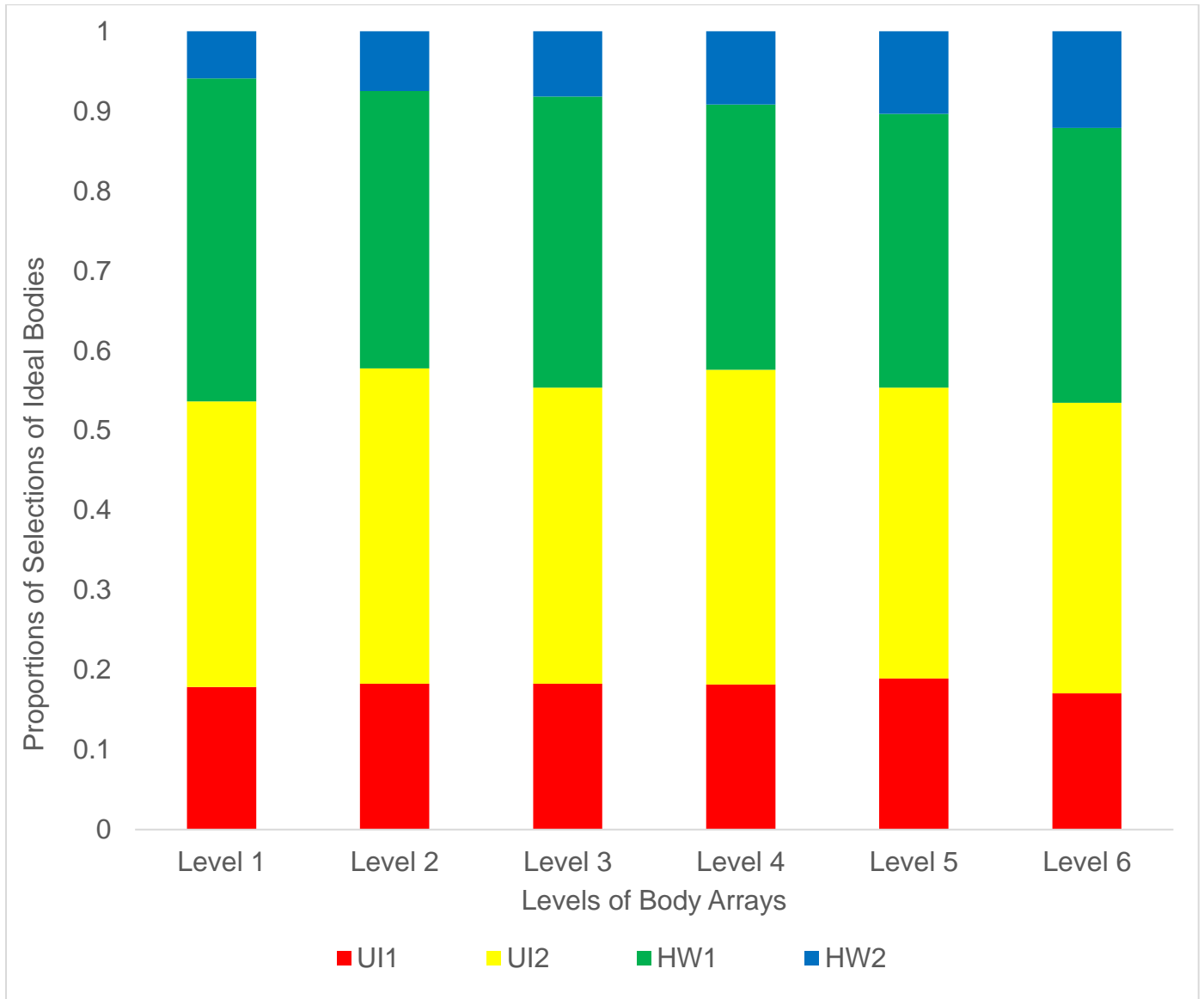
Influences	$\beta$	$t(p)$
Family	.23	2.72 (.008)
Peers	.09	1.05 (.294)
Media	.48	5.87 (<.001)
Misperception of Men's Preferences of Women's Bodies	-.00	-.04 (.965)

**Figure 1***Effect of Array Level on BMI of Selected Ideal Body*

*Note.* All  $p$ s differences between all level pairs were significant in the expected direction at  $p < .05$ . The bars represent standard deviations for each level.

