

An ethnic comparison of eating attitudes and associated body image concerns in adolescent South African schoolgirls

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body image, body shape concerns, eating attitudes, schoolgirls, South African.

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Abstract

Objective The purpose of this study was to investigate whether differences exist in eating attitudes and body shape concerns amongst adolescent schoolgirls representing South Africa's ethnically and culturally diverse population currently undergoing epidemiological transition.

Method A questionnaire survey, including the Eating Attitudes Test, Body Shape Questionnaire and a Body Silhouette Chart, was administered to 228 South African schoolgirls (60 black, 83 mixed race and 85 white) aged 15–18 years from five secondary schools in the greater Cape Town area.

Results Black girls had significantly higher mean BMI values (24.1 (3.3)) than either white (21.9 (3.0)) or mixed race girls (22.1 (3.7)) ($P < 0.05$). Controlling for differences in BMI, white subjects scored significantly higher on the Body Shape Questionnaire than did mixed race or black subjects, whereas no ethnic differences were found for Eating Attitude Test scores. A comparable percentage (mean = 18.8%) of black, mixed race and white girls had scores indicative of eating disorder pathology on the Eating Attitudes Test, while a higher percentage of white, compared to mixed race and black, girls had abnormal scores on the Body Shape Questionnaire (33%, 26% and 20%, respectively; $P < 0.05$). The ideal body size desired by white girls was significantly smaller than that of the mixed race or black samples. Dissatisfaction with present body size was significantly higher in white, compared to black or mixed race girls ($P < 0.001$).

Conclusion These findings suggest that the prevalence of abnormal eating attitudes is equally common in South African schoolgirls from different ethnic backgrounds. White girls exhibit greater body image concerns and body image dissatisfaction than mixed race or black individuals. These findings reinforce the notion that eating disorders are culture-reactive rather than culture-bound phenomena and provide insight into the extent of eating-related problems and body image issues in developing societies.

Introduction

The aetiology of eating disorders (anorexia nervosa, bulimia nervosa and its variants) is complex and multifactorial; however, sociocultural factors such as ethnicity, socioeconomic status and cultural ideals of thinness are important influencing factors. It has been suggested that one of the strongest sociocultural factors influencing young girls and women today is the Western beauty ideal, in which fatness is stigmatized and thinness is praised (Rodin *et al.*, 1984). In the past, eating disorders were generally considered to be confined to young white females from middle-to-upper class families living in Western societies (Bruch, 1973). This stereotyping of the typical eating disordered female led to the description of eating disorders as being 'culture-bound' syndromes (Swartz, 1985). Evidence from the literature suggests that the prevalence of eating disorders has increased to near epidemic proportions in young girls in developed countries (Dolan, 1991).

It has been argued that non-Caucasians living in the United Kingdom and the United States are largely protected from the illness by their cultural ideals which link fatness with affluence, beauty, prosperity and fertility (Gray *et al.*, 1987; Nasser, 1988; Rucker & Cash, 1992). However, findings from a recent American study revealed a considerable degree of body image dissatisfaction in both black and white subjects (Wilfley *et al.*, 1996). Prior to the early 1980s, almost no reports of non-Caucasian anorexics in clinical populations exist (Bruch, 1966; Rowland, 1970; Kendall *et al.*, 1973; Garner *et al.*, 1982; Holden & Robinson, 1998). Since that time, eating disorders have become increasingly common in non-Caucasian populations within clinical settings (Hsu, 1987). Recent epidemiological studies in the United States, Britain, India and Japan have also demonstrated an increase in eating disorder psychopathology in non-Westernized populations (King & Bhugra, 1989; Mumford *et al.*, 1991; Fisher *et al.*, 1994; Mukai *et al.*, 1994; Le Grange *et al.*, 1998a).

In the United States, the increase in eating disorders amongst African-Americans has been attributed to a rise in affluence and social status in this population (Hsu, 1987). Worldwide media

exposure, which focuses on mainstream cultural values, has been implicated as a powerful force in shaping public perceptions regarding the value of thinness and hence contributory to the rise in eating disorders in non-Westernized populations (Nasser, 1994). From the available evidence, eating disorders appear to occur out of the previously culture-bound context to some extent. A theory has thus emerged which has been dubbed 'culture-reactive' and implicates 'culture change' as a major risk factor for the development of eating disorders (DiNicola, 1990). Proponents of this theory suggest that susceptible individuals may experience a 'culture-change' where traditional cultural values on thinness are eroded as individuals are exposed to, and acculturate to, another culture.

