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Title: Features of objectified body consciousness and sociocultural perspectives as risk factors for disordered eating among late-adolescent women and men.

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Abstract: Body surveillance and body shame are features of objectified body consciousness (OBC) that have been linked to disordered eating, yet the evidence base is largely cross-sectional and limited to samples in certain Western countries. Furthermore, it is not clear whether these factors contribute to the prediction of eating disturbances independent of conceptually related risk factors emphasized within other sociocultural accounts. In this prospective study, body surveillance, body shame, and features of complementary sociocultural models (i.e., perceived appearance pressure from mass media and close interpersonal networks, appearance social comparisons, negative affect, body dissatisfaction) were assessed as risk factors for and concomitants of eating disturbances over time. University-age, mainland Chinese women (n = 2144) and men (n = 1017) completed validated measures of eating-disorder pathology and hypothesized risk factors at baseline (T1) and 1-year follow-up (T2). Among women, elevations on T1 measures of sociocultural-model features predicted more T2 eating disturbances, independent of T1 disturbances. After controlling for other T1 predictors, body surveillance and shame made modest unique contributions to the model. Finally, heightened T2 body dissatisfaction, media, and interpersonal appearance pressure, negative affect, and body shame predicted concomitant increases in T2 eating concerns. For men, T1 features of sociocultural accounts (negative affect, body dissatisfaction) but not OBC predicted T2 eating disturbances, along with attendant elevations in T2 negative affect, interpersonal appearance pressure, and body shame. Implications are discussed for theory and

intervention that target disordered eating. (PsycINFO Database Record (c) 2017 APA, all rights reserved)

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Features of Objectified Body Consciousness and Sociocultural Perspectives as Risk Factors for Disordered Eating Among Late-Adolescent Women and Men / BRIEF REPORT

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Clinical and subclinical eating disturbances are widely documented (e.g., [Machado, Machado, Goncalves, & Hoek, 2007](#); [Smink, van Hoeken, & Hoek, 2012](#)) and result in significant functional impairment, psychiatric morbidity, and premature mortality risk, particularly among adolescent girls and young women (e.g., [Arcelus, Mitchell, Wales, & Nielsen, 2011](#); [Thomas, Vartanian, & Brownell, 2009](#); [Wade, Wilksch, & Lee, 2012](#)). To illustrate, [Eisenberg, Nicklett, Roeder, and Kirz \(2011\)](#) found that 13.5% of undergraduate women and 3.6% of undergraduate men endorsed three or more symptoms on a brief eating-disorder screen; these subgroups were also more susceptible than peers to comorbid experiences of depression, anxiety, self-injury, and substance abuse. The pervasiveness of eating concerns on college campuses underscores their relevance as presenting problems for university counseling centers. Hence, the capacity to identify reliable risk factors for disordered eating can help to refine prevention strategies and interventions targeting this group.

Objectified Body Consciousness and Disordered Eating

Feminist accounts have contended that gender-socialization experiences characterized by sexual objectification from the larger culture result in self-objectification among girls and women ([Fredrickson & Roberts, 1997](#); [McKinley, 1999, 2011](#)). Self-objectification reflects coming to treat oneself as an object judged on the basis of physical appearance ([McKinley, 2011](#); [Tiggemann, 2013](#)).

In elaborating these processes, [McKinley and Hyde \(1996\)](#) developed objectified body consciousness (OBC) as a framework for capturing how cultural constructions of women as objects to be evaluated encourage girls and women to view themselves from the perspective of observers. OBC includes three facets: (a) body surveillance (i.e., viewing the body as an outside observer would), (b) body shame (i.e., feeling embarrassed or ashamed if body standards are not met), and (c) appearance-control beliefs (i.e., believing that one can control one's appearance with sufficient effort), typically measured with corresponding subscales of the Objectified Body Consciousness Scale (OBCS; [McKinley & Hyde, 1996](#)). Although support for the control-beliefs dimension has been lacking, OBCS body-surveillance and body-shame dimensions have been used to explain gender differences in overall body dissatisfaction and eating pathology (e.g., [Lindberg, Grabe, & Hyde, 2007](#); [McKinley, 1998](#); [Slater & Tiggemann, 2010](#)), as well as individual differences in body image and eating disturbances among

women (e.g., [Calogero, Davis & Thompson, 2005](#); [McKinley & Hyde, 1996](#); [Mercurio & Rima, 2011](#); [Tiggemann & Lynch, 2001](#); [Tylka & Hill, 2004](#)) and men (e.g., [Aubrey, 2006](#); [Strelan & Hargreaves, 2005](#); [Knauss, Paxton, & Alsaker, 2008](#); [Wiseman & Moradi, 2010](#)).

Limitations of Objectified Body Consciousness: Neglect of Culturally Diverse Groups

Despite support for the surveillance and shame facets of OBC, a major criticism of this model and other self-objectification approaches has been the lack of research on culturally diverse groups ([Tiggemann, 2013](#)). For example, studies on OBC features have focused upon women in North America, Europe, or Australia. Research has expanded to women in South Korea (e.g., [Forbes & Jung, 2008](#); [Kim, Seo, & Baek, 2014](#)) and Nepal ([Crawford et al., 2009](#)) but has not included samples in large, rapidly developing nations such as China, where objectification perspectives have been applied to explain sharp increases in body-image concerns of young women.

Specifically, [Yang \(2011\)](#) maintained that gender-based biological differences were downplayed during Mao's cultural revolution to maximize women's labor in the service of nation building. However, mass layoffs from former state-owned enterprises since the mid-1990s typically resulted in men holding their jobs and women leaving the labor force to stay home. This shift was said to "liberate" women's bodies from work but corresponded to other macrolevel changes, including the emergence of a free-market economy, increased consumerism, and reemployment of many women in lower paying jobs within China's burgeoning beauty industry ([Luo, 2013](#); [Yang, 2011](#)). Corresponding to these structural shifts, youthful beauty or "nennu" and physical attributes including a specific constellation of facial features and a thin body (e.g., [Chen, Jackson, & Huang, 2006](#); [Leung, Lam, & Sze, 2001](#); [Luo, 2012](#)) gained prominence as defining features of femininity. During the past 20 years, a beauty economy, based largely on the production and consumption of feminine beauty, youth, and appearance, rose to become China's third largest growth industry, behind only real estate and tourism ([Luo, 2013](#)). [Yang \(2011\)](#) asserted that objectifying macrolevel processes have led to women's bodies becoming sources of increased scrutiny, and those deemed to be defective are targeted for modification.

Against this backdrop, cosmetic surgery, body dissatisfaction, and disordered eating have increased among Chinese adolescents and young adults, especially females (e.g., [Chen & Jackson, 2008](#); [Jackson & Chen, 2010a](#); [Tong et al., 2014](#)). For example, [Tong et al. \(2014\)](#) recently concluded that rates of eating disorders among female university students in China approximated those reported in the U.S. By 2012, China ranked third in cosmetic surgeries per annum; high-school and college-age women accounted for over 70% of these procedures ([Wen, 2013](#)). Body-image problems are less common among young Chinese males (e.g., [Chen & Jackson, 2008, 2012](#)), but have been linked to a growing male beauty culture that promotes men's beauty contests, skincare lines, and professional beauty institutions ([Wen, 2013](#)). Despite the use of objectification theory to explain population-based increases in body-image and eating concerns of Chinese women and men, the extent to which individual differences in salient psychological experiences of body surveillance and body shame predict eating disturbances has not been examined in Chinese samples.

Limitations of Objectified Body Consciousness: Lack of Prospective Risk-Factors Research

The lack of longitudinal risk-factors studies has been cited as another conspicuous limitation of objectification models (e.g., [Tiggemann, 2013](#)). With reference to OBC, body surveillance and body shame have been assessed in prospective designs (e.g., [McKinley, 2006](#)), yet only one study of which we are aware examined their statuses as risk factors for later eating problems, independent of initial disturbances. [Rolnik, Engeln-Maddox, and Miller \(2010\)](#) assessed 90 college-age women before, during, and after a sorority rush and found that baseline body-shame levels failed to predict eating disturbances on the final rush day (12 days later), independent of baseline eating disturbances. Due to the small sample and brief assessment interval used in this study, as well as the

absence of large-scale longitudinal tests, the salience of body surveillance and shame as risk factors is still not clear.

