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Original Article

Body image differences among Malay, Samoan, and Australian women

Andrew J McDowell PhD and Malcolm J Bond PhD

Flinders University, Adelaide, Australia

Comparisons of body attitudes and associated behaviours were undertaken using Malay, Samoan, and Australian female students. The general goal of the research was to determine the degree to which the observed pattern of attitudes and behaviours was attributable to culture. The specific analyses comprised an examination of group differences using standard measures that included the Body Attitudes Questionnaire, the Three-Factor Eating Questionnaire and detailed questions concerning the use of diet and exercise as weight control strategies. The main findings concerned a number of cultural differences, particularly in relation to diet and exercise, that were evident even with the effect of body mass index held constant. These results are interpreted in terms of the efficacy of entrenched cultural beliefs in protecting against introduced, more dominant, cultural values. The Australian sample exhibited the most negative body image, although there was some evidence that Malays and Samoans were influenced by Western ideals of weight and shape. It is proposed that to fully understand the differential meaning of negative body image across cultures and the potential impact of westernisation, both within-group and between-group differences in body size need to be acknowledged.

Key Words: body image, body mass index, cross-cultural comparison, diet, exercise.

Introduction

Negative body image is variously defined as a perceived discrepancy between actual and desired weight/shape, expressed negative attitudes about weight/shape, or a misperception of body size, and may be accompanied by disordered eating symptomatology. There is agreement that some of the strongest influences on body image are socio-cultural in origin,^{1,2} with culture considered to have an independent, causal, influence on body image.³ Cross-cultural comparisons of body image are complicated by the somotype of the cultural groups under investigation. For example, Wardle *et al.*,⁴ found initial differences between Caucasian and Asian students, with Asians exhibiting less body dissatisfaction and lower levels of dietary restraint. However, after controlling for body mass index (BMI) these differences were either minimalised or became non-significant. Results such as these may be confounded by the fact that a very high mean BMI and obesity prevalence may not equate with a higher percentage of body fat. Nevertheless, studies of the type conducted by Wardle *et al.*,⁴ suggest that factors such as the average BMI of a population may moderate the relationship between beliefs, attitudes and behaviours associated with current weight and shape. The present study explores such issues using samples of young women from Malaysia, Australia and Samoa; three countries from the Asia-Pacific region that vary considerably in their average size and shape.

Like many South-East Asian countries, Malaysia is subject to increasing levels of Westernisation. So while Malaysian samples traditionally have a lower average BMI than do, for example, Australian samples, there is a trend toward obesity.⁵ However, Malaysia incorporates three

major ethnocultural groups, Chinese Malays, Indian Malays and, the target group of the current study, Malay Malays. Analyses of body image differences need to accommodate any variation among these distinct groups. The eating behaviour and food ideology of Malay Malays in particular are complex.⁶ Indran and Hatta⁷ suggest that sociocultural and religious influences still guide the eating attitudes and behaviours of Malays, resulting in only modest pressure to conform to Western ideals of body shape and size. Samoans have one of the highest prevalences of obesity in the world⁸ and in Polynesia generally a large body has traditionally been highly valued, being suggestive of health, wealth and prestige.⁹ Wilkinson *et al.*,¹⁰ noted that, compared with Australian women, Samoans expressed more positive body attitudes and were less preoccupied with Western ideals of body size and shape. A more recent study of Cook Islanders, however, found a predilection towards thinness that was ascribed to increasing Westernisation in the region.¹¹ Australia is a highly industrialised country in which influences such as peer pressure and contemporary media encourage women to express body attitudes similar to those found in other Western cultures.^{12,13} Australian women equate 'thinness' with 'attractiveness'¹⁴ and form idealised perceptions of their bodies largely independent of actual physical size and

Correspondence address: Assoc Prof Malcolm Bond, School of Medicine, Flinders University, GPO Box 2100, Adelaide SA 5001, Australia
Telephone : 61 8 8204 5417, Fax : 61 8 8204 5935
Email: malcolm.bond@flinders.edu.au
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shape.¹⁵ Young Australian women are commonly found to consider themselves to be unrealistically overweight,¹⁶ and to engage in disordered eating behaviours.¹⁷

The current study comprised an exploratory comparison of the body images held by Malay, Australian and Samoan women, defined in terms of weight perception, attitudes and cognitions, and the weight-related behaviours of diet and exercise. The extent to which cultural differences extend beyond differences in somotype was examined, while statistically controlling for the effect of BMI.

