

アジアの若年女性における摂食障害

Eating Disorders in Young Asian Women

—— EAT-26を用いた11の研究の批判的検討 ——

A Critical Review of 11 Studies that used the EAT-26

ドマネチレイク・ポーラ L DOMENICI-LAKE, Paula L

- 国際基督教大学 教育研究所 客員研究員
Research Fellow, International Christian University
Doctoral Candidate, University of Maryland, College Park



摂食障害, アジア人若年女性, EAT-26
Eating Disorder, Young Asian Women, EAT-26

ABSTRACT

本稿ではアジアの若年女性に摂食障害傾向尺度 (EAT-26; Garner & Garfinkel) を用いた 11 の研究を批判的に検討し、将来的な研究方法を提示することを目的とする。摂食障害は一般に若い白人女性のみに見られる障害だと考えられているため、時として生命に関わることもある重要な問題ではあるが、アジアの若年女性における摂食障害は見過ごされてきた。結果的に、心理学者や教育者はアジア人の摂食障害患者に対する効果的で適切なカウンセリングや教育的介入を行わずにいる。ここでは 11 の研究を取り上げ、そこに認められる欠点に基づいて四つの提言をする。まず、サンプルサイズ、特にアジア人の患者のサンプルサイズを拡大すること。次に、アジア人に対する EAT-26 の利用と解釈の標準的な研究法を明確にすること。第三に、質的研究とともに量的研究を増大させること。最後にアジアの若年女性が摂食障害に至るパスを理解するためにより洗練された分析手法を用いること。これら四点が望まれる。

Introduction

The purpose of this paper is to conduct a critical review of a narrow literature on eating disorders among women of Asian ancestry, including ancestral backgrounds originating in the Indian subcontinent, in order to provide specific recommendations for future research on this particular population. The criteria used to select studies for this critique are those studies that: (a) were quantitative; (b) focused on eating problems or eating disorders with non-clinical samples of young Asian women (mean sample ages between 14 and 32); (c) used the widely recognized instrument called the Eating Attitudes Test-26 (EAT-26; Garner & Garfinkel, 1979; Garner, Olmsted, Bohr, & Garfinkel, 1982) (See Appendix A); and (d) were written in English. In this paper, 11 studies that met these selection criteria (See Appendix B for a summary of each study) are critiqued collectively and then suggestions for new research directions are made.

For the field of psychology and education, the correct diagnosis and effective treatment of clients with eating disorders are obviously crucial because these illnesses can be life threatening. According to Kempa and Thomas (2000), the rates of relapse and mortality are high. However, misdiagnosis or lack of identification of eating disorders in women of Asian descent, as well as other women of color, often occurs because these disorders are commonly viewed as only manifesting themselves in young, Caucasian women (Osvold & Sadowsky, 1993) or in European and European-American middle-class groups (Harris & Kuba, 1997). Past research (e.g., Mumford, Whitehouse, & Platts, 1991;

Nasser, 1988a, 1988b) has suggested that these disorders are culture-bound syndromes tied to the “Western” value of thinness and a relentless pursuit of this ideal. Consequently, practitioners and educators may presume that individuals who are not Caucasian, such as Asians, are unsusceptible to eating problems (Kempa & Thomas, 2000). As a result, counseling services and educational interventions targeting these disorders may not be adequately provided to eating-disturbed Asian clients. In actuality, inadequate empirical and conceptual research has been conducted on Asian women with eating problems, and the number of overall non-Caucasian eating disorder cases is unknown (Hall, 1995).

The EAT-26 is a widely used screening measure for abnormal eating attitudes and behaviors (Choudry & Mumford, 1992; Mukai, Kambara, & Sasaki, 1998) that was developed in Canada (Garner et al., 1982) (See Appendix A). Respondents rate how often they engage in the behavior described in each statement using a 6-point likert scale ranging from always (6) to never (0). Higher scores suggest more unhealthy attitudes and behaviors toward eating and food. Garner et al. (1982) designated scores above 20 as the clinical threshold indicating that a respondent is at risk for, or likely to have, an eating disorder and warranting further investigation for eating psychopathology.

In developing specific recommendations, this paper raises questions about the basic presumptions used in applying the EAT-26. As Harris and Kuba (1997) pointed out, there are no norms available for determining a standard of symptomatology for women of color, including Asians, because ethnocultural breakdowns of the standardization samples

for the EAT-26 are not provided. Do eating concerns exist that this self-report measure does not capture in some Asian women? Thus, whether the EAT-26 is appropriate and culturally valid to use with women of Asian ancestry remains unclear. Despite this potential shortcoming, it has been used with Asian female participants living in various countries (e.g., England, Pakistan, U.S., and Japan) in several studies. Accordingly, this critique reviews the collective strengths and weaknesses of these studies to provide the springboard for discussing new research directions related to eating disorders in young women of Asian heritage.

