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ACCULTURATION EXPLAINS VARIATIONS IN THE OBJECTIFICATION MODEL FOR EATING PATHOLOGY ACROSS AUSTRALIAN CAUCASIANS AND ASIAN WOMEN

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest

Author contribution statement

CT, IK, SL, RU and MT drafted the manuscript and conceptualized the aims and hypotheses. MT conducted the analyses. IK, VY, CT, TP set up data collection. All authors provided feedback on different versions of the manuscripts. All authors read and approved the final manuscript and are accountable for all aspects of the work in ensuring that questions related to the accuracy of any part of the work are appropriately investigated.

Keywords

objectification, body shame, appearance anxiety thin-ideal internalization, eating pathology, cultural, Acculturation

Abstract

Word count: 294

Objective: To assess differences in trait objectifying measures and eating pathology between Australian Caucasians and Asian women with high and low levels of acculturation and to see if exposure to objectifying images had an effect on state-objectification. A further aim was to assess using path-analyses whether an extended version of the objectification model, including thin-ideal internalization, differed depending on the level of acculturation. Method: A total of 424 participants comprising 162 Australian Caucasians and 262 Asians (n=133 with high and n=129 with low levels of acculturation) took part in the current study. Participants were randomly allocated into one of two conditions, presenting either objectifying images of attractive and thin Asian and Caucasian female models (objectification group, n=204), or showing neutral images of objects (e.g. chairs, tables; control group, n=220). Subsequently, participants were asked to complete a series of questionnaires assessing objectification processes and eating pathology. Results: Findings revealed that the Caucasian group presented with significantly higher internalization and body surveillance scores than either of the two Asian groups and also revealed higher scores on trait-self-objectification than the low-acculturated Asian sample. Differences across the Asian groups were also revealed, with the low-acculturated Asian group presenting with higher body shame than the high-acculturated Asian group. As regards to the effects of objectifying images on state self-objectification, we found that ratings were higher after exposure to women than to control objects for each of the three acculturation groups. Finally, multi-group analyses revealed that our revised objectification model functioned equally across the Caucasian and the high-acculturated Asian groups, but differed for Caucasians and the low-acculturation Asian group. Conclusions: Our findings outline that individuals with varying acculturation levels, might respond differently to self-objectification processes. Acculturation should therefore be taken into consideration when working with women from different cultural backgrounds.

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Ethics statement

(Authors are required to state the ethical considerations of their study in the manuscript including for cases where the study was exempt from ethical approval procedures.)

Did the study presented in the manuscript involve human or animal subjects: Yes

Please state the full name of the ethics committee that approved the study. If the study was exempt from this requirement please state the reason below.

Ethical Approval for the Current Study by obtained from University of Melbourne School of Psychological Sciences Ethics Committee

Please detail the consent procedure used for human participants or for animal owners. If not applicable, please state this.

Participants provided consent by ticking of a box indicating that they consented to take part in the current study. A tick off box was chosen, since the assessment included an online questionnaire. Participants were able to withdraw from the study at any time.

Please detail any additional considerations of the study in cases where vulnerable populations were involved, for example minors, persons with disabilities or endangered animal species. If not applicable, please state this.

Not applicable

In review

ABSTRACT

Objective: To assess differences in trait objectifying measures and eating pathology between Australian Caucasians and Asian women with high and low levels of acculturation and to see if exposure to objectifying images had an effect on state-objectification. A further aim was to assess using path-analyses whether an extended version of the objectification model, including thin-ideal internalization, differed depending on the level of acculturation. **Method:** A total of 424 participants comprising 162 Australian Caucasians and 262 Asians ($n=133$ with high and $n=129$ with low levels of acculturation) took part in the current study. Participants were randomly allocated into one of two conditions, presenting either objectifying images of attractive and thin Asian and Caucasian female models (objectification group, $n=204$), or showing neutral images of objects (e.g. chairs, tables; control group, $n=220$). Subsequently, participants were asked to complete a series of questionnaires assessing objectification processes and eating pathology. **Results:** Findings revealed that the Caucasian group presented with significantly higher internalization and body surveillance scores than either of the two Asian groups and also revealed higher scores on trait-self-objectification than the low-acculturated Asian sample. As regards to the effects of objectifying images on state self-objectification, we found that ratings were higher after exposure to women than to control objects for each of the three acculturation groups. Finally, multi-group analyses revealed that our revised objectification model functioned equally across the Caucasian and the high-acculturated Asian groups, but differed for Caucasians and the low-acculturation Asian group. **Conclusions:** Our findings outline that individuals with varying acculturation levels, might respond differently to self-objectification processes. Acculturation should therefore be taken into consideration when working with women from different cultural backgrounds.

Key words: Objectification, body shame, appearance anxiety thin-ideal internalization, eating pathology, cultural, acculturation

INTRODUCTION

1
2
3 Objectification theory, developed by Fredrickson and Roberts (1997), proposes a formal
4 framework that allows incorporation of both sociocultural (including media influences) and
5 psychological risk factors, and their interactions with eating pathology. The literature has also
6 advocated for the inclusion of internalization of the media ideal as preceding self-objectification,
7 however studies incorporating this variable have been scarce (Moradi, & Huang, 2008). Most of
8 the studies supporting the model have been correlational and only more recently have studies
9 established growing support for the model using experimental designs (Harper, 2008) or
10 structural equation modelling (SEM) and/or path-analyses (Dakanalis et al., 2015a,b;
11 Tiggemann, & Williams, 2012). Moreover, cross-cultural validation of the objectification model
12 using these designs have been extremely limited (Kim et al., 2014), and the extent to which
13 participants had acculturated to western ideals was not directly measured in the few cultural
14 studies, even though it would likely impact the effects of ethnicity on objectification-related
15 outcomes (Doris et al., 2015). The present study assessed, for the first time, within an Australian
16 and Hong Kong context, differences across three acculturation groups (Caucasians, high-
17 acculturated Asians and less-acculturated Asians). It should be noted that the cultural norms in
18 Australia and Hong Kong (given that it used to be a British colony), aligns with the thin ideal in
19 other western cultures (Jennings et al., 2006; Lai et al., 2013); and that Australia has a high
20 proportion of Asian heritage individuals. In specific the current study will assess differences
21 across the three acculturation groups in trait objectification processes and eating pathology and
22 will use an experimental design to investigate whether exposure to objectifying media images
23 had an effect on state-objectification in these three groups. Additionally, this study assessed,
24 using path-analyses, whether a revised version of the objectification model, including thin-ideal
25 internalization, varied depending on the level of acculturation of the participants.

26
27 Objectification theory (Fredrickson & Roberts, 1997) asserts that women, through gender
28 socialization and repeated experiences of sexual objectification (e.g., sexual harassment,
29 exposure to media that objectify women), begin to take on an observer's perspective of their
30 body, and perceive and consider themselves as objects to be judged based on appearance (i.e.,
31 they self-objectify). Self-objectification is characterized by habitual monitoring of one's outward
32 appearance. The literature further distinguishes between state and trait self-objectification. The
33 former refers to self-objectification that occurs as a consequence of an objectifying encounter or
34 within a specific context (e.g., experimentally induced), while the latter relates to intrapersonal
35 characteristics, which tends to be more stable, though in this instance, is still influenced by
36 longstanding socialization processes (Moradi, & Huang, 2008). Self-objectification is the
37 primary component of the objectification model, and the mechanism by which exposure to a
38 cultural environment that encourages objectification of women results in psychological
39 problems.

40
41 More recently, the literature has advocated for the inclusion of internalization as preceding self-
42 objectification (Dakanalis et al., 2014; Moradi, & Huang, 2008; Tiggemann, 2013).
43 Internalization of the media ideal refers to the extent an individual endorses and engages in
44 behaviours which helps them to abide by societal archetypes of attractiveness (Harrison et al.,
45 2006). While most women in westernized countries are exposed to the pervasive thin-ideal
46 female form and the pressure to conform, not all of them go on to experience adverse

1 psychological outcomes. It has been argued that the adoption of cultural standards of beauty (i.e.,
 2 internalization) is a key mediating variable between exposure to sexual objectification and self-
 3 objectification, psychological issues and maladaptive eating patterns, and should therefore be
 4 included in future objectification studies (Moradi, & Huang, 2008). *Figure 1* outlines the
 5 objectification model, including thin-ideal internalization, as it relates to eating pathology.