**Figure 2**

*Distribution of Selections of the Four Ideal Bodies Across Array Levels*



## Appendix A

### Informed Consent

The Department of Psychology supports the practice of protection for human subjects participating in research. The following information is provided so that you can decide whether you wish to participate in the present study. You should be aware that even if you agree to participate you are free to withdraw at any time, without penalty. You can also request the results of the study in PDF form by emailing the principal investigator by May 1, 2024.

**Purpose:** The purpose of this project is to examine relationships among Asian women's body satisfaction with illustrations of different body weights and pre-existing influences of body image.

**Participation:** You will first fill out a demographic questionnaire. If any of your responses in the demographic questionnaire are inconsistent with your Prolific prescreening responses, then you won't be able to proceed further with the study. Next, you'll take an English comprehension test that you will need to pass to proceed with the study. You will then fill out some body image measures. Afterwards, you will look at 90 illustrations of different body weights and for each illustration, you will select 1) the body that matches your ideal preference and 2) the body you think men prefer. Lastly, you will fill out most of the same body image measures again. This study is expected to be conducted through an online survey and take approximately 1 hour to complete.

**Benefits and rights:** You may learn about the psychological research process through your participation and may gain insight into your own attitudes and beliefs. You will earn \$12 for completing this study.

**Expected risks:** No risks are anticipated. However, if any questions arouse strong emotions, you may choose to not answer the question(s) or stop participating at any time without explanation or penalty.

**Extent of confidentiality:** Your responses will be anonymous. At no time will your personal data be accessible. Your name and identity will not be associated in any way with the research findings—once your responses are entered into a secure statistical program, data will be examined in aggregate, such that no individual's responses will be traceable from the products of this work, such as journal articles and presentations.

**Alternatives:** You may choose not to participate or to participate in other research.

Do not hesitate to ask any questions about the study at any time. Thank you for your participation!

Sincerely,

Nida Ali, B.A. (Principal Investigator and contact for any problems/questions)

[nida.ali@washburn.edu](mailto:nida.ali@washburn.edu)

913-687-8837

**IRB Information:**

IRB Number: #23-54

IRB Contact:

Marian Jamison, Ph.D. (IRB Director)

irb@washburn.edu

(785)-670-1205

If you do not agree with these terms, please inform the researcher and stop participation now.

**Please select one of the following options:**

**YES** - I verify that I have read and understand this consent form, and willingly agree to participate in this study under the terms described.

**NO** - I verify that I have read and understand this consent form and do NOT wish to participate in this study under the terms described.

**Please retain a copy of this consent form for your records**

**Appendix B**

## Demographics

1. **What is your age in years? (e.g., 19) \_\_\_\_\_**
2. **Do you identify with being an Asian for your race or one of your races?**
  - a. Yes
  - b. No
3. **What is your gender? (Please select one)**
  - a. Man (including Trans Male/Trans Man)
  - b. Woman (including Trans Female/Trans Woman)
  - c. Non-binary
  - d. Prefer not to say and/or Other
4. **Which of the following best describes your sexual orientation?**
  - a. Heterosexual
  - b. Homosexual
  - c. Bisexual
  - d. Asexual
  - e. Prefer not to say and/or Other
5. **What is your height? (e.g. 160.02 cm or 63 in)\_\_\_\_\_ (cm or in)**
6. **What is your weight? (e.g. 58.96700 kg or 130 lb)\_\_\_\_\_ (kg or lb)**

**Appendix C**

English Comprehension Measure (ETS, 2022)