Collective Strengths of the 11 Studies

The assemblage of 11 studies reviewed for this paper, shown in Appendix B, contributes to the literature on eating disorders by focusing attention on an understudied, non-Caucasian group of young women of Asian descent. Collectively, these studies highlight that young women of Asian ancestry are not immune to maladaptive eating behaviors, body shape concerns, or eating disorders, as historically defined by “Western” standards. For example, Dolan, Lacey, & Evans (1990) found that some Asian girls of Pakistani origin met the Diagnostic and Statistical Manual of Mental Disorders-III-R (DSM-III-R) criteria for bulimia nervosa, and Mukai, Crago, & Shisslak (1994) found that Japanese women were more dissatisfied with their body shape than American women in their sample. Moreover, McCourt and Waller (1995) found that Asian girls of Indian subcontinent origin between 12 and 13 years old and 15 and 16 years old had significantly

more unhealthy eating attitudes and behaviors than their Caucasian peers. Hence, these findings challenge the simplistic yet commonly held assumption that eating problems are “Western” syndromes associated with “Western” ideals of thinness that affect only Caucasian women.

More specifically, results from these 11 studies identify a handful of factors that might contribute to unhealthy eating patterns in some young Asian women. These factors include maternal overprotection, self-consciousness, low self-esteem, body dissatisfaction, need for social approval, obsessive compulsive tendencies, and poor relationships with parents. Also, results from these studies indicate that the influence of acculturation on the development of eating problems in some young Asian women may be more tenuous than hypothesized. For example, of the four studies that investigated the relationship between cultural orientation and eating problems, one showed a nonsignificant relationship between these constructs (Akan & Grilo, 1995), two indicated that Asian females with higher “traditional” orientations had higher EAT-26 scores (Furnham & Patel, 1994; Mumford, Whitehouse, & Platts, 1991), and one showed that more “Westernized” Asian girls had higher EAT-26 scores (Mumford, Whitehouse, & Choudry, 1992). These contradictory findings suggest that integration into the Caucasian majority culture may not be a clear-cut mediating factor in the etiology of eating disorders of Asian females.

In addition to these strong points, this group of studies supplies some initial evidence, albeit limited, for the reliability and validity of using the EAT-26 with certain Asian female samples. Two of the studies

(Dolan et al., 1990; Mukai et al., 1998) found acceptable Cronbach's alpha coefficients (.87 and .84) for total scores on the EAT-26 with their Asian samples. Moreover, two of the studies (Mumford et al., 1991; Mumford et al., 1992) obtained factor structures of the EAT-26 that were very similar to the one obtained with New Zealand female adolescents (Wells et al., 1985), suggesting some degree of cross-cultural conceptual equivalence of this measure.

Collective Weaknesses of the 11 Studies

Notwithstanding these merits, a number of these studies used small sample sizes, limiting the generalizability of the results. To illustrate, Furnham and Patel (1994) studied 74 Asian and 22 Caucasian participants, and Akan and Grilo (1995) surveyed 28 Caucasian, 36 African American and 34 Asian American students. In the majority of these studies (e.g., Ahmad, Waller, & Verduyn, 1994; Choudry & Mumford, 1992; Dolan et al., 1990; Furnham & Patel, 1994; McCourt & Waller, 1995; Mumford et al., 1991; Mumford et al., 1992), the Asian ancestries of the participants were from the Indian subcontinent. Therefore, the representative nature of the findings beyond young Asian women with origins in the Indian subcontinent is restricted. Also, in some instances, the specific Asian backgrounds of the participants were not furnished, like in Akan and Grilo's (1995) study, in which the authors only reported that 34 Asian Americans participated. As Lucero et al. (1992) and McCourt and Waller (1995) underscored, to make generalizations about the eating patterns of Asian females without taking into account within group differences

that potentially exist in this diverse ethnic group is misleading.

Furthermore, in nearly all of the studies reviewed above, the researchers provided inadequate information on the reliability and validity of the standardized measures (e.g., EAT-26) used with their samples. In only two cases (Dolan et al., 1990; Mukai, Kambara, & Sasaki, 1998) did the authors actually calculate the Cronbach's alpha coefficients obtained for the formal measures used with their samples. Likewise, past reliability and validity data about the adequacy of using selected measures with their Asian samples were scant. In addition, some authors explicitly stated that their goal was to assess the validity of the EAT-26 with an Asian group (e.g., Choudry & Mumford, 1992; Mumford et al., 1991; Mumford et al., 1992;). However, they did not check for or demonstrate the discriminant, convergent or concurrent criteria validity of this measure. Instead, they only conducted factorial analyses of the EAT-26 and compared the factor structures they obtained to factor structures previously found with Caucasian participants.

In some of these studies, the researchers designed their own measures or scales to investigate important constructs, like cultural orientation (Mumford et al., 1991; Mumford et al., 1992), resentment toward parents (Furnham & Patel, 1994), level of integration into British society (Furnham & Patel, 1994), and perception of being overweight (Mukai et al., 1998). Unfortunately, in these cases the authors supplied little, if any, reliability or validity information on these scales and used very few items. As an example, the acculturation measures developed by the authors in three of the studies (i.e., Furnham & Patel,

1994; Mumford et al., 1991; Mumford et al., 1992) may have contributed to the inconsistent findings with respect to the relationship between eating problems and cultural orientation mentioned earlier. Thus, it is unclear whether these instruments accurately assessed what they were designed to measure, so inferences derived from participants' scores on them are likely untenable.

In other studies, the researchers provided insufficient theoretical or empirical justification for their proposed hypotheses or sought to accomplish too many goals at one time. To illustrate, Furnham and Patel (1994) generated six hypotheses and furnished inadequate support for them. Mumford et al. (1991) attempted not only to assess the cross-cultural validity of the EAT-26 and Body Shape Questionnaire (BSQ) with Asian girls but also to use these measures to compare the prevalence of eating disorders in Asians and Caucasians and to examine the relationship between Western orientation and scores on these measures. And Mumford et al. (1992) interjected two hypotheses in their results section that had not been previously mentioned or supported. These shortcomings undermined the rigor of these studies and likely contributed to the lack of significant findings because predictions were not well thought out or substantiated.

