

Influences of Ethnicity and Socioeconomic Status on the Body Dissatisfaction and Eating Behaviour of Australian Children and Adolescents

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Abstract

The present study examined the association between socioeconomic status (SES), ethnicity, body dissatisfaction, and eating behaviours of 10- to 18-year-old children and adolescents. The study participants (N = 768) were categorised as Caucasian (74.7%), Chinese or Vietnamese (18.2%), and Italian or Greek (7.0%), and high (82%), middle (8.6%), and low SES (9.4%) according to parents' occupations. The χ^2 , Mann–Whitney U test and Kruskal–Wallis test and logistic regression model were used to determine the interaction between variables. Females and older participants were more likely to desire a body figure that was thinner than their perceived current figure. Furthermore, the same groups were also more likely to be preoccupied with eating problems (females 7.1% vs. males 1.4%; for participants aged 15–18 years, 7.8% vs. participants aged 10–14 years, 3.9%). The body dissatisfaction gender difference was females 42.8% vs. males 11.8%, and participants aged 15–18 years 41.7% vs. those aged 10–14 years, 28.3%. Participants whose parents were managers/professionals were more likely to desire a body figure that was thinner than their perceived current figure than those from white-collar and blue-collar families. This was also the case for Caucasian Australians compared to those from Chinese or Vietnamese backgrounds. In conclusion, age and gender differences in body image and problems in eating behaviour were evident among children and adolescents. However, there was no significant SES and ethnic difference in the proportion of participants with eating problems and body dissatisfaction.

Keywords: body image; body dissatisfaction; EAT-26; EDI-BD; ethnicity; socioeconomic status

1. Introduction

With the rapid increase in the prevalence of overweight and obesity in children and adolescents in recent decades in most industrialised countries (Chinn & Rona, 2001; Flegal, Ogden, Wei, Kuczmarski, & Johnson, 2001), the related health risk factors, such as the overconsumption of food and a sedentary lifestyle, have received considerable attention. Paradoxically, recognition of the merits of regular physical activity and the desirability of leanness as opposed to fatness has resulted in an increased concern for body shape in both genders and in individuals of all ages, but especially in youth (Ricciardelli & McCabe, 2001). The health-related behaviours displayed by young males and females appear to reflect a heightened concern with body image and the increasing cultural pressure on both sexes to fit an 'ideal' body shape. Furthermore, a preoccupation with physical attractiveness may lead to unhealthy weight-loss behaviours and eating problems (Abraham, 2003; Killen et al., 1994; Thompson, Coovert, Richards, Johnson, & Gattarin, 1995; Smolak, Levine, & Gralen, 1993; Stormer & Thompson, 1996; Wertheim et al., 1992).

The well-documented research on gender and age differences in body image suggests that girls primarily report greater body image concerns and desire to be thinner than boys (Collins, 1991; Lawrence & Thelen, 1995; Mendelson, White, & Mendelson, 1996; Wood, Becker, & Thompson, 1996). In addition, body dissatisfaction becomes more pronounced with increasing age in girls (Gardner, Sorter, & Friedman, 1997; Rolland, Farnill, & Griffiths, 1997). In terms of gender and age differences for eating problems in youth, some studies have revealed that such differences occur in children aged 10 years and over (Lawrence & Thelen, 1995; Rolland et al., 1997). However, little research has explored the association of body dissatisfaction with ethnicity. A previous study found

that African American children desired a body figure that was larger than their perceived figure, while more Caucasian children desired a body figure that was thinner than their perceived current figure (Lawrence & Thelen, 1995). In concert with this finding, the prevalence of eating disorders among African Americans is rare (Rand & Kaldia, 1990). Further exploration of the body image concerns of children and adolescents from other cultural backgrounds is required. In addition, few studies have examined the effects of socioeconomic status (SES) on body dissatisfaction and eating problems among children and adolescents. In an earlier Australian study, O’Dea (1994) found no difference between adolescent girls from low or middle/upper socioeconomic groups for measures of body image and eating behaviours, while others have found an association (Paxton, Sculthorpe, & Gibbons, 1994; Walters & Kendler, 1995; Wardle & Marsland, 1990).