6
 7 ---- Insert figure 1 about here ----
 8

9 Correlational studies of the objectification model (with or without internalization) have found
 10 relationships between self-objectification processes and levels of eating disorder symptoms
 11 across a variety of population types, including adolescents (Slater & Tiggemann, 2010), young
 12 females (Dakanalis et al., 2013, 2016), older women (Augustus-Horvath & Tylka, 2009),
 13 physically active women (Greenleaf & McGreer, 2006), women with eating disorders (Calogero
 14 et al., 2005), deaf women (Moradi, & Rottenstein, 2007), lesbian women (Kozee & Tylka, 2006)
 15 and heterosexual and gay men (Dakanalis et al., 2012; Engeln-Maddox et al., 2011).
 16

17 In the few comparative studies between Caucasian and Asian women, Frederick and colleagues
 18 (Frederick et al., 2006; 2007), reported equal levels of body surveillance, but greater body
 19 dissatisfaction in Asian compared to Caucasian women, once body mass index (BMI) was
 20 statistically controlled. However, despite differences in body dissatisfaction, there was a similar
 21 body surveillance-body dissatisfaction relationship across both groups. Another study comparing
 22 Caucasian and Asian women revealed that self-objectification was related to body shame and
 23 surveillance in both groups, despite higher trait self-objectification, body surveillance and body
 24 shame scores in the Caucasian group (Claudat et al., 2012). Therefore, these studies suggest that
 25 the relationships conceived within the objectification model might be similarly applicable to
 26 Asian women, however further experimental studies and research using more advanced statistical
 27 procedures such as SEM and/or path modelling in cultural diverse samples are required to verify
 28 these initial findings.
 29

30 To date, experimental studies that have tested the effect of objectifying media images on state
 31 self-objectification have been relatively scarce. One of the key studies in this area, elicited state
 32 self-objectification by exposing women to advertisements taken from fashion magazines
 33 marketed towards young adult women (Harper & Tiggemann, 2008). Those in the control
 34 condition were shown images featuring products without people, while those in the two
 35 experimental groups were shown images containing thin women with or without attractive men
 36 and four images from the control condition. The researchers found that women from the
 37 experimental groups had greater state self-objectification, weight related appearance anxiety,
 38 negative mood states, and body dissatisfaction compared to individuals who viewed the control
 39 images. However, no differences were identified across conditions for non-weight-related
 40 appearance anxiety. Aubrey and colleagues (2009) similarly investigated the impact of showing
 41 images of female models with high skin exposure, women's body parts or models with low skin
 42 exposure on self-objectification and criterion variables. They found that participants in the high
 43 skin exposure condition used more negative words to describe their appearances and had greater
 44 state self-objectification relative to the other conditions. To our knowledge there is no study that
 45 has assessed the effect of media images on state self-objectification in a culturally diverse
 46 sample. Further cross-cultural experimental research in this area is therefore required.

1 Recent studies have incorporated SEM and/or path-analyses in their analyses, enabling
 2 simultaneous assessment of all of the relationships within the objectification model (Calogero, &
 3 Pina, 2011; Dakanelis et al., 2015a,b; Tiggemann, & Williams, 2012; Tylka, & Sabik, 2010).
 4 Most of these studies have found support for the pathways within the objectification model. In a
 5 comprehensive test of the objectification model using SEM, Tiggemann and Williams (2012),
 6 found a sufficient fit of the model within a primarily white female population. Significantly, the
 7 model accounted for 93% of the variance in predicting eating disorder symptoms, with both body
 8 shame and appearance anxiety as major mediators. Additionally, past studies have also used
 9 SEM to demonstrate the role of internalization in contributing to body image disturbances and
 10 subsequently, eating pathology (Kozee & Tylka, 2006; Moradi et al., 2005; Tylka, & Subich,
 11 2004). However, there appears to be only one study exploring the applicability of the
 12 objectification model in an Asian population (Kim et al., 2014) living in their home country. In
 13 college age Asian-born South Korean women, internalization, body surveillance, and body
 14 shame were found to mediate the relationship between media exposure and maladaptive eating
 15 (Kim et al., 2014). This provides support for the generalizability of the objectification model to a
 16 South Korean cohort, and raises the possibility that the model could be extended to other Asian
 17 populations as well. However, a limitation of this study was that the sample assessed might have
 18 varied considerably as regards to having adapted to the western cultural ideal, which could have
 19 been accounted for by assessing level of acculturation to western culture.

20
 21 Acculturation has been defined as the process of psychosocial change that transpires as the
 22 dominant society's cultural values, language, norms, and behaviours such as the western ideal of
 23 beauty, are acquired (Alvidrez et al., 1996). It is possible that Asian women experience changes
 24 in terms of their body image and eating behaviours when they become more acculturated to the
 25 Western cultural norms. Thus far, research on the links of acculturation with body image and
 26 eating disorder symptoms has produced mixed findings, with a recent systematic review (Doris
 27 et al., 2015) on the topic, outlining that both higher and lower acculturation levels have been
 28 identified as risk factors for the development of eating disorders in Asian women (Doris et al.,
 29 2015). The same review also outlined that these inconsistent findings could partially be
 30 explained by the different acculturation measures employed in the studies reviewed. Further
 31 research on acculturation in relation to the objectification model in cross-cultural studies using
 32 validated acculturation measures assessing various components of acculturation (e.g. language,
 33 identity, friendships, behaviours, generation background and attitudes) are therefore needed
 34 (Suinn et al., 1992).

35
 36 To conclude, existing research examining objectification theory tenets has largely used
 37 convenience samples of white, upper middle class, undergraduate women. Thus, there continues
 38 to be limited experimental research and SEM and/or path analyses studies in ethnically and
 39 culturally diverse sample. Research has also highlighted the relationship between internalization
 40 and various factors within the objectification model. However, despite this association, the
 41 inclusion of internalization in objectification theory research continues to be limited across SEM
 42 and/or path-analysis studies. Finally, no study to date has assessed the role of acculturation on
 43 the model when assessing individuals from different cultural and ethnic backgrounds. However,
 44 including acculturation into the model is important, as it might explain differences between the
 45 objectification theory constructs and/or relationships, further increasing our understanding of the

1 model across cultures. Consequently, it may also allow for more efficacious preventive measures
2 and interventions techniques to reduce the risk of eating disorders in other cultures.

3
4 The present study aimed to integrate culture into the objectification framework for eating
5 pathology among Caucasian Australians and high and low-acculturated Asians. More
6 specifically, we aimed to partially replicate Harper and Tiggemann's (2008) research by
7 assessing the effect of objectifying images (thin-ideal Caucasian and Asian women), compared
8 to neutral pictures (chairs, tables), on ratings of state-self objectification and to assess what
9 impact acculturation played in both state and trait objectification processes and eating pathology.
10 Hence, our aims were threefold: **1.**) to assess differences across trait-level variables (appearance
11 anxiety, body shame, surveillance, trait self-objectification and eating pathology), across three
12 acculturation groups including Caucasians, high-acculturated Asians and low-acculturated
13 Asians; **2.**) to examine the effect of objectifying images on state self-objectification across these
14 three acculturation groups; and **3.**) to undertake multi-group path modelling to explore whether a
15 (revised) objectification model, including thin-ideal internalization, differed across the three
16 groups (*see Figure 1*). Internalization was added to the model since it would further aid us in
17 understanding the objectification model and it would also provide clarification of posited
18 acculturation group differences.