Moreover, the replication of some of the studies critiqued above would be difficult to accomplish because the researchers did not provide thorough descriptions of their methods and analyses. For example, Mumford et al. (1992) and Choudry and Mumford (1992) did not describe what sort of interviews they used with those participants who scored above 20 on the EAT-26 to ascertain whether

they met DSM-III-R criteria for an eating disorder. Also, Akan and Grilo (1995) did not explain how they analyzed participants scores' on the Racial Identity Attitude Scale-Short Form B (RIAS-B) and Suinn Lew Asian Self-Identity Acculturation Scale (SL-ASIA) in relation to scores on other measures. Moreover, Lucero et al. (1992) did not report specifics on how they recruited undergraduate students for their study. This lack of specificity weakened the research designs of these studies.

Furthermore, this critique uncovers the confusion that exists with respect to how the EAT-26 can be used as a diagnostic screening instrument for eating problems and eating disorders. For instance, in some of the studies (e.g., Dolan et al., 1990), the researchers focused on the mean EAT-26 scores and looked at differences between ethnic groups based on these average scores. In other cases, the investigators (e.g., Lucero et al., 1992) chose to look only at the number of participants who scored above 20 on the EAT-26, the threshold determined by the authors to suggest potential risk for eating disorders. Then they calculated the prevalence of eating problems in their sample by looking at the percentage of respondents who met this threshold and those who did not. However, Nakamura et al. (1999) used a slightly different threshold (i.e., they looked at the number of participants who scored 20 or above on the EAT-26) and then calculated the prevalence rate. Other researchers (e.g., Choudry & Mumford, 1992; Mumford et al., 1991) invited participants who scored above 20 on the EAT-26 to interviews to determine if they met DSM-III-R criteria for an eating disorder and then calculated the prevalence of eating disorder.

der diagnoses. Yet in these studies, the rates of attendance at interviews were not 100%, so the number of DSM-III-R diagnoses only reflects approximations. Finally, some researchers (e.g., Akan and Grilo, 1995) looked at the amount of variance in eating attitudes and behaviors accounted for by specific psychological factors. Unfortunately, these myriad methods of using EAT-26 scores limit generalizations that can be drawn from these 11 studies.

In addition to these weaknesses, the majority of research reviewed here was comparative in nature (Ahmad et al., 1994; Akan & Grilo, 1995; Dolan et al., 1990; Furnham & Patel, 1994; Lucero et al., 1992; McCourt & Waller, 1995; Mukai et al., 1998; Mumford et al., 1991). Yet demographic categories such as ethnic classifications explain little about cultural factors that may contribute to differences in unhealthy eating patterns. Also, the relatively modest amount of total variance accounted for in EAT-26 scores by predictor variables in those few studies that conducted multiple regressions analyses (e.g., Akan & Grilo, 1995; Mukai et al., 1998) indicate that other factors warrant investigation.

Recommendations

In light of these identified shortcomings, the following recommendations are made so psychologists and educators can more productively advance research on this topic. First and foremost, investigators are encouraged to use larger sample sizes, specify the Asian backgrounds of participants, and in addition to Asians from the Indian subcontinent, focus on other Asian groups, like Koreans, Chinese, Vietnamese, and Japanese.

However, it is crucial that researchers be extremely careful when making generalizations about Asians as a whole. Unless samples are fully represented by East Asians (e.g., persons from China, Japan, and Korea), Southeast Asians (e.g., persons from Thailand, Indonesia, and Vietnam) and Asians from the Indian subcontinent (e.g., persons from India and Pakistan), to make claims about Asians in general is inaccurate. Therefore, researchers should stipulate to which particular group of Asians their findings pertain (e.g., Japanese, Chinese, Southeast Asians, Asian Americans, etc.) based on the representative members in their sample. Also, the casual use of the term “Western” in these 11 studies highlights the larger problem inherent in using labels like this without sufficiently defining them. In a global society today where ethnically diverse individuals, including persons of varied Asian backgrounds, are born and raised in North American and European countries, to use the term “Western” without specifying clearly what one means is misleading and unclear. For example, does “Western” refer to non-Caucasians or to individuals actually living in “Western” countries, including non-Caucasians? Researchers in the new millennium are called to use greater discipline when describing groups as “Western” or “Asian” or when using other similarly broad stereotypes.

Second, investigators are encouraged to calculate the internal consistency reliability estimates obtained with their samples and to supply appropriate psychometric data about the reliability and validity of using the EAT-26 and other formal measures with Asian participants. They are recommended to validate the EAT-26 against other measures, including clinical interviews, with individuals of Asian

lineage. Third, in the future, researchers should study further the relationship between acculturation and eating problems in this population but they should use rigorously tested, standardized instruments and multiple assessments of both acculturation and eating problems. Fourth, psychologists and educators are encouraged to use greater specificity when describing their procedures and analyses so other investigators can adequately replicate their studies. Fifth, it is suggested that researchers hone their goals and hypotheses to be more effective in achieving them. Sixth, investigators are encouraged to spend more time outlining the theoretical underpinning that guides their investigation and choice of variables.