**Questions 5–11 refer to the following story.**

"Did you see that?" Joe said to his friend Bill. "You're a great shooter!" Bill caught the basketball and bounced it before throwing it again. The ball flew into the net. "Bill, you never miss!" Joe said admiringly. "Unless I'm in a real game," Bill complained. "Then I miss all the time." Joe knew that Bill was right. Bill performed much better when he was having fun with Joe in the school yard than he did when he was playing for the school team in front of a large crowd." Maybe you just need to practice more," Joe suggested. "But I practice all the time with you!" Bill objected. He shook his head. "I just can't play well when people are watching me." "You play well when I'm watching," Joe pointed out. "That's because I've known you since we were five years old," Bill said with a smile. "I'm just not comfortable playing when other people are around." Joe nodded and understood, but he also had an idea. The next day Joe and Bill met in the school yard again to practice. After a few minutes, Joe excused himself. "Practice without me," Joe said to his friend. "I'll be back in a minute." Joe hurried through the school building, gathering together whomever he could find—two students, a math teacher, two secretaries, and a janitor. When Joe explained why he needed them, everyone was happy to help. Joe reminded the group to stay quiet as they all went toward the school's basketball court. As Joe had hoped, Bill was still practicing basketball. He made five baskets in a row without noticing the silent people standing behind him. "Hey, Bill!" Joe called out finally. Bill turned. A look of surprise came over his face. "I just wanted to show you that you could play well with people watching you," Joe said. "Now you'll have nothing to worry about for the next game!"

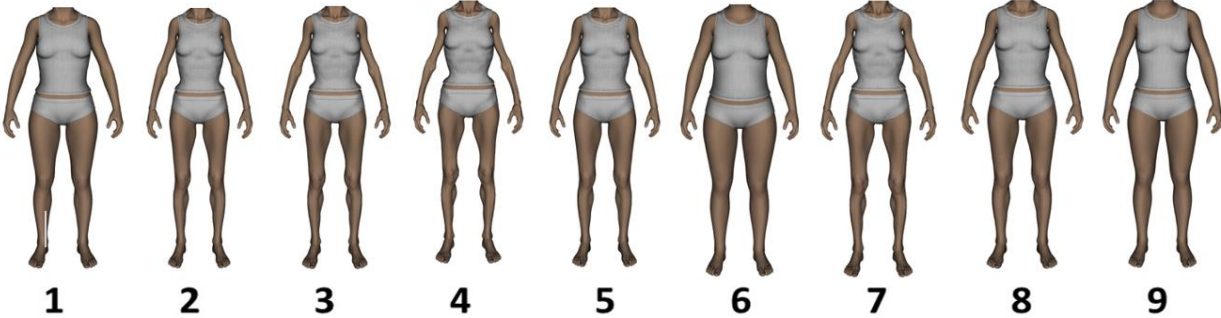
5. What would be the best title for the story?
  - A. Joe Joins the Team
  - B. Practice Makes Perfect
  - C. Bill Wins the Big Game
  - D. Bill's Basketball Problem**
  
6. The word performed is closest in meaning to \_\_\_\_\_.
  - A. acted
  - B. played**
  - C. moved
  - D. changed
  
7. Why is Bill upset?
  - A. He plays better in practice than he does during games.**
  - B. The school yard is not a good place to practice.
  - C. Joe watches him too closely when he plays.
  - D. His team loses too many games.

8. Why does Bill play well when Joe is watching him?
- A. **He is comfortable with Joe.**
  - B. Joe tells him how to play better.
  - C. He does not know that Joe is there.
  - D. He wants to prove to Joe that he is a good player.
9. Why does Joe decide to gather a group of people?
- A. Because he wants more players for his team
  - B. **Because he wants to help Bill feel less nervous**
  - C. Because he wants to show them his talent
  - D. Because he wants more people to see the next game
10. At the end of the story, all of the following people watch Bill practice EXCEPT \_\_\_\_\_.
- A. Joe
  - B. a janitor
  - C. a math teacher
  - D. **the basketball coach**
11. Why does the group have to be quiet when they go to the basketball court?
- A. Because Joe is telling Bill what to do
  - B. **Because they do not want Bill to know they were there**
  - C. Because Bill likes to practice alone
  - D. Because the group needs to listen to Joe's instructions

