
Eating Attitudes, Self-Dissatisfaction and Emotional Distress Among Early Adolescents in Hawai'i: A Gender Comparison

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The present study examines whether there are gender differences in eating attitudes among a sample of early adolescents in Hawai'i. A total of 79 female and 65 male 7th graders completed a survey that included measures of eating attitudes and other psychological constructs. Contrary to our prediction, males reported higher levels of disordered eating attitudes and body dissatisfaction than females. However, there were no gender differences in symptom levels of anxiety and depression. Eating attitudes were associated with symptoms of depression, anxiety and self-dissatisfaction among females, while only self-dissatisfaction was associated with eating attitudes among males. The findings fail to support past studies that suggest females report more disordered eating attitudes than males.

Keywords: eating attitudes, depression, anxiety, body dissatisfaction, self-dissatisfaction

There has been an increased interest in examining whether there are cultural differences in risk of developing eating problems. Although previous research has suggested that disordered eating was primarily a Western, middle class, problem (Miller & Pumariega, 2001), more recent research has challenged this assumption (Edman & Yates, 2004b). For example, British-Asian women have been found to be at higher risk than Caucasian women (Thomas, James, & Bachmann, 2002), and the rate of eating disorders appears to be increasing in developing countries (Gorden, 2001). The present study will further explore disordered eating attitudes among an ethnically diverse group of early adolescents residing in Hawai'i.

Gender Differences in Eating Disorders

It is not uncommon for adolescents to engage in dieting and other weight control strategies, as Neumark-

Sztainer, Wall, Story and Perry (2003) found that nearly 60% of girls and more than 30% of adolescent boys reported unhealthy behaviours to control weight. In another study, Nowak, Crawford and Butler (2001) found that 72% of 12th grade and 42% of 8th grade girls attempted to lose weight in comparison to only 15% of the boys. This behaviour is of concern as early dieting has been found to be associated with symptoms of disordered eating among adolescent girls (Bisaga, Whitaker, Davies, Chuang, Feldman et al., 2005). Disordered eating attitudes and behaviours among females often begin in late childhood and have been found to be linked to body dissatisfaction (Isnard, Michel, Frelut, Vila, Falissard et al. 2003; Kim & Kim, 2001; Edman & Yates, 2004a). Gender differences in body dissatisfaction have also been found as males from nearly every cultural group studied report higher body satisfaction than females (Demarest

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& Allen, 2000; Smolak, 2004; Sondhaus, Kurtz, & Strube, 2001). In addition, both epidemiological and clinical data suggest that females are at higher risk of disordered eating than males (Adams, Sargent, Thompson, Corwin, & Rogan, 2000; American Psychiatric Association, 1994).

A variety of psychological factors have been found to be associated with disordered eating, including negative affect and anxiety (McCabe & Ricciardelli, 2003; Ross & Gill, 2002). Ricciardelli and McCabe (2003) found that depression was a predictor of body dissatisfaction and body change strategies among adolescents of both genders, and binge eating was associated with depression among adolescents (Isnard et al., 2002). Thomas, James and Bachman (2002) found that depressed mood was linked to disordered eating attitudes in a multiethnic female sample in Britain. Overeating was related to depressed mood among male and female adolescents, and those who overate were more likely to report suicidal thoughts (Ackard, Neumark-Sztainer, Story, & Perry, 2003). Perceptions of being overweight and negative body image have been found to be associated with symptoms of depression among adolescent Asian and American girls (Kim & Kim, 2001) and there is a correlation between increased levels of body fat and depression among adolescent girls (Marcotte, Fortin, Potvin, & Papillon, 2002). Finally, adolescent girls have been found to report higher levels of depression than boys (Roberts, Roberts & Chen, 1997; Rushton, Forcier, & Schectman, 2002). Anxiety has also been found to be associated with disordered eating (Isnard et al., 2003; Ross & Gill, 2002) and one study found that more than 60% of individuals diagnosed with eating disorders had at least one lifetime period with symptoms of anxiety, most commonly obsessive-compulsive disorder (Kaye, Bulik, Thornton, Bararick & Master, 2004). Some other predictors of disordered eating include self-esteem (Thomas, James & Bachman, 2000), childhood adversities (Johnson, Cohen, Kasen, & Brooks, 2002), and perfectionism (Bulik et al., 2003).