Alternative Sociocultural Accounts of Disordered Eating

Instead, features of overlapping alternative sociocultural accounts, particularly the tripartite-influence model (e.g., [Shroff & Thompson, 2006](#)) and the dual-pathway model ([Stice, 2001](#)), have garnered much of the attention in recent risk-factors research. According to the tripartite-influence model, mass-media, friend, and family influences (e.g., appearance-based social pressure) contribute to body dissatisfaction and disordered eating, both directly and indirectly through the internalization of unrealistic societal appearance ideals (e.g., ultrathinness for women, hypermuscularity for men) and appearance comparison propensities with peer and media ideals (e.g., [Shroff & Thompson, 2006](#); [Yamamiya, Shroff, & Thompson, 2008](#)). Similarly, the dual-pathway model posits that increases in perceived pressure to be thin from friends, family, and mass media and the internalization of an unrealistic ultrathin feminine ideal contribute body dissatisfaction among females; in turn, body dissatisfaction increases risk for bulimic symptoms via increases in dieting and negative affect (e.g., [Stice, 2001](#)).

Within young female samples, structural equation modeling studies (e.g., [Shroff & Thompson, 2006](#); [Yamamiya et al., 2008](#)) have illuminated links between tripartite-influence-model features, and growth-curve analyses have been used to evaluate hypothesized links between dual-pathway-model features ([Stice, 2001](#)). Technically, however, such studies shed little light on the status of associated model features as unique risk factors because doing so requires the relation between baseline (T1) and follow-up (T2) responses on the outcome (e.g., disordered eating) to be controlled before evaluating the impact of T1 responses on model features of interest (e.g., [Carlson Jones, 2004](#)). Nonetheless, numerous prospective studies of U.S. women and men have used hierarchical multiple regression analyses to assess the status of specific dual-pathway- or tripartite-influence-model features as risk factors for subsequent increases in body image or eating concerns, after controlling for T1 responses on these outcomes (e.g., [Bearman, Presnell, Martinez, & Stice, 2006](#); [Carlson Jones, 2004](#); [Presnell, Bearman, & Stice, 2004](#); [Stice, & Whitenton, 2002](#); [Wertheim, Koerner, & Paxton, 2001](#)).

Reviews of associated longitudinal and experimental studies (e.g., [Jacobi, Hayward, de Zwaan, Kraemer, & Argas, 2004](#); [Stice, 2002](#)) have concluded that experiences salient to these models, including appearance pressure from mass media and/or close interpersonal ties, thin-ideal internalization, negative affect, and body dissatisfaction are risk factors for eating disturbances among girls and young women in developed countries. Individual prospective studies have also found initial reports of appearance pressure, male-ideal internalization, and/or negative affect predict later increases in body dissatisfaction and body-change strategies of U.S. and Australian adolescent males (e.g., [Carlson Jones, 2004](#); [McCabe & Ricciardelli, 2005](#); [Paxton, Eisenberg, & Neumark-Sztainer, 2006](#); [Presnell et al., 2004](#)).

Applications of Alternative Sociocultural Accounts Within Chinese Samples

Conceptually and empirically, alternate sociocultural models have also been applied as guiding frameworks in a Chinese context. Thin-body ideals, portrayed as a phenomenon specific to Western women, have been embraced widely, especially among the affluent, throughout ancient and recent Chinese history ([Leung et al., 2001](#)). For example, the Chi-pao, a long thin dress that enhances a slim, curvaceous figure, has been the national dress of China since early in the 20th century, before contact with the West increased. In present-day China, the mushrooming beauty economy described above and media images imported from developed Asian countries and the West ([Xie et al., 2006](#)) have perpetuated this ideal preference. Traditionally, physical attributes (e.g., ultrathinness, hypermuscularity) have been downplayed in depictions of Chinese masculine ideals ([Yang, Gray, & Pope, 2005](#)), but facets of collectivist value orientations, including embeddedness in relational influences, sensitivity to others' judgments of the self, conformity to standards, and reliance on social norms to guide behavior ([Nisbett, 2003](#)) may augment perceived appearance-pressure and appearance-comparison tendencies for both

genders. For example, [Forbes and Jung \(2008\)](#) contended that East Asians are often acutely aware of others' opinions when judging their own physical appearance and use frequent appearance comparisons with media and peer ideals to ensure they do not deviate too far from accepted norms.

Empirically, reported appearance pressure from mass media and interpersonal sources (i.e., friends, family) and frequent appearance comparisons with others have been identified as risk factors for exacerbations in disturbances within China-based longitudinal studies ([Chen & Jackson, 2009](#); [Jackson & Chen, 2008a, 2011, 2014](#)). Weight/body dissatisfaction and negative affect have also been identified as reliable prospective risk factors for disordered eating among Chinese girls and women ([Jackson & Chen, 2008a, 2008b, 2011, 2014](#)) and males ([Jackson & Chen, 2008a, 2011, 2014](#)). In contrast, measures of thin-ideal internalization have had comparatively weak correlations with eating and weight concerns of Chinese females (e.g., [Chen et al., 2006](#); [Jackson & Chen, 2008a, 2008b](#)) and factor-analytic research on media-influence scales indicate dimensions reflecting general ideal internalization and perceived appearance-pressure overlap among Chinese females ([Jackson & Chen, 2011](#)) and males ([Jackson & Chen, 2010b](#)). In response to measurement concerns with ideal-internalization scales in a Chinese context, some authors have opted to evaluate effects of perceived-appearance pressure instead (e.g., [Chen & Jackson, 2012](#); [Jackson & Chen, 2010a, 2014](#)).

Overlaps Between Objectified Body Consciousness and Alternative Sociocultural Models

Conceptual similarities and differences between the models discussed above might raise questions about the status of OBC features as unique influences on eating disturbances, independent of facets of alternative sociocultural accounts. For example, external factors are recognized as key influences across perspectives, but both alternative sociocultural accounts emphasize sensitivity to external factors such as appearance pressure from mass media and close interpersonal ties, whereas the OBC account emphasizes other external forces (i.e., sexual objectification, gender norms) that becomes internalized and expressed via body surveillance. Negative emotions are also underscored across approaches. However, whereas general discontent with appearance (i.e., body dissatisfaction) and/or general negative affect are stressed in sociocultural models ([Shroff & Thompson, 2006](#); [Stice, 2001](#)), surveillance and shame facets of OBC implicate more specific emotional reactions reflecting worry/self-consciousness and embarrassment/shame/humiliation, respectively. Because largely separate lines of evidence have connected features of OBC and sociocultural models with disordered eating, it is not clear whether body surveillance and body shame prospectively predict disturbances after controlling for more widely examined sociocultural risk factors. Evaluating this issue within longitudinal designs would clarify the incremental validity and status of these OBC features as unique influences on disordered eating, independent of factors emphasized within other accounts.

Purposes and Hypotheses

In sum, cross-sectional studies suggest that body surveillance and body shame are reliable correlates of body image and eating disturbances among young U.S., European, and Australian women and men. However, it is not clear whether these factors predict disordered eating in understudied groups, including samples from highly populated, rapidly developing nations. Moreover, due to the near absence of related longitudinal studies, little is known about the status of body surveillance and shame as risk factors for future eating disturbances or whether they have a unique impact on such outcomes, independent of widely tested, conceptually related risk factors (i.e., perceived appearance pressure from mass media and close interpersonal sources, appearance comparisons, negative affect, body dissatisfaction) highlighted in tripartite-influence and/or dual-pathway models. This study was designed to explicitly address each of these limitations within a 12-month prospective design of university-age Chinese women and men.

Within each gender, four main hypotheses were tested. First, drawing upon past prospective evidence with Chinese samples ([Jackson & Chen, 2008a, 2011, 2014](#)), we expected that higher scores on widely assessed T1

measures of tripartite-influence/dual-pathway models noted above would predict T2 elevations in eating disturbances, independent of T1 disturbances. Second, higher T1 body-surveillance and body-shame scores were also expected to predict exacerbations in T2 eating disturbances, even after controlling for all other significant T1 measures. Third, we hypothesized that higher scores on T2 measures reflecting features of alternate sociocultural models would also correspond to increased T2 eating disturbances, independent of all T1 influences. Fourth, we expected that higher T2 body-surveillance and body-shame scores would predict more T2 eating disturbances, beyond the impact of all other measures included in each prediction model.

Method

Participants

From a larger initial pool of mainland Chinese undergraduates (3065 women, 1565 men) who completed the initial assessment, 2144 women and 1017 men also completed the 12-month follow-up. Participants ranged from 17 to 21 years ($M = 18.87$ years, $SD = 0.89$) and 86.6% were of Han ethnicity or members of 17 other ethnic minorities. For parental education, 51.3% reported mothers with postsecondary education compared with lower rates for high school completion or less (28.60%) and middle school completion or less (20.1%). A majority (62.2%) also reported fathers with postsecondary education compared with high school completion or less (24.90%) and middle school completion or less (12.9%). The mean T1 BMI was 20.27 ($SD = 2.31$); 155 students reported a BMI below the 5th percentile (<17.22) of the sample distribution, whereas 10.5% ($n = 332$) reported a BMI > 23 , the level at which obesity-related disease risk increases in Asia-Pacific samples (WHO, 2000).