Information on eating disorders in developing and ethnically diverse countries, such as South Africa, is useful to detect those socio-cultural factors that may influence their development. In South Africa, a host of different cultures reside side-by-side, including a subsection of 'true' Westernized culture. In view of massive socio-economic changes currently taking place in the country, and increased social integration following the abolishment of previous apartheid legislation, young South Africans may rapidly become exposed to different belief systems and thereby alter their value systems regarding acceptable body size.

The existence of eating disorders in white South Africans is well established (Beumont *et al.*, 1976; Norris, 1979). Nash & Colborn (1994) noted the absence of referrals of black eating disorder patients to their psychiatric unit in Cape Town. The first published records of eating-related psychopathology in black South Africans were those of three cases reported by Szabo *et al.* (1994). To date, the total number of reported cases has increased to nine (Szabo, 1999). Epidemiological data relating to the prevalence of eating disorders in the black South African population are lacking. However, recent studies using the Eating Attitudes Test (Garner & Garfinkel, 1979) have surprisingly found a higher presence of abnormal eating attitudes in the black compared to the white community (Sheward, 1994; Szabo & Hollands, 1997; Le Grange *et al.*, 1998b).

The understanding of eating disorder pathology in non-Westernized populations is limited. A study

was undertaken in adolescent schoolgirls representing South Africa's ethnically and culturally diverse population to investigate whether differences exist in eating attitudes and body shape concerns amongst different sociocultural groups.

Methodology

Subjects

The sample comprised 228 schoolgirls from five state-owned English-medium secondary schools in and around the greater Cape Town area. Schools were conveniently sampled using a cluster-like sampling method. A sample of about 50 girls in grades 10–12 (age 15–18) was taken from each school. Each sample included one or more full classes of girls. The spectrum of schools included two predominantly white schools situated in affluent areas (Schools A and B), two multiracial schools situated near affluent areas (Schools C and D) and one multiracial school situated in a peri-urban area close to an informal settlement (School E). The spectrum of schools was chosen to be representative of the ethnic and socioeconomic diversity in South Africa.

Formal approval for the study was granted by the Research and Ethics Committee of the University of Cape Town, as well as the Provincial Administration of the Western Cape's Department of Education. Written informed consent was obtained from each of the participant's parents or guardians prior to participation in the study. Self-administered questionnaires were completed by the study subjects during class-time; no consultation with peers was permitted.

Measurements

Questionnaires

Subjects completed three separate self-report questionnaires as well as a demographics questionnaire. The demographics questionnaire was completed first, while the order of the other three questionnaires was randomized in order to prevent reporter bias. All questionnaires were

administered in English. Subjects were requested to state their ethnic background. Two proxy measures for socioeconomic status were taken, namely housing density (HD) (calculated as the number of people in a household divided by the number of rooms in that household, excluding bathroom and kitchen), and parental occupation, classified according to CASS Occupational Categories (Schlemmer & Stopforth, 1979).

Eating Attitudes Test

Eating problems were measured by a 26-item version (Garner *et al.*, 1982) of Garner & Garfinkel's (1979) Eating Attitudes Test (EAT), referred to as the EAT-26. This self-report instrument measures a broad range of symptoms characteristic of anorexia nervosa and bulimia. The EAT is more appropriately viewed as a measure of abnormal attitudes towards food and eating rather than as a diagnostic tool for eating disorders (Button & Whitehouse, 1981). The test is scored using a Likert scale with a choice of six answers ranging from 'always' to 'never' for each of the 26 items. Possible scores on the EAT range from 0 to 78; scores ≥ 20 are generally considered characteristic of subclinical eating disorder pathology.

