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**MEDIA INFLUENCES ON BODY IMAGE
AND DISORDERED EATING
AMONG INDIGENOUS ADOLESCENT AUSTRALIANS**

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and Kylie Ball**

ABSTRACT

There has been no previous investigation of body image concerns and body change strategies among indigenous Australians. This study was designed to investigate the level of body satisfaction, body change strategies, and perceived media messages about body change strategies among 50 indigenous (25 males, 25 females) and 50 non-indigenous (25 males, 25 females) Australian adolescents (mean age 14.05, $SD = 1.05$). Consistent with past studies, girls were more likely to be dissatisfied with their weight and engage in strategies to lose weight. However, contrary to expectations, indigenous adolescents engaged in more strategies to lose weight, increase weight, and increase muscles than did non-indigenous adolescents, despite perceiving fewer media messages about losing weight. Additional factors that may explain the findings and the need for further research with different cultural groups are highlighted.

A substantial body of data indicates that the media provides strong messages regarding ideal body appearance for both adolescent boys and girls. In Western countries, the media consistently portrays the ideal body for girls as extremely slim (Thompson & Smolak, 2001) and the ideal body for boys as slim and muscular (Podpe, Olivardia, Gruber, & Borowiecki, 1999). Adolescent boys and girls are clearly aware of these media ideals, which have been shown to influence levels of body satisfaction, as well as disordered eating and strategies to increase muscles (McCabe, Ricciardelli & Finemore, 2002; Ricciardelli & McCabe, 2003). However, these findings largely apply to Caucasian populations, with less investigation of body image ideals of other racial groups (Abrams & Stormer, 2002). Abrams and Stormer have

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suggested that other racial groups who live in Western societies are less likely than the White population to adopt the body image ideal portrayed within these societies. It is not clear if the differences in the levels of body satisfaction and disordered eating between different racial groups are due to the fact that the media messages are different for respondents from different ethnic backgrounds, that the media messages are not detected, or that the messages do not impact on the body image or eating behaviors of some groups. There is also no information on the nature and impact of media messages related to increasing muscle size among non-White populations.

The current study was designed to evaluate the nature of media messages related to body shape and strategies to change body shape perceived by indigenous Australian adolescents, and compare these messages to those received by non-indigenous Australian adolescents. Associations between these perceived messages and body satisfaction, as well as strategies to decrease weight or increase muscles, were also investigated in the two groups. Indigenous Australian adolescents are known to have a distribution of body size/shape that is atypical of the general adolescent population (House of Representatives Standing Committee on Family and Community Affairs, 2000), with higher proportions of indigenous adolescents being overweight, but little is known about related attitudes and behaviors. We are not aware of any other research on body image and media influences on body image that has been published on this group of respondents.

The following reviews past research on body image and body change strategies among other ethnic populations in order to guide the hypotheses for the present study. Past research on ethnic differences in body image and body change strategies has focused primarily on body dissatisfaction and the impact of perceptions of attractiveness for females. Relationships between perceptions of media messages, body image concerns, and body change strategies for males have received little attention.

Although they did not specifically examine media influences, Abrams and Stormer (2002) investigated the role of ethnicity in the internalization of the thin ideal among urban adolescent girls in the United States. The respondents were African American, White, Latino, and Asian. The results clearly demonstrated that White adolescent girls were more aware and had internalized the thin ideal more than African Americans. Interestingly, no differences were found among the White, Latino, and Asian American girls on the awareness or internalization score. African American girls were the least likely to detect or internalize the sociocultural messages regarding the ideal body form for fe-

males. This would suggest that the African American girls are most different from the other groups in their views on ideal body appearance. It is not known whether these findings are generalizable to indigenous Australian adolescents.

Poran (2002) also explored the perceptions of beauty held by White, Latino, and Black American women. Consistent with the findings of Abrams and Stormer's (2002) study, Poran found that Black women specified an ideal of beauty that was different from the general ideal portrayed in society, and demonstrated higher levels of body satisfaction than either White or Latino women. The ideal body portrayed by Black women was also larger than that portrayed by White women.