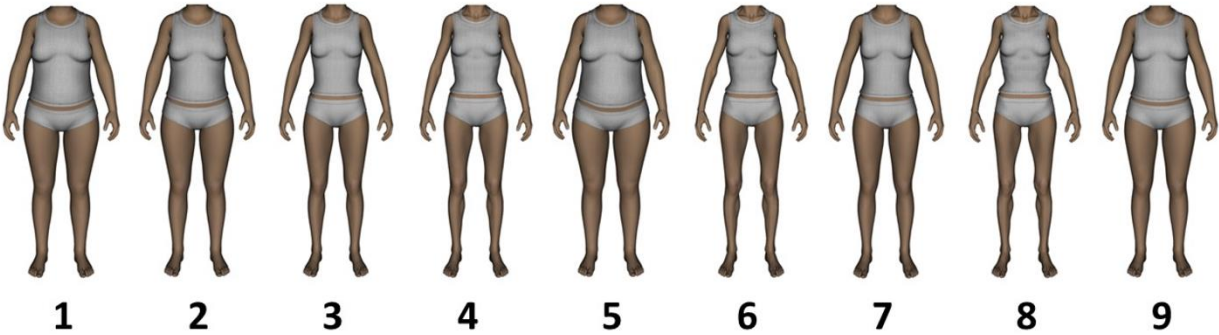
**Appendix D**

Body Arrays (Aniulis et al., 2021)

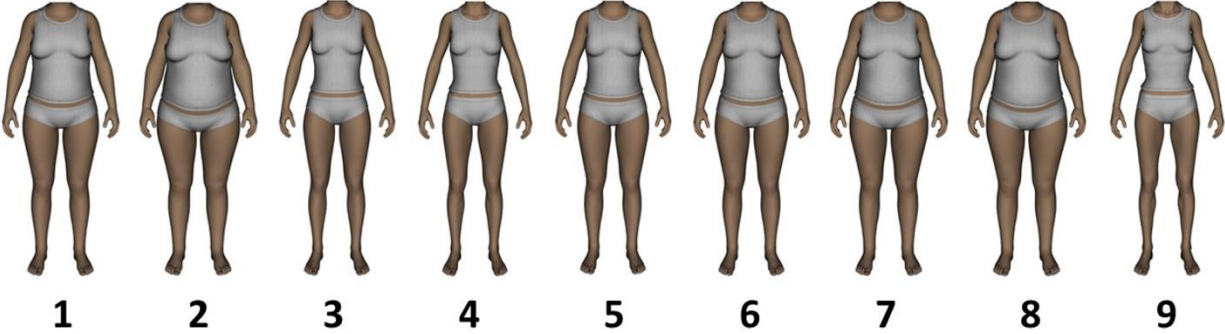
1. Level 1 Body Array 1



2. Level 4 Body Array 1



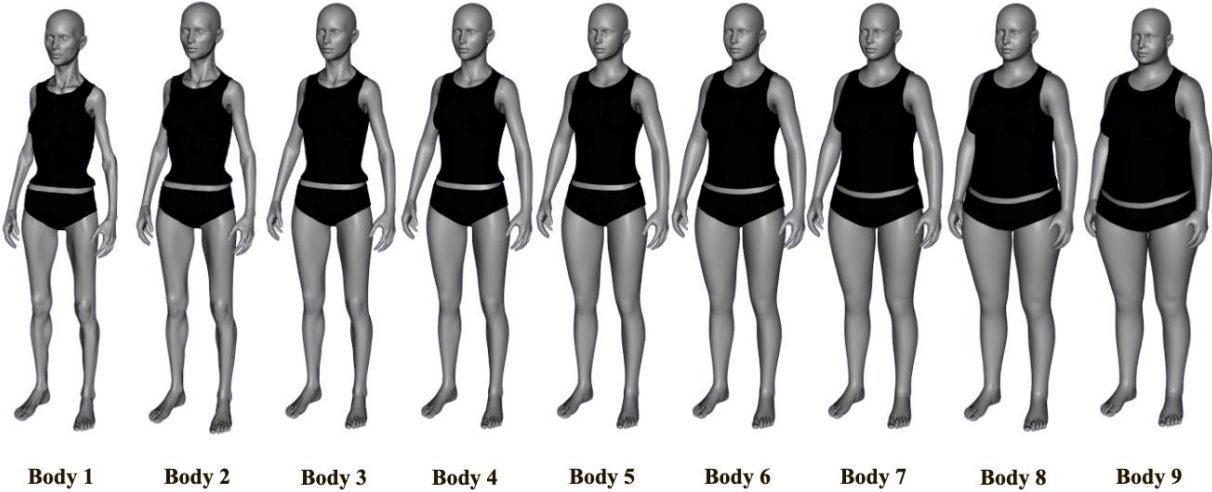
3. Level 6 Body Array 1



**Appendix E**

Figure Rating Scale (Mutale et al., 2016)