Furthermore, it is recommended that future literature define a consistent, standard approach for utilizing and interpreting EAT-26 scores with Asian samples that will effectively identify eating risks in this population. Clearly, additional research needs to be undertaken that moves beyond merely looking at ethnic group differences and instead focuses on underlying psychological and cultural factors that mediate pathways leading to disturbed eating patterns in young Asian women. Potential influences on the etiology of eating disorders in Asian women worth investigating might include a collectivist orientation, shame, locus of control, perfectionist tendencies, insecure attachment patterns, and religious orientation. To illustrate, McCourt and Waller (1995) noted that religious affiliation could be an important cultural factor related to eating patterns. They cited as an example that Asian girls of Muslim faith may face various dietary constraints including periods of fasting.

More sophisticated analytical approaches like structural equation modeling (SEM) are needed to identify predictors of eating disturbances in this population. This additional work will ultimately strengthen and expand the small but growing literature with this population.

Finally, the perplexing question still remains: Do eating disorders occur in other forms or guises among young Asian women that are not identified by measures designed for Caucasian women or defined by North American or European criteria? To answer this question, a qualitative approach, such as consensual qualitative research (CQR; Hill, Thompson, & Williams, 1997), would be necessary to explore the attitudes and concerns that a specific group of Asian women experience related to weight, eating, or body shape. This type of research design would allow for the emergence of concepts from the data, rather than imposing existing standards and criteria on to the data. Thus, qualitative studies of this kind could result in promising leads.

Reference

- Ahmad, S., Waller, G., & Verduyn, C. (1994). Eating attitudes among Asian schoolgirls: The role of perceived parental control. *International Journal of Eating Disorders, 15*(1), 91-97.
- Akan, G. E., & Grilo, C. M. (1995). Sociocultural influences on eating attitudes and behaviors, body image, and psychological functioning: A comparison of African-American, Asian American, and Caucasian college women. *International Journal of Eating Disorders, 18*(2), 181-187.
- Choudry, E. Y., & Mumford, D. B. (1992). A pilot study

- of eating disorders in Mirpur (Pakistan) using an Urdu version of the Eating Attitudes Test. *International Journal of Eating Disorders*, 11(3), 243-251.
- Dolan, B., Lacey, J. H., & Evans, C. (1990). Eating behaviour and attitudes to weight and shape in British women from three ethnic groups. *British Journal of Psychiatry*, 157, 523-528.
- Furnham, A., & Patel, R. (1994). The eating attitudes and behaviors of Asian and British schoolgirls: A pilot study. *The International Journal of Social Psychiatry*, 40(3), 214-226.
- Garner, D. M., & Garfinkel, P. E. (1979). The Eating Attitudes Test: An index of the symptoms of the symptoms of anorexia nervosa. *Psychological Medicine*, 9, 273-279.
- Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine*, 9, 273-280.
- Garner, D. M., Olmsted, M. P., & Polivy, J. (1983). Development and validation of a multi-dimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, 2, 15-34.
- Hall, C. C. I. (1995). Asian eyes: Body image and eating disorders of Asian and Asian American women. *Journal of Treatment and Prevention: Eating Disorders*, 3, 8-19.
- Harris, D. J., & Kuba, S. A. (1997). Ethnocultural identity and eating disorders in women of color. *Professional Psychology, Research, and Practice*, 28(4), 341-347.
- Hill, C. E., Thompson, B. J., & Williams, E. N. (1997). A guide to conducting consensual qualitative research. *The Counseling Psychologist*, 25(4), 517-572.
- Kempa, M. L. & Thomas, A. J. (2000). Culturally sensitive assessment and treatment of eating disorders. *Journal of Treatment and Prevention: Eating Disorders*, 8, 17-30.
- Lucero, K., Hicks, R. A., Bramlette, J., Brassington, G. S., & Welter, M. G. (1992). Frequency of eating problems among Asian and Caucasian college women. *Psychological Reports*, 71, 255-258.
- Mukai, T., Kambara, A., & Sasaki, Y. (1998). Body dissatisfaction, need for social approval, and eating disturbances among Japanese and American college women. *Sex Roles*, 39(9-10), 751-762.
- Mukai, T., Crago, M., & Shisslak, C. A. (1994). Eating attitudes and weight preoccupation among female high school students in Japan. *Journal of Child Psychology and Psychiatry*, 35, 677-688.
- Mumford, D. B., Whitehouse, A. M., & Choudry, E. Y. (1992). Survey of eating disorders in English-medium schools in Lahore, Pakistan. *International Journal of Eating Disorders*, 11(2), 173-184.
- Mumford, D. B., Whitehouse, A. M., & Platts, M. (1991). Sociocultural correlates of eating disorders among Asian schoolgirls in Bradford. *British Journal of Psychiatry*, 158, 222-228.
- Nakamura, K., Hoshino, Y., Watanabe, A., Honda, K., Niwa, S., Tominaga, K., Shimai, S., & Yamamoto, M. (1999). Eating problems in female Japanese high school students: A prevalence study. *International Journal of Eating Disorders*, 26, 91-95.
- Nasser, M. (1998a). Culture and weight consciousness. *Journal of Psychosomatic Research*, 32, 574-577.
- Nasser, M. (1998b). Eating disorders: The cultural dimension. *Social Psychiatry and Psychiatric Epidemiology*, 23, 184-187.
- Osvold, L. I., & Sadowsky, G. R. (1993). Eating disorders of White American, racial and ethnic minority American and international women. *Journal of Multicultural Counseling and Development*, 21, 143-154.
- Wells, J. E., Coope, P. A., Gabb, D. C., & Pears, R. K. (1985). The factor structure of the Eating Attitudes Test with adolescent schoolgirls. *Psychological Medicine*, 15, 141-146.