The sociocultural factors—families, peers, and the media have recently appeared as the three primary risk factors influencing body image and disordered eating behaviours (Blowers, Loxton, Grady-Flessler, Occhipinti, & Dawe, 2003; Stice, 1994, 1998; Stice, Ziemba, Margolis, & Flik, 1996). However, there is a paucity of data on body image characteristics of children and adolescents from different ethnic and socioeconomic backgrounds. Thus, the present study focuses on the relationship between SES, ethnicity, and body dissatisfaction and eating problems. The study provides important baseline data on the influences of SES and ethnicity on the body image and eating behaviours of Australian youth.

2. Methods

2.1. Participants

Participants were 768 school-age children from three primary and three high schools with multicultural diversity in Brisbane, Australia. All participants were in Grades 6, 8, 10, and 12, and ranged in age from 10 to 18 years with a mean (S.D.) age of 13.8 (2.0) years. Of these participants, 74.7% ($n = 574$) were Caucasian, 18.2% ($n = 140$) Chinese or Vietnamese, and 7.0% ($n = 54$) were Italian or Greek Australians. The classification of SES was based on parents’ occupation, the proportion of high SES (i.e., managers and professionals) was 82% ($n = 630$), middle SES (white collar) 8.6% ($n = 66$) and low SES 9.4% ($n = 72$; blue collar). Participants whose data was incomplete were excluded prior to the analyses. Thus, the sample size for the variable perceived body size, the Eating Attitude Test-26 and the Eating Disorder Inventory was 754, 757, and 723, respectively. The University Human Research Ethics Committee of Queensland University of Technology approved the study protocols and school Principals agreed to participate. Participants were recruited on a voluntary basis after investigators met with the relevant class teachers to discuss the data collection procedures. Prior to the commencement of the study, consent forms were completed by all parents.

2.2. Measures

A self-completion questionnaire to examine the perception of body size, body dissatisfaction, and eating behaviours was provided to all participants.

2.2.1. Self-perception of body size

Three questions related to body size perception, including ‘how you think you currently look’ (think body size), ‘how you feel most of the time’ (feel body size), and ‘how you would like to look’ (ideal body size). Nine adolescent body figure silhouettes (figures 1–9) were provided to participants in random order. Participants were asked to choose the most representative silhouette (number) for each question (Byrne & Hills, 1996). Prior to the analysis, the order of all figures in the completed questionnaire was transferred back to the original format. The value 1 stands for the smallest body size, 9 for the largest body size, and the average body size rating is from 4 to 5. Median scores of ‘think,’ ‘feel,’ and ‘ideal’ body size were calculated. In addition, a comparison of discrepancy between ‘think-ideal’ and ‘feel-ideal’ was also conducted.

2.2.2. Eating Attitudes Test (EAT-26)

The EAT-26 includes 26 items to examine the symptoms of anorexia nervosa (Garner, Olmsted, Bohr, &

Garfinkel, 1982). The scores are ranked on a six-point scale from *always* to *never*, with 3 points allotted to 'always,' 2 points to 'very often,' 1 point to 'often,' and 0 points to 'others.' The cutoff point for the diagnosis of an eating problem is a total score of greater than or equal to 20.

2.2.3. Body dissatisfaction based on Eating Disorder Inventory (EDI-BD)

In the full Eating Disorder Inventory, eight items are related to the measure of body dissatisfaction (Garner, 1990). Of the eight items, the points allotted to the six-point scale in three items of body dissatisfaction questions from 'always' to 'never' are the same as for the EAT-26, while for other five items which were related to body satisfaction, 3 points were allotted to 'never,' 2 points to 'rarely,' 1 point to 'sometimes,' and 0 points to 'others.' All individuals were divided according to the scores on the EDI-BD into low (a score of 10 or less) and moderate and high (a score of greater than 10).

2.3. Data management and analysis

The SPSS for Windows statistical package (SPSS, 2001) was used for all data management and statistical analyses. The χ^2 test was used to determine differences in categorical data. Nonparametric methods, including the Mann–Whitney U test and Kruskal–Wallis test were used for the comparison of two groups or multigroups' median. The association between the body dissatisfaction, eating problems, and SES and ethnicity was summarised with odds ratios using logistic regression models. The models were adjusted for all independent variables. The Pearson correlation among the different measures of body dissatisfaction and eating problems was also examined. Statistical significance was defined at the level of $P < .05$ (two-tailed).