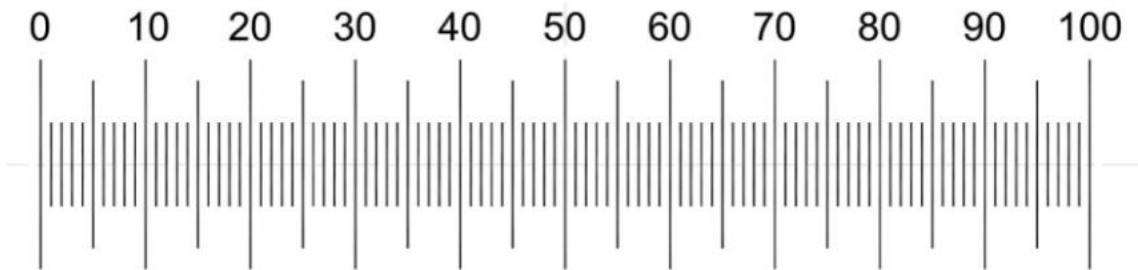
1. Body Stimuli of Women



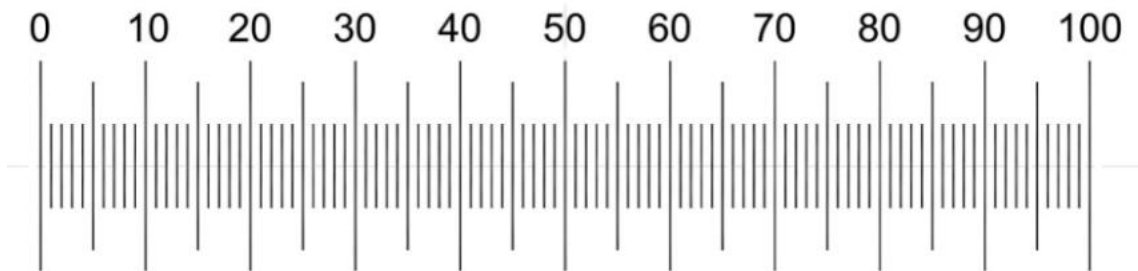
**Appendix F**

Visual Analogue Scales (Aniulis et al., 2021)

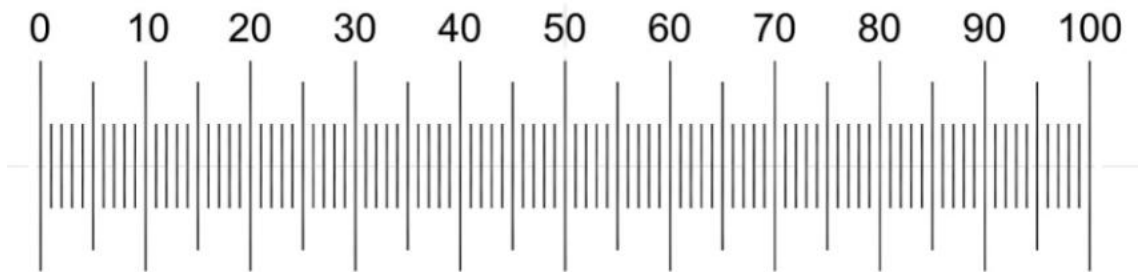
1. On a scale of 0 (not at all) to 100 (very much), please rate the extent to which you are feeling fat right now by physically dragging the sliding bar to make a vertical mark on the scale.