Culture, Eating Attitudes and Body Dissatisfaction

Some studies have found there are ethnic differences in risk of developing eating pathology among females. For example, in a sample of more than 700 British women, ethnic Asian women report more disordered eating attitudes than ethnic White women (Thomas, James & Bachmann, 2002). Another cross-cultural study found that women in India reported higher levels of disordered eating symptoms than Australian women (Sjorstedt, Schumaker, & Nathawat, 1998). However, similar levels of disordered eating were found among in several studies, including one with a sample of 135 Caucasians and Pacific Island women from the island of Guam (Edman & Yates, 2004b). In a study of eating attitudes among 197 female college students in

Hawai'i, Edman and Yates (2005) found similar levels of disordered eating attitudes among Caucasian and Filipino women, which was supported by another study comparing eating attitudes among Caucasian and Asian-American adolescents (Cachelin, Veisel, Barzegarnazari, & Striegel-Moore, 2000). Finally, Bisaga et al. (2005) examined risk of disordered eating in a multiethnic sample of nearly 1500 American urban high school students and found that Asian girls reported lower levels of disordered eating attitudes than Hispanic and White girls.

A growing number of cross-cultural studies have been conducted examining risk of disordered eating among Asian and Asian-American males, and findings suggest that some Asian males may be at high risk for eating problems (Edman & Yates, 2004a). For example, findings from a large sample of more than 4000 adolescents in urban American found that Asian-American boys were more likely to report overeating than boys from other groups (Ackard, Neumark-Sztainer, Story & Perry; 2003) and no gender differences in body esteem were found among a sample of 73 Hmong-American adolescents (Franzoi & Chang, 2002). In a study examining disordered eating attitudes among a sample of college students, Edman and Yates (2005) found that Filipino American male college students residing in Hawai'i reported higher levels of body dissatisfaction and disordered eating attitudes than Caucasian males. International studies also suggest that Asian males may be at high risk for eating pathology, as a study among nearly 300 college students in Malaysia found that males reported similar eating attitudes as females (Edman & Yates, 2004a). Similar findings were observed among a sample of more than 900 high school students in the Philippines as no gender differences were found on disordered eating attitudes (Lorenzo, Lavori, & Lock, 2002). Finally, Sjorstedt, Schumaker and Nathawat (1998) examined eating attitudes in a sample of 249 Indian Asians college students and the results suggest that Asians males may be at similar risk for eating problems as females.

The present study will examine the eating attitudes among 7th grade adolescents on the island of Maui in the state of Hawai'i. Maui has a population of approximately 130,000 people with the following ethnic breakdown: 37% White, 31% Asian, 21% mixed ethnicity and 11% Native Hawaiian (U.S. Census Bureau, 2005). Adolescents were selected as it is been found that there is an increase in body and self-awareness among this age group (Tiggemann, 2001). Previous research also suggests that there is an increase in body dissatisfaction among adolescents of both genders, with boys desiring larger bodies and girls smaller (Nowak, Crawford, & Buttner, 2001). We will examine whether there are gender differences in eating attitudes and other psychological constructs. We will also examine whether

disordered eating attitudes correlate with the other psychological measures such as depression, anxiety and self dissatisfaction.

Based on the above findings, we predicted the following:

- Females reported higher symptom levels of eating pathology and body dissatisfaction than males.
- Females reported higher depression and anxiety symptom levels than males.
- Symptom levels of depression, anxiety, self dissatisfaction and body dissatisfaction correlated with eating attitudes.

