

DISTURBANCES OF ATTITUDES AND BEHAVIOURS RELATED TO EATING IN BLACK AND WHITE FEMALES AT HIGH SCHOOL AND UNIVERSITY IN SOUTH AFRICA

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Abstract

This paper reports two studies, which contribute to the increasing evidence that the attitudes and behaviours associated with eating disorders, are encountered among both black and white females in South Africa. In Study One, the Eating Disorders Inventory (EDI) was administered to black ($n = 39$) and white ($n = 41$) female students in Natal. There were no significant differences between black and white on the sub-scales which measure disturbed eating behaviour directly (Drive for Thinness, Bulimia, Body Dissatisfaction). However black respondents scored higher on Perfectionism, Interpersonal Distrust and Maturity Fears, variables believed to predispose individuals to eating disorders. In Study Two, the Bulimia Test (BULIT) was administered to black and white females at three educational levels. There was no significant effect of Ethnicity, but there was a significant effect of Age: Standard 6 respondents had significantly higher scores than University students. In both studies, Body mass index (BMI) was significantly higher among blacks than whites. In Study One there was no significant correlation between BMI and Drive for Thinness in either blacks or whites. However in Study Two, the correlation between BMI and BULIT full scale was significant in the case of both blacks ($r = 0,39$; $p <,01$) and whites ($r = 0,38$; $p <,05$). These findings are consistent with those of other recent studies, which find disturbances in eating-related attitudes and behaviour in all ethnic groups in South Africa.

Key words: Eating disorders, cultural factors, body dissatisfaction, bulimia.

Résumé

Cet article présente deux études qui contribuent à l'accumulation de preuves que les attitudes et les comportements associés à des troubles psycho-alimentaires sont rencontrés parmi les femmes, aussi bien noires que blanches, en Afrique du Sud. Dans la première étude, l'*Eating Disorders Inventory* (EDI) a été administré aux 39 étudiantes noires et 41 étudiantes blanches dans le Natal. Il y a eu très peu de différences entre noire et blanche sur les critères qui mesurent directement les anomalies du comportement alimentaire ("*Drive for Thinness*", "*Bulimia*", "*Body Dissatisfaction*"). Cependant les étudiantes noires obtiennent un score plus élevé sur les "*Perfectionism*", "*Interpersonal Distrust*" et "*Maturity fears*", qui sont vraisemblablement des critères qui prédisposent les individus à avoir des troubles psycho-alimentaires. Dans la deuxième étude le "*Bulimia Test*" (BULIT), a été administré à des femmes noires et blanches avec trois niveaux d'éducatifs différents. Il y avait très peu de différences au niveau ethnique, mais beaucoup sur l'âge. Les écolières de "Standard 6" avaient des scores plus élevés de façon significative que les universitaires. Dans les deux études, le "*Body Mass Index*" (BMI) était nettement plus élevé parmi les noires. Dans la première étude, il y avait peu de corrélation entre BMI et "Drive for thinness" ni chez les noires, ni chez les blanches. Cependant, la deuxième étude a montré que la corrélation entre BMI et BULIT était significative dans le cas de noires et blanches. Ces résultats sont en accord avec d'autres études récentes qui ont trouvées que les attitudes et les comportements associés à des troubles psycho-alimentaires sont présents parmi toutes groupes ethniques en Afrique du Sud.

Mots clés: Des Troubles psycho-alimentaires, des facteurs culturels, le non-satisfaction du corps, la boulimie.

Introduction

Anorexia nervosa is a serious condition, mainly affecting women, in which the sufferer engages in intentional self-starvation in order to lose weight, to the extent that she may put her health and even her life at risk (American Psychiatric Association, 2000). Although similar syndromes have been identified since ancient times (Silverman, 1997), only during the 1960's was it recognized that a significant percentage of women were affected and that they were motivated by factors such as fear of obesity and disturbance of body image (i.e. sufferers perceived their bodies to be larger and heavier

than they actually were) (Stunkard, 1993). In bulimia nervosa, a related condition, the sufferer attempts to lose weight by means of a range of strategies that include restricting diet, over-exercising, self-induced vomiting and the use of laxatives and diuretics. Bulimics often have a chaotic eating pattern in which dietary restriction alternates with bingeing and they do not necessarily succeed in losing a significant amount of weight (American Psychiatric Association, 2000). The prevalence of this syndrome seems to have grown steadily during the early 1970s, so that by the late 1970s it attracted increasing attention among health professionals (Russell, 1997). There is a much higher prevalence among women than among men and prevalence increased sharply during the 1980s in several western countries (Fairburn, Hay, & Welch, 1993; Rand & Kuldau, 1992).