Body Shape Questionnaire

Body shape concerns were measured using a 34-item Body Shape Questionnaire (BSQ) developed by Cooper *et al.* (1987b). The questionnaire is scored similarly to the EAT, using a six-point Likert scale. Possible scores on the BSQ range from 34 to 204. A score of ≥ 129 was used to identify probable cases of bulimia nervosa/obese dieters/distorted body image, as identified by Cooper *et al.* (1987a) and Rosen *et al.* (1996) to be a valid cut-off value. Bunnell *et al.* (1992) have demonstrated that the BSQ provides a valid measure of body image concerns in adolescents.

Body Silhouette Chart

Body image perception was assessed using a Body Silhouette Chart derived by Bell *et al.* (1986). Subjects were shown eight female silhouettes

ranging in morphology from emaciation to severe obesity. Subjects were asked to select the silhouette which they believed was most similar to their own (i.e. 'actual' figure) as well as the silhouette which they most desired (i.e. 'ideal' figure). Subjects were also requested to select the silhouette which they believed their friends and family would most want them to have. The discrepancy between the 'actual' and 'ideal' figure, termed the ('Feel Minus Ideal Discrepancy' or FID), was calculated to represent the degree of body image dissatisfaction.

Physiological measures

Subjects were weighed (single blinded) in their school uniforms minus any extraneous clothing, using a TANITA model 1607 calibrated, digital bathroom scale. Height was measured barefoot using a graduated height measure. Body Mass Index (BMI) was calculated as weight (kg)/(height (m))². Questions about age of menarche, and duration and frequency of menstruation were asked. Subjects were asked whether they had ever been diagnosed with an eating disorder.

Data analysis

Data were analysed using the 'Statistica' (1998 edition) program. Analysis of variance (ANOVA) was used to determine whether differences in responses were found, according to ethnic groups, after covarying for factors such as BMI. Chi-squared tests were used to assess between-group differences in categorical data. Pearson-Product Moment Correlations and multivariate regression analyses were used to determine factors associated with various outcomes, such as EAT and BSQ questionnaire scores.

Results

Sample characteristics

Subjects whose parents did not complete and return consent forms were excluded from the study. A response rate of 88% was obtained. Of the 232 questionnaires that were administered, four

were uninterpretable and therefore excluded. The realized sample size was 228; 60 subjects (26.3%) were black, 83 (36.4%) were mixed race and 85 (37.3%) were white. Twenty-five per cent of the sample spoke Xhosa (an indigenous South African language commonly spoken by black Capetonians), 64% spoke English and 9.6% spoke Afrikaans as their first language. However, all subjects had a good understanding of English since they attended English-medium schools. Background socio-demographic information, body weight, menstrual characteristics and history of eating disorders are shown, according to ethnicity, in Table 1. Black girls were significantly heavier and shorter than the other two groups, and had a correspondingly higher BMI ($P < 0.0001$). BMI was classified as underweight, normal weight, overweight or obese, according to weight-for-age percentiles obtained in the first National Health and Nutrition Examination Survey (NHANES I) (National Center for Health Statistics, 1987).

Scores on questionnaires

Ethnic differences in EAT and BSQ scores

No ethnic differences were found for score on the EAT questionnaire and between 17 and 21% (mean = 19% ($N = 42$)) had scores above the cut-off of 20 and may therefore be described as representing possible eating disorder pathology (see Table 2). In contrast to the EAT findings, mean BSQ score (body shape concerns) was significantly higher in white girls ($P < 0.01$), and a higher proportion of white girls than either of the other two groups had cut-off values above 129, which indicates abnormal body shape concerns. The ethnic differences in BSQ remained after covarying for BMI (white vs. black: $P < 0.01$; white vs. mixed race: $P < 0.01$) and for housing density (white vs. black: $P < 0.01$; white vs. mixed race: $P < 0.05$).