Both of the above studies were conducted among participants within the American culture setting. Three studies were located that examined the role of ethnicity within settings other than the United States. Wilkinson, Ben-Tovim, and Walker (1994) compared the cultural significance of body weight and shape for women from Western Samoa and Australia. The results demonstrated that Samoan women had a larger BMI than Australian women, that they felt stronger and more attractive, but that they engaged in higher levels of body disparagement than did Australian women. The data indicated that although the Samoan women felt as fat as the Australian women, this feeling was less likely to impact on their feelings of attractiveness. Perhaps there is less internalization of the thin ideal among Samoan women, and thus they feel less concerned about their body shape.

Consistent with this proposal, Brevis, McGarvey, Jones, and Swinburn (1998) found that Samoans demonstrated an absence of a strongly negative view of obesity, and the ideal body size for Samoan women in Samoa was greater than that for Samoans in Auckland, New Zealand. In contrast, the ideal size for Samoan men in New Zealand was greater than that for Samoan men in Samoa. It would seem that once ethnic groups become more aware of the cultural ideals generated by Western societies (as would occur in New Zealand), they are more likely to adopt the sociocultural ideal of that society. However, from the studies noted earlier, this ideal may not be internalized to the same extent as it is by Whites within these societies. Further support for this proposal was provided by a recent Australian study of acculturation effects on body weight dissatisfaction and extreme weight loss behaviors (Ball & Kenardy, 2002). In a community sample of 14,779 young women, a strong acculturation effect was observed such that the longer the time spent in Australia, the more women reported weight-related values and behaviors similar to those of Australian-born women. These findings support the contention that, as individuals

become more acculturated to Western society, they become more susceptible to sociocultural influences from the media and peers that promote the thin ideals in these societies. This may lead to the development of concerns about body image and the adoption of body change behaviors.

Very few studies have examined the impact of race and ethnicity on body image concerns and body change strategies among adolescent males. In one study, Black males were found to be more satisfied with their weight and proud of their body compared to Whites (Story, French, Resnick, & Blum, 1995). However, in two other studies, no differences were found in the number of White versus Black adolescent boys who were trying to lose weight (Adams, Sargent, Thompson, Richter, Corwin, & Rogan, 2000; Field et al., 1999). No studies were located that have examined the role of race and ethnicity on body change strategies to increase weight or muscles.

From the above review, it is clear that further research needs to be conducted to determine the differences in body image and body-change strategies among different ethnic groups. Most particularly, it is important to examine the body image and body change strategies adopted by males from different ethnic groups, since males have been largely ignored in studies of body image and ethnicity. Furthermore, given the central role of the media in shaping body image and body change strategies, it is important to examine its role among non-White populations.

The current study was designed to examine body image, body change strategies, and media influences among indigenous and non-indigenous Australian adolescent boys and girls. Satisfaction with and importance of body shape, as well as body change strategies to decrease weight, increase weight, and increase muscles were explored. It was predicted that indigenous boys and girls would be less likely to be dissatisfied with their bodies and would view their body shape as less important than would non-indigenous boys and girls, and would also be less likely to adopt strategies to lose weight or increase muscles. It was also predicted that indigenous Australians would detect less pressure from the media to lose weight or increase muscles, and that the media would be less likely to predict body satisfaction or body change strategies among indigenous adolescent boys and girls.

METHOD

Participants

Fifty indigenous adolescents, from urban areas, aged 12–16 years participated in the study; 25 girls (mean age = 13.92, $SD = 1.44$) and 25 boys (mean age = 14.00, $SD = 1.15$). Respondents were drawn from the suburbs of Melbourne, Australia (a city of about three million people). The data were compared to a matched sample drawn from the study of non-indigenous adolescents (McCabe & Ricciardelli, 2003) who were mainly Anglo-Saxon (girls' mean age = 14.07, $SD = 1.32$; boys' mean age = 14.04, $SD = 1.07$). The two groups were matched on gender, grade, and age.

Materials

All respondents completed five subscales of the Body Image and Body Change Inventory (Ricciardelli & McCabe, 2001a; 2002). The Body Image and Body Change Inventory subscales completed by respondents were:

Body Image Concern (described as Body Dissatisfaction). This scale was comprised of eight items that related to dissatisfaction with chest, abdominal region, shoulders, arms, hips, thighs, stomach, and legs. There were also three separate single-item scales that related to level of dissatisfaction with weight, shape, and muscles.

Body Image Importance. This scale was comprised of eight items as it was for Body Image Concerns. There were also three additional items related to weight, shape, and muscles.