Appendix A
Eating Attitudes Test – 26
(EAT-26)

Instructions: Please rate how often you engage in the behavior described in each statement using the following scale ranging from never (0) to always (6).

	1	2	3	4	5	6
	never					always
1. I am terrified about being overweight.	1	2	3	4	5	6
2. I avoid eating when hungry.	1	2	3	4	5	6
3. I find myself preoccupied with food.	1	2	3	4	5	6
4. I have gone on eating binges.	1	2	3	4	5	6
5. I cut my food into small pieces.	1	2	3	4	5	6
6. I am aware of the calorie content of foods.	1	2	3	4	5	6
7. I avoid foods with high carbohydrate content.	1	2	3	4	5	6
8. I feel others prefer if I ate more.	1	2	3	4	5	6
9. I vomit after I have eaten.	1	2	3	4	5	6
10. I feel extremely guilty after eating.	1	2	3	4	5	6
11. I am preoccupied with desire to be thinner.	1	2	3	4	5	6
12. I think about burning up calories.	1	2	3	4	5	6
13. Others think I am too thin.	1	2	3	4	5	6
14. I am preoccupied with thought of fat.	1	2	3	4	5	6
15. I take longer than others to eat meals.	1	2	3	4	5	6
16. I avoid foods with sugar in them.	1	2	3	4	5	6
17. I eat diet foods.	1	2	3	4	5	6
18. I feel that food controls my life.	1	2	3	4	5	6
19. I display self-control around food.	1	2	3	4	5	6
20. Others pressure me to eat.	1	2	3	4	5	6
21. I give too much thought to food.	1	2	3	4	5	6
22. I feel uncomfortable after eating sweets.	1	2	3	4	5	6
23. I engage in dieting behavior.	1	2	3	4	5	6
24. I like my stomach to be empty.	1	2	3	4	5	6
25. I enjoy trying new rich foods.	1	2	3	4	5	6
26. I have the impulse to vomit after meals.	1	2	3	4	5	6

Appendix B:
Table Summarizing Quantitative Studies that Used the EAT-26 to Investigate Eating Disorders in Young Asian Women

Authors, Year of Study, and Country of Study	Participants	Purpose or Hypotheses	Measures	Cronbach's Alpha Coefficient for EAT-26	Mean and SD of EAT-26 Scores	Percentage of Participants Scoring over 20 on EAT-26	Main Results
	365 Caucasian, 71 Afro-Caribbean and 43 Asian (Indian, Pakistan, Sri Lankan, East African Asian) women attending family planning and well-woman clinic in London over 3 months. Mean age of total sample = 28.2 (SD = N/A); separate age means of each group N/A except for Asians (M = 31.7; SD = N/A).	1) To measured and compare eating attitudes and behaviors and feelings about weight and shape in Caucasian, Afro-Caribbean and Asian women; 2) To explore possible mediating effects of anxiety and depression on eating attitudes and behavior and feelings about weight and shape in these groups of women.	EAT-26, BSQ, Depression and Anxiety subscales of HAD, BMI, and demographic questionnaire.	For Caucasians, alpha = .87; for Afro-Caribbeans, alpha = .71; for Asians, alpha = .87.	For Caucasians, M = 8.53 (SD = 9.5); for Afro-Caribbeans, M = 8.79 (SD = 6.8); for Asians, M = 12.39 (SD = 9.7).	Not provided.	1) Asians had significantly higher EAT-26 scores than Caucasians; 2) For the Caucasian group, EAT-26 and BSQ scores correlated significantly (positively) with both HAD subscales; 3) For the Afro-Caribbean group, BSQ scores correlated significantly (positively) with both HAD subscales; 4) For the Asian group, no significant correlations between either of the eating scales and either of the HAD subscales.
Dolan, Lacey, & Evans (1990) in England	204 Asian (majority Pakistani) and 355 Caucasian girls from 4 state schools in Bradford, England. Mean age of Asians = 15.1 (SD = 1.6); mean age of Caucasians = 14.9 (SD = 1.0).	Goals: 1) To assess the validity of the EAT-26 and BSQ with Asian girls; 2) To estimate one-year prevalence of eating disorders in Asian and Caucasian girls; 3) Identify social and cultural factors associated with eating problems. Hypotheses: 1) There would be major differences between Asian and Caucasian girls' pattern of responses on the EAT-26 and BSQ; 2) Prevalence of eating disorders would be lower among Asian girls; 3) Eating disorders would only be found among the most westernized of the Asian girls.	EAT-26, BSQ, BMI, cultural orientation scale (developed by authors), and demographic items. Participants who scored above 20 on the EAT-26 or above 140 on the BSQ were interviewed by two of the authors using the EDE. Diagnosis of an eating disorder made if DSM-III-R criteria met.	Not provided.	For Caucasians, M = 7.7 (SD = 8.0); for Asians, M = 10.6 (SD = 9.0).	For Caucasians, 8.7% > 20; for Asians, 12.3% > 20.	No support for any of the hypotheses. 1) Factor structures of EAT-26 and BSQ were similar in Asian and Caucasian groups; 2) Prevalence of bulimia nervosa was significantly greater in Asians (3.4%) than Caucasians (.6%) and Asians had significantly higher EAT-26 scores than Caucasians; 3) Asians reporting the greatest use of 'traditional' dress and language had higher mean EAT and BSQ scores. Asians diagnosed with bulimia had significantly higher 'traditional' scores.
Mumford, Whitehouse & Platts (1991) in England							

Note: Last page of table provides the full names of all measures.