Materials and methods

The study was approved by the Flinders Clinical Research Ethics Committee.

Participants and procedure

There were 56 participants in each of the three cultural groups. The Malay participants comprised an index sample to which Samoan and Australian participants were frequency matched based on age ($F_{(2, 165)} = 2.75, P > 0.05$).

Malay sample

The Malay sample comprised a convenience sample of students who had recently arrived in Australia to attend a pre-university bridging course, designed to prepare them for university studies. Participation was voluntary. Mean age was 20.3 years ($SD = 0.5$ years), while mean BMI was 21.5 ($SD = 2.6$).

Samoan sample

The Samoan women, also a convenience sample, were drawn from students enrolled at a Samoan school providing a specialised post-secondary preparatory year prior to enrolment at a university. The Samoan sample was therefore in an equivalent educational position to the Malay participants. Mean age was 19.8 years ($SD = 0.8$ years); BMI 23.8 ($SD = 2.5$).

Australian sample

The Australian women were randomly sampled from a standing database comprising first year undergraduate nursing students in Adelaide, Australia. They were therefore slightly more advanced in their education (approximately 3 months) than the Malay and Samoan participants. Their mean age was 20.1 years ($SD = 1.9$ years); BMI 22.0 ($SD = 3.3$).

Questionnaire

Weight and weight control

Self-reported measures of height and weight were used to derive Body Mass Index (BMI). For those participants who were unsure of their height and/or weight, appropriate instruments were available for the acquisition of this information. Weight perception was sought using a 7-point scale from *very underweight* to *very overweight*. Participants were also asked whether they had dieted (*yes, no*) or exercised (*yes, no*) for the specific purpose of controlling their weight during the past 12 months.

Body Attitudes Questionnaire (BAQ)

The BAQ contains 44 self-referent statements to which participants respond using a 5-point scale with anchors of *strongly disagree* and *strongly agree*. Six attitude domains are assessed: feelings of fatness (13 items), body

disparagement (8 items), strength and fitness (6 items), salience of weight and shape (8 items), attractiveness (5 items), lower body fatness (4 items). In all cases higher scores indicate greater importance of the domain being assessed.¹⁸ For the current sample, internal reliability (α) was above .90 for all domains. The BAQ has previously demonstrated its applicability with both Samoan¹⁰ and Malay samples.¹⁹

Three-Factor Eating Questionnaire (TFEQ)

This 51-item scale was developed from the theory of restrained eating. Measures of restraint (21 items), disinhibition (16 items) and hunger (14 items) are incorporated.²⁰ Items describe cognitive, affective, or behavioural cues associated with eating. Responses are scored 0 or 1 and summed, with higher scores denoting the more frequent practice of restrained eating, disinhibited eating, and eating due to feelings of hunger, respectively. For the current sample internal reliability coefficients were .81, .67 and .74. The TFEQ has previously demonstrated its applicability with a Malay sample,¹⁹ and has also been used with a range of multi-racial samples.^{21, 22}

Statistical analysis

Analyses were conducted using SPSS for Windows (version 11.5). Basic group differences were examined using ONEWAY analysis of variance. Multivariate comparisons were conducted using analysis of covariance (ANCOVA).