19 20 21 **MATERIAL AND METHODS**

22 **Sample**

23
24 The sample included 424 Asian and Caucasian women between the ages of 17 to 48 years,
25 ($M=19.72$, $SD=3.72$), who were recruited from a University in Australia ($n=345$) and a
26 university in Hong Kong ($n=79$). Study eligibility criteria included being female, and of either
27 Asian or Caucasian descent. Of the participants, 38.2% ($n=162$) were Caucasian women with
28 Australian citizenship, 20.8% ($n=88$) were Asian women with Australian citizenship, 22.4%
29 ($n=95$) were Asian women without Australian citizenship, but were in Australia for educational
30 purposes, and 18.6% ($n=79$) were Asian women from Hong Kong. The mean **body mass index**
31 (**BMI**) of the overall sample was 21.15 kg/m^2 ($SD=3.21$).

32 33 **Design**

34
35 An experimental between-subjects design was used to assess the impact of objectifying images
36 on the variables in the objectification theory. Participants were randomly allocated into one of
37 two conditions, one presenting 40 objectifying images of both attractive and thin Asian and
38 Caucasian female models (objectification group), while the other showed 40 neutral images of
39 objects (control group). Half of the total sample ($n=204$) were in the objectification group while
40 the other half ($n=220$) were in the control group.

1 **Choice of images**

2
3 The images of women were generated with an online search using descriptors related to sexual
4 objectification (e.g. “attractive”, “thin”, “objectification”, “sexy”, “Asian”). Each picture chosen
5 portrayed a thin-ideal woman, who looked either Asian or Caucasian, in sexualized and/or
6 objectified manners (e.g. postures which emphasized body parts, clothed in revealing garments,
7 poses which portrayed sexual desire or interest). Attempts were made to avoid images of
8 celebrities, which might result in greater attention or other inadvertent biases not present within
9 the other stimulus. The initial pool of images was reduced to 20 Asian women and 20 Caucasian
10 women by a group of female volunteers (N=10). They were asked to rate how attractive the
11 images within each set were using a five-point Likert scale (1=Unattractive; 5=Attractive).
12 Images with the highest ratings were chosen for use in the experiment. The pictures of objects
13 were selected using a similar process, changing only the keywords used (e.g. “accessories”,
14 “home ware”).”

15 **Measures**

16
17
18 **Demographics:** Information on age, country of birth, years lived in Australia, ethnicity, weight,
19 and height were obtained. BMI was subsequently calculated as the ratio of weight (kg) to height
20 squared (m²).
21

22 **State self-objectification:** A shortened version of the Twenty Statements Test [TST;
23 (Fredrickson et al., 1998)] was used to assess experimentally heightened changes in self-
24 objectification. Participants were asked to describe themselves by completing ten sentences
25 about their identity that begin with the phrase “I am”. Responses were coded by two raters (C.T
26 and T.P.) and categorised into six categories: (a) body shape and size, (b) other physical
27 appearance, (c) physical competence, (d) traits or abilities, (e) states or emotions and (f)
28 uncodable or illegible. Scores were derived by summing up the number of responses from the
29 two appearance-related categories (i.e., a and b). Scores ranged from 0 to 10 with higher scores
30 indicative of greater state self-objectification. The second coder (T.P.) coded a random sample of
31 the statements, with a 97.6% agreement to the original ratings as to the responses either being
32 appearance-or not appearance-based.
33

34 **Trait self-objectification:** There are two common methods of operationalizing trait self-
35 objectification within the literature. One approach is through the Body Surveillance subscale
36 from the Objectified Body Consciousness Scale [OBCS; (McKinley & Hyde, 1996)], which is
37 behavioural in nature as it assesses level of reported habitual body monitoring. The other is via
38 the Self Objectification Questionnaire [SOQ; (Noll & Fredrickson, 1998)], which looks at the
39 cognitive component of self-objectification, comparing participants’ perceived importance of
40 appearance- versus competence-based body attributes. Currently, it remains unclear if the Body
41 Surveillance subscale and SOQ assess distinct or overlapping or similar construct(s). As such,
42 researchers (Moradi, & Huang, 2008) have argued for the use of both to address the process of
43 self-objectification more comprehensively.
44
45

ACCULTURATION, OBJECTIFICATION AND EATING PATHOLOGY

1 **Body surveillance:** The Body Surveillance subscale, taken from the OBCS (McKinley & Hyde,
2 1996), evaluates the extent to which individuals monitor their bodies as an observer and think
3 about their bodies in terms of how it looks. There are 8 items (e.g., “*I rarely compare how I look*
4 *with how other people look*”) on a 7-point Likert scale ranging from 1 (*Strongly Disagree*) to 7
5 (*Strongly Agree*). Scores were averaged, with higher scores illustrating more time expended on
6 self-monitoring and greater concern for outward appearances. In previous studies, Cronbach's
7 alphas have ranged from .76 to .89 with a test-retest reliability of .79 (McKinley & Hyde, 1996).
8 The internal consistency in this study was .82.

9
10 **Trait self-objectification:** The SOQ (Noll & Fredrickson, 1998) assesses the extent to which
11 participants have a primarily appearance-based versus competence-based self-concept. In the
12 current study, participants were asked to rank 10 attributes in order of how important the parts
13 were to their self-concept (with 1 being *most important* and 10 being *least important*). Scores
14 were obtained by summation of the ranks within the appearance and competency items, and
15 computing the difference of appearance from competency. Scores ranged from -25 to 25, with
16 higher scores indicative of the greater importance of appearance, which was interpreted as higher
17 trait self-objectification.

18
19 **Body shame:** The Body Shame subscale from the OBCS (McKinley & Hyde, 1996) assesses the
20 level of guilt an individual experiences for not attaining the cultural standard (e.g., “*I feel*
21 *ashamed of myself when I haven't made the effort to look my best*”). It consists of 8 items, with
22 ratings based on a 7-point Likert scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*).
23 Scores were derived by averaging the responses given, with higher scores indicative of greater
24 body shame. In a previous study, a two-week test-retest reliability of .79 and internal
25 consistencies ranging from .70 to .84 were reported (McKinley & Hyde, 1996). Cronbach's
26 alpha in the current sample was .81.

27
28 **Appearance anxiety:** This was measured using the brief version of the Appearance Anxiety
29 Scale (Dion et al., 1990), which assesses preoccupation with observable aspects of the physical
30 self and body image assessment. Respondents reported the extent to which each of 14 statements
31 (e.g., “*I get nervous when others comment on my appearance*”) were true of them (0 = *never*; 4 =
32 *almost always*). Scores were achieved by summation, with higher scores demonstrating higher
33 anxiety about one's appearance. A previous study reported the internal consistency to be .86,
34 with a test-retest reliability of .89 (Dion et al., 1990). In the present study, the scale had an
35 internal consistency of .90.

36
37 **Internalization of media ideals:** The Internalization subscale from the Sociocultural Attitudes
38 Towards Appearance Scale-3 [SATAQ-3 (Thompson et al., 2004)] was administered to assess
39 the internalization and acceptance of societal pressure to be thin and attractive. It consists of 9
40 items (e.g., “*Women who appear in TV shows and movies project the type of appearance that I*
41 *see as my goal*”) and participants respond on a Likert scale ranging from 1 (*completely disagree*)
42 to 5 (*completely agree*). Scores were obtained by averaging item responses, with higher scores
43 representative of greater internalization. A previous study reported Cronbach's alpha of .92
44 (Thompson et al., 2004). Within the current sample, it had an internal consistency of .93.

45

1 **Eating Pathology:** The Eating Attitudes Test [EAT-26 (Garner et al., 1982)] was used to
 2 determine the level of disordered eating attitudes and behaviours in participants. It is a widely
 3 used screening tool consisting of 26-items on a 6-point Likert scale ranging from *Always* to
 4 *Never*. These items were designed to measure level of dieting, bulimia and food preoccupation,
 5 as well as oral control. Dieting was measured by 13 items (e.g., “*Am preoccupied with a desire*
 6 *to be thinner*”); bulimia and food preoccupation by 6 items (e.g., “*Have gone on eating binges*
 7 *where I feel that I may not be able to stop*”); and oral control by 7 items “*Display self-control*
 8 *around food*”. The EAT-26 has excellent psychometric properties with reliability coefficients
 9 ranging between .70 and .88 (Garner et al., 1982). Cronbach’s alpha for the overall EAT-26
 10 scores in the current sample was .86.