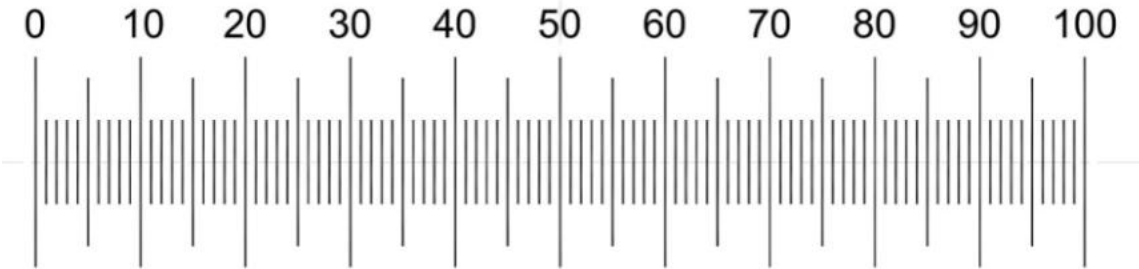
2. On a scale of 0 (not at all) to 100 (vey much), please rate the extent to which you are feeling strong right now by physically dragging the sliding bar to make a vertical mark on the scale.



3. On a scale of 0 (not at all) to 100 (vey much), please rate the extent to which you are feeling dissatisfied with your weight and shape right now by physically dragging the sliding bar to make a vertical mark on the scale.



4. On a scale of 0 (not at all) to 100 (very much), please rate the extent to which you are feeling dissatisfied with your overall appearance right now by physically dragging the sliding bar to make a vertical mark on the scale.



**Appendix G**

Body Shape Questionnaire (Cooper et al., 1987)

We would like to know how you have been feeling about your appearance over the **PAST FOUR WEEKS**. Please read each question and circle the appropriate number to the right. Please answer all the questions.

**OVER THE PAST FOUR WEEKS:**

	Never		Rarely		Sometimes		Often		Very often		Always
1. Has feeling bored made you brood about your shape?.....	1	2	3	4	5	6					
2. Have you been so worried about your shape that you have been feeling you ought to diet?.....	1	2	3	4	5	6					
3. Have you thought that your thighs, hips or bottom are too large for the rest of you?.....	1	2	3	4	5	6					
4. Have you been afraid that you might become fat (or fatter)?.....	1	2	3	4	5	6					
5. Have you worried about your flesh being not firm enough?.....	1	2	3	4	5	6					
6. Has feeling full (e.g. after eating a large meal) made you feel fat?.....	1	2	3	4	5	6					
7. Have you felt so bad about your shape that you have cried?.....	1	2	3	4	5	6					
8. Have you avoided running because your flesh might wobble?.....	1	2	3	4	5	6					
9. Has being with thin women made you feel self-conscious about your shape?.....	1	2	3	4	5	6					
10. Have you worried about your thighs spreading out when sitting down?	1	2	3	4	5	6					
11. Has eating even a small amount of food made you feel fat?.....	1	2	3	4	5	6					
12. Have you noticed the shape of other women and felt that your own shape compared unfavourably?.....	1	2	3	4	5	6					
13. Has thinking about your shape interfered with your ability to concentrate (e.g. while watching television, reading, listening to conversations)?.....	1	2	3	4	5	6					
14. Has being naked, such as when taking a bath, made you feel fat?.....	1	2	3	4	5	6					

15. Have you avoided wearing clothes which make you particularly aware of the shape of your body?.....	1	2	3	4	5	6
16. Have you imagined cutting off fleshy areas of your body?.....	1	2	3	4	5	6
17. Has eating sweets, cakes, or other high calorie food made you feel fat?	1	2	3	4	5	6
18. Have you not gone out to social occasions (e.g. parties) because you have felt bad about your shape?.....	1	2	3	4	5	6
19. Have you felt excessively large and rounded?.....	1	2	3	4	5	6
20. Have you felt ashamed of your body?.....	1	2	3	4	5	6
21. Has worry about your shape made you diet?.....	1	2	3	4	5	6
22. Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning)?.....	1	2	3	4	5	6
23. Have you thought that you are in the shape you are because you lack self-control?.....	1	2	3	4	5	6
24. Have you worried about other people seeing rolls of fat around your waist or stomach?.....	1	2	3	4	5	6
25. Have you felt that it is not fair that other women are thinner than you?.	1	2	3	4	5	6
26. Have you vomited in order to feel thinner?.....	1	2	3	4	5	6
27. When in company have you worried about taking up too much room (e.g. sitting on a sofa, or a bus seat)?.....	1	2	3	4	5	6
28. Have you worried about your flesh being dimply?.....	1	2	3	4	5	6
29. Has seeing your reflection (e.g. in a mirror or shop window) made you feel bad about your shape?.....	1	2	3	4	5	6
30. Have you pinched areas of your body to see how much fat there is?.....	1	2	3	4	5	6
31. Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths)?.....	1	2	3	4	5	6
32. Have you taken laxatives in order to feel thinner?.....	1	2	3	4	5	6
33. Have you been particularly self-conscious about your shape when in the company of other people?.....	1	2	3	4	5	6
34. Has worry about your shape made you feel you ought to exercise?.....	1	2	3	4	5	6