Results

A significant group difference was noted for BMI ($F_{(2, 165)} = 10.80, P < 0.001$), reinforcing the decision to include it as a covariate in subsequent analyses. Two series of 3 x 2 ANCOVA were conducted. The first series included culture and recent dietary practices as factors with BMI as a covariate. All effects were evaluated simultaneously, adjusting each effect for all other effects (unique sums of squares). Dependent variables were weight perception, BAQ and TFEQ scores. Results are presented in Table 1. The second series of analyses repeated the above analytical strategy but evaluated the influence of exercise as a weight loss strategy rather than diet. Table 2 includes these results. In both sets of analyses BMI was significantly related to the majority of dependent variables in the expected direction. For example, the larger the BMI the more negative were the body attitudes, and the more likely participants were to report disinhibited eating and hunger. A positive relationship between BMI and weight perception demonstrated appropriate insight on the part of participants. Only strength and fitness, attractiveness and restraint were not related to BMI.

In the first analyses those who had dieted within the past 12 months for the purpose of weight loss were significantly more likely to perceive themselves as overweight than non-dieters. Dieters were also significantly more likely to have higher scores for feelings of fatness, body disparagement, salience of weight and shape and lower body fatness, and lower scores for attractiveness. They were also more likely to report both restrained and disinhibited eating. There were independent effects of culture for weight perception, feelings of fatness, attractiveness and lower body fatness. Malays had the

Table 1. Adjusted means and statistical analyses of culture and dieting with BMI as a covariate

	Malays	Australians	Samoans	Dieters	Non-dieters	F _{BMI}	F _{culture}	F _{dieting}	F _{interaction}
Weight perception BAQ	4.9	4.7	3.7	4.7	4.2	64.41 ^{***}	21.33 ^{***}	8.47 ^{**}	6.33 ^{**}
Feelings of fatness	47.4	38.9	37.3	43.7	38.7	18.85 ^{***}	10.68 ^{***}	7.38 ^{**}	1.45
Body disparagement	19.3	18.3	20.4	21.1	17.6	9.61 ^{**}	2.31	15.02 ^{***}	0.89
Strength and fitness	20.4	19.3	20.4	19.8	20.2	0.10	0.97	0.19	1.27
Saliency of weight/shape	21.3	21.5	22.7	22.9	20.7	4.77 [*]	1.50	6.77 ^{**}	3.72 [*]
Attractiveness	14.7	15.7	16.5	15.0	16.2	0.67	4.97 ^{**}	5.88 ^{**}	3.43 [*]
Lower body fatness TFEQ	14.3	12.2	11.4	13.5	11.8	9.73 ^{**}	7.31 ^{***}	6.93 ^{**}	2.60
Restraint	9.1	9.6	10.0	11.4	7.7	0.35	0.39	20.80 ^{***}	2.41
Disinhibition	8.3	7.5	7.3	8.3	7.0	7.87 ^{**}	0.98	5.35 [*]	1.49
Hunger	8.1	6.4	7.3	7.4	7.2	8.09 ^{**}	2.59	0.10	0.60

* $P < 0.05$. ** $P < 0.01$. *** $P < 0.001$.

Table 2. Adjusted means and statistical analyses of culture and exercise with BMI as a covariate