11
 12 **Acculturation:** The Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn et al., 1992) is a
 13 21-item scale that assesses different levels of acculturation, including language, identity,
 14 friendships, behaviours, generation background and attitudes. A higher composite score reflects
 15 greater western identification (i.e., high-acculturation), whereas a lower composite score is
 16 indicative of greater identification with Asian culture (i.e., low-acculturation). To examine if and
 17 how acculturation level in Asian participants impacted the objectification model, Asian
 18 respondents were categorized into two groups (high- and low-acculturation), with 133
 19 participants in the former and 129 in the latter. This was achieved by conducting a median-split
 20 on the composite score of the acculturation scale. Reliability of the scale was reported as ranging
 21 from .88 to .91. (Suinn et al., 1992). Cronbach’s alpha in this study was .97.

22
 23 **Procedure**

24
 25 The study was administered online via Qualtrics. At the start of the study, participants read and
 26 signed a consent form informing them of the voluntary nature of the study, before completing the
 27 demographic questions. Next, participants were briefed that they would be viewing a slideshow
 28 of 40 images. Allocation into the condition was randomized by Qualtrics, based on when they
 29 began the study and self-selected ethnicity (Asian or Caucasian). The latter was done to ensure
 30 roughly equal representation of both groups across the experimental and control conditions.
 31 Participants were encouraged to attend to the images, and informed that they would be asked
 32 about them later in the study. Forty pictures of either objectified women or control were shown,
 33 one at a time, for three seconds each. Once the slideshow was completed, a battery of
 34 questionnaires assessing the variables in the objectification framework, eating pathology and
 35 acculturation was administered.

36
 37 **Statistical Analyses**

38
 39 All descriptive and group-difference based analyses were conducted using IBM SPSS 20.0,
 40 whereas path-analyses were conducted in Mplus. Between group analyses (using t-test, chi-
 41 square, and one-way ANOVAs, as appropriate) of the sociodemographic factors were done to
 42 identify differences between women across acculturation levels (Caucasian versus high-
 43 acculturated Asian vs low-acculturated Asian participants). **MANOVA** analyses were used to
 44 assess the impact of acculturation level on trait self-objectification, internalization, body
 45 surveillance, body shame, appearance anxiety, and maladaptive eating behaviours. **A 2 x 3**

1 ANOVA was undertaken to evaluate the moderating effect of acculturation levels on the
 2 relationship between images viewed (objectifying versus control) and state self-objectification.

3
 4 Finally, a series of multi-group path-analyses were undertaken to test the model shown in Figure
 5 1. As we were interested in the possibility that the Caucasian group differed from the other two
 6 groups, separate analyses were undertaken to compare Caucasian vs low-acculturation Asian
 7 participants and Caucasian vs high-acculturation Asian participants. In both of these
 8 comparisons, model parameters were set to be equal across groups (e.g., the relationship between
 9 internalization and appearance anxiety was forced to be of equal magnitude for the Caucasian
 10 and low-acculturation groups), and model fit was compared against a saturated model (since the
 11 model with parameters freely estimated across groups consumed all degrees of freedom).

12
 13 Standard cut-offs were used to evaluate acceptable model fit for the model in which parameters
 14 were constrained to equality: non-significant chi-square value, Comparative Fit Index (CFI)
 15 $>.95$, Root Mean Square Error of Approximation (RMSEA) $<.06$, and Standardized Root Mean
 16 Square Residual (SRMR) $<.08$ (Byrne, 2012; Hu & Bentler, 1999). As the model in which
 17 parameters were allowed to vary across groups was saturated (i.e., chi-square = 0, df = 0, CFI =
 18 1, RMSEA = 0, and SRMR = 0), fit statistics are not reported for this model. As a consequence,
 19 the models were concluded to be different across groups if chi-square for the constrained model
 20 was significantly different from zero (Byrne, 2012). Standardized coefficients are reported in-
 21 text. Studies have identified age and BMI as potential covariates of eating disorder constructs
 22 (Augustus-Horvath & Tylka, 2009). In order to provide a more stringent test of the hypotheses,
 23 age and BMI were therefore added as covariates in the path models.

24
 25
 26 **RESULTS**

27
 28 *Sociodemographics*

29
 30 The sociodemographic variables for the overall sample, Caucasian, high-acculturated Asian
 31 group, and low-acculturated Asian group are presented in Table 1. Significant group differences
 32 were observed for BMI ($p < .001$), but not for age ($p = .104$). The low-acculturated Asians ($p <$
 33 $.001$) and the high-acculturated Asians ($p = .001$) had lower BMI compared to Caucasian
 34 women. There were no significant differences between the two Asian groups ($p = .597$) for BMI.
 35 Distribution of participants across the education level categories (secondary, tertiary, and
 36 postgraduate) differed significantly between the three acculturation groups ($p < .001$), with both
 37 the low- and high-acculturation groups tending to have a higher proportion of participants
 38 completing tertiary studies than the Caucasian group, and this proportion was greater for the low-
 39 acculturation than high-acculturation group.

40
 41 ---- Insert table 1 about here ----
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The impact of acculturation on trait measures from the objectification theory

Table 2 provides a breakdown by group of acculturation of means for each of the trait variables from the objectification theory. Across most variables, Caucasian participants reported more extreme levels for each of the study variables, followed by the high-acculturation group, and then the low-acculturation group. A MANOVA was conducted to evaluate acculturation-related differences in the trait variables from the objectification theory, and found a significant multivariate effect for acculturation group; $F(12, 834) = 4.20, p < .001, \eta_p^2 = .057$. As detailed in Table 2, significant univariate effects were observed for: (1) trait self-objectification – the low-acculturated group had significantly lower levels of objectification than the Caucasian group; (2) body surveillance – the Caucasian group reported higher levels of body surveillance than either of the Asian subgroups, and the high acculturation group had higher levels of body surveillance than the low acculturation group; and (3) internalization - the Caucasian group reported higher levels of internalization than either of the Asian subgroups.

---- Insert table 2 about here -----

The impact of image type and acculturation on state self-objectification

A 2 x 3 factorial ANOVA was conducted using image type (objectification, control) and acculturation (Caucasian, high-acculturated Asian, low-acculturated Asian) as the independent variables, and state self-objectification as the dependent variable. A significant main effect of image type, $F(1, 418) = 10.64, p = .001, \eta_p^2 = .025$ was present, with higher state self-objectification for images of women ($M = 1.01, SD = 1.16$) than for objects ($M = .65, SD = .99$). The main effect for acculturation was borderline significant, $F(2, 418) = 3.43, p = .051, \eta_p^2 = .022$. Pairwise comparisons showed that the low acculturation group had significantly higher state self-objectification ($M = 1.02, SD = 1.11$) than the Caucasian group ($M = .73, SD = 1.03; p = .021$), but the high acculturation group ($M = .76, SD = 1.11$) did not significantly differ from the low acculturation group ($p = .060$) or the Caucasian group ($p = .736$). There was no interaction effect, $F(2, 418) = 1.30, p = .273, \eta_p^2 = .006$.

Comparing the revised objectification theory model across groups of acculturation

Multi-group path analyses showed that the proposed, objectification theory model functioned equivalently across Caucasian and high-acculturation groups [chi square ($df = 25$) = 27.73, $p = .320$; CFI = .996, RMSEA = .027, SRMR = .058], but differed for Caucasian and low-acculturation groups [chi square ($df = 25$) = 64.92, $p < .001$]. Unsurprisingly, fit for the model in which Caucasian and high-acculturation groups were constrained to equality was acceptable (CFI = .996, RMSEA = .027, SRMR = .058), but poor for the model constraining Caucasian and low-acculturation groups to equality (CFI = .939, RMSEA = .105, SRMR = .148).