Procedure

The human research ethics committee of a large Chinese university approved the study. Class advisors of first year students were contacted and informed their advisees of a new study on body image issues of university students. Those under age 18 had parental/guardian consent to participate. The T1 assessment was completed in a classroom setting during November-December, 2012 or May, 2013; all follow-ups (T2) were completed one year later using identical procedures. On each occasion, volunteers over the age of 18 years provided informed consent and those under 18 years of age provided assent. All participating students received paper survey packet comprising a summary of the general research focus, an informed consent/assent form, the scales described below, and information on campus resources to assist people distressed by body image or eating problems.

Each study phase took 25–40 minutes to complete. After completing their questionnaires, participants handed them to a research assistant separately from their informed consent/assent forms. To permit matching of T1 and T2 surveys while retaining participant anonymity, birth date and student number were used as the initial items on the first page of each survey. Participants received 10 yuan for the T1 assessment and 12 yuan for the T2 follow-up.

English-language scales had formerly undergone English to Mandarin back-translations by two bilingual Mandarin-English speakers from the university's Foreign Languages Department. Discrepancies from original versions were discussed between translators and the first author to best approximate intended meanings. With the exception of OBC measures, factor analyses from previously published studies reported identical factor structures in Chinese female and male samples on measures of disordered eating (Jackson & Chen, 2008b), body dissatisfaction (Jackson & Chen, 2011), negative affect (Jackson & Chen, 2008a), perceived appearance pressure from both mass media and close interpersonal networks (Chen & Jackson, 2012), and social comparisons of appearance (Jackson & Chen, 2008b). Scales also had structures identical to original factor structures in U.S. samples except where noted below.

After data entry and data screening, items on each scale were summed to obtain total scores, the higher of which always reflected more frequent or intense associated experiences. Following analyses, a summary of the

purposes and results was forwarded to potential participants via their class advisors during September, 2014.

Measures

Eating Disorder Diagnosis Scale (EDDS)

This 22-item self-report screen (Stice, Telch, & Rizvi, 2000) is based on the American Psychiatric Association's 1994 *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.), Washington, DC, Author (*DSM-IV*) eating-disorder criteria (e.g., "How many times per week on average over the past 3 months have you made yourself vomit to prevent weight gain or counteract the effects of eating?"). A symptom-composite score calculated by transforming responses on the first 18 EDDS items into z scores and summing them has been found to have a mean internal-consistency reliability of $\alpha = .89$ as well as concordance with risk factors and disordered eating examined with self-reports and structured interviews in samples of U.S. women (Stice et al., 2000). In three Chinese samples of each gender, composite internal consistencies ranged from $\alpha = .74$ to $\alpha = .89$ and had significant correlations with self-reported body dissatisfaction, negative affect, appearance-evaluation fears, appearance comparisons, perceived appearance pressure, and responses on other measures of weight and eating disturbances (e.g., Jackson & Chen 2008b, 2011, 2014). In this study, internal consistencies for men (T1 $\alpha = .81$, T2 $\alpha = .85$) and women (T1 $\alpha = .83$, T2 $\alpha = .84$) were similar to those found in other Chinese samples.

Satisfaction and Dissatisfaction with Body Parts Scale

This nine-item scale (Stice, 2001) queries dissatisfaction with nine appearance features (i.e., height, waist, thighs, legs, buttocks, hips, stomach, body build, body shape) from 1 = *extremely satisfied* to 5 = *extremely dissatisfied*. China-based studies of three male and three female samples reported internal consistencies between $\alpha = .87$ and $\alpha = .95$ and significant relations with scores on measures of other risk factors and disordered eating (e.g., Chen & Jackson, 2012; Jackson & Chen, 2011, 2014). In this study, internal-consistency reliabilities were higher for men (T1 $\alpha = .92$, T2 $\alpha = .91$) than women (T1 $\alpha = .85$, T2 $\alpha = .85$).

Negative Affect Scale (Positive Affect and Negative Affect Schedule–Chinese; PANAS)

The PANAS (Jackson & Chen, 2008a) assesses 20 affective states (e.g., distressed, excited) experienced in the last month from 1 = *never or little of the time* to 4 = *most of the time*. Only negative affect (NA) was assessed in this study. The original PANAS factor structure (Watson, Clark, & Tellegen, 1988) was replicated in Chinese samples (Jackson & Chen, 2008a), except that "alert" loaded with the 10 original NA items, not with the Positive Affect construct. Studies of Chinese males and females showed that this 11-item NA scale had internal-consistency coefficients above $\alpha = .80$ and significant relations to disordered eating, body dissatisfaction, appearance-evaluation fears, and appearance pressure (e.g., Jackson & Chen, 2008a, 2008b, 2011, 2014). Internal consistencies were comparable for men (T1 $\alpha = .79$, T2 $\alpha = .84$) and women (T1 $\alpha = .78$, T2 $\alpha = .81$) in the sample.

Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ)–3–Pressure subscale

Perceived mass-media pressure was assessed via six of seven SATAQ items (SATAQ-3-Pressure; Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004) that tapped pressure to conform to media portrayals of physical appearance (e.g., "I've felt pressure from TV and magazines to diet"). The SATAQ-3-Pressure items were rated from 1 = *Definitely disagree* to 5 = *Definitely agree*. Although Pressure and General Internalization subscale items loaded together in Chinese samples that used the 30-item SATAQ-3 (Jackson & Chen, 2010b, 2011), studies based on the Pressure scale alone found that all items except "I've felt pressure from TV or magazines to exercise" loaded on one component within Chinese female and male samples (Chen & Jackson, 2012; Jackson & Chen, 2010a). In two different Chinese samples of each gender, the scale had internal-consistency reliabilities

ranging from $\alpha = .84$ to $\alpha = .90$ and significant correlations with conceptually related risk-factor and body-dissatisfaction scales (Chen & Jackson, 2012). In this study, α s were slightly lower for men (T1 $\alpha = .88$, T2 $\alpha = .87$) than women (T1 $\alpha = .91$, T2 $\alpha = .91$).

Perceived Sociocultural Pressure Scale (PSPS)

Perceived interpersonal appearance pressure was examined with six PSPS items (Bearman et al., 2006) assessing pressure from friends, family, and current/potential dating partners to change one's appearance (e.g., "I have felt pressure from my friends to change my physical appearance"). Response options ranged from 0 = *None* to 4 = *A lot*. For use in Chinese samples, items were modified slightly to reflect pressure to change physical appearance or have a "certain physical appearance" (e.g., Jackson & Chen, 2008a, 2008b), in part, because disordered eating in Chinese groups is not always reducible to preoccupations with thinness or fear of fatness (e.g., Lee, Ho, & Hsu, 1993). Chen and Jackson (2012) found that all six items loaded on one component in Chinese samples of each gender, α s ranging from $\alpha = .84$ to $\alpha = .89$, and significant relations with eating concerns, body dissatisfaction, and other risk-factor indices (Chen & Jackson, 2012; Jackson & Chen, 2010a). Across assessments, internal-consistency coefficients were stable for men (T1 $\alpha = .83$, T2 $\alpha = .83$) and women (T1 $\alpha = .83$, T2 $\alpha = .83$).

Physical Appearance Comparison Scale (PACS)

Four PACS items (Shroff & Thompson, 2006) assessed appearance comparison tendencies (e.g., "At parties and other social occasions I compare my physical appearance to that of others") between 1 (*never*) and 5 (*always*). Univariate structures comprising all items were found for Chinese females and males (Jackson & Chen, 2008b). Alphas higher than $\alpha = .80$ and significant associations with risk-factor and weight or eating-disturbance scales have been reported in several Chinese samples of each gender (Chen & Jackson, 2009, 2012; Jackson & Chen, 2008b, 2011). Internal consistencies were similar for men (T1 $\alpha = .82$, T2 $\alpha = .83$) and women (T1 $\alpha = .82$, T2 $\alpha = .84$) in this study.

Objectified Body Consciousness Scale (OBCS)

Body surveillance and body shame were assessed with corresponding OBCS subscale items (McKinley & Hyde, 1996) reflecting respective tendencies for individuals to view his or her body as an outside observer would (e.g., "During the day, I think about how I look many times") and experience shame when his or her body does not conform to cultural standards (e.g., "I feel ashamed of myself when I haven't made the effort to look my best"). Items were rated from 1 = *Strongly disagree* to 7 = *Strongly agree* following Knauss et al. (2008).