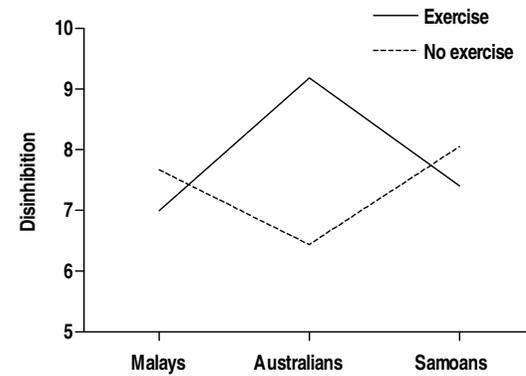
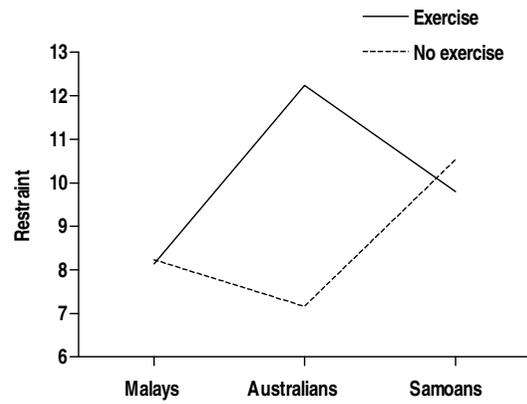
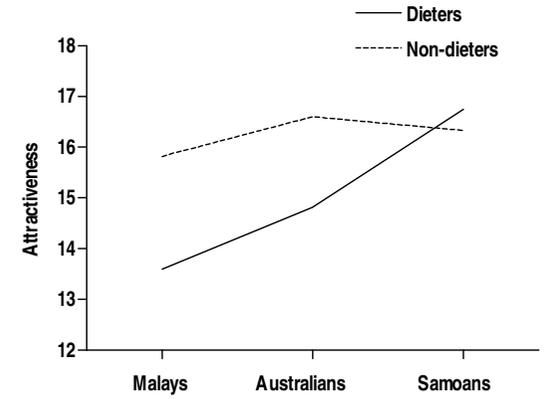
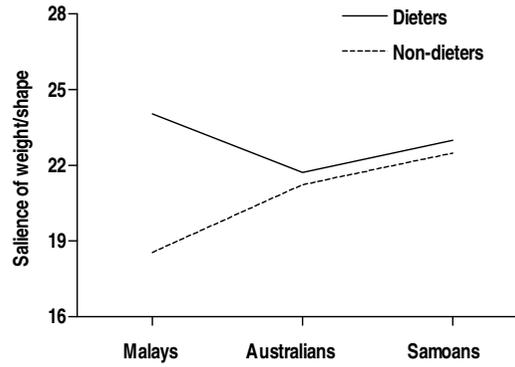
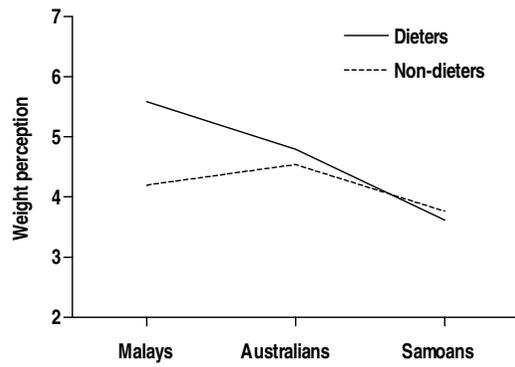
	Malays	Australians	Samoans	Exercise	No exercise	F _{BMI}	F _{culture}	F _{exercise}	F _{interaction}
Weight perception BAQ	4.5	4.8	3.7	4.4	4.2	69.45 ^{***}	13.04 ^{***}	1.28	1.50
Feelings of fatness	44.6	38.4	37.9	40.2	40.4	19.16 ^{***}	4.90 ^{**}	0.01	0.81
Body disparagement	17.0	18.7	20.8	19.1	18.5	7.04 ^{**}	5.49 ^{**}	0.33	1.80
Strength and fitness	21.4	19.1	20.4	20.5	20.2	0.08	2.88	0.17	1.75
Saliency of weight/shape	19.3	21.4	23.2	21.3	21.2	4.69 [*]	7.01 ^{***}	0.01	0.00
Attractiveness	15.7	15.6	16.8	15.8	16.3	0.44	2.23	0.86	1.31
Lower body fatness TFEQ	13.4	12.0	11.3	12.6	11.9	11.96 ^{***}	3.40 [*]	1.20	0.06
Restraint	8.2	9.7	10.2	10.1	8.6	0.22	1.79	2.56	4.16 [*]
Disinhibition	7.3	7.8	7.7	7.9	7.4	4.98 [*]	0.27	0.70	3.90 [*]
Hunger	8.2	6.5	7.2	7.5	7.1	6.18 ^{**}	2.65	0.59	1.00

* $P < 0.05$. ** $P < 0.01$. *** $P < 0.001$.

highest scores for weight perception, feelings of fatness and lower body fatness, and the lowest attractiveness score. There were significant interactions between culture and dieting for weight perception, saliency of weight and shape and attractiveness. These interactions are presented graphically in Figure 1. Malay dieters reported the most negative body image, being particularly dissimilar to their non-dieting counter-parts. Conversely, the body image of Samoan dieters and non-dieters were very similar.