Association between EAT and BSQ scores and other variables

No association between EAT scores and BMI was found for any of the groups ($r = 0.17$, NS). Body

Table 1 Subject characteristics

	Black <i>n</i> = 60	Mixed race <i>n</i> = 83	White <i>n</i> = 85	Total <i>n</i> = 228
Subjects (%)	26	36	37	
Age	16.3 (1.1)	16 (0.7)	16.5 (0.7)	16.2
Housing density	1.67 (1.7)	1.65 (1.0)	0.7 (0.3)*	
Occupational class (parental occupation) (%)†				
I and II	23	41	88	
III and below	77	59	12	
Height (m)	1.59 (0.06)§	1.58 (0.06)§	1.64 (0.07)	1.61 (0.07)
Weight (kg)	61.0 (10.2)‡	55.6 (10.1)	59.4 (9.8)	58.4 (10.2)
Body Mass Index (BMI)	24.1 (3.3)‡	22.1 (3.7)	21.9 (3.0)	22.5 (3.4)
BMI category (%)				
Underweight (<15th centile)	0	6.0	7.1	
Normal weight (15–85th centile)	61.8	68.7	80	
Overweight (85–95th centile)	30.9	20.5	11.8	
Obese (> 95th centile)	7.3	4.8	1.2	
Age of Menarche (years)	13.8 (1.1)‡	12.1 (1.3)	12.7 (1.2)	12.8 (1.4)
Irregular/absent menstrual cycles (%)	18	8	20	15
Previous diagnosis of an eating disorder (%)	8	4	5	5

*ANOVA ($P < 0.01$): White subjects different from black and mixed race subjects. † χ^2 test ($P < 0.0001$): Ethnic differences found. ‡ANOVA ($P < 0.05$): Black subjects different from white and mixed race subjects. §ANOVA ($P < 0.0001$): Black and mixed race subjects different from white subjects.

Table 2 Mean scores of the Eating Attitudes Test and Body Shape Questionnaire, by ethnicity and percentage subjects below cut-off values

	Black	Mixed race	White	Total
EAT	11.7 (10.8)	11.5 (11.2)	12.5 (11.6)	12.2 (12.6)
EAT ≥ 20 (%)	17.9	17.1	21.2	18.8
BSQ	90.8 (37.5)	94.6 (43.1)	109.6 (37.0)*	99.4 (40.1)
BSQ ≥ 129 (%)	19.6	25.9	32.9	27.0

*ANOVA: White subjects scored higher than black ($P < 0.05$) and mixed race subjects ($P < 0.01$).

shape concerns increased with BMI in all three groups, as shown in Fig. 1 ($r = 0.33$ ($P < 0.001$)).

Significantly lower scores for EAT questionnaire were found in underweight girls compared with all other BMI categories ($P < 0.05$). In addition, overweight individuals scored significantly higher than normal weight individuals on the BSQ. Nine per cent of underweight, 18% of normal weight, 24% of overweight and 33% of obese subjects scored above the cut-off on the EAT. Nine per cent of underweight, 24% of normal weight, 39% of overweight and 56% of obese subjects scored above the cut-off on the BSQ (see Fig. 2).

Differences between schools

A main effect for school attended was found for both EAT ($P < 0.05$) and BSQ ($P < 0.01$) scores (see Table 3). Of note are the significant differences in EAT and BSQ scores found between schools C and D, even though ethnic and socio-demographic

characteristics of pupils are similar. A significant group difference between schools remained after covarying for both ethnicity and BMI ($P < 0.05$). Housing density differed significantly according to school attended ($P < 0.001$). As expected, the mean housing densities for Schools A and B (predominantly white schools in affluent areas) were significantly lower than the housing densities for Schools C, D and E (multiracial schools near affluent areas and informal settlements) (see Table 3). A similar and significant difference in occupational social class was found according to school attended: ($P < 0.001$). It is evident that a school culture exists, and this cannot be explained by differences in ethnic distribution of pupils, nor socioeconomic status (housing density).

Occupational class differences

No occupational class effect was found for either EAT or BSQ scores, even after covariate analysis

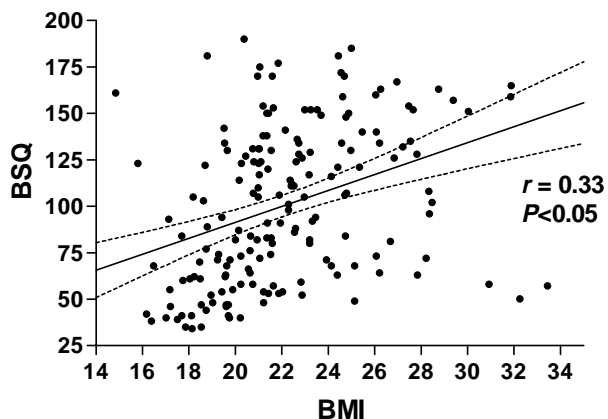


Figure 1 Association between Body Shape Questionnaire scores and BMI.