Body Change Strategies to Decrease Weight. This scale was comprised of six items related to losing weight; e.g., "How often do you change your eating to decrease your body size?" and "How often do you think about exercising to lose weight?"

Body Change Strategies to Increase Weight. This scale was comprised of six items; e.g., "How often do you change your eating to increase your body size?" and "How often do you think about exercising to increase weight?"

Body Change Strategies to Increase Muscles. This scale was comprised of six items related to increasing muscles; e.g., "How often do you change your level of exercise to increase the size of your muscles?" and "How often do you worry about changing your eating to increase the size of your muscles?"

All items were rated on a five-point Likert scale with higher scores indicating higher levels of each construct. Total scores were obtained by adding responses to items for each scale. The inventory has demon-

strated high levels of internal consistency (Cronbach alpha > .77 for all scales), and has been validated by both exploratory and confirmatory factor analysis (Ricciardelli & McCabe, 2001a).

The Media Scale from the Sociocultural Influences on Body Image and Body Change Questionnaire (McCabe & Ricciardelli, 2001) was used in the current study. This scale has been shown to form three subscales: pressure to lose weight (3 items), pressure to increase weight (3 items), and pressure to increase muscle tone (4 items). Each of these subscales have demonstrated high levels of internal consistency ($\alpha > .84$) and have been subject to both exploratory and confirmatory factor analysis (McCabe & Ricciardelli, 2001).

Procedure

Ethics clearance was obtained from the Deakin University Human Research Ethics Committee, and the Education Department School Support Branch. For the indigenous population, clearance to conduct the study was also sought and gained from Aboriginal Cooperatives and indigenous community elders in the regions from which data were collected. For the non-indigenous population, permission to conduct the study was obtained from school principals.

Consistent with the guidelines of the National Health and Medical Research Council and the Australian Psychological Society, indigenous female research assistants who were members of the local community were employed to collect the data from the indigenous participants. This is an extremely important step in conducting research with indigenous Australians because there is a great deal of scepticism and resistance among this population to being involved in research conducted by non-indigenous Australians. Some evidence suggests that indigenous persons may view such research as exploitative (Dudgeon & Oxenham, 1989). Nobles (1991) referred to this exploitation as "academic colonization." Therefore, it is necessary for members of the community to have a full understanding of the research questions, purpose, and process, and to be informed as to how the findings will be used to benefit the community. In the case of this study, the benefits were considered to be that the findings would inform the development of educational materials specifically designed to address the needs of the indigenous population. Female research assistants also collected the data from the non-indigenous respondents.

Plain Language Statements detailing the purpose of the study were provided to all participants and their parents, and informed consent was obtained from both the parents and the participants. The research assistants then individually administered the questionnaires to the

indigenous participants in their school or in their home, providing assistance with the contents as required. Surveys were administered to the non-indigenous participants during class time. All questionnaires were completed anonymously, and the survey took about 30 minutes to complete.

RESULTS

Gender and Cultural Differences on Body Image and Body Change Strategies

A 2 (gender) \times 2 (group-indigenous versus non-indigenous) MANOVA was conducted to determine the differences between the groups in the body image (body dissatisfaction, body importance) and body change strategies (lose weight, gain weight, increase muscles), of the respondents (see Table 1 for a summary of means and standard deviations). The results demonstrated an overall multivariate significant difference between boys and girls, $F(5, 86) = 5.40, p < .001$, and between the indigenous and non-indigenous groups, $F(5, 86) = 10.24, p < .001$, and a significant interaction between the indigenous and non-indigenous groups, $F(5, 86) = 10.24, p < .001$, and a significant interaction effect between gender and cultural group, $F(5, 86) = 2.41, p < .05$. Univariate tests demonstrated that girls were more dissatisfied with their bodies than were boys, $F(1, 90) = 5.91, p < .05$, and engaged in more strategies to decrease weight, $F(1, 90) = 7.74, p < .01$. Boys were more likely to engage in strategies to increase their muscles, $F(1, 90) = 4.23, p < .05$. The results further demonstrated that indigenous adolescents were more dissatisfied with their weight, $F(1, 90) = 4.09, p < .05$, and engaged in more strategies to decrease weight, $F(1, 90) = 14.98, p < .001$, increase weight, $F(1, 90) = 19.92, p < .001$, and increase muscles, $F(1, 90) = 35.79, p < .001$. However, analysis of the interaction effect demonstrated that non-indigenous girls scored higher than indigenous girls on body dissatisfaction ($F(1, 90) = 6.08, p < .05$), but there was little difference between indigenous and non-indigenous boys in their levels of body dissatisfaction. There were no other significant interaction effects.