Caucasian group

As shown in *Figure 2.a.*, for the Caucasian group, eating pathology was significantly predicted by appearance anxiety ($\beta = .30, p = .012$, two-tailed), body shame ($\beta = .44, p < .001$), body surveillance ($\beta = -.34, p = .008$), and internalization ($\beta = .25, p = .028$). Appearance anxiety was

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1 significantly predicted by body surveillance ($\beta = .52, p < .001$) and internalization ($\beta = .19, p =$
2 $.034$). Body shame was significantly predicted by body surveillance ($\beta = .53, p < .001$). Trait
3 self-objectification and body surveillance were both predicted by internalization ($\beta = .45, p <$
4 $.001$, and $\beta = .71, p < .001$, respectively). Appearance anxiety co-varied with body shame ($\beta =$
5 $.46, p < .001$), and trait self-objectification co-varied with body surveillance ($\beta = .29, p < .001$).

6
7 Internalization had several significant indirect effects on eating pathology, body shame, and
8 appearance anxiety: (1) internalization \rightarrow body surveillance \rightarrow eating pathology, $\beta = -.24, p =$
9 $.009$; (2) internalization \rightarrow body surveillance \rightarrow body shame \rightarrow eating pathology, $\beta = .17, p =$
10 $.001$; (3) internalization \rightarrow body surveillance \rightarrow appearance anxiety \rightarrow eating pathology, $\beta = .16,$
11 $p = .017$; (4) internalization \rightarrow body surveillance \rightarrow appearance anxiety, $\beta = .37, p < .001$; and
12 (5) internalization \rightarrow body surveillance \rightarrow body shame, $\beta = .38, p < .001$. In total, 37% of the
13 variance in eating pathology, 58% of the variance in appearance anxiety, 53% of the variance in
14 body surveillance, 41% of the variance in body shame, and 22% of the variance in trait self-
15 objectification were accounted for by predictor variables (including the covariates) in the model.

16 High-acculturated Asian group

17
18
19 For the high-acculturation group (*see Figure 2.b.*), eating pathology was significantly predicted
20 by appearance anxiety ($\beta = .27, p = .004$), body shame ($\beta = .36, p < .001$), and trait self-
21 objectification ($\beta = .27, p = .005$). Appearance anxiety was significantly predicted by body
22 surveillance ($\beta = .29, p = .005$) and internalization ($\beta = .20, p = .023$). Body shame was
23 significantly predicted by body surveillance ($\beta = .37, p = .002$). Trait self-objectification and
24 body surveillance were both predicted by internalization ($\beta = .47, p < .001$, and $\beta = .61, p < .001$,
25 respectively). Appearance anxiety co-varied with body shame ($\beta = .47, p < .001$), and trait self-
26 objectification co-varied with body surveillance ($\beta = .35, p < .001$).

27
28 Internalization had several significant indirect effects on eating pathology, body shame, and
29 appearance anxiety: (1) internalization \rightarrow trait self-objectification \rightarrow eating pathology, $\beta = .13, p$
30 $= .006$; (2) internalization \rightarrow body surveillance \rightarrow body shame \rightarrow eating pathology, $\beta = .08, p =$
31 $.006$; (3) internalization \rightarrow body surveillance \rightarrow appearance anxiety, $\beta = .17, p = .009$; and (4)
32 internalization \rightarrow body surveillance \rightarrow body shame, $\beta = .22, p = .009$. 35% of the variance in
33 eating pathology, 38% of the variance in appearance anxiety, 38% of the variance in body
34 surveillance, 27% of the variance in body shame, and 23% of the variance in trait self-
35 objectification were accounted for by predictor variables (including the covariates) in the model.

36 Low-acculturated Asian group

37
38
39 For the low-acculturation group (*see Figure 2.c.*), eating pathology was significantly predicted
40 by appearance anxiety ($\beta = .21, p = .040$), and internalization ($\beta = .19, p = .048$). Appearance
41 anxiety was significantly predicted by trait self-objectification ($\beta = .17, p = .012$) and body
42 surveillance ($\beta = .34, p < .001$). Body shame was significantly predicted by body surveillance (β
43 $= .26, p = .002$) and internalization ($\beta = .31, p < .001$). Trait self-objectification and body
44 surveillance were both predicted by internalization ($\beta = .38, p < .001$, and $\beta = .48, p < .001$,
45 respectively). Appearance anxiety co-varied with body shame ($\beta = .45, p < .001$), and trait self-
46 objectification co-varied with body surveillance ($\beta = .25, p = .002$).

1
2 Internalization had several significant indirect effects on body shame and appearance anxiety,
3 but not for eating pathology: (1) internalization → trait self-objectification → appearance
4 anxiety, $\beta = .07$, $p = .029$; (2) internalization → body surveillance → appearance anxiety, $\beta =$
5 $.16$, $p = .001$; and (3) internalization → body surveillance → body shame, $\beta = .12$, $p = .006$. In
6 total, 25% of the variance in eating pathology, 34% of the variance in appearance anxiety, 22%
7 of the variance in body surveillance, 29% of the variance in body shame, and 14% of the
8 variance in trait self-objectification were accounted for by predictor variables (including the
9 covariates) in the model.

10
11 ---- Insert figures 2 a., b. c., about here ----
12

13 14 DISCUSSION

15
16 Our findings revealed significant differences in trait objectification measures across the three
17 acculturation groups, with the Caucasian group presenting with significantly higher
18 internalization and body surveillance scores than either of the two Asian groups and they also
19 revealed higher scores on trait-self-objectification than the low-acculturated Asian sample. As
20 regards to the experimental component of the study, we found higher scores in the group that
21 viewed the thin-ideal images of women compared to the control group in all three acculturation
22 groups, indicating that our exposure was successful in eliciting state self-objectification, but that
23 this effect generalized across cultural groups. Finally, our revised objectification model,
24 including thin-ideal internalization was equivalent across the Caucasian and the high-
25 acculturated Asian group, but differed across the Caucasian and the low-acculturated Asian
26 individuals. Each of these findings will be discussed in more detail in the subsequent sections.
27

28 Main effect of acculturation on the assessed trait variables

29
30 Greater trait self-objectification, internalization and body surveillance were demonstrated in
31 Caucasian women compared to Asian women, particularly the low-acculturated ones. This is in
32 line with previous findings, which have found that Asian American women had less
33 internalization, lower trait-objectification levels and lower body surveillance compared to
34 Caucasian Americans (e.g. Claudat et al., 2012; McKenney & Bigler, 2016).
35

36 A further important finding was that there were no differences in disordered eating scores across
37 the acculturation groups. This finding is consistent with previous findings, in which Asian
38 American (Nouri, et al., 2011; Marques et al., 2011), and Australian women (Jennings et al.,
39 2006) demonstrated comparable levels of weight concerns, the use of unhealthy weight control
40 behaviours and eating pathology compared to Caucasian women, but contradicts the findings of
41 other studies, which found higher eating pathology in Asian females (Jennings, et al., 2005)
42 compared to Caucasian Australians. Future studies are therefore required to disentangle these
43 contradictory findings.
44
45
46

1 **Impact of exposure to media images and acculturation on state-self-objectification**

2
3 As regards to the experimental aspect of the current study, we found that state self-objectification
4 was higher in the group viewing objectifying images compared to the control group, suggesting
5 that objectifying images were effective in inducing self-objectification. This finding is consistent
6 with the findings of other studies (Aubrey et al., 2009; Harper & Tiggemann, 2008), which also
7 found greater state self-objectification, weight related appearance anxiety, negative mood states,
8 and body dissatisfaction, in response to viewing objectifying images. However, it should be
9 noted that we were only able to assess state self-objectification in this experimental part of the
10 study, given that the other measures were all trait-based. Future studies should include a range of
11 state-related objectification and disordered eating measures to extend our findings.