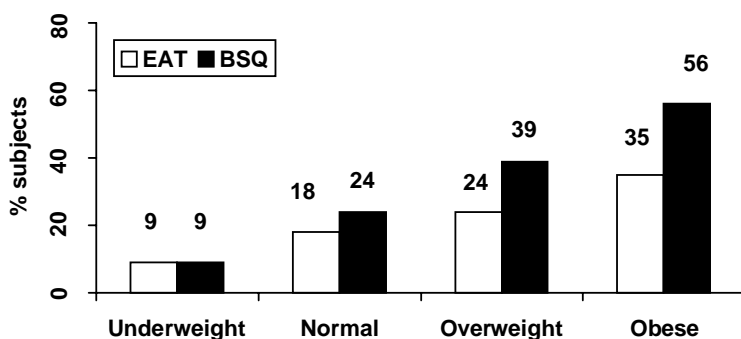


Figure 2 Abnormal EAT and BSQ scores, according to BMI categories.

Table 3 Comparison of mean housing density, parental social class and EAT and BSQ scores, according to school attended

	Housing density (mean (SD))	Parental occupational class (% subjects in Class I and II)	EAT (mean (SD))	BSQ (mean (SD))
School A – white	0.8 (0.4)*	91.7†	10.7 (8.5)	108.9 (34.4)‡‡
School B – white	0.64 (0.2)*	88.5†	13.3 (12.4)¶	108.4 (35.7)¶, ¶¶
School C – multi-racial	1.31 (0.7)	33.3	15.9 (15.5)††, ‡	106.3 (49.3)††
School D – multi-racial	1.32 (0.5)	49.0	8.4 (7.2)	85.1 (39.1)
School E – multi-racial (informal settlement)	2.38 (2.0)	9.3	12.3 (10.4)	92.3 (37.3)

ANOVA: *Housing density for Schools A and B were lower than for Schools C, D and E ($P < 0.0001$). School E had higher HD than all other schools ($P < 0.05$). †A higher proportion of subjects from Schools A and B were in Social Class I and II ($P < 0.01$), compared to Schools C, D and E. ††Mean score higher in School C than School D ($P < 0.05$). ‡Mean score higher in School C than School A ($P < 0.05$). ‡‡Mean score higher in School A than School D ($P < 0.05$). ¶Mean score higher in School B than School D ($P < 0.01$). ¶¶Mean score higher in School B than School E ($P < 0.05$).

with ethnicity and BMI. However, a main effect of occupational class was found for BMI ($P < 0.001$) with subjects from the higher occupational classes demonstrating a significantly lower BMI (mean = 21.8 (3.1)) than subjects from the lower occupational classes (mean = 23.4 (3.7)).

Silhouette Chart Results: Body image

Responses to the Body Silhouette Chart revealed a main effect for ethnicity for the self-perceived ideal figure, as well as for the Feel Minus Ideal Discrepancy (FID) ($P < 0.0001$) (see Table 4). The

Table 4 Body Silhouette Chart responses, by ethnicity (mean (SD))

	Black	Mixed race	White	Total
Actual	4.5 (1.1)	4.2 (1.4)	4.49 (1.1)	4.39 (1.2)
Ideal	4.09 (1.1)	3.72 (1.2)†	3.36 (0.8)*	3.68 (1.1)
Friends and family	3.98 (1.0)	3.59 (1.1)†	3.73 (0.9)	3.75 (1.0)
FID	0.43 (1.1)	0.49 (1.2)	1.13 (0.9)§	0.72 (1.0)

*ANOVA: The ideal figure chosen was smaller in the white compared to the mixed race ($P < 0.05$) and black samples ($P < 0.001$). †ANOVA: The ideal figure chosen was smaller in the mixed race compared to the black sample ($P < 0.05$). ‡The figure most desired by friends and family was significantly smaller in the mixed race compared to the black sample ($P < 0.05$). §The white sample demonstrated a significantly greater FID than the black ($P < 0.001$) and the mixed race samples ($P < 0.001$).