**Appendix H**

Sociocultural Attitudes Towards Appearance Questionnaire-4 (Schaefer et al., 2015)

Directions: Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

Definitely Disagree = 1

Mostly Disagree = 2

Neither Agree Nor Disagree = 3

Mostly Agree = 4

Definitely Agree = 5

1. It is important for me to look athletic.	1	2	3	4	5
2. I think a lot about looking muscular.	1	2	3	4	5
3. I want my body to look very thin.	1	2	3	4	5
4. I want my body to look like it has little fat.	1	2	3	4	5
5. I think a lot about looking thin.	1	2	3	4	5
6. I spend a lot of time doing things to look more athletic.	1	2	3	4	5
7. I think a lot about looking athletic.	1	2	3	4	5
8. I want my body to look very lean.	1	2	3	4	5
9. I think a lot about having very little body fat.	1	2	3	4	5
10. I spend a lot of time doing things to look more muscular.	1	2	3	4	5

Answer the following questions with relevance to your FAMILY (include parents, brothers, sisters, relatives):

11. I feel pressure from family members to look thinner.	1	2	3	4	5
12. I feel pressure from family members to improve my appearance.	1	2	3	4	5
13. Family members encourage me to decrease my level of	1	2	3	4	5



### Appendix I

#### Body Appreciation Scale-2 (Zarate et al., 2021)

For each item, the following response scale should be used: 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often, 5 = Always

**Directions for participants:** Please indicate whether the question is true about you with never, seldom, sometimes, often, or always.

1. I respect my body.
2. I feel good about my body.
3. I feel that my body has at least some good qualities.
4. I take a positive attitude towards my body.
5. I am attentive to my body's needs.
6. I feel love for my body.
7. I appreciate the different and unique characteristics of my body.
8. My behavior reveals my positive attitude toward my body; for example, I hold my head high and smile.
9. I am comfortable in my body.
10. I feel like I am beautiful even if I am different from media images of attractive people (e.g., models, actresses/actors).

**Appendix J**

## Debrief Form

Debriefing:

My name is Nida Ali, and I am the lead investigator for the study you completed: Predicting and Improving Asian Women's Body Satisfaction Through Body Type Exposure. Thank you for your time and effort in participating in my research. One of the purposes of this study was to examine if exposure to illustrations of different body weights affects Asian women's body dissatisfaction. This was done by exposing participants to illustrations of different body weights and assessing their body dissatisfaction before and after the exposure. Another purpose of the study was to examine which of the pre-existing factors of body image (i.e. peers, family, media, and misperception of men's preference of women's bodies) has the strongest predictive association with Asian women's body dissatisfaction. This was done by having participants answer questions regarding the extent to which outside influences affect their body dissatisfaction and pick the body type they think men prefer for each body array. As stated in the informed consent, you still have the right to withdraw your consent and withdraw your data from the study and can get a copy of the study results in PDF form when the study is complete. Please email me at [nida.ali@washburn.edu](mailto:nida.ali@washburn.edu) if you are interested in the study results in PDF form by May 1, 2024.

If you have any more questions or concerns related to the study or your participation, please do not hesitate to reach out! Once again, I greatly appreciate your participation!

Sincerely,

Nida Ali, B.A.