3. Results

3.1. The association between self-perceived body size and SES/ethnicity

The median and range of scores on the self-perception body size, that is, 'think body size,' 'feel body size,' and 'ideal body size' was compared among the groups of different SES/ethnic backgrounds in boys and girls. There were statistically significant differences in the ratios of 'think body size' and 'ideal body size' between females and males, with the think and ideal body figure ratings smaller in females than males (Fig. 1a). Similarly, the ratings of think and feel body figures in older participants (15–18 years) were significantly greater than for younger individuals (10–14 years; Fig. 1b).

The perceived ideal body size was significantly larger in the younger males from low-SES families than counterparts from medium SES ($P < .05$). The 'think' body size of females aged 15–18 years from high-SES families was significantly larger than those females from medium SES ($P < .05$), and those females from low SES ($P < .05$). This was also the case for the 'feel' body size of the females aged 15–18 years from high-SES families compared with counterparts from low SES ($P < .05$).

The 'feel' body size of Caucasian females aged 10–14 years was significantly larger than that of females from Chinese or Vietnamese backgrounds ($P < .05$). The 'ideal' body size perceived by females from Italian or Greek cultural backgrounds was significantly larger compared with their Caucasian Australian counterparts ($P < .01$), and females from Chinese or Vietnamese backgrounds ($P < .05$).

At the bivariate level of analysis, the proportion of 'think>ideal' was significantly greater for females (56.9%) than males (27.6%; $\chi^2 = 68.33$, $P < .001$). It was also the case for participants aged 15–18 years (56.3%) compared with those aged 10–14 years (43.2%; $\chi^2 = 54.45$, $P < .001$). The proportion of 'think>ideal' was lower (34.8%) in those from medium SES compared to high with the highest proportion of 'think>ideal' (50.8%), or low SES (37.1%), a significant difference ($\chi^2 = 9.83$, $P = .007$). The proportion of 'think>ideal' was lower (44.9%) in Chinese or Vietnamese Australians compared to Caucasians (49.2%), or those from Italian or Greek backgrounds (45.3%). However, this difference did not attain statistical significance ($\chi^2 = 1.00$, $P = .607$).

These factors were considered in a multivariable logistic regression model to determine their independent influences on the discrepancy between 'think' and 'ideal' body size (Table 1). After mutual

adjustment for all variables included in the model, age and gender remained strong risk factors for the discrepancy. Relative to younger participants, the odds of ‘think>ideal’ in those aged 15–18 years was 1.55 times higher (95% CI 1.14, 2.11). The odds ratio in females was 3.17 times (95% CI 2.25, 4.48) higher relative to males. The proportion of ‘think>ideal’ in participants with high SES was significantly greater than those from white-collar families. There was no ethnicity difference in the model (Table 1).