Researchers of two Chinese undergraduate samples (under review) using all 24 original OBCS items found identical initial principal-components analysis (PCA) solutions for men and women, with components comprising (a) all eight body-surveillance items and (b) six of eight body-shame items, but only (c) three of eight control items; confirmatory factor analyses (CFA) in the second sample revealed that the two-component solution comprised of eight-item surveillance and six-item shame factors had the best overall fits (women: comparative fit index [CFI] = .96, Tucker–Lewis fit index [TLI] = .91, root mean-square error of approximation [RMSEA] = .05, standardized root mean-square residual [SRMR] = .067; men: CFI = .95, TLI = .88, RMSEA = .06, SRMR = .043). Finally, in both PCA and CFA samples, these surveillance and shame scales had significant relations to one another, self-reported weight and eating disturbances, perceived appearance pressure from media and interpersonal networks, appearance social comparisons, and appearance investment. In this study, internal-consistency reliabilities for body surveillance (women, T1 $\alpha = .80$, T2 $\alpha = .79$; men, T1 $\alpha = .81$, T2 $\alpha = .79$) and body shame (women: T1 $\alpha = .70$, T2 $\alpha = .81$; men: T1 $\alpha = .69$, T2 $\alpha = .76$) were comparable for women and men.

Sociodemographic data

Age, gender, ethnicity (Han vs. minorities), parent education, height, and weight were queried. Body-mass index (BMI) was calculated from self-reported height and weight, which correlates highly with objective BMI measurement (e.g., [Connor Gorber, Tremblay, Moher, & Gorber, 2007](#)).

Design and Analysis

Analyses were performed with SPSS Version 20. Preliminary analyses included the evaluation of missing data, comparisons of results based on casewise deletion versus missing-values imputation, and within-gender evaluations of multicollinearity. Next, 2×2 repeated-measures analyses of covariance (ANCOVAs) assessed effects of gender and study phase (T1 vs. T2) on eating disturbances, appearance pressure from mass media and interpersonal sources, negative affect, body dissatisfaction, body surveillance and body shame, controlling for significant ($p < .05$) demographic differences.

Main analyses were conducted separately for women and men. First, partial correlations were calculated between T2 eating disturbances and T1 demographics (i.e., age, ethnicity, parent education levels, T1 BMI, T1-to-T2 BMI changes), hypothesized T1 risk factors, and T2 concomitants, controlling for T1 eating disturbances. This strategy generated estimates of relations between each predictor and T2 eating disturbances independent of T1 disturbances or overlaps among predictors. Based on these initial tests, only predictors having significant partial correlations ($p < .05$) with T2 eating disturbances were included in subsequent multivariate regression models (e.g., [Jackson & Chen, 2014](#); [Presnell et al., 2004](#)). In each multivariate model, T2 eating disturbances were the criterion measure; the sequence and content of predictor blocks are described below.

Results

Preliminary Analyses

Of initially assessed participants, 68.27% completed the 1-year follow-up. More women (69.95%) than men (64.98%) finished both study phases, $\chi^2(1, 4630) = 11.52, p < .001$, but T2 completers and noncompleters within each gender did not differ on age, ethnicity, or parent education (all $ps > .05$). Among men, T2 completers ($n = 1017$) had significantly higher T1 interpersonal appearance-pressure scores than did noncompleters, $n = 548, M = 12.13$, versus $M = 11.51, F(1, 1563) = 7.47, p < .006, \eta = .07$, but did not differ on other T1 scales (all $ps > .10$). For women, no differences were found between T2 completers ($n = 2144$) and noncompleters ($n = 921$) on T1 indices (all $ps > .10$). Multicollinearity was not evident in either sample based on variance-inflation factor values. Overall results were similar whether casewise-deletion or missing-values imputation was used to manage missing data. However, given that statistical significance is attained more easily in much larger samples, findings based on the more conservative, casewise-deletion method are presented below.

Between-groups analyses indicated that men were older than women, $M = 18.94, SD = 0.92$ versus $M = 18.83, SD = 0.87, F(1, 4628) = 15.65, p < .001, \eta = .06$, and had a higher mean T1 BMI, $M = 18.94, SD = 0.92$ versus $M = 18.83, SD = 0.87, F(1, 4628) = 15.65, p < .001, \eta = .06$; gender differences were not evident on other demographics (all $ps > .10$). Using T1 age and BMI as covariates, ANCOVAs indicated that women scored higher than men did on overall eating disturbances and all hypothesized T1 and T2 predictors (see [Table 1](#)). Gender $\times$ Phase interactions indicated that women reported significant T1-to-T2 decreases in eating disturbances, whereas men did not. Conversely, men reported relatively sharper increases in perceived mass-media appearance pressure and body dissatisfaction between assessments compared with women.

Table 1

Descriptive and Univariate Statistics for Main Research Measures Among Mainland Chinese University Students (N = 3161)

Measure	Sample		Univariate <i>F</i> values					
	Men	Women	Gender		Phase		Gender × Phase	
	<i>M</i> ± <i>SD</i>	<i>M</i> ± <i>SD</i>	<i>F</i>	η^2	<i>F</i>	η^2	<i>F</i>	η^2
T1 eating disturbances	−4.24 ± 7.22	2.18 ± 9.18						
T2 eating disturbances	−4.27 ± 8.65	1.48 ± 9.12	541.53***	.40	4.22*	.04	4.41*	.04
T1 body dissatisfaction	24.73 ± 6.90	28.56 ± 5.89						
T2 body dissatisfaction	25.10 ± 6.99	28.39 ± 6.22	445.36***	.33	0.45	.00	8.33**	.09
T1 negative affect	18.44 ± 3.86	18.91 ± 3.69						
T2 negative affect	18.55 ± 4.492	19.26 ± 3.98	21.44***	.08	0.14	.00	2.39	.04
T1 appearance pressure (mass media)	15.41 ± 5.56	19.63 ± 6.16						
T2 appearance pressure (mass media)	16.76 ± 5.62	20.19 ± 6.20	449.17***	.35	1.27	.01	13.84***	.07
T1 appearance pressure (interpersonal)	12.12 ± 4.14	13.39 ± 4.14						
T2 appearance pressure (interpersonal)	13.15 ± 4.38	14.24 ± 4.20	105.34***	.18	0.29	.00	0.91	.01
T1 appearance comparisons	8.26 ± 3.00	9.64 ± 2.92						
T2 appearance comparisons	9.01 ± 3.14	10.16 ± 3.01	172.16***	.23	0.44	.00	2.19	.03
T1 body surveillance	19.96 ± 8.21	22.98 ± 7.67						
T2 body surveillance	21.12 ± 7.55	23.73 ± 6.96	110.34***	.18	0.25	.00	1.82	.02
T1 body shame	11.40 ± 5.68	11.86 ± 5.66						
T2 body shame	12.38 ± 5.65	12.99 ± 5.62	19.05***	.08	5.16*	.04	0.13	.00
T1 body-mass index	20.81 ± 2.60	20.01 ± 2.11						
T2 body-mass index	20.74 ± 2.54	19.83 ± 2.08	216.60***	.18	2.13	.02	3.22	.03

* $p < .05$. ** $p < .01$. *** $p < .001$.

Descriptive and Univariate Statistics for Main Research Measures Among Mainland Chinese University Students (N = 3161)

Main Analyses

Multivariate prediction model for women

Among women, demographic measures were not related to T2 eating disturbances, independent of T1 eating disturbances (all $ps > .10$), and were therefore excluded from the multivariate model. Conversely, all T1 risk factors and T2 concomitants based on sociocultural and OBC accounts had significant partial correlations with T2 eating disturbances, independent of T1 disturbances (see Table 2) and were, therefore, added to the associated multiple regression equation that included five predictor blocks to test hypotheses. To test the unique impact of established sociocultural model features on the T2 criterion, independent of baseline criterion responses, T1 eating disturbances were entered in Block 1, followed by T1 measures of mass-media appearance pressure, interpersonal appearance pressure, appearance-social comparisons, negative affect, and body dissatisfaction in Block 2. T1 body-surveillance and body-shame scores were entered in Block 3 to assess the hypothesis that OBC features would influence T2 eating disturbances independent of other significant T1 measures. To assess the impact of changes in hypothesized risk factors between assessments, T2 measures of sociocultural influences were added in Block 4. Finally, to test for hypothesized unique associations of changes in OBC features with the criterion, T2 body-surveillance and body-shame scores were assessed in Block 5, after controlling for the impact of T2 sociocultural model measures.

Table 2

Univariate Associations Between Measures of Features of Sociocultural Models and Objectified Body Consciousness and Follow-Up Eating Disturbances of Late Adolescent Chinese Men and women.