A widely accepted explanation for the increasing prevalence of both disorders is that in western and westernised countries women are subjected to cultural and societal norms regarding a slim appearance (Sobal, 1995). Glamorous images of the thin woman are presented as role models in movies, soap operas, fashion magazines, fashion shows and advertising. Consciously and unconsciously, women compete with the media images and with each other as a means of increasing their sense of self-worth and social acceptability. The emphasis on thinness is evidenced by the number of low calorie diets on the market and the many business organizations which specialize in promoting weight loss, as well as the flood of articles and advertisements on dieting and slimming in the media. Dieting, self-induced vomiting, laxative and diuretic abuse are all strategies for achieving the goal of a thin body (Wilfley & Rodin, 1995). However the standard of slimness presented by the media is difficult to maintain, and women who use these strategies become chronically hungry and prone to lose control in eating binges (Garner, 1997; Polivy & Herman, 1995).

The high prevalence of bulimia nervosa is understood to be a product of a particular historical time with particular values regarding physical appearance and a powerful communications technology. Because anorexia nervosa and bulimia nervosa are particularly prevalent among affluent white females living in the urban economies of Northern Europe and North America, they have been considered culture-bound syndromes, which are not associated with a peasant life style, with poverty or with life in developing countries (Nasser, 1986). However, in the past decade, there has been increasing evidence that these disorders are not limited to affluent whites but are reported from a range of ethnic groups and socio-economic strata (Davis & Yager, 1992; Dolan, 1991). In western countries there has been a steady increase in the extent to which female members of minority groups have become vulnerable to eating disorders. Arab women students were more at risk for developing bulimia in London than in Cairo (Nasser, 1986). Similarly, Asian females in the United Kingdom had a much higher

prevalence of bulimia nervosa than those in Pakistan; however, in the United Kingdom, Pakistanis from more traditional families were more vulnerable to eating disorders, a finding which the authors attributed to the greater level of stress the traditional families experienced in adapting to a foreign culture (Mumford, Whitehouse & Chowdry, 1992).

In the United States, several studies of college students have found that, compared to black women, white women have more restrictive standards regarding what is an acceptable physical appearance and are, therefore, more influenced by media portrayals of the thin body ideal, impose more dietary restrictions upon themselves, and display more bulimic symptoms (Abrams, Allen and Gray, 1993; Gray, Ford & Kelly, 1987; Rand & Kuldau, 1992; Rucker & Cash, 1992). Altabe (1998) found that whites and Hispanics had similar levels of body dissatisfaction, which were higher than those of blacks and Asians. On a measure of the importance of physical attractiveness to self-esteem, blacks, whites and Hispanics had similar scores whereas Asians scored significantly lower. However some US studies have found a less consistent pattern. Disturbed eating patterns have been reported in Hispanics and native Americans (Snow & Harris, 1989); among high school students, native Americans and Hispanics actually scored higher than whites on several of the subscales of the Eating Disorders Inventory (EDI) and the Bulimia test (BULIT) (Smith & Krejci, 1991). Hispanics were found to have higher levels of binge eating than blacks and whites by Fitzgibbon, Spring, Avellone, Blackman, Pingitore and Stolley (1998). In all groups, women who binge more were heavier, more depressed and preferred a slimmer body ideal. By contrast, no differences between blacks and whites on attitudes to shape and weight as measured by a body dissatisfaction scale and a silhouette rating task were found among readers of a magazine with an upper class readership, suggesting that differences between blacks and whites might reflect class rather than ethnicity effects (Caldwell, Brownell and Wilfley, 1997). Finally, a study of girls aged 9-10 found a higher degree of Drive for Thinness in blacks as compared to whites (Striegel-Moore, Schreiber, Pike, Wilfley & Rodin, 1995).

In countries outside Northern Europe and North