Appendix B:
Table Summarizing Quantitative Studies that Used the EAT-26 to Investigate Eating Disorders in Young Asian Women

Authors, Year of Study, and Country of Study	Participants	Purpose or Hypotheses	Measures	Cronbach's Alpha Coefficient for EAT-26	Mean and SD of EAT-26 Scores	Percentage of Participants Scoring over 20 on EAT-26	Main Results
Lucero, Hicks, Bramlette, & Welter (1992) in U.S.	111 Asian (Japanese, Korean, and Chinese descent) and 162 Caucasian female undergraduate students. Mean age of total sample = 18.9 (SD = N/A); separate age means for each group N/A.	To partially replicate the studies of Doian et al. (1990) and Mumford et al. (1991) but with women of Chinese, Japanese and Korean descent.	EAT-26 and items to categorize women's ethnic backgrounds.	Not provided.	Not provided.	For Caucasians, 9.9% > 20; for Asians, 1.8% > 20.	1) Caucasians were 5.5 times more likely to report eating problems (based on EAT-26 scores > 20) than Asians in this study; 2) Women of Japanese, Korean, and Chinese descent in this study were 7.3 times less likely to report eating problems (based on EAT-26 scores > 20) than women of Indian and Pakistani descent in previous studies.
Choudry & Mumford (1992) in Pakistan	271 Pakistani girls from state-run school in Mirpur, Pakistan. Mean age = 15.1 (SD = 1.4).	1) To translate the EAT-26 from English into Urdu and then validate the Urdu version; 2) To conduct an eating disorder survey using the Urdu EAT-26 with female students in Pakistan.	Urdu version of EAT-26. Participants who scored above 20 on EAT-26 were interviewed (not described). Diagnosis of an eating disorder made if DSM-III-R criteria met.	Not provided.	M = 11.1 (SD = 6.1).	7% > 20.	1) Authors claimed that enough of the Urdu EAT-26 items passed their evaluation criteria (e.g., conceptual equivalence by factorial analysis, evaluation of item comprehension at interview) to demonstrate a reasonable degree of linguistic, scale, and conceptual validity; 2) Prevalence of bulimia nervosa was .4% (one girl). No participants met criteria for anorexia nervosa or eating disorders NOS.

Note: Last page of table provides the full names of all measures.

Appendix B:
Table Summarizing Quantitative Studies that Used the EAT-26 to Investigate Eating Disorders in Young Asian Women

Authors, Year of Study, and Country of Study	Participants	Purpose or Hypotheses	Measures	Cronbach's Alpha Coefficient for EAT-26	Mean and SD of EAT-26 Scores	Percentage of Participants Scoring over 20 on EAT-26	Main Results
Mumford, Whitehouse, & Choudry (1992) in Pakistan	369 Pakistani girls from 3 English schools in Lahore, Pakistan. Mean age = 14.3 (SD = 1.0).	1) To assess the validity of the EAT-26 and BSQ, in English, with Pakistani girls in Lahore; 2) To estimate the prevalence of eating disorders in this non-Western population; 3) To identify social and cultural factors associated with unhealthy eating attitudes and behaviors, body shape concerns, and eating disorders.	EAT-26, BSQ, BMI, Western orientation scale (2-items developed by authors), and demographic items. Participants who scored above 20 on the EAT or above 109 on the BSQ were interviewed. Diagnosis of an eating disorder made if met DSM-III-R criteria met.	Not provided.	M = 10.1 (SD = 7.7).	10.3% > 20.	1) Factor structure of EAT-26 was nearly identical to one obtained by Wells et al. (1985) with New Zealand girls and Mumford et al. (1991) with Asian and Caucasian girls. Factor structure of the BSQ was similar to the one obtained by Mumford et al. (1991) with Asian and Caucasian girls, with only one interpretable factor emerging; 2) Prevalence of anorexia nervosa was 0%, of bulimia nervosa was .3%, of eating disorders NOS was 1.4%; 3) Girls with highest Western orientation scores had highest EAT-26 and BSQ scores; 4) Some modest but significant correlations between EAT-26 scores and a history of dieting by siblings (.14) and friends (.19), and between BSQ scores and a history of dieting by mother (.20), siblings (.24), and friends (.12).
Furnham & Patel (1994) in England	74 Asian (of Indian, Pakistani, and Bangladeshi descent) and 22 Caucasian girls from state-run, middle-class school in London. Mean age of total sample = 15 (SD = 2.39), separate age means for each group N/A.	1) Older girls would have higher EAT-26 scores than younger girls; 2) Asian EAT-26 scores would increase at a higher rate than White EAT-26 scores, so at 18 years of age, they would be significantly higher; 3) Prevalence of vomiting would be higher in the Asian girls than in the Caucasian girls; 4) Girls from higher SES would have higher EAT-26 scores than girls from lower SES; 5) Asian girls who felt resentment towards their families would have higher EAT-26 scores than girls who did not feel resentment; 6) Asian girls who were more integrated into British society would have higher EAT-26 scores than those who were not integrated.	EAT-26, BEQ, BMI, questionnaire (developed by authors) to measure Asians' level of integration into British society and Asians' resentment toward their families, and demographic questionnaire.	Not provided.	Mean for both groups (combined) = 35.4 (SD = 23.1); separate means for each group not provided.	Not provided.	Five of the six hypotheses were not supported. There was some conflicting evidence of a relationship between Asians' resentment toward their families and eating problems, as demonstrated by two significant (positive) correlations and one significant (negative) correlation between individual resentment item scores and total EAT-26 scores.