Method

Participants

A total of 66 boys (age mean = 12.22; $SD = .45$) and 80 girls (age mean = 12.20; $SD = .43$) participated in the study. The ethnic breakdown of the sample was as follows: Native Hawaiian (40%), Filipino (20%), mixed ethnicity (17%), Japanese (13%), Caucasian (4%), and other groups (6%). Although the total sample is small, it represents nearly 50% of the total population of 7th graders attending this intermediate school on Maui (State of Hawai'i, 1999). The ethnic breakdown of the sample also reflects the school's ethnic demographics as Native Hawaiian and Filipino students comprise more than 50% of the student population.

Procedure

Parental consent forms were distributed by the home-room teachers at the intermediate school. A total of 48% of the students returned the signed parental and student consent forms, and completed the survey which was administered by the health education teacher during class. A major criterion for instrument selection was to include measures that have been successfully used among adolescents. The survey took approximately 30 minutes to complete and contained the following measures:

Eating Attitudes Test- 26 (EAT-26). The EAT-26 is a shortened version of the original Eating Attitudes Test (Garner, 1991). It has been found to have adequate reliability and validity as a measure of eating disorder symptoms among the general populations. Items assess both eating attitudes and behaviors such as 'Am terrified about being overweight', 'Feel food controls my life', 'Engage in dieting behaviors' and 'Vomit after I have eaten'. The EAT-26 has been successfully used to assess eating attitudes in a variety of studies among adolescent groups including Japanese (Nakamura et al., 1999), Filipino (Lorenzo, Lavori, & Locke, 2002), Fijian (Becker, Burwell, Gilman, Herzog, & Hamburg, 2002), and British (Thomas, James & Bachmann, 2002). Participants rate each item on a 6-point scale ranging from never to always. A score greater than 20 is commonly used as screener

point for risk of disordered eating. The Chronbach's alpha value for this study was .90.

Center for Epidemiologic Depression Scale (CES-D). The CES-D is a 20 item measure of depressive symptoms (Radloff, 1977), and consists of four factors: Depressed Affect, Positive Affect, Somatic, and Interpersonal. The CES-D is one of the most commonly used measures of depression symptoms and has been successfully used in measuring depression symptoms among adolescents (Edman, Andrade, Glipa, Foster, Danko et al., 1998; Kim & Kim, 2001). The total CES-D score can range from 0 to 60. Traditionally, individuals with scores of 16 or greater are viewed as being at risk for depression (Radloff, 1977). The Chronbach's alpha value for this study was .79.

Revised Children's Manifest Anxiety Scale (RCMAS). The RCMAS is a measure that assesses the level of anxiety in children and adolescents (Reynolds & Richmond, 1978). It consists of 37 items that measure four factors including: Worry, Social Concerns, Physiological anxiety and a Lie scale. It has been found to have adequate reliability and validity among children and adolescents (Reynolds, 1980, 1981). A total Anxiety score is calculated by adding items from the Worry, Social Concern, and Physiological scales. The Chronbach's alpha value for this study was .71.

Figure Drawings (Stunkard, Sorenson & Schlusinger, 1983). This measure includes 9 male and 9 female figures ranging from very thin (value = 1) to very overweight (value = 9). Participants were asked to select the figure that best resembles them and also select the figure they would most prefer to resemble. The Body dissatisfaction score was computed by taking the absolute value of the preferred score from the resembled score. This measure has been successfully used among adolescents (Tiggemann, 2001).

The Self-Loathing Sub-Scale (SLSS). The SLSS is a four item subscale of the Exercise Orientation Questionnaire (EOQ) (Yates, Edman, Crago, Crowell, & Zimmerman, 1999). The EOQ consists of 6 factors including exercise identity, self-control, weight loss, competition, exercise orientation and self-loathing. The SLSS measures self-dissatisfaction as it relates to the body and exercise performance. This subscale has been found to be a valid indicator of those at risk for eating disorders, as SLSS scores were higher among clinically obese and eating disordered groups than a control group (Yates, Edman, Crago, & Crowell, 2001) and athletes with symptoms of eating disorders reported higher SLSS scores than athletes reporting no symptoms (Yates, Edman, & Crowell, 2003). The Chronbach's alpha for this study was .61.