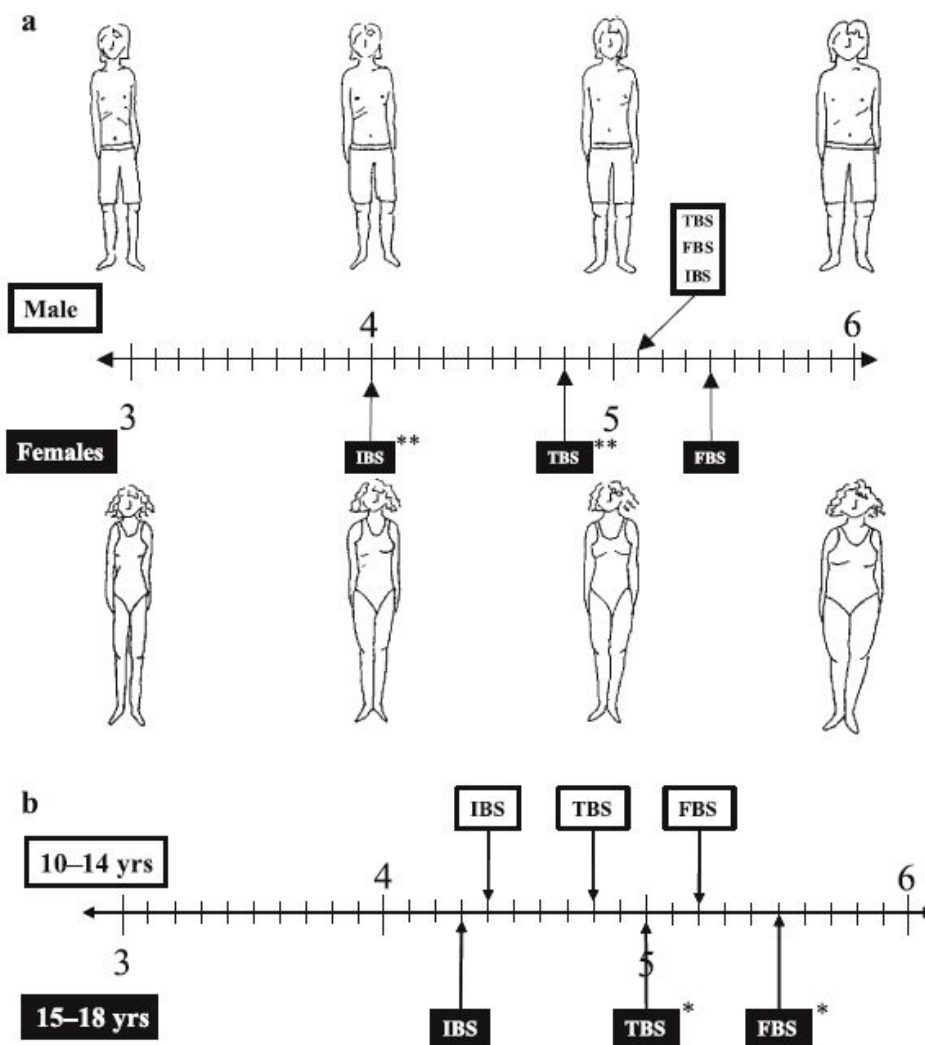


Fig. 1. (a) Think (TBS), feel (FBS), and ideal (IBS) body size perceptions for males ($n = 225$) and females ($n = 529$). $**P < .01$ between the two groups using Mann–Whitney U test. (b) Think (TBS), feel (FBS), and ideal (IBS) body size perceptions for youths 10–14 years ($n = 470$) and 15–18 years ($n = 284$). $*P < .05$ between the two groups using Mann–Whitney U test.

3.2. Discrepancy between ‘think’ and ‘ideal,’ and between ‘feel’ and ‘ideal’

At the bivariate level of analysis on the proportion of ‘feel>ideal,’ females (62.2%) were more likely to desire a body figure that was thinner than their ‘feel’ current figure than males (29.3%; $\chi^2 = 68.33$, $P < .001$), and it was also the case for older (60.9%) compared to younger participants (47.2%; $\chi^2 = 13.29$, $P < .001$). The SES and ethnic differences in the proportion of ‘feel>ideal’ were also statistically significant. Values were 36.4% in the medium-SES category, 55.0% in the high-SES category, and 44.3% in the low-SES category ($\chi^2 = 10.35$, $P = .006$), and 43.5% in Chinese or Vietnamese Australian, 54.9% Caucasian Australian, and 49.1% in those from Italian or Greek backgrounds ($\chi^2 = 6.04$, $P = .0049$). In a multivariable logistic regression model, the age, gender, and SES and ethnicity remained the risk factors for the discrepancy between ‘feel and ‘ideal’ body figure (Table 1). The proportion of ‘feel>ideal’ in participants from high SES was significantly greater than those from medium SES, as was the case for Caucasian Australian compared to those from Chinese or Vietnamese backgrounds (Table 1).

TABLE 1. Multivariable relationship between proportion of “think>ideal” and “feel>ideal,” and demographic variables, SES, and ethnicity

	N	“Think>ideal”				P ^c	“Feel>ideal”			
		%	OR ^a	95% CI ^b			%	OR	95% CI	P
<i>Age</i>										
10–14 years	470	43.2	1.00	Referent		47.2	1.00	Referent		
15–18 years	284	56.3	1.55	(1.14, 2.11)	< .01	60.9	1.59	(1.16, 2.18)	< .01	
<i>Gender</i>										
Males	225	27.6	1.00	Referent		29.3	1.00	Referent		
Females	529	56.9	3.17	(2.25, 4.48)	< .01	62.2	3.67	(2.6, 5.17)	< .01	
<i>SES</i>										
High	618	50.8	1.00	Referent		55.0	1.00	Referent		
Medium	66	34.8	0.56	(0.33, 0.98)	.042	36.4	0.51	(0.29, 0.88)	.016	
Low	70	37.1	0.72	(0.42, 1.25)	.240	44.3	0.93	(0.54, 1.61)	.80	
<i>Ethnicity</i>										
CA	563	49.2	1.00	Referent		54.9	1.00	Referent		
CV	138	44.9	0.92	(0.62, 1.37)	.669	43.5	0.65	(0.43, 0.96)	.033	
IG	53	45.3	0.99	(0.54, 1.79)	.962	49.1	0.88	(0.48, 1.59)	.661	

SES—socioeconomic status, High—managers and professionals, Medium—white collar, Low—blue collar.
 Ethnicity: CA—Caucasian Australian, CV—Chinese or Vietnamese, IG—Italian or Greek.