12
13 Even though an interaction between **the** exposure group (objectifying versus control) and **the**
14 acculturation group was not revealed, we found that the low-acculturation Asian group exhibited
15 the highest state self-objectification ratings after exposure to images of women. This finding
16 could be attributable to the fact that perhaps the low-acculturated Asian group had fewer
17 opportunities to be exposed to the Western thin ideal, resulting in a more detrimental influence of
18 these images in this group.

19 20 **Comparing the revised objectification theory model across groups of acculturation**

21
22 Despite some differences between the aforementioned variables across acculturation, invariance
23 testing indicated that the objectification model was largely equivalent between Caucasians and
24 high-acculturated Asian women, but differed significantly between the Caucasians and the low-
25 acculturated Asian group. Consistent with previous studies (e.g. Calogero, & Pina, 2011; Kim et
26 al., 2014; Tiggemann, & Williams, 2012), this suggests that the objectification model may be
27 used to explain and understand maladaptive eating development for highly acculturated Asian
28 women. Furthermore, these results are congruent with the literature, which highlights similar risk
29 factors in the development of eating disorders between highly acculturated Asian and Caucasian
30 females (Pike & Dunne, 2015).

31
32 A closer look at the revised model also highlighted several areas of interest that may add to the
33 understanding of the objectification theory in different acculturation groups. First, **the** variance
34 explained in these outcome measures tended to be lower for the low-acculturation group,
35 suggesting that in addition to differences in mean levels for these objectification variables, their
36 associations may also differ across cultures. **Second, the indirect effects of internalization on key
37 outcomes (body shame, appearance anxiety, and eating pathology) differed across groups
38 (especially for the low acculturation group relative to the other two groups). The key indirect
39 effects can be summarised as follows: 1.) body surveillance mediated the internalization-
40 appearance anxiety and internalization-body shame relationships for all three groups; 2.) the
41 internalization-eating pathology relationship was not mediated by any variables for the low
42 acculturation group, but was mediated by several variables for the other two groups (body
43 surveillance and shame for both groups, trait self-objectification for the high acculturation group
44 only and appearance anxiety for the Caucasian group only.**

45

1 The mediating role of body shame and appearance anxiety in the links between internalization of
2 cultural standards of beauty and body surveillance with eating pathology has been supported
3 with young and adult women (e.g. Calogero et al., 2010; Dakanalis et al., 2015a; Rolnik et al.,
4 2010). Furthermore, the finding that internalization acts as an antecedent to the objectification
5 model, is congruent with previous research that highlighted both the direct and indirect unique
6 contribution of internalization to the various self-objectification measures and eating pathology
7 (Calogero et al., 2005; Dakanalis et al., 2015b; Moradi et al., 2005; Myers & Crowther, 2007;
8 Sinclair, 2005).

9
10 The main differences between the Caucasian and the high-acculturated Asian group, was that
11 internalization had an effect through trait self-objectification on eating pathology, only in the
12 high-acculturated Asian group. This finding could implicate again that given that the high-
13 acculturated Asian females had possibly less exposure to objectifying images than the
14 Caucasians, they might have been more affected by these images. Despite the growing body of
15 literature that supports trait self-objectification and body surveillance as being notionally
16 different terms, they continue to be broadly regarded as interchangeable in most research
17 (Tiggemann, & Williams, 2012). The current findings therefore provide further grounds for
18 assessing these two objectification variables separately in future studies (Calogero et al., 2005;
19 Moradi, & Huang, 2008).

20
21 Conversely, for the low-acculturated Asian group, few significant pathways were revealed for
22 the overall model, with the no significant indirect pathway being found from internalization to
23 eating pathology. It is possible that the low-acculturated Asian group might have had certain
24 protective factors, which prevented them from experiencing the negative psychological
25 consequences of self-objectification, for instance, that these women were enculturated to their
26 heritage culture (Pike & Dunne, 2015; Sussman et al., 2007) or they might have adopted an
27 integration style of acculturation, accepting the identity of both cultures and therefore
28 experienced less stress and subsequently less exposure to risk factors for eating pathology (Doris
29 et al., 2015). Finally, it is also possible that the traditional Asian conceptualization of ideal
30 female beauty emphasizes other body parts (e.g. face) rather than the body. Accordingly Kim
31 and colleagues (2014) found that face size and shape was one of the most important factors in the
32 modified objectification model, tested in a South-Korean sample. Furthermore, research has
33 shown that amongst Asians, there is relative homogeneity in terms of BMI variance (Bélanger et
34 al., 2010) and therefore it is likely that these women may have developed a stronger preference
35 to differentiate each other through other body parts (e.g. facial features). Further research is
36 required to further assess all of these potential explanations.

37
38 Finally, it is also worth mentioning that in both the Caucasian and the low-acculturated Asian
39 groups, but not the high-acculturated Asian group, thin ideal internalization had a direct effect on
40 eating pathology. This finding is in agreement, with previous findings, outlining that the
41 adoption of cultural standards of beauty (i.e., internalization) has direct detrimental effects on
42 eating pathology (Dakanelis et al., 2013, 2016; Stice, 2002). However, what remains of interest
43 for future studies to explore, is why this direct relationship was not observed in the high-
44 acculturated Asian group.

1 **Limitations**

2
3 The present findings should be considered in light of a number of study limitations. A limitation
4 of the current study is the reliance on undergraduate participants, which is a limiting
5 characteristic of most experimental research in this field. The cross-sectional and correlational
6 nature of the data does not allow for strong causal inferences from the study's results.
7 Furthermore, participants filled in the questionnaire-based measures after having seen the
8 objectifying or neutral images to replicate the original experimental studies in this area (Aubrey
9 et al., 2009; Harper & Tiggemann, 2008). This ordering of manipulation and measurement could
10 have had an effect on the participants' responses. A better design would have entailed a pre-post
11 design, but given the extensive number of measures included in the current study this would have
12 been too burdensome for the participants. We did however, carefully consider our measures and
13 made sure that with the exception of state self-objectification, all other measures were trait
14 based. Hence, it seems unlikely that the trait measures might have been impacted by the images
15 previously seen. Another consideration is that our Asian group was used as a homogenous
16 sample in this study, despite being made up of various ethnic subgroups from various countries
17 (e.g., Hong Kong, China, Singapore, Malaysia, Indonesia, and Korea). Although this adds
18 breadth, important group differences might have been overlooked. It should also be considered
19 that the group from Hong Kong was not living in Australia, however, given that Hong Kong used
20 to be a British colony we assumed that individuals there would be exposed to a similar Western
21 ideal as in Australia. Finally, it should be noted that the path-analysis approach we used,
22 assumed that the constructs included in the assessed model functioned equally across the
23 Caucasian and the two Asian groups. Future studies would benefit from using a multi-group
24 Confirmatory Factor Analysis (CFA) framework, to explicitly test such an assumption.
25 Regardless of these limitations, the current study is of great significance as it is the first study of
26 objectification that comprised a large sample of Asian and Caucasian participants and took for
27 the first level of acculturation into consideration.

28 29 **Implications**

30
31 The findings of the current study have substantial implications for future eating disorder
32 prevention and intervention endeavours. Preventive strategies, regardless of the ethnic
33 background and level of acculturation, would benefit from identifying women evidencing high
34 thin-ideal internalization and body surveillance and design prevention efforts targeted to these
35 objectification processes. Such programmes might involve psychoeducation of realistic body
36 shapes and sizes, the negative impact of consuming media that objectify women and increasing
37 awareness of the pervasiveness of sexual objectification of women and its implications.
38 Interventions would also benefit from emphasizing individuals' internal qualities and to provide
39 embodied experiences. Cognitive dissonance-based prevention programs already do this by
40 including behavioural activities whereby participants speak or write positively about their bodies,
41 including their bodies' physical, emotional, intellectual, and social qualities (Becker et al., 2013).