In the second analyses there were no significant main effects of exercising for weight loss. However, the inclusion of exercise in the analyses produced a somewhat

different pattern of significant effects for culture than seen in Table 1. There was again a significant effect for weight perception, although on this occasion it was the Australian sample with the highest score. Significant effects for feelings of fatness and lower body fatness could again be attributed to the Malay sample. New significant effects for culture were noted for body disparagement and saliency of weight and shape. In both cases the Malay mean was the lowest and the Samoan mean the highest. Despite there being no significant main effects for the TFEQ scales, significant interactions between culture and exercise were evident for restraint and



disinhibition. These are presented graphically in Figure 1. Again, there was a consistent pattern. The interactions were most attributable to the difference between Australians who did and did not report exercise as a weight loss strategy. Those who did not exercise tended to practise restrained and disinhibited eating. In contrast, there was little difference between those who did and did not exercise in the Malay and Samoan samples.

Discussion

The current study sought to compare the body images of three cultural groups from the Asia-Pacific region. Two of these were resident in their country of birth while the third comprised temporary residents in a Western country. The goal of the study was to determine whether there were unique effects of culture once BMI was accounted for. To consider cultural differences without acknowledging the potentially confounding effect of differential body size across different ethnic groups, may overemphasise the importance of culture. Larger and/or smaller individuals within a particular cultural group may in fact hold an entirely realistic and adaptive view of their body image, as reflected in their attitudes and behaviours. Of course one caution in such an investigation is the extent to which BMI provides a valid commentary on body size as a risk factor for poor health among non-Western samples.²³⁻²⁵ Notwithstanding this point, BMI is commonly reported for a large range of cultural groups,²⁶ and was noted in the current study to be associated with the majority of dependent variables.

With BMI statistically controlled there remained substantial evidence for a cultural explanation for group differences in weight perception and a number of the BAQ domains. A further enquiry concerned the degree to which the Western epidemic of dieting to address body image, and the use of exercise, were of relevance to other non-Western cultural groups. In general, interactions between dieting and culture were limited to attitudes concerning body image, while interactions between exercise and culture were more prevalent among the more drastic behaviours of restrained and disinhibited eating. Notable among these interactions were the psychological differences between dieters and non-dieters.

The greatest discrepancy between the attitudes of dieters and non-dieters emerged among the Malay sample. This suggests that dieting for the purpose of losing weight has become an accepted strategy. It remains unclear whether or not this is due to the growing effect of Westernisation in Malaysia, or if it is due to specific cultural practices of Malays, as suggested by Indran and Hatta.⁷ Ultimately, these results must be considered exploratory. The women in this sample had recently relocated to Australia, were highly educated, fluent in English, comprise the demographic frequently targeted by Western marketeers, and had been prepared for study overseas. Irrespective of the cause, the highlighted finding presents a burgeoning problem for Malays. Our result is also pertinent in light of other studies that report negative body image in neighbouring South East Asian countries such as Japan, Singapore, Hong Kong, Taiwan and the Republic of Korea.²⁷⁻³⁰

Dieters and non-dieters from Samoa showed little difference in their psychological profiles. They rated themselves equally for attractiveness, weight perception, salience of weight and shape, and lower body fatness. That is, there is no obvious psychological correlate to dieting for the Samoan sample. Australian dieters and non-dieters differed in the domains of attractiveness and the perception of having excess lower body fat. Confirming previous findings,^{14,15} this implies that it is the need to appear attractive generally, and have the ideal shape specifically, that motivates Australians who actively diet to control their weight.