The instrument also included the demographic measures of gender, age, grade level, ethnicity, as well as weight and height so that Body Mass Index (BMI; kg/m^2) could be calculated.

Table 1
Mean EAT-26, BODDIS, CES-D and RMCAS Scores by Ethnicity and Gender

	EAT-26 <i>M (SD)</i>	BODDIS <i>M (SD)</i>	CES-D <i>M (SD)</i>	RMCA <i>M (SD)</i>	SLSS <i>M (SD)</i>	BMI <i>M (SD)</i>
Males	14.37 (13.93)	1.32 (1.06)	13.64 (7.04)	11.93 (5.86)	11.89 (3.81)	21.42 (4.99)
Females	8.72 (8.69)	.86 (.70)	12.93 (8.19)	11.46 (5.69)	11.21 (2.83)	20.73 (4.65)

Results

In order to examine whether there were gender differences on the various measures, ANOVAs were conducted on the variables of EAT-26, CES-D, anxiety, body dissatisfaction, self dissatisfaction and BMI (see Table 1). Contrary to our hypothesis, males reported higher EAT-26 scores, $F(1,126) = 8.22$, $p = .005$, and Body Dissatisfaction scores $F(1,139) = 9.51$, $p = .002$, than females. There were no gender differences in Anxiety, CES-D, BMI, and Self-Loathing. There were gender differences in the frequency of EAT-26 high scorers with more males (28%) reporting scores above the cutoff than females, 8%; $\chi^2(1) = 9.60$, $p = .004$. There were no gender differences in frequency of CES-D high scorers.

There were gender differences in the relationship between the predictor variables and EAT-26. CES-D, $r(65) = .474$, $p = .001$; SLSS, $r(72) = .363$, $p = .002$, and anxiety scores, $r(69) = .558$, $p = .001$, were related to EAT-26 among females, while only SLSS correlated with the EAT-26 among males, $r(54) = .428$, $p = .001$. Regression analyses were conducted to determine if CES-D, Anxiety, SLSS, BMI and body dissatisfaction could predict EAT-26 scores. CES-D was the only significant predictor among females, Beta = .399, $t(43) = 2.223$, $p = .032$; $R^2 = .227$, and the model was not significant for males.

Discussion

Contrary to our first hypothesis, females did not report higher disordered eating attitudes and body dissatisfaction than males. The present findings suggest that males in this sample may be at higher risk for eating problems than females based on their higher EAT-26 and body dissatisfaction scores. Twenty-eight per cent of males scored about the EAT-26 cut-off, in comparison to only 8% of the females. The percentage of high scoring males is higher than many other studies among females, which commonly range between 5 to 22%, (Nakamura et al., 1999). Although the present findings suggest that a very high percentage of males may be at risk for eating pathology, the percentage of 'at risk' females in the present study at 8% is well within the range of previous studies. Also, contrary to our prediction, females were not at greater risk for depression than males, so the findings from the present study fail to support findings from other studies suggesting gender differences in depression

(Edman et al., 1998; Roberts, Roberts, & Chen, 1997; Rushton, Forcier, & Schectman, 2002).

As predicted, levels of depression, anxiety, and self-dissatisfaction were associated with disordered eating attitudes among females. The present findings support past studies suggesting that females reporting disordered eating attitudes may suffer from symptoms of other emotional distress (Ricciardelli & McCabe, 2003; Ross & Gill, 2002). However, only self-dissatisfaction (SLSS) correlated with eating attitudes among the males. SLSS measures an individual's dissatisfaction with his/her exercise performance, and includes items such as 'I am dissatisfied with my performance' and 'I hate my body when it won't do what I want it to'. It appears that this specific type of 'perfectionism' toward the body is an important risk factor in the development of disordered eating attitudes among male adolescents in Hawai'i. This is not surprising as an association has been found between perfectionism and disordered eating among adolescents (Bulik et al., 2003). The relationship between self-dissatisfaction and eating attitudes has been found among other Asian and Pacific Island cultural groups including Malay males (Edman & Yates, 2004a), Filipino females (Edman & Yates, 2004b) and Chamorro females (Edman & Yates, 2004b). Further studies should be conducted to examine how self-dissatisfaction and other measures of perfectionism relate to disordered eating especially since SLSS was the only measure that correlated with the EAT-26 among males. The lack of relationship between BMI and EAT-26 is similar to findings from a study conducted among adolescents in Fiji (Becker, Burwell, Gilman, Herzog, & Hamburg, 2002), and the authors suggested that that perceived weight may be more important in predicting risk of disordered eating than actual weight.