42
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1 Furthermore, our findings indicated that the development of eating pathology might differ within
2 the broader context of the objectification model across women of varying acculturation levels.
3 For example, for Asian women who are more acculturated to western cultures, overvaluation of
4 their appearance is more likely to result in maladaptive eating behaviours and attitudes,
5 compared to less acculturated Asian women. Therefore, for the former population, it may be
6 important to focus on distorted cognitions related to the magnified importance of appearances in
7 the development of preventative strategies, early interventions or treatment. As such, it may be
8 relevant to consider acculturation levels or acculturation-related stressors during assessment.

9
10 **Conclusions**

11
12 To conclude, our study highlights that objectification theory provides a suitable framework to
13 explore the development of eating pathology in Asian women and that acculturation does play a
14 role in influencing both state and trait variables within the model. Overall, our findings showed
15 that the Caucasian and the high-acculturated Asian sample presented with more significant
16 pathways within our revised model than the low-acculturated Asian group. Our findings might
17 therefore indicate that the low-acculturated Asian women might have protective factors, which
18 might prevent them from the negative psychological consequences of self-objectification. Future
19 research in culturally diverse samples would benefit from conducting more experimental and
20 longitudinal studies to evaluate changes of our revised objectification theory constructs and to
21 clarify the direction of causality in the posited relations in the objectification framework.

22
23
24 **CONFLICT OF INTEREST STATEMENT**

25
26 All authors declare that the research was conducted in the absence of any commercial or
27 financial relationship that could be construed as a potential conflict of interest.

28
29
30 **AUTHOR AND CONTRIBUTORS**

31
32 CT, IK, SL, RU and MT drafted the manuscript and conceptualized the aims and hypotheses.
33 MT conducted the analyses. IK, VY, CT, TP set up data collection. All authors provided
34 feedback on different versions of the manuscripts. All authors read and approved the final
35 manuscript and are accountable for all aspects of the work in ensuring that questions related to
36 the accuracy of any part of the work are appropriately investigated.

1

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In review

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Table 1: Sociodemographic details of study participants

	Total (<i>n</i> =424)	Caucasian (<i>n</i> =162)	More Acculturated (<i>n</i> =133)	Less Acculturated (<i>n</i> =129)
N (%)				
University student	418 (98.58)	162 (100)	132 (99.25)	124 (96.12)
Highest completed education:				
Secondary	290 (68.40)	133 (82.10)	97 (72.93)	60 (46.51)
Tertiary	123 (29.01)	26 (16.05)	34 (25.56)	63 (48.84)
Postgraduate	11 (2.59)	3 (1.85)	2 (1.50)	6 (4.65)
Mean (SD)				
Age (years)	19.71 (3.72)	20.06 (4.77)	19.16 (3.02)	19.87 (2.68)
BMI	21.15 (3.21)	22.06 (3.24)	20.40 (3.25)	20.77 (2.88)

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Table 2: Descriptive statistics and group difference tests for trait measures

	Less Acculturated (<i>n</i> =129)	More Acculturated (<i>n</i> =133)	Caucasians (<i>n</i> =162)	<i>F</i> (2, 421)	<i>p</i>	eta ²
Trait self-objectification	-4.12 (12.05) ^c	-1.26 (14.34)	1.10 (12.42) ^a	5.83	.003	.027
Body surveillance	4.31 (0.84) ^{b,c}	4.55 (1.03) ^{a,c}	4.87 (0.96) ^{a,b}	12.70	<.001	.057
Body shame	3.62 (0.88)	3.38 (1.08)	3.58 (1.17)	2.29	.130	.010
Appearance anxiety	29.93 (6.95)	29.64 (9.47)	31.31 (10.34)	1.43	.241	.007
Internalization	3.01 (0.85) ^c	3.16 (0.94) ^c	3.46 (0.94) ^{a,b}	9.15	.000	.042
Eating pathology	9.03 (7.71)	10.95 (9.31)	10.78 (10.98)	1.65	.193	.008

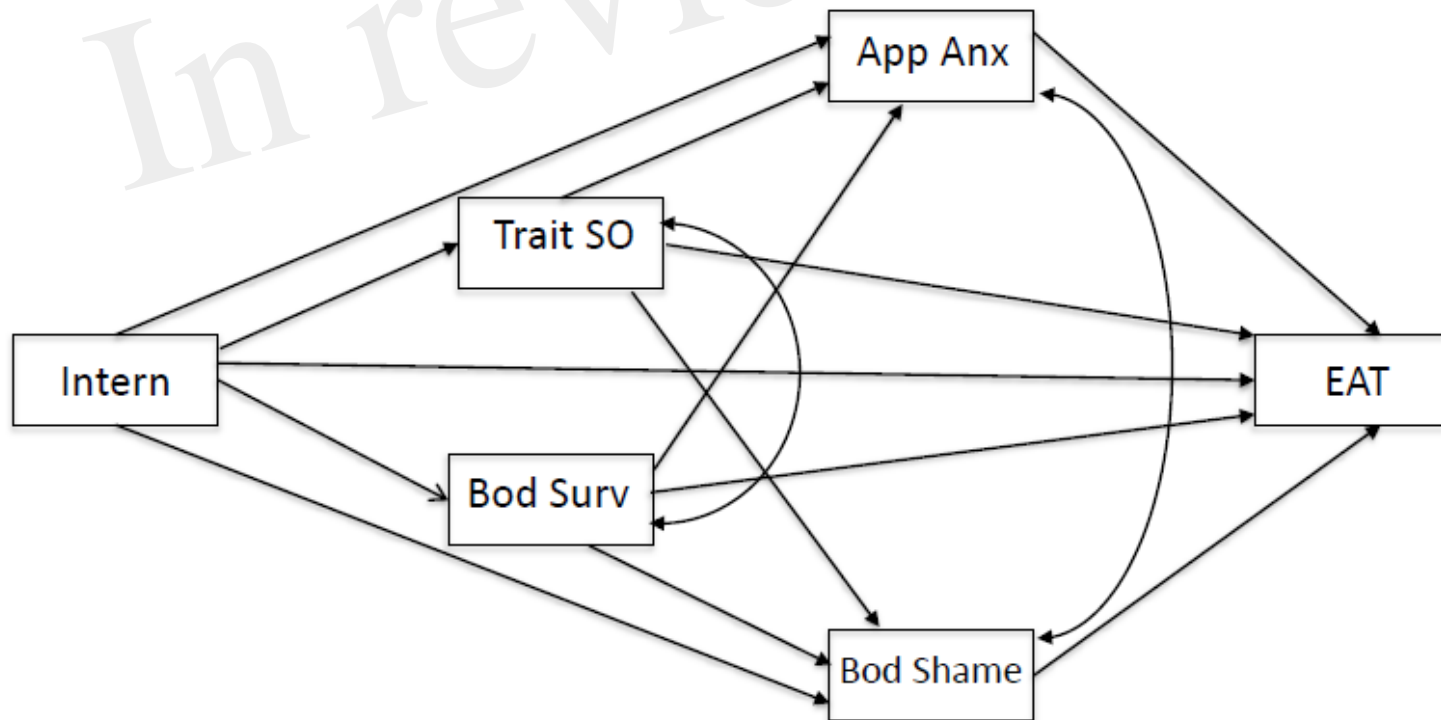
Notes:

^aGroup differed significantly ($p < .05$, two-tailed) from less acculturated group,

^bGroup differed significantly from more acculturated group,

^cGroup differed significantly from Caucasian group.