Table 5 Predictors of BSQ: multiple regression model

	Beta	Std. Error of Beta	P
Ethnicity	0.187	0.101	0.064
BMI	0.382	0.298	< 0.0001
Housing density (HD)	-0.34	0.063	0.253
HD*Ethnicity	0.45	0.281	0.114

figure most commonly chosen as being representative of actual body size was similar between groups, despite the higher BMI of black girls. The white sample had a significantly higher FID (and therefore greater body image dissatisfaction) than the black or mixed race sample, whose FID values were similar, even after covarying for differences in BMI ($P < 0.001$).

Association between indices

EAT and BSQ were strongly correlated for all ethnic groups ($r = 0.69$ for black, $r = 0.76$ for mixed race and $r = 0.79$ for white subjects; $P < 0.001$ in all cases) which demonstrates face validity of the instruments. The relationship between FID and EAT was significant only for the white and mixed race samples ($r = 0.37$, $P < 0.001$ and $r = 0.27$, $P < 0.05$, respectively); however, a significant and positive association was found between FID and BSQ for all ethnic groups ($r = 0.5$, $P < 0.001$ in all cases).

Multiple regression analysis was used to identify factors significantly and independently associated with EAT and BSQ scores (see Table 5). The model which best predicted BSQ included ethnicity, housing density, an interaction term of HD and ethnicity (confounding), and BMI. BMI was the

only significant ($P < 0.001$) term in the model; however, only 18% of the variance in BSQ was explained by the model. Adding school to the model improved variance only by 2%, probably because of covariance with other variables in the model. The same variables explained only 5% of the variance in EAT scores (data not shown).

Discussion

The main focus of this study was to compare eating attitudes and associated body image concerns among adolescent females living in a city of ethnic and cultural diversity, in which socioeconomic transition of communities is currently taking place. The study findings demonstrate that abnormal eating attitudes and related body image issues are found in all groups of girls, regardless of ethnic background.

Results from EAT scores show that abnormal eating attitudes are present with equal severity in black, mixed race and white adolescent schoolgirls, even after controlling for differences in BMI between the groups. Taken together, these results suggest that young women who are similarly acculturated, but from different ethnic backgrounds, display a similar prevalence of abnormal eating attitudes or could be considered to be at equal risk for the development of an eating disorder. In contrast to our findings, three other South African studies (Sheward, 1994; Szabo & Hollands, 1997; Le Grange *et al.*, 1998) showed that black girls tended to score higher on the EAT than white girls. Two British studies also found unexpected results when they demonstrated abnormal eating attitudes to be more prevalent in Asian compared

to Caucasian and African-Caribbean women. Our mean EAT score for the total sample in the present study (12.2 (SD = 12.6)) was considerably higher than that reported for other populations, including a sample of schoolgirls in London (Mann *et al.*, 1983), New Zealand (Wells *et al.*, 1985) and Caucasian, Asian and black young British women (Dolan *et al.*, 1990). The percentage of subjects (19%) considered to be at risk for the development of an eating disorder (i.e. EAT \geq 20) was similar to other South African studies where proportions of 15% and 22% have been reported (Le Grange *et al.*, 1995; Szabo & Hollands, 1997). Our findings and those from other studies suggest that relative to other nations, young South African women in urban areas may be at high risk for the development of eating disorders. Alternatively, the finding that the mean EAT scores in our study population were similar between ethnic groups, together with higher scores previously reported in black South African subjects by other authors (Sheward, 1994; Szabo & Hollands, 1997; Le Grange *et al.*, 1995), suggests that the construct validity of this instrument may vary across different cultural groups.

In contrast to EAT scores, ethnic differences in BSQ scores revealed that white girls demonstrate significantly greater body image concerns than black and mixed race girls, but that body image concerns are not uncommon in the latter two groups. This trend was noted even after controlling for differences in body size between the groups and occurred despite the fact that black girls were significantly heavier than white and mixed race girls.

The mean BSQ score reported in the current study was similar to another study of South African schoolgirls (Le Grange *et al.*, 1995) but was higher than that reported by Cooper *et al.* (1987a) in their initial validation study of Canadian subjects, as well as that found in a sample of British women (Dolan *et al.*, 1990).