Measure	Men (n = 1017)		Women (n = 2144)	
	r	pr ¹	r	pr ¹
T1 eating disturbances	.50**	—	.64**	—
T1 to T2 body-mass index changes	.06	.13**	-.00	.02
T1 body dissatisfaction	.25**	.10**	.38**	.16**
T1 negative affect	.22**	.11**	.25**	.05*
T1 appearance pressure (mass media)	.29**	.10**	.44**	.18**
T1 appearance pressure (interpersonal)	.27**	.10**	.39**	.14**
T1 appearance social comparisons	.18**	.03	.30**	.10**
T1 body surveillance	.16**	.04	.31**	.12**
T1 body shame	.23**	.05	.39**	.14**
T2 body dissatisfaction	.23**	.14**	.46**	.31**
T2 negative affect	.34**	.28**	.35**	.24**
T2 appearance pressure (mass media)	.35**	.23**	.52**	.36**
T2 appearance pressure (interpersonal)	.36**	.24**	.46**	.31**
T2 appearance social comparisons	.31**	.21**	.40**	.25**
T2 body surveillance	.25**	.18**	.35**	.21**
T2 body shame	.38**	.27**	.47**	.32**

¹ Partial correlation coefficient controlling for baseline eating disturbances.

* $p < .01$. ** $p < .001$.

Univariate Associations Between Measures of Features of Sociocultural Models and Objectified Body Consciousness and Follow-Up Eating Disturbances of Late Adolescent Chinese Men and women

Initial multiple regression runs indicated T1 and T2 appearance social comparisons both had negative standardized beta values (T1: $\beta = -0.02$, T2: $\beta = -0.02$) in contrast to significant positive partial correlations (see Table 2) with T2 eating disturbances. Closer inspection indicated appearance comparison indices were acting as error variance suppressors, artificially inflating effects of other predictors. Hence, the analysis was rerun after dropping both appearance comparison measures.

The final prediction model (see Table 3) indicated, as expected, T1 sociocultural model features (Block 2) explained significant variance in the criterion, independent of T1 eating disturbances (Block 1); within Block 2, body dissatisfaction and mass media appearance pressure each had a unique impact. Also as hypothesized, T1 OBC features (Block 3) explained modest unique variance in T2 eating disturbances, independent of other T1 predictors. Both body shame and body surveillance made unique contributions in this block. Beyond all T1 indices, T2 measures of sociocultural model features (Block 4) explained R^2 Ch. = .095 in T2 eating disturbances; each measure had a statistically significant impact. Finally, controlling for other T1/T2 predictors, T2 body shame and surveillance (Block 5) accounted for further unique variance, albeit only body shame had a unique impact. The final model explained $R^2 = .543$, $F(13, 2130) = 196.75$, $p < .0001$, in the criterion.

Table 3

Risk Factors and Concomitants of Changes in Eating Disorder Symptoms Among Late Adolescent Chinese Men and Women.

Predictor ¹	Men (n = 1017)				Women (n = 2144)			
	Block	β	<i>t</i>	<i>P</i>	Block	β	<i>t</i>	<i>p</i>
T1 eating disturbances	1	.50	18.55	.001	1	.64	38.31	.001
		R^2 Ch. = .253, $F(1, 1015) = 343.97^{**}$				R^2 Ch. = .407, $F(1, 2142) = 1467.80^{**}$		
BMI changes from T1 to T2	2	.10	3.77	.001	—	—	—	—
		R^2 Ch. = .010, F Ch. (1,1014) = 14.18 ^{**}						
T1 body dissatisfaction	3	.07	2.50	.010	2	.11	5.92	.001
T1 negative affect		.08	2.65	.005		.01	0.69	.489
T1 appearance pressure (mass media)		.06	1.60	.110		.12	5.23	.001
T1 appearance pressure (interpersonal)		.02	0.41	.679		.04	1.74	.082
		R^2 Ch. = .019, F Ch. (4, 1010) = 6.79 ^{**}				R^2 Ch. = .031, F Ch. (4, 2138) = 29.23 ^{**}		
T1 body surveillance	—	—	—	—	3	.04	1.97	.049
T1 body shame	—	—	—	—		.05	2.53	.011
						R^2 Ch. = .003, F Ch. (2, 2136) = 5.70 [*]		
T2 body dissatisfaction	4	.03	1.07	.283	4	.20	9.64	.001
T2 negative affect		.23	7.49	.001		.16	8.62	.001
T2 appearance pressure (mass media)		.05	0.95	.342		.19	7.97	.001
T2 appearance pressure (interpersonal)		.14	3.04	.002		.06	2.50	.013
T2 appearance social comparisons		.00	0.01	.850		—	—	—
		R^2 Ch. = .075, F Ch. (5, 1005) = 23.43 ^{**}				R^2 Ch. = .095, F Ch. (4, 2132) = 108.79 ^{**}		
T2 body surveillance	5	.05	1.58	.115	5	.03	1.42	.155
T2 body shame		.14	4.56	.001		.13	6.62	.001
		R^2 Ch. = .016, F Ch. (2, 1003) = 12.48 ^{**}				R^2 Ch. = .011, F Ch. (2, 2129) = 24.37 ^{**}		
Overall model		Multiple $R = .611$, adj. $R^2 = .365$				Multiple $R = .739$, adj. $R^2 = .543$		

* $p < .01$. ** $p < .001$.*Risk Factors and Concomitants of Changes in Eating Disorder Symptoms Among Late Adolescent Chinese Men and Women.***Multivariate Prediction Model for Men**

For men, T1 to T2 BMI change, the only demographic factor having a significant partial correlation with T2 eating disturbances ($pr = .13$, $p < .001$), was added to the multivariate model. Hypothesized T1 risk factors had significant partial correlations with T2 eating disturbances, except for appearance social comparisons, body surveillance and body shame (see Table 2) which were excluded from analyses as a result. Table 2 also indicates all T2 measures of sociocultural model features, body surveillance, and body shame had significant partial correlations with the criterion. From these results, the prediction model generated for men had five blocks. After controlling for T1 eating disturbances (Block 1) and T1 to T2 BMI changes (Block 2), the impact of four T1 sociocultural risk factors (i.e., mass-media appearance pressure, interpersonal appearance pressure, negative affect, body dissatisfaction) was assessed in Block 3. Because neither T1 OBC measure had a significant partial correlation with the outcome, Block 4 comprised all five T2 measures of sociocultural model features. Last, the impact of T2 body-surveillance and body-shame scores was assessed (Block 5) after controlling for all other predictors.

Supporting the initial hypothesis, after controlling for T1 eating disturbances and BMI changes (Blocks 1 and 2), T1 sociocultural measures (Block 3) added modestly to the model (see Table 3); negative affect and body dissatisfaction had unique effects. In Block 4, responses to T2 sociocultural measures explained a further R^2 Ch. = .075 in the criterion, with unique contributions from negative affect and interpersonal appearance pressure. Finally, independent of other T1/T2 predictors, T2 body-surveillance and shame scores (Block 5) added modestly to the model, though only the latter had a unique impact. In sum, Adj. $R^2 = .365$ [$F(13, 1003) = 45.93$, $p < .0001$] in T2 eating disturbances was explained.

Supplementary Analyses

Given the lack of related prospective research on these OBC features, simplified supplementary prediction models were generated in each gender excluding the set of sociocultural model factors. For women, after controlling for T1 eating disturbances (Block 1), T1 surveillance ($\beta = 0.08$, $p < .001$) and T1 shame ($\beta = 0.10$, $p <$

.001) had unique effects and combined for R^2 Ch. = .016, F Ch. = 29.22, $p < .001$, in Block 2 of the model. In Block 3, T2 body surveillance ($\beta = 0.12$, $p < .001$) and T2 body shame ($\beta = 0.24$, $p < .001$) explained a further R^2 Ch. = .055, F Ch. = 112.60, $p < .001$. Among men, after controlling for T1 eating disturbances and T1 to T2 BMI changes (Blocks 1 and 2), T1 surveillance and T1 shame (Block 3) did not combine for significant additional variance, R^2 Ch. = .002, F Ch. = 2.00, $p < .135$. However, in Block 4, T2 body surveillance ($\beta = 0.14$, $p < .001$) and T2 body shame ($\beta = 0.23$, $p < .001$) added R^2 Ch. = .065, F Ch. = 48.70, $p < .001$, to the model, beyond all other predictors.

Discussion

Extending past cross-sectional studies on body surveillance and body shame among U.S., Swiss, and Australian women and men, this study is the first to evaluate their status as prospective risk factors for later eating disturbances over an extended interval in tandem with features of alternate sociocultural models. Examining the issue in mainland Chinese samples also extended research on OBC features to more culturally diverse groups and provided initial tests for certain aspects of recent contentions that self-objectification and appearance surveillance fuelled by China's thriving beauty economy and other macrolevel changes contribute to such disturbances among Chinese youth (Wen, 2013; Yang, 2011).