Gender and Cultural Differences on Perceived Media Influences

A second 2 (gender) \times 2 (group-indigenous versus non-indigenous) MANOVA was conducted to determine differences between the groups in perceived media influences (media messages to lose weight, gain weight, increase muscles) (see Table 1 for a summary of means and

Table 1

Means and Standard Deviations for Indigenous and Nonindigenous Adolescents for Body Image, Body Change Strategies and Media Influences

Body/Media Variable	Indigenous				Nonindigenous			
	Males		Females		Males		Females	
	M	SD	M	SD	M	SD	M	SD
Body dissatisfaction	16.95	4.61	16.92	4.63	12.50	3.38	17.36	6.04
Body image importance	19.95	4.89	12.00	4.56	20.28	6.61	21.36	5.07
Strategies to decrease weight	10.09	2.67	12.24	3.34	7.77	2.98	9.36	3.80
Strategies to increase weight	8.95	2.92	9.96	3.88	7.32	2.53	6.32	1.60
Strategies to increase muscle	11.14	3.06	10.08	3.76	7.73	3.12	6.32	.80
Media to lose weight	5.68	2.03	6.64	2.06	6.95	2.21	7.68	1.46
Media to increase weight	4.73	1.58	4.76	1.51	4.73	1.70	4.57	1.49
Media to increase muscles	8.27	2.29	7.36	2.38	8.27	2.07	6.84	2.11

standard deviations). The results demonstrated an overall significant multivariate effect for gender, $F(3, 88) = 6.25, p < .001$, and cultural group, $F(3, 88) = 3.84, p < .05$. The interaction effect was not significant. Univariate tests demonstrated that girls scored higher than boys in their perception of media messages to lose weight, $F(1, 90) = 4.35, p < .05$, and boys scored higher in their perception of media messages to increase muscles, $F(1, 90) = 6.53, p < .05$. The results also demonstrated that the non-indigenous adolescents indicated that they experienced more media messages to lose weight than did the indigenous participants, $F(1, 90) = 8.21, p < .01$.

Predictors of Body Image and Body Change Strategies

In order to determine the extent to which media messages predicted body image and body change strategies among the non-indigenous and indigenous groups, 12 standard multiple regressions were conducted. Analyses were conducted separately for the indigenous and non-indigenous populations to determine if the nature of the predictors was different for the two groups. The independent variables in each analysis were gender and media influences (media pressures to lose weight, increase weight, increase muscles), and the dependent variables were overall dissatisfaction with weight, shape, and muscles, and strategies to decrease weight, increase weight, and increase muscles.

Indigenous adolescents

For overall dissatisfaction with weight, $F(4, 42) = 4.02, p < .01, R^2 = .28$. The only variable that showed a unique contribution to dissatisfaction with weight was media messages about weight loss, $\beta = .59, p < .001$. For overall dissatisfaction with shape, $F(4, 42) = 4.45, p < .01, R^2 = .23$. The variables that showed a unique contribution to dissatisfaction with shape were gender, $\beta = -.35, p < .05$ (girls more dissatisfied), media messages about weight loss, $\beta = .57, p < .001$, and media messages about increasing muscles, $\beta = -.34, p < .05$. For overall dissatisfaction with muscles, $F(4, 42) = 1.38, p > .05$. For strategies to decrease weight, $F(4, 42) = 5.00, p < .01, R^2 = .32$. The only variable that showed a unique contribution to strategies to decrease weight was media messages about weight loss, $\beta = .41, p < .01$. For strategies to increase weight, $F(4, 42) = 1.76, p > .05$. For strategies to increase muscles, $F(4, 43) = 2.46, p < .05, R^2 = .11$. The only variable that showed a unique contribution to strategies to increase muscle was media messages to increase muscle, $\beta = .33, p < .05$.