^aOR, odds ratios of “think>ideal” or “feel>ideal,” mutually adjusted for all other variables in the table.

^bCI, confidence interval for true estimate of adjusted odds ratio.

^cP value, statistical significance of the adjusted odds ratio.

TABLE 2. Multivariable relationship between proportion of eating problems and body dissatisfaction, and demographic variables, SES, and ethnicity

	Eating problems					Body dissatisfaction (EDI-BD>10)				
	N	%	OR ^a	95% CI ^b	P ^c	N	%	OR ^a	95% CI ^b	P ^c
<i>Age</i>										
10–14 years	440	3.9	1.00	Referent		449	28.3	1.00	Referent	
15–18 years	283	7.8	1.91	(0.99, 3.70)	.054	288	41.7	1.65	(1.19, 2.29)	< .01
<i>Gender</i>										
Males	219	1.4	1.00	Referent		221	11.8	1.00	Referent	
Females	504	7.1	5.35	(1.60, 17.83)	< .01	516	42.8	5.37	(3.41, 8.46)	< .01
<i>SES</i>										
High	593	5.4	1.00	Referent		605	34.9	1.00	Referent	
Medium	61	4.9	0.99	(0.29, 3.41)	.987	62	25.8	0.76	(0.41, 1.44)	.450
Low	69	5.8	1.58	(0.50, 5.03)	.437	70	28.6	1.15	(0.62, 2.110)	.661
<i>Ethnicity</i>										
CA	544	5.7	1.00	Referent		552	35.0	1.00	Referent	
CV	130	3.1	0.50	(0.17, 1.51)	.221	135	25.9	0.66	(0.42, 1.04)	.070
IG	49	8.2	1.53	(0.49, 4.76)	.465	50	38.0	1.31	(0.69, 2.49)	.413

SES—socioeconomic status, High—managers and professionals, Medium—white collar, Low—blue collar.
 Ethnicity: CA—Caucasian Australian, CV—Chinese or Vietnamese, IG—Italian or Greek.

^aOR, odds ratios of eating problems or body dissatisfaction, mutually adjusted for all other variables in the table.

^bCI, confidence interval for true estimate of adjusted odds ratio.

^cP value, statistical significance of the adjusted odds ratio.

3.3. Eating problems identified by EAT-26 scores

At the bivariate level of analysis, the proportion of eating problems was significantly greater for females (7.1%) than males (1.4%; $\chi^2 = 9.97, P = .002$), and also for the older (7.8%) compared to the

younger participants (3.9%; $\chi^2 = 5.16, P = .023$). There was no significant SES or ethnic difference. The conclusions based on the bivariate analyses described above were confirmed in the multivariable logistic regression model (Table 2).

3.4. Body dissatisfaction identified by the subscale of EDI-BD

At the bivariate level of analysis, the proportion of EDI-BD>10 was significantly greater for females (42.8%) than males (11.8%; $\chi^2 = 67.01, P < .001$). Again, the proportion was higher for older (41.7%) compared to the younger participants (28.3%; $\chi^2 = 14.10, P < .001$). Similarly, there was no significant SES or ethnic difference. In the multivariable logistic regression model (Table 2), age and gender remained strong risk factors for body dissatisfaction. There was also a near-significant relationship between ethnicity and body dissatisfaction, with the proportion of EDI-BD>10 greater for Caucasian Australian (35%) than those from Chinese or Vietnamese backgrounds (25.9%; $P = .07$).

3.5. Correlation between body dissatisfaction, size perception of boys, and EDI-BD

The results suggest that all measurements used to examine body dissatisfaction and eating problems were significantly correlated with each other with correlation coefficients between .30 and .62.

4. Discussion

There was a significant relationship between age/gender and body image and eating problems, with females and older participants more likely to desire a body figure that was thinner than their perceived current figure. The same trends were seen for likely preoccupied with eating problems and body satisfaction. In addition, there were SES and ethnic differences in body image among participants. High-SES Caucasian Australian youth were more likely to desire a thinner body size than their perceived current figure. However, there was no linear relationship between SES and body image, and no relationship between SES/ethnicity and eating problems.