The lack of differences in both EAT and BSQ scores between the two occupational class groups, controlling for ethnicity and BMI, was unexpected as was the lack of association between housing density and either EAT or BSQ scores. A school effect was found for both eating attitudes and body shape concerns, which could not be explained by differences in socioeconomic status nor ethnic

composition of the schools. The existence of a 'school culture' may create an environment in which peer influences potentiate or protect against the development of eating disorder psychopathology. This should be considered in future studies using a cluster-type study design.

Results obtained from the Body Silhouette Chart, in which the body size considered ideal by black girls was larger than that selected by white and mixed race girls, are consistent with previous research on body size preferences among different ethnic groups (Desmond *et al.*, 1989; Powell & Kahn, 1995; Parnell *et al.*, 1996). The higher degree of body image dissatisfaction demonstrated by the white schoolgirls, compared to black girls, suggests that black girls are more comfortable with a larger body size than mixed race or white girls. These data suggest that black girls may live in an environment that is more permissive of overweight, which may protect them against body image disturbance to some degree. However, although body image problems are less severe in black girls, they are by no means uncommon, which suggests that some black girls may not be immune to mainstream pressures. Societal pressures of this nature probably develop within the context of an evolving multi-ethnic school environment, where competitiveness and peer influences begin to break down the protective barrier of traditional aesthetic values. The increasing portrayal of the Western beauty ideal in the media may also play a role in the erosion of this barrier.

The finding that 27% and 33% of underweight and normal weight girls exhibited inappropriate eating attitudes and body shape concerns, respectively, is concerning. In all ethnic groups, body shape concerns, but not abnormal eating attitudes, increased with increasing BMI. It could be argued that, given the near epidemic proportions of obesity seen in middle-aged black urban women (Steyn *et al.*, 1998), it may be appropriate for adolescent girls who are already tending towards obesity to express concerns about their body size and shape. Consideration needs to be given to the potentiating effect on eating-disorder-related psychopathology in young girls, which adds further complexity to strategies to combat obesity in black populations undergoing transition.

Various methodological issues in the present study need to be considered as limitations. The sample was chosen to be representative of the ethnic diversity of South Africa's population; however, none of the schools contained a substantial mix of black and white subjects. It cannot be assumed that black girls schooling together with mixed race girls experience the same social pressures as black girls schooling with white girls. However, truly multi-ethnic schools in which all three groups are included in equal proportions are a rarity in the Western Cape, with the exception of nonstate owned (private) schools. The EAT and BSQ were administered in English, which is not the first language of the black sample as well as a small number of mixed race individuals in the sample, which could bias the validity of the responses. Linguistic and conceptual pitfalls inherent to cross-cultural epidemiological research may have resulted in misinterpretation of questions, or alternatively a genuinely high prevalence of abnormal eating attitudes may be present in young South African girls from both white and other ethnic groups. The relatively small sample size could be considered another limitation to the validity of the findings, increasing the likelihood of Type II error for finding interethnic differences. However, in a previous study of over 1400 South African college women, Le Grange *et al.* (1998b) also did not show any differences between ethnic groups in the prevalence of abnormal EAT scores. Furthermore, the sampling technique ensured that schools from diverse socioeconomic and demographic strata were selected. Self-reported previous diagnosis of an eating disorder was found to be 5%. These subjects were not excluded from the data analyses as the accuracy of their reporting could not be validated. Girls were not asked whether the diagnosis had been made by a health professional. Further, the aim of the study was to investigate whether sociocultural factors were determinants of abnormal eating attitudes.

Conclusion

This study provides insight into the extent of abnormal eating attitudes and associated body

image concerns in South African adolescent schoolgirls. The relatively high proportion of girls from multi-ethnic backgrounds who exhibit abnormal eating attitudes indicates that risk for eating disorders may occur outside of the previously dubbed 'culture-bound' context and that this psychopathology may transcend the boundaries of geography, socioeconomic status and ethnicity. Black and mixed race subjects who were previously thought to be 'protected' may now find themselves in a sociocultural flux between traditional cultural values and values instilled by modern Western society. Future studies of this type will undoubtedly provide better perspective regarding the aetiology of eating-related pathology; however, screening instruments need to be validated and shown to be culturally robust.

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