Objectified Body Consciousness and Disordered Eating Among Young Chinese Women

In line with the initial hypothesis, T1 sociocultural model features, particularly body dissatisfaction and perceived mass media appearance pressure, contributed to T2 eating disturbances among women, independent of initial disturbances. Explained variance was modest but approximated or exceeded that explained by T1 predictors in large-scale prospective studies of early and middle adolescent Chinese girls (Jackson & Chen, 2011, 2014) and young U.S. women (e.g., Leon et al., 1995; Paxton et al., 2006). Findings also provided qualified support for hypothesized effects of T1 body surveillance and body shame as risk factors. Specifically, partial correlation and supplementary multiple regression analyses indicated women having high T1 body-surveillance and body-shame scores were susceptible to increases in disordered eating at one year follow-up, independent of T1 eating disturbances. These small, significant effect sizes were comparable to those of individual sociocultural model features and contrasted with those of Rolnik et al. (2010) who found presorority rush levels of body shame did not predict changes in eating disturbances once the rush had ended 12 days later. Under the more stringent condition of first controlling for sociocultural model influences, effects of T1 body-surveillance and body-shame levels were substantially reduced but remained statistically significant.

Also as hypothesized, proximal responses on T2 measures of appearance pressure, negative affect, and body dissatisfaction explained substantially more variance in T2 eating disturbances than distal T1 responses on these scales did, consistent with evidence from younger Chinese females (Jackson & Chen, 2014). Finally, as expected, after accounting for the impact of T2 sociocultural model features, T2 scores on OBC measures explained significant unique variance in the criterion, albeit their impact was weaker than that observed in the supplementary model that omitted T2 sociocultural measures.

Taken together, this pattern indicated relations between OBC features and disordered eating are clearly affected by, though not entirely reducible to their overlaps with, more widely investigated risk factors drawn from alternate sociocultural accounts. To elaborate, although women who experienced more T1 appearance pressure, from mass media in particular, were more susceptible to increased T2 eating disturbances, the modest additional impact of T1 body surveillance illustrated how frequent thoughts and worries about how one looks also have repercussions for later eating disturbances, beyond perceived external pressure. More notably, because the impact of body dissatisfaction and negative affect underscored how general discontent with appearance and nonspecific distress influence disordered eating, arguably the added contributions of body-shame scores offer a

more nuanced understanding of specific emotional responses that have a bearing on eating disturbances of young Chinese women over time.

Overall results suggest features of sociocultural accounts and OBC offer useful targets for intervention among university-age young Chinese women. Both OBC ([McKinley, 2011](#)) and alternate approaches such as those based on cognitive dissonance ([Stice, Rohde, Durant, & Shaw, 2012](#)) view the larger social context, not individual pathology, as the source of negative body experiences. Hence, psychoeducation and outreach to raise awareness of causes and costs of appearance social pressure, body surveillance, body shame, and body dissatisfaction may help at risk women to differentiate damaging messages and societal expectations about attractiveness from how their bodies feel or function. More broadly, political advocacy for diverse representations of women's nonphysical attributes in visual media can promote body-positive communities ([McKinley, 2011](#); [Tiggemann, 2013](#)) and counter value orientations imposed via China's beauty industry.

On the surface, the recommended use of dissonance approaches may seem counterintuitive because a key underlying change mechanism, reductions in thin ideal internalization, was excluded from this study. In fact, dissonance interventions do not focus solely on reducing thin ideal internalization and include exercises to promote body acceptance, diminish appearance pressure, and pursue activities previously avoided because of body image concerns ([Stice et al., 2012](#)). These approaches can also contribute to decreases in disordered eating without corresponding decreases in internalization (e.g., [McMillan, Stice, & Rohde, 2011](#); [Stice, Rohde, Gau, & Shaw, 2009](#)). Hence, other risk factors, general intervention content (e.g., body acceptance exercises, shifting the locus of pathology from internal to external sources), and nonspecific influences (e.g., installation of hope, normalizing one's experience) may also explain treatment effects ([McMillan et al., 2011](#)). Because dissonance program content can be delivered online or via peer facilitators, the efficacy of such formats should be evaluated within China's university counseling centers given that severe shortages of adequately trained, qualified practitioners are a reality ([Gao et al., 2010](#)).

Notwithstanding the impact of other factors, T1 eating disturbances were the strongest influence on T2 disturbances, particularly for women, in line with other studies of younger Chinese females ([Jackson & Chen, 2011, 2014](#)). Even though overall eating disturbances decreased over time in this group, young women who experienced more T1 disturbances were not as likely to report later abatements. Because an unrelenting course is especially damaging ([Arcelus et al., 2011](#)), this finding suggests that education and outreach efforts to identify vulnerable young women must be highly proactive.

Finally, comparatively higher scores for women than men across measures of eating disturbances and risk factors underscored female gender as a potent fixed marker of disordered eating ([Jacobi et al., 2004](#)) that extends to China. The same pattern of gender differences has been found in early and middle adolescent samples (e.g., [Chen & Jackson, 2008, 2012](#)) and may reflect, in part, insidious effects of a thriving beauty economy and its promotion of physical attractiveness and youth as highly desirable attributes for young Chinese girls and women ([Wen, 2013](#); [Yang, 2011](#)) across the long transition from early adolescence to young adulthood. Incorporation of beauty culture influences within research designs and examination of their associations with OBC features and exacerbations in body image or eating concerns is an important avenue for future work toward testing assumptions of objectification perspectives more fully among young Chinese women.

Objectified Body Consciousness and Disordered Eating Among Young Chinese Men

Implications for women aside, clinical or subclinical eating disturbances also affect a substantial minority of young men ([Eisenberg et al., 2011](#); [Jackson & Chen, 2010b](#)) who are more likely than affected women to experience psychiatric comorbidity, suicide attempts, social impairment, and misdiagnosis ([Bramon-Bosch, Troop, &](#)

Treasure, 2000; Jones & Morgan, 2010; Striegel-Moore & Bulik, 2007). Given such data, identifying predictors of disordered eating within this understudied group was also a key focus of this study.

As hypothesized, elevations on measures of T1 sociocultural model features, especially mass media appearance pressure, negative affect, and body dissatisfaction, also predicted T2 exacerbations in disordered eating for late adolescent men, independent of T1 eating disturbance levels. Overall effect sizes were small but accumulating support for their robustness across several young male samples suggests that intervention content designed to increase media literacy (e.g., Wilksch & Wade, 2009) and body acceptance warrant evaluation among at risk young Chinese males. In contrast to cross-sectional data linking body surveillance and body shame with body dissatisfaction and/or eating disturbances in young men (e.g., Knauss et al., 2008; Wiseman & Moradi, 2010), no support was found for the hypothesis that these OBC features would emerge as distal risk factors for later eating disturbances among men in this study.

However, like the women, young men who experienced increases in disordered eating over time reported concomitant increases in sociocultural model features, particularly appearance pressure from close interpersonal networks and negative affect as well as facets of OBC (i.e., body shame), independent of T1 responses or changes in BMI. Unique effects of negative affect and body shame may parallel effects of distressing emotions observed in other middle-to-late adolescent male samples (Jackson & Chen, 2011; Paxton et al., 2006; Presnell et al., 2004). Accordingly, outreach programs that target general emotional distress are potentially viable strategies that campus counseling centers can use in assisting vulnerable young men.

Limitations of the Study

Notwithstanding these implications, the main limitations of this study should be noted. First, because the sample comprised late adolescent Chinese university students, results may not generalize to nonuniversity students or groups from other cultures. Research should be extended to other understudied groups. Second, in line with research on younger samples in China (e.g., Jackson & Chen, 2008a, 2011, 2014), men were less likely to complete the follow-up, albeit in this case, highly vulnerable or distressed men did not have lower completion rates. Third, because questionnaire-based assessments were used, biases related to self-report responses including inattentive or socially desirable responding cannot be dismissed as influences on the data. Extensions that include clinical interviews and informants (e.g., roommates) may add perspective on risk/protective factors independent of self-reports. Finally, the causal status of the risk factors is not known because random assignment to groups and experimental manipulations of multiple risk factors were not feasible. Experimental studies involving manipulations to temporarily increase or reduce risk factors, such as appearance pressure and body shame, are needed to elucidate causal effects more directly.

Conclusion

In sum, this study established features of sociocultural models and OBC as unique distal risk factors for exacerbations in disordered eating among late adolescent Chinese women, whereas only sociocultural indices emerged as unique risk factors for young men. However, increases in body surveillance and/or body shame between assessments accompanied exacerbations in eating-disorder pathology within each gender in tandem with changes in body dissatisfaction, negative affect, and perceived media appearance pressure. Despite overlaps with established sociocultural risk factors, concomitant increases in OBC features helped to explain exacerbations in disordered eating of young Chinese women and men.

References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Arcelus, J., Mitchell, A. J., Wales, J., & Nielsen, S. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders. A meta-analysis of 36 studies. *Archives of General Psychiatry*, 68, 724–731.