Non-indigenous Adolescents

For overall dissatisfaction with weight— $F(4,42) = 4.07, p < .01, R^2 = .28$. The only variable that showed a unique contribution to dissatisfaction with weight was media messages about weight gain, $\beta = -.36, p < .05$; adolescents who displayed higher levels of weight dissatisfaction reported that they were less affected by media messages to gain weight. For overall dissatisfaction with shape— $F(4, 42) = 2.84, p < .05, R^2 = .14$. The only variable that showed a unique contribution to dissatisfaction with shape was gender, $\beta = .41, p < .05$ (girls were more dissatisfied). For overall dissatisfaction with muscles— $F(4, 42) = 1.20, p > .05$. For strategies to decrease weight— $F(4, 42) = 1.26, p > .05$. For strategies to increase weight— $F(4, 42) = 1.19, p > .05$. For strategies to increase muscles— $F(4, 42) = 2.84, p < .05, R^2 = .14$. The single variable that showed a unique contribution to strategies to increase muscle was media messages to gain weight, $\beta = .33, p < .05$.

DISCUSSION

The present study was designed to examine the extent to which there are differences in body image and body change strategies, as well as awareness of media messages related to body change strategies for indigenous and non-indigenous Australian adolescents from urban areas. The study was also designed to examine the extent to which these media messages predicted body image and body change strategies in these two cultural groups.

Consistent with past studies, girls were more likely to be dissatisfied with their weight (Keel, Fulkerson, & Leon, 1997) and to engage in strategies to lose weight (Smolak & Murnen, 2001), whereas boys were more likely to engage in strategies to increase muscles (McCabe & Ricciardelli, 2003). These findings are consistent with some of the main gender differences on perceived media messages found in the present study. Girls reported more perceived media messages about weight loss while boys reported more perceived media messages about increasing muscles.

Contrary to expectations, indigenous adolescents engaged in more strategies to lose weight, increase weight, and increase muscles than did non-indigenous adolescents. These findings are at variance with previous research among Black adolescent girls (Abrams & Stormer, 2002; Poran, 2002) and Black adolescent boys (Adams et al., 2000; Field et al., 1999). These inconsistencies may be related to the different ethnic groups under study. There are no previous studies of these is-

sues among indigenous Australian adolescents with which the present findings can be compared. The greater use of body change strategies among indigenous adolescents also seems at odds with several of the other findings in the present study. Indigenous girls displayed lower levels of body dissatisfaction than did non-indigenous girls. In addition, indigenous adolescents reported that media messages were less likely to encourage weight loss behavior in comparison to the non-indigenous adolescents. Furthermore, regression analyses showed that the factors contributing to body dissatisfaction and body change strategies were similar for both cultural groups. However, consistent with the finding that indigenous adolescents were engaging in more body change strategies, perceived media messages were significantly associated with a larger number of body image and body change strategies among the indigenous group. Therefore, although indigenous adolescents reported fewer media messages, overall these seemed to have more impact on the indigenous group than on the non-indigenous group. It may be that indigenous adolescents were less aware of the media messages and their possible impact on their behavior. Another possibility is that they were more reluctant to report that media messages influenced their body change strategies. Future studies need to examine how adolescents from indigenous backgrounds and other cultures are interpreting the nature of media messages and the impact these have on their body image and body change strategies.

Further research is also needed to examine other factors that may explain why indigenous adolescents are engaging in more body change strategies. It may be that these adolescents are receiving messages regarding body change strategies from other sources. These may be coming from parents, peers or from engaging in higher levels of social comparisons. Certainly, previous research has demonstrated the role of these sociocultural influences on shaping both body dissatisfaction and body change strategies among non-indigenous adolescents (e.g., McCabe & Ricciardelli, 2003; Ricciardelli & McCabe, 2001b). It is also possible that the indigenous adolescents may be engaging in more body change strategies because of their higher BMI and/or larger body build. Neither BMI nor body frame was assessed in the current study; however, indigenous Australians tend to have a larger body frame than do non-indigenous Australians (House of Representatives Standing Committee on Family and Community Affairs, 2000).

In conclusion, the present study found more differences than similarities in body image, body change strategies, and the perceived impact of the media on these behaviors among indigenous and non-indigenous Australians. However, further research is needed to replicate the pres-

ent findings with a larger sample size since this is the first study that has published research findings on body image and body change strategies of indigenous Australian adolescents, and also compared the findings to those of non-indigenous adolescents.

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