Previous studies (Collins, 1991; Lawrence & Thelen, 1995; Mendelson et al., 1996; Nishizawa et al., 2003; Wood et al., 1996) support the findings on age/gender differences in body image and eating behaviours among youth in the current study. This suggests that body dissatisfaction, weight concerns, attempts to lose or gain weight, and some unhealthy eating patterns may begin in preadolescence and increase after puberty, particularly among females (Abraham & O'Dea, 2001; O'Dea & Abraham, 1999; O'Dea & Caputi, 2001). Research on the effects of cultural or ethnic influences (Cogan, Bhalla, Sefaddeh, & Rothblum, 1996; Schreiber et al., 1996) has suggested that certain cultural and ethnic groups have a desire for a rounder, fuller body or greater body size than those reflected by Western ideals of slimness. Consistent with earlier research, the present study revealed that young girls from Italian or Greek backgrounds desired a larger body size than the Caucasian or Asian girls. In terms of differences in SES, results of the current study also suggested that young boys from low-SES families desired a larger body size compared to those with medium SES. O'Dea and Caputi (2001) found that young people of low SES, especially boys, were more likely to see themselves as 'too thin' and to be currently trying to gain weight compared to their higher SES counterparts. The SES and ethnicity differences in the current study also showed that youth of medium SES compared to those of high SES were less likely to desire a body figure that was thinner than their perceived current body figure. It is possible that those young people with high SES had been more influenced by factors such as the family or the media.

Overall, ample research has shown that ethnic and cultural differences exist in the prevalence of eating disorders. Wildes, Emery, and Simons (2001) analysed 35 studies examining disturbance and body dissatisfaction in Western countries. The results indicated that white women experienced greater eating disturbance and body dissatisfaction than nonwhite women. Many researchers believe that SES and educational attainment are related to eating disturbance (Gard & Freeman, 1996); that is, nonwhite women who attend college identify with the upper-middle class, white standard of thinness and therefore should report greater eating pathology than other nonwhite women. However, studies using high-school samples report fewer differences between white and nonwhites and more eating pathology in nonwhites than studies using college samples (Wildes et al., 2001). The increasing rate of eating pathology in the nonwhite population has also been reported (Weiss, 1995) but little is known about how

economic and professional factors specific to the nonwhite population may be related to increases in eating disorders. The majority of previous research has focused on the assumption that parental SES and career status translate directly to a child's development of eating problems (Gard & Freeman, 1996). The results of the current study did not indicate that the proportion of eating problems was different between Caucasian and non-Caucasian youth; therefore, further examinations of changes over time in reported eating problems among people from different SES and cultural backgrounds are required.

There were highly significant correlations among all measures of body image and eating behaviours in the current study which indicates that the self-completed questionnaire data is reliable. However, some limitations of the present study should be noted. Firstly, the study is limited by its cross-sectional design and it is not possible to determine a cause–effect relationship. Secondly, participants were sampled from only six schools in the metropolitan area of a large Australian city. The reproducibility of SES and cultural differences in the wider population may be limited. In addition, there was also a lack of qualitative data on the sociocultural influences on body image and eating behaviours of the youth in the study. A recent study suggested that both psychological factors (e.g., internalisation and social comparison) and physical features (e.g., body mass) are contributing factors to body image (Blowers et al., 2003). Finally, caution should also be taken when generalising the findings on EAT-26, as it is an indicator of anorexia, not bulimia nervosa. However, in Australia, few data on body image and eating behaviour among young people from different SES and ethnic groups have been reported. As a result, the current findings do provide important baseline data on the influences of SES and ethnicity on the body image and eating behaviours of Australian children and adolescents. To understand whether SES and ethnicity change across developmental periods, and how these risk factors interact with other individual moderators, requires further well-designed cross-sectional and longitudinal research.

In conclusion, the results of this study indicate that there is a significant association between age/gender and body image and eating behaviours. Furthermore, there were some SES and ethnic differences of body image among the Australian youth. However, there was no evidence to suggest that the prevalence of eating problems was different according to SES and ethnicity.

5. Uncited reference

Garfinkel et al., 1992.

Acknowledgements

This research was funded by the Australian Research Council. Special thanks to Sherryn Davies, Kristy Mitchell, Linda Lyell, and Jenny-Kay Sharpe for their assistance in data collection and to the schools and students who agreed to participate.

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