One limitation to the present study is the failure to include a measure of opportunities to express cohesiveness that has been found to be a protective factor for disordered eating among adolescents of both genders (Croll, Neumark-Sztainer, Story, & Ireland, 2002). Some available data suggest that Filipino and Native Hawaiians are less likely to obtain college degrees and are underrepresented in employment in the higher paid, professional and managerial sectors (Toth, 2006; US Census, 2005). To compensate for low-paying jobs, parents work multiple jobs, which reduce time for family life (Enriquez, 1984; Marsella, Oliveira, Plummer, & Crabbe, 1995).

Family dynamics in turn play a role in the development of eating attitudes and behaviors among Filipinos and Pacific Islanders (Becker, Burwell, Gilman, Herzog, & Hamburg, 2002; Edman, 1990). Hence future research could include a measure of socio-economic opportunity for family connectedness and its interactions with eating attitudes — and highly tentatively perhaps, any potential interaction with gender.

Another limitation of the present study was the failure to include any measure of ethnic identity, immigration status, or acculturation, as numerous studies have found these variables are related to increased risk of depression (Chamorro & Florez-Ortiz, 2000; Gonzalez, Haan, & Hinton, 2001; Oh, Koeske, & Sales, 2002), disordered eating (Davis & Katzman, 1999; Guenewardene, Huon, & Zheng, 2001) and other weight-related illnesses (Laurderdale & Rathouz, 2000; Smith, Bogin, Varela-Silva, Orden, & Loucky, 2002). Although Asian and Pacific Islanders make up the largest ethnic group in Hawai'i, the percentage of Caucasians on the island of Maui (37%) is higher than the state average (25%; U.S. Census, 2005). According to political scientist, Ira Rochter, the past decade has also resulted in a demographic change in Hawai'i due to a large influx of residents from the U.S. continent, and this may have resulted in a decline in the influences of 'local island' cultural values (Burnett, 2006, p. 8). Littlewood (2004) has suggested that eating disorders among non-Western cultural groups may be due to the acculturation stress that results from replacing collectivistic, collaborative societal values to more individualistic, competitive values, which may be similar to the present situation in Maui due to the influx of continental U.S. residents. It may be that males from some ethnic groups face greater acculturation stress than females, resulting in increased risk of psychopathology (as suggested by Edman & Yates, 2005), which would help explain the high risk among the males in the present study. Future studies should explore whether these variables are associated with disordered eating attitudes among youth in Hawai'i.

Although the sample includes more than 50% of the school's student population, the sample is small in this preliminary study of eating attitudes among early adolescents in Hawai'i. It is important to expand this research by conducting studies in intermediate schools on other islands to determine if the present results generalize to early adolescents in other Hawai'i communities.

Summary

In contrast to our predictions, the present data suggest that some Asian and Pacific Island adolescent males may be at a higher risk for eating problems than females as indicated by high EAT-26 and body dissatisfaction scores. There were also no gender differences in symptoms of anxiety and depression. These findings suggest that risk of eating pathology and negative affect may not be primarily

a female problem among some ethnic groups. We also found gender differences in factors associated with disordered eating attitudes. Although eating disorders attitudes among females were associated with a variety of other psychological measures such as anxiety and depression, it was only associated with self dissatisfaction among males. Future studies should explore the impact of factors such as socioeconomic status, family support, acculturation stress and immigration status on eating attitudes among adolescents, especially males, in Hawai'i.

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