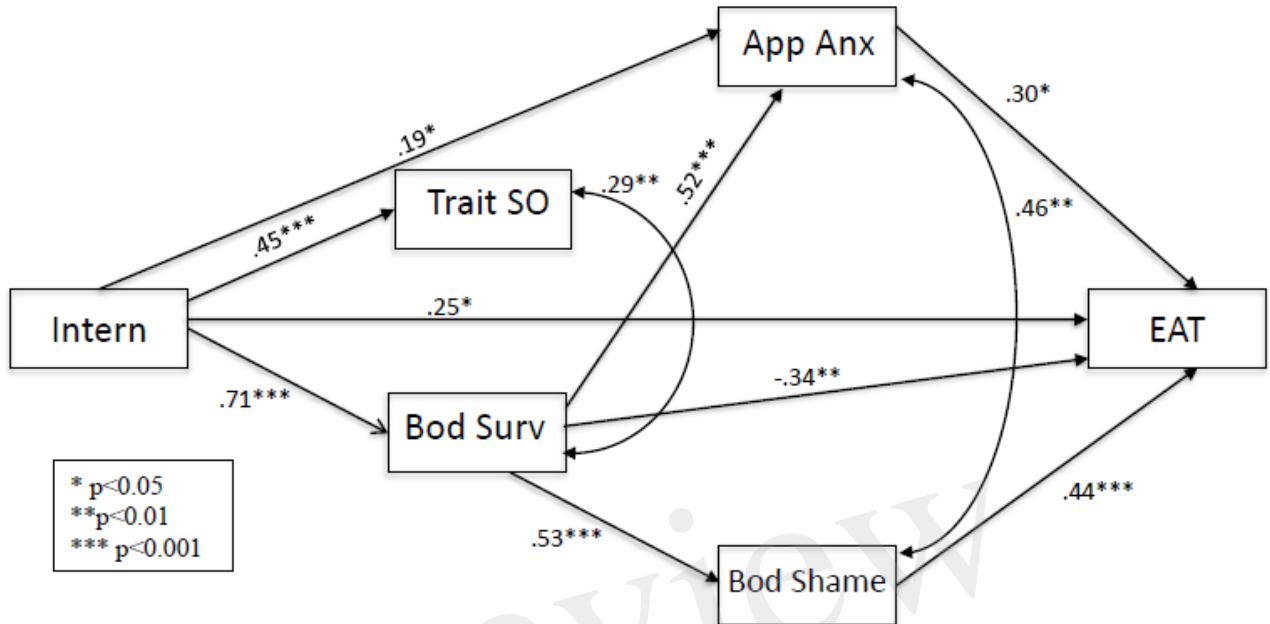
Figure 1: A conceptual model of the revised objectification model including thin-ideal internalization



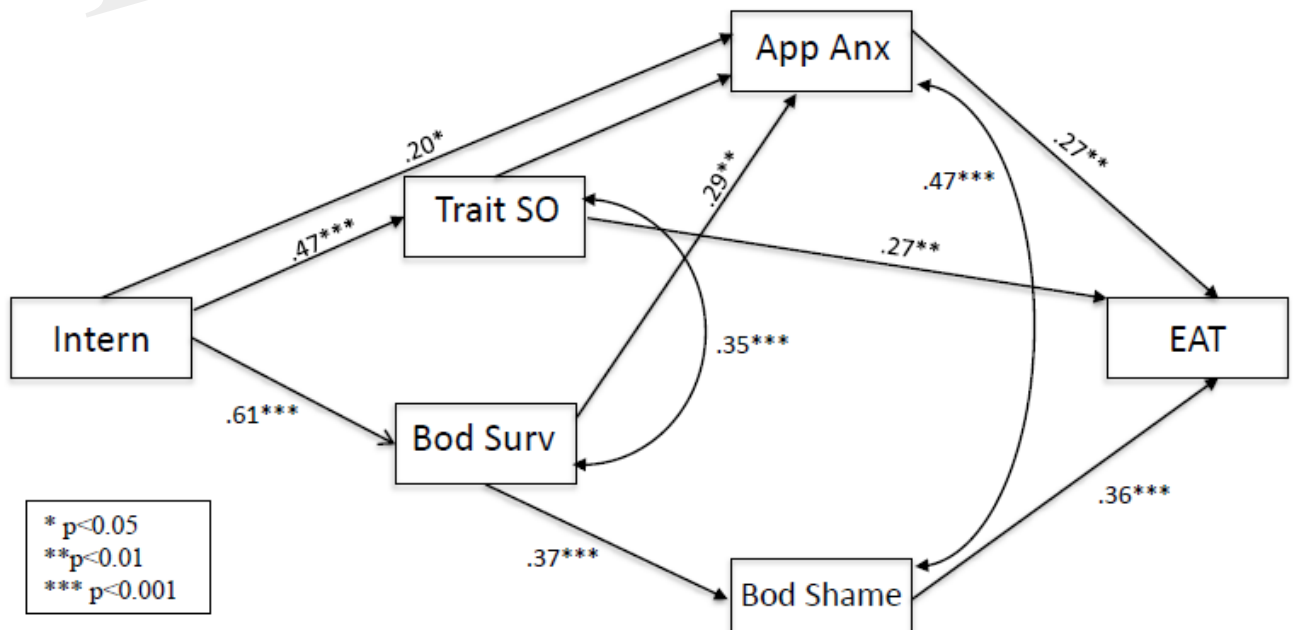
Note: Intern = Internalization; App Anx = Appearance Anxiety; Bod Surv = Body Surveillance; Trait SO = Trait self-objectification; Bod Shame = Body Shame; EAT = Eating pathology

Figure 2: Differences in the revised objectification model across acculturation groups

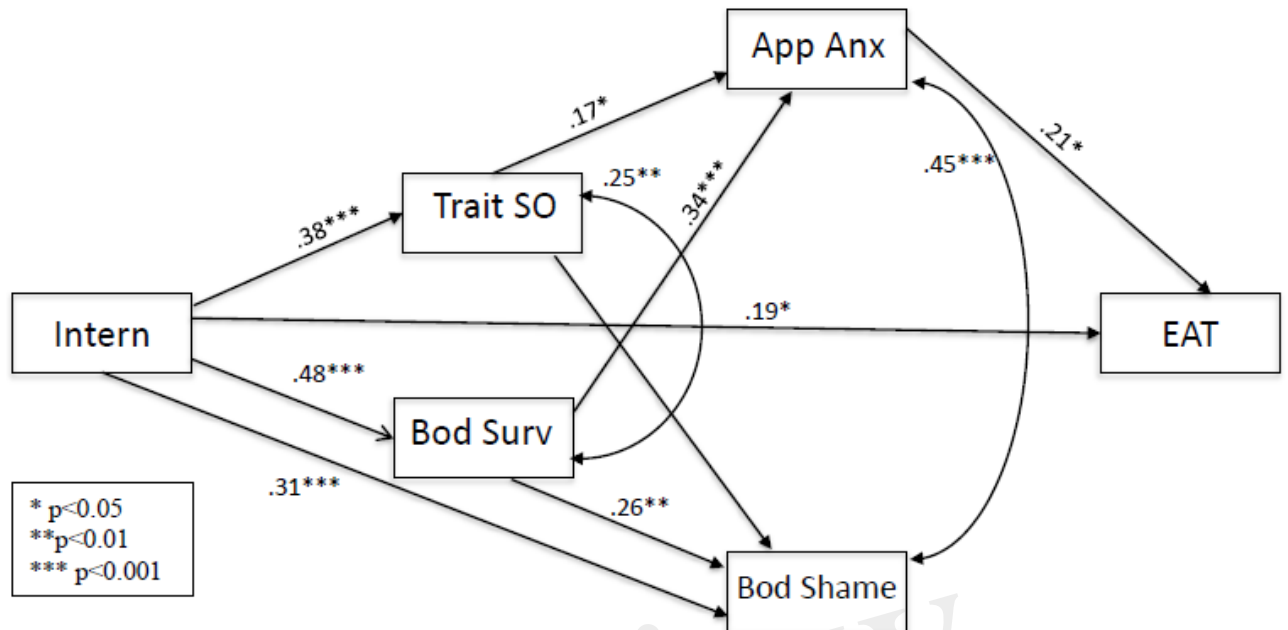
a.) Significant pathways for the Caucasian group



b.) Significant pathways for the high acculturated Asian group



c.) Significant pathways for the low acculturated Asian group



Note: Covariates (age and BMI) and non-significant pathways are omitted from the figure for clarity of presentation.

Intern = Internalization; App Anx = Appearance Anxiety; Bod Surv = Body Surveillance; Trait SO = Trait self-objectification; Bod Shame = Body Shame; EAT = Eating pathology