Note: Last page of table provides the full names of all measures.

Appendix B:
Table Summarizing Quantitative Studies that Used the EAT-26 to Investigate Eating Disorders in Young Asian Women

Authors, Year of Study, and Country of Study	Participants	Purpose or Hypotheses	Measures	Cronbach's Alpha Coefficient for EAT-26	Mean and SD of EAT-26 Scores	Percentage of Participants Scoring over 20 on EAT-26	Main Results
Ahmad, Waller, & Verdun (1994) in England	71 Asian (of Indian subcontinent origin) and 115 Caucasian girls from a state comprehensive school in Bolton, England. Mean age of Asians = 14.9 (SD = .69); Mean age of Caucasians = 14.9 (SD = .73).	1) Asians would rate their parents as more overcontrolling than Caucasians; 2) Asians would have more unhealthy eating attitudes (especially bulimic attitudes) than Caucasians; 3) Higher level of perceived parental control would explain greater level of eating psychopathology in Asians.	EAT-26, BSS, PBI, BMI and questionnaire about religious and ethnic background.	Not provided.	For Caucasians, M = 8.91 (SD = 7.76). For Asians, M = 10.5 (SD = 8.10). Also provided breakdown of EAT-26 subscale means.	Not provided.	1) Asians rated both parents as significantly more overprotective and their mothers as significantly lower in care than Caucasians; 2) Asians had a significantly greater level of bulimic attitudes than Caucasians; 3) Among Caucasians, body dissatisfaction was significantly correlated with ratings of both parents as overprotective; 4) Among Asians, unhealthy eating attitudes were significantly correlated with low maternal care and high maternal overprotection, and body dissatisfaction was significantly correlated with low maternal care; 5) Significant part of the difference between Asian and Caucasians' bulimic attitudes was accounted for by Asians' greater level of perceived maternal control; 6) When effects of perceived paternal control were partialled out, Asians showed more satisfaction with bodies than did Caucasians.
McCourt & Waller (1995) in England	178 Asian (of Indian subcontinent origin) and 158 Caucasian girls from 3 schools in Birmingham, England. Participants divided into 3 age groups: 1) 12-13 years old (43 Asians, 46 Caucasians); 2) 14 years old (65 Asians, 47 Caucasians); and 15-16 years old (70 Asians, 65 Caucasians). Age means N/A.	1) Perceived parental control would be greater among Asians; 2) Perceived parental control would explain part of the higher level of eating psychopathology in Asians; 3) This effect would become more apparent in later adolescence.	EAT-26, PBI, BMI and questionnaire about religious and ethnic background.	Not provided.	For Caucasians (all age groups), M = 7.07 (SD = 7.99); for Asians (all age groups), M = 10.8 (SD = 9.04). Means for each age group by ethnicity also provided.	Not provided.	1) Asians showed a significantly higher level of perceived maternal control than Caucasians; 2) Asians' higher level of perceived maternal control explained a significant proportion of ethnic group difference in eating attitudes; 3) This effect was particularly strong among the older age group (15-16 years old); 4) Asians had significantly higher EAT-26 scores than Caucasians in 2 of the age groups (12-13 years old and 15-16 years old).

Note: Last page of table provides the full names of all measures.

Appendix B:
Table Summarizing Quantitative Studies that Used the EAT-26 to Investigate Eating Disorders in Young Asian Women