10.1001/archgenpsychiatry.2011.74

Aubrey, J. (2006). Effects of sexually objectifying media on self objectification and body surveillance in undergraduates: Results of a 2-year panel study. *Journal of Communication*, 56, 366–386. 10.1111/j.1460-2466.2006.00024.x

Bearman, S. K., Presnell, K., Martinez, E., & Stice, E. (2006). The skinny on body dissatisfaction: A longitudinal study of adolescent girls and boys. *Journal of Youth and Adolescence*, 35, 217–229. 10.1007/s10964-005-9010-9

Bramon-Bosch, E., Troop, N. A., & Treasure, J. (2000). Eating disorders in males: A comparison with female patients. *European Eating Disorders Review*, 8, 321–328. 10.1002/1099-0968(200008)8:4<321::AID-ERV355>3.0.CO;2-G

Calogero, R. M., Davis, W., & Thompson, J. K. (2005). The role of self-objectification in the experience of women with eating disorders. *Sex Roles*, 52, 43–50. 10.1007/s11199-005-1192-9

Carlson Jones, D. (2004). Body image among adolescent girls and boys: A longitudinal study. *Developmental Psychology*, 40, 823–835. 10.1037/0012-1649.40.5.823

Chen, H., & Jackson, T. (2008). Prevalence and sociodemographic correlates of eating disorder endorsements among adolescents and young adults from China. *European Eating Disorders Review*, 16, 375–385. 10.1002/erv.837

Chen, H., & Jackson, T. (2009). Predictors of changes in weight esteem among mainland Chinese adolescents: A longitudinal analysis. *Developmental Psychology*, 45, 1618–1629. 10.1037/a0016820

Chen, H., & Jackson, T. (2012). Gender and age group differences in mass media and interpersonal influences on body dissatisfaction among Chinese adolescents. *Sex Roles*, 66, 3–20. 10.1007/s11199-011-0056-8

Chen, H., Jackson, T., & Huang, X. (2006). The Negative Physical Self Scale: Initial development and validation in samples of Chinese adolescents and young adults. *Body Image*, 3, 401–412. 10.1016/j.bodyim.2006.07.005

Connor Gorber, S., Tremblay, M., Moher, D., & Gorber, B. (2007). A comparison of direct vs. self-report measures for assessing height, weight and body mass index: A systematic review. *Obesity Reviews*, 8, 307–326. 10.1111/j.1467-789X.2007.00347.x

Crawford, M., Lee, I. C., Portnoy, G., Gurung, A., Khatri, D., Jha, P., & Regmi, A. C. (2009). Objectified body consciousness in a developing country: A comparison of mothers and daughters in the US and Nepal. *Sex Roles*, 60, 174–185. 10.1007/s11199-008-9521-4

Eisenberg, D., Nicklett, E. J., Roeder, K., & Kirz, N. E. (2011). Eating disorder symptoms among college students: Prevalence, persistence, correlates, and treatment-seeking. *Journal of American College Health*, 59, 700–707. 10.1080/07448481.2010.546461

Forbes, G. B., & Jung, J. (2008). Measures based on sociocultural theory and feminist theory as predictors of multidimensional measures of body dissatisfaction among Korean and U.S. college women. *Journal of Social and Clinical Psychology*, 27, 70–103. 10.1521/jscp.2008.27.1.70

- Fredrickson, B. L., & Roberts, T. A. (1997). Objectification theory. *Psychology of Women Quarterly*, 21, 173–206. 10.1111/j.1471-6402.1997.tb00108.x
- Gao, X., Jackson, T., Chen, H., Liu, Y., Wang, R., Qian, M., & Huang, X. (2010). There is a long way to go: A nationwide survey of professional training for mental health practitioners in China. *Health Policy*, 95, 74–81. 10.1016/j.healthpol.2009.11.004
- Jackson, T., & Chen, H. (2008a). Predicting changes in eating disorder symptoms among Chinese adolescents: A 9-month prospective study. *Journal of Psychosomatic Research*, 64, 87–95. 10.1016/j.jpsychores.2007.08.015
- Jackson, T., & Chen, H. (2008b). Predicting changes in eating disorder symptoms among adolescents in China: An 18-month prospective study. *Journal of Clinical Child and Adolescent Psychology*, 37, 874–885. 10.1080/15374410802359841
- Jackson, T., & Chen, H. (2010a). Sociocultural experiences of bulimic and non-bulimic adolescents in a school-based Chinese sample. *Journal of Abnormal Child Psychology*, 38, 69–76. 10.1007/s10802-009-9350-0
- Jackson, T., & Chen, H. (2010b). Factor structure of the Sociocultural Attitudes Towards Appearance Questionnaire–3 (SATAQ-3) among adolescent boys in China. *Body Image*, 7, 349–355. 10.1016/j.bodyim.2010.07.003
- Jackson, T., & Chen, H. (2011). Risk factors for disordered eating during early and middle adolescence: Prospective evidence from mainland Chinese boys and girls. *Journal of Abnormal Psychology*, 120, 454–464. 10.1037/a0022122
- Jackson, T., & Chen, H. (2014). Risk factors for disordered eating during early and middle adolescence: A two year longitudinal study of mainland Chinese boys and girls. *Journal of Abnormal Child Psychology*, 42, 791–802. 1–12. 10.1007/s10802-013-9823-z
- Jacobi, C., Hayward, C., de Zwaan, M., Kraemer, H. C., & Agras, W. S. (2004). Coming to terms with risk factors for eating disorders: Application of risk terminology and suggestions for a general taxonomy. *Psychological Bulletin*, 130, 19–65.
- Jones, W., & Morgan, J. (2010). Eating disorders in men: A review of the literature. *Journal of Public Mental Health*, 9, 23–31. 10.5042/jpmh.2010.0326
- Kim, S. Y., Seo, Y. S., & Baek, K. Y. (2014). Face consciousness among South Korean women: A culture-specific extension of objectification theory. *Journal of Counseling Psychology*, 61, 24–36. 10.1037/a0034433
- Knauss, C., Paxton, S. J., & Alsaker, F. D. (2008). Body dissatisfaction in adolescent boys and girls: Objectified body consciousness, internalization of the media body ideal and perceived pressure from media. *Sex Roles*, 59, 633–643. 10.1007/s11199-008-9474-7
- Lee, S., Ho, T. P., & Hsu, L. K. (1993). Fat phobic and non-fat phobic anorexia nervosa: A comparative study of 70 Chinese patients in Hong Kong. *Psychological Medicine*, 23, 999–1017. 10.1017/S0033291700026465
- Leon, G. R., Fulkerson, J. A., Perry, C. L., & Early-Zald, M. B. (1995). Prospective analysis of personality and behavioral vulnerabilities and gender influences in the later development of disordered eating. *Journal of Abnormal Psychology*, 104, 140–149. 10.1037/0021-843X.104.1.140

- Leung, F., Lam, S., & Sze, S. (2001). Cultural expectations of thinness in Chinese women. *Eating Disorders*, 9 (339–350).
- Lindberg, S. M., Grabe, S., & Hyde, J. S. (2007). Gender, pubertal development, and peer sexual harassment predict objectified body consciousness in early adolescence. *Journal of Research on Adolescence*, 17, 723–742. 10.1111/j.1532-7795.2007.00544.x
- Luo, W. (2012). Selling cosmetic surgery and beauty ideals: The female body in the web sites of Chinese hospitals. *Women's Studies in Communications*, 35, 68–95.
- Luo, W. (2013). Aching for the altered body: Beauty economy and Chinese women's consumption of cosmetic surgery. *Women's Studies International Forum*, 38, 1–10. 10.1016/j.wsif.2013.01.013
- Machado, P. P., Machado, B. C., Gonçalves, S., & Hoek, H. W. (2007). The prevalence of eating disorders not otherwise specified. *International Journal of Eating Disorders*, 40, 212–217. 10.1002/eat.20358
- McCabe, M. P., & Ricciardelli, L. A. (2005). A prospective study of pressures from parents, peers, and the media on extreme weight change behaviors among adolescent boys and girls. *Behaviour Research and Therapy*, 43, 653–668. 10.1016/j.brat.2004.05.004
- McKinley, N. M. (1998). Gender differences in undergraduates' body esteem: The mediating effect of objectified body consciousness and actual/ideal weight discrepancy. *Sex Roles*, 39, 113–123. 10.1023/A:1018834001203
- McKinley, N. M. (1999). Women and objectified body consciousness: Mothers' and daughters' body experience in cultural, developmental, and familial context. *Developmental Psychology*, 35, 760–769. 10.1037/0012-1649.35.3.760
- McKinley, N. M. (2006). The developmental and cultural contexts of objectified body consciousness: A longitudinal analysis of two cohorts of women. *Developmental Psychology*, 42, 679–687. 10.1037/0012-1649.42.4.679
- McKinley, N. M. (2011). Continuity and change in self-objectification: Taking a life-span approach to women's experiences of objectified body consciousness. In R. M. Calogero, S. Tantleff-Dunn, & J. K. Thompson (Eds.), *Self-objectification in women: Causes, consequences, and counteractions* (pp. 101–115). Washington, DC: American Psychological Association. 10.1037/12304-005
- McKinley, N. M., & Hyde, J. S. (1996). The Objectified Body Consciousness Scale: Development and validation. *Psychology of Women Quarterly*, 20, 181–215. 10.1111/j.1471-6402.1996.tb00467.x
- McMillan, W., Stice, E., & Rohde, P. (2011). High- and low-level dissonance-based eating disorder prevention programs with young women with body image concerns: An experimental trial. *Journal of Consulting and Clinical Psychology*, 79, 129–134. 10.1037/a0022143
- Mercurio, A., & Rima, B. (2011). Watching my weight: Self-weighing, body surveillance, and body dissatisfaction. *Sex Roles*, 65, 47–55. 10.1007/s11199-011-9980-x
- Nisbett, R. (2003). *The geography of thought*. New York, NY: Simon & Schuster.
- Paxton, S. J., Eisenberg, M. E., & Neumark-Sztainer, D. (2006). Prospective predictors of body dissatisfaction in adolescent girls and boys: A five-year longitudinal study. *Developmental Psychology*, 42, 888–899. 10.1037/0012-1649.42.5.888