The most striking set of observed cultural differences were attributable to the Australian women who reported exercising to control their weight. In fact, all significant interactions between culture and exercise behaviour were attributable to the Australian sample. The Malay and Samoan means were virtually identical for exercisers and non-exercisers, suggesting that while exercise is a weight-loss strategy for some, it is yet to become part of the constellation of attitudes and behaviours associated with negative body image. That is, among Samoan and Malay participants the use of exercise as a weight loss strategy appears to be independent of body image. Conversely, for many women from Western cultures, perhaps including the Australians in the current sample, excessive exercise is now a commonly acknowledged correlate of negative body image and disordered eating symptomatology.^{31,32} It was also only among the Australian women that participants reported the combined use of exercise and diet for weight loss purposes. Samoans and Malays reported either exercise or diet as their strategy of choice, with the two rarely being combined.

For cultures in which the extent of negative body image is yet to be accurately determined (e.g. Samoan and Malay cultures), it is advisable that presumed influences on body image (e.g. media), and what is considered to be 'normal' (e.g. ideal size/shape, amount of exercise), are carefully monitored for each specific culture. Ideally this should involve non-clinical groups and on-going monitoring to identify changing attitudes. The aim would be to clearly identify those aspects of cultural systems that may be influenced by the internalisation of social norms regarding ideal weight and shape.³³ The identification with strong cultural norms may in fact be a protective factor against the development of poor body image and disordered eating for Malays and Samoans. This has been noted in some studies of African-American culture,³⁴ and has already been proposed for the Malay culture.⁷ However, it remains equivocal whether there is any protective effect associated with the larger, traditionally valued, somotype of the Samoan culture.^{11,35} An interesting corollary is that Australian women may benefit from exposure to variations in what is considered normal weight and shape. Indeed, a suggested treatment strategy for Caucasians with poor body image is their involvement in the cultural activities of non-Caucasian groups.²⁶

While negative body image was the primary focus of this study, it should be acknowledged that perceptions of body image are not always of a 'negative' nature. Rather, such perceptions form a continuum characterising a range

of attitudes toward body image. The traditional emphasis on 'negative' body image focuses on the primary desire for a smaller body size and altered body shape. However, such perceptions may be entirely appropriate for those who do in fact have a very high BMI. While statistically controlling for BMI recognises that participants are of different body sizes, perhaps future research should more explicitly acknowledge those participants whose body attitudes are in accord with their current BMI.

In conclusion, it has been predicted that Western messages of thinness may eventually impact on all cultures in the Asia-Pacific region, a detailed examination of the psychological constructs and behavioural practices of these cultures should precede any premature conclusions. Factors commonly associated with negative body image and disordered eating, such as diet and exercise, may be potentially culturally "normal" within some ethnic groups. Further, depending on their own size and shape, individuals from a given culture are likely to be differentially influenced by both cultural practices and Western influences, and the interplay between these two dominating forces.

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Original Article

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Andrew J McDowell PhD and Malcolm J Bond PhD
Flinders University, Adelaide, Australia

马来西亚，萨摩亚和澳大利女性体形差异

以马来西亚，萨摩亚和澳大利亚女学生比较研究了她们对体形的态度及其相关行为，本研究的目的是决定所观察到的态度和行为模式可归因于文化的程度。所进行的特定分析包括使用标准测量方法来测定组间差异，这些标准测量方法包括体形态度问卷调查，三因子饮食调查和一些详细的关于通过饮食和体育锻炼来控制体重等情况的调查。主要的发现为组间存在许多文化上的差异，特别是饮食和体育锻炼等方面的差异，这些文化上的差异与各自的体重指数保持稳定的结果明显一致。这些结果可以用根深蒂固的文化信仰对外来侵入的更为强势的文化价值所起的保护作用来解释，尽管马来西亚和萨摩亚被认为受西方体重和体形等观念的影响，但是澳大利亚样本的体形却最差。我们建议为了充分理解不同文化背景下消极的体形所代表的不同内涵和西化的潜在影响，有必要承认组内和组间体形尺寸上存在的差异。

关键词：体形、体重指数、跨文化比较、饮食、体育锻炼。