Authors, Year of Study, and Country of Study	Participants	Purpose or Hypotheses	Measures	Cronbach's Alpha Coefficient for EAT-26	Mean and SD of EAT-26 Scores	Percentage of Participants Scoring over 20 on EAT-26	Main Results
Avan & Grilo (1995) in U.S.	28 Caucasian, 36 African American, and 34 Asian American female college students from a New England university in the U.S. Mean age = 20.11 (SD = 1.17) for Caucasians; 20.28 (SD = 1.16) for African Americans; and 20.03 (SD = 1.45) for Asian Americans.	1) To examine between group differences in Caucasian, African American, and Asian American female students regarding eating behaviors and attitudes and body image; 2) To test associations between assimilation and acculturation and eating behaviors and attitudes and body image in African Americans and Asian Americans; 3) To explore how psychological factors (self-esteem, self-consciousness, and social anxiety) influence body image variability in each group.	EAT-26, GFF, WST, GAT, BSQ, RIAS-B, SL-ASIA, PSC, SAS, RSE, BMI, EDE-Q, and demographic questionnaire.	Not provided.	For Caucasians, M = 64.79 (SD = 19.72); for African Americans, M = 55.31 (SD = 16.62); for Asian Americans, M = 53.62 (SD = 15.35).	Not provided.	1) Caucasians had significantly higher EAT-26 scores than 2 other groups; 2) Caucasians had significantly higher global EDE-Q scores than Asian Americans; 3) In all three groups, PSC scores were significantly (positively) correlated with EAT-26, GFF, and BSQ scores; 4) African Americans' RIAS-B scores and Asian Americans' SL-ASIA scores were not significantly related to any variables; 5) In Caucasian group, WST, PSC and BMI scores accounted for 59% of variance in BSQ scores. In African American group, RSE, BMI, and PSC scores accounted for 66% of the variance in BSQ scores. In Asian American group, BMI and PSC scores accounted for 45% of variance in BSQ scores.
Mukai, Kambara, & Sasaki (1998) in U.S. and Japan	171 Japanese female undergraduate students from a national university in Japan and 130 European American female undergraduate students from a state university in U.S. Mean age of Japanese = 20.2 (SD = 1.9); Mean age of European-Americans = 20.3 (SD = 1.6).	1) To compare Japanese and American women on the relationships among body fatness, body dissatisfaction, need for social approval and eating problems; 2) To examine if/how the relationship between need for social approval and eating problems was mediated by culture.	EAT-26, BMI, EDI-Body Dissatisfaction Subscale, MLAM, and single item (developed by authors) about perception of being overweight.	For Japanese, alpha = .84; for Americans, alpha = .89. Alphas for EAT-26 subscales also provided for each group. (SD = 11.1).	For Japanese, M = 9.8 (SD = 8.2); for Americans, M = 11.6 (SD = 11.1).	Not provided.	1) Japanese scored significantly higher than Americans on EDI-Body Dissatisfaction subscale and MLAM; 2) Americans scored significantly higher on BMI; 3) No significant group differences on EAT-26 scores; 4) Japanese were more likely to perceive themselves as overweight than Americans at same BMI; 5) In Japanese group, EDI-Body Dissatisfaction and MLAM were significant predictors of EAT-26 scores, accounting for 24% of variance; 6) In American group, BMI and EDI-Body Dissatisfaction scores were significant predictors of EAT-26 scores, accounting for 48% of variance.

Note: Last page of table provides the full names of all measures.

Appendix B:
Table Summarizing Quantitative Studies that Used the EAT-26 to Investigate Eating Disorders in Young Asian Women

Authors, Year of Study, and Country of Study	Participants	Purpose or Hypotheses	Measures	Cronbach's Alpha Coefficient for EAT-26	Mean and SD of EAT-26 Scores	Percentage of Participants Scoring over 20 on EAT-26	Main Results
Nakamura et al. (1999) in Japan	For calculating prevalence of eating problems, participants were 2,685 female high school Japanese students from 3 public high schools in Fukushima, Japan; for determining risk factors for eating problems, 144 of the participants (i.e., those who scored > or = to 20 on the EAT-26) were included. Mean age for large sample = 16.3 (SD = 0.9); mean age for smaller sample N/A.	1) To estimate the prevalence of eating problems among Japanese high school adolescents and then compare this rate to those reported for North Americans and Europeans; 2) To identify potential risk factors for eating problems in Japanese high school adolescents.	EAT-26, MOCI, BMI, demographic and family questions, and 1 item about self-perception of body weight.	Not provided.	Not provided.	5.4% > or = to 20. **This criteria is slightly different than the MOCI scores were statistically significant for high EAT-26 scores (i.e., scores > or = to 20 on the EAT-26); 2) Most of these variables, plus obesity, were independently related to eating problems.	1) Prevalence of eating problems (5.4%) found for Japanese female adolescents in this study was at lower range of figures (5% - 22%) reported for European and North American female adolescents; 2) With respect to risk factors, ages 17 and 18; gap score of 2 points or more; having unmarried, divorced, or widowed parents; poor relationships with parents; poor relationship between parents; presence of alcohol problems in the family, and high MOCI scores were statistically significant for high EAT-26 scores (i.e., scores > or = to 20 on the EAT-26); 2) Most of these variables, plus obesity, were independently related to eating problems.

MEASURES: EAT-26 = Eating Attitudes Test; BSQ = Body Shape Questionnaire; EDE = Eating Disorder Examination (interview); BMI = Body Mass Index (kg/m²); HAD = Hospital Anxiety and Depression Questionnaire; BSS = Body Satisfaction Scale; PBI = Parental Bonding Instrument; SCS = Self-Consciousness Scale; PSC = Public Self-Consciousness subscale of SCS; SAS = Social Anxiety subscale of SCS; RSE = Rosenberg Self-Esteem Scale; GFF = Goldfarb Fear of Fat Scale; EDE-Q = Eating Disorder Examination-Questionnaire (written only); PARTS = Physical Appearance Related Teasing Scale; WST = Weight/Size Teasing subscale of PARTS; GAT = General Appearance Teasing subscale of PARTS; RIAS-B = Racial Identity Attitudes Scale - Short Form B; SL-ASIA = Sullnn Lew Asian Self-Identity Acculturation Scale; MOCI = Maudsley Obsessional-Compulsive Inventory; EDI-Body Dissatisfaction = Body Dissatisfaction subscale of Eating Disorders Inventory; MLAM = revised Martin-Larsen Approval Motivation Scale; and BEQ = Binge Eating Questionnaire.

Note: Last page of table provides the full names of all measures.