- Presnell, K., Bearman, S. K., & Stice, E. (2004). Risk factors for body dissatisfaction in adolescent boys and girls: A prospective study. *International Journal of Eating Disorders*, 36, 389–401. 10.1002/eat.20045
- Rolnik, A. M., Engeln-Maddox, R., & Miller, S. A. (2010). Here's looking at you: Self-objectification, body image disturbance, and sorority rush. *Sex Roles*, 63, 6–17. 10.1007/s11199-010-9745-y
- Shroff, H., & Thompson, J. K. (2006). Peer influences, body-image dissatisfaction, eating dysfunction and self-esteem in adolescent girls. *Journal of Health Psychology*, 11, 533–551. 10.1177/1359105306065015
- Slater, A., & Tiggemann, M. (2010). Body image and disordered eating in adolescent girls and boys: A test of objectification theory. *Sex Roles*, 63, 42–49. 10.1007/s11199-010-9794-2
- Smink, F. R., van Hoeken, D., & Hoek, H. W. (2012). Epidemiology of eating disorders: Incidence, prevalence and mortality rates. *Current Psychiatry Reports*, 14, 406–414. 10.1007/s11920-012-0282-y
- Stice, E. (2001). A prospective test of the dual-pathway model of bulimic pathology: Mediating effects of dieting and negative affect. *Journal of Abnormal Psychology*, 110, 124–135. 10.1037/0021-843X.110.1.124
- Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin*, 128, 825–848. 10.1037/0033-2909.128.5.825
- Stice, E., Presnell, K., Gau, J., & Shaw, H. (2007). Testing mediators of intervention effects in randomized controlled trials: An evaluation of two eating disorder prevention programs. *Journal of Consulting and Clinical Psychology*, 75, 20–32. 10.1037/0022-006X.75.1.20
- Stice, E., Rohde, P., Durant, S., & Shaw, H. (2012). A preliminary trial of a prototype Internet dissonance-based eating disorder prevention program for young women with body image concerns. *Journal of Consulting and Clinical Psychology*, 80, 907–916. 10.1037/a0028016
- Stice, E., Rohde, P., Gau, J., & Shaw, H. (2009). An effectiveness trial of a dissonance-based eating disorder prevention program for high-risk adolescent girls. *Journal of Consulting and Clinical Psychology*, 77, 825–834. 10.1037/a0016132
- Stice, E., Telch, C. F., & Rizvi, S. L. (2000). Development and validation of the Eating Disorder Diagnostic Scale: A brief self-report measure of anorexia, bulimia, and binge-eating disorder. *Psychological Assessment*, 12, 123–131. 10.1037/1040-3590.12.2.123
- Stice, E., & Whitenton, K. (2002). Risk factors for body dissatisfaction in adolescent girls: A longitudinal investigation. *Developmental Psychology*, 38, 669–678. 10.1037/0012-1649.38.5.669
- Strelan, P., & Hargreaves, D. (2005). Reasons for exercise and body esteem: Men's responses to self-objectification. *Sex Roles*, 53, 495–503. 10.1007/s11199-005-7137-5
- Striegel-Moore, R. H., & Bulik, C. M. (2007). Risk factors for eating disorders. *American Psychologist*, 62, 181–198. 10.1037/0003-066X.62.3.181
- Thomas, J. J., Vartanian, L. R., & Brownell, K. D. (2009). The relationship between eating disorder not otherwise specified (EDNOS) and officially recognized eating disorders: Meta-analysis and implications for DSM. *Psychological Bulletin*, 135, 407–433. 10.1037/a0015326

- Thompson, J. K., van den Berg, P., Roehrig, M., Guarda, A. S., & Heinberg, L. J. (2004). The sociocultural attitudes towards appearance scale-3 (SATAQ-3): Development and validation. *International Journal of Eating Disorders*, 35, 293–304. 10.1002/eat.10257
- Tiggemann, M. (2013). Objectification theory: Of relevance for eating disorder researchers and clinicians? *Clinical Psychologist*, 17, 35–45. 10.1111/cp.12010
- Tiggemann, M., & Lynch, J. E. (2001). Body image across the life span in adult women: The role of self-objectification. *Developmental Psychology*, 37, 243–253. 10.1037/0012-1649.37.2.243
- Tong, J., Miao, S., Wang, J., Yang, F., Lai, H., Zhang, C., . . . Hsu, L. K. (2014). A two-stage epidemiologic study on prevalence of eating disorders in female university students in Wuhan, China. *Social Psychiatry and Psychiatric Epidemiology*, 49, 499–505. 10.1007/s00127-013-0694-y
- Tylka, T. L., & Hill, M. S. (2004). Objectification theory as it relates to disordered eating among college women. *Sex Roles*, 51, 719–730. 10.1007/s11199-004-0721-2
- Wade, T. D., Wilksch, S. M., & Lee, C. (2012). A longitudinal investigation of the impact of disordered eating on young women's quality of life. *Health Psychology*, 31, 352–359. 10.1037/a0025956
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063–1070. 10.1037/0022-3514.54.6.1063
- Wen, H. (2013). *Buying beauty: Cosmetic surgery in China*. Hong Kong, PRC: Hong Kong University.
- Wertheim, E. H., Koerner, J., & Paxton, S. J. (2001). Longitudinal predictors of restrictive eating and bulimic tendencies in three different age groups of adolescent girls. *Journal of Youth and Adolescence*, 30, 69–81. 10.1023/A:1005224921891
- Wichstrøm, L. (2000). Psychological and behavioral factors unresponsive of disordered eating: A prospective study of the general adolescent population in Norway. *International Journal of Eating Disorders*, 28, 33–42. 10.1002/(SICI)1098-108X(200007)28:1<33::AID-EAT5>3.0.CO;2-H
- Wilksch, S. M., & Wade, T. D. (2009). Reduction of shape and weight concern in young adolescents: A 30-month controlled evaluation of a media literacy program. *Journal of the American Academy of Child & Adolescent Psychiatry*, 48, 652–661. 10.1097/CHI.0b013e3181a1f559
- Wiseman, M. C., & Moradi, B. (2010). Body image and eating disorder symptoms in sexual minority men: A test and extension of objectification theory. *Journal of Counseling Psychology*, 57, 154–166. 10.1037/a0018937
- World Health Organization. (2000). *The Asia-Pacific perspective: Redefining obesity and its treatment*. Sydney, NSW, Australia: Health Communications Australia.
- Xie, B., Chou, C. P., Spruijt-Metz, D., Reynolds, K., Clark, F., Palmer, P. H., . . . Johnson, C. A. (2006). Weight perception and weight-related sociocultural and behavioral factors in Chinese adolescents. *Preventive Medicine*, 42, 229–234. 10.1016/j.ypmed.2005.12.013
- Yamamiya, Y., Shroff, H., & Thompson, J. K. (2008). The tripartite influence model of body image and eating disturbance: A replication with a Japanese sample. *International Journal of Eating Disorders*, 41, 88–91. 10.1002/eat.20444

Yang, C. F., Gray, P., & Pope, H. G., Jr. (2005). Male body image in Taiwan versus the West: Yanggang Zhiqi meets the Adonis complex. *The American Journal of Psychiatry*, 162, 263–269. 10.1176/appi.ajp.162.2.263

Yang, J. (2011). Nennu and Shunu: Gender, body politics, and the beauty economy in China. *Signs*, 36, 333–357. 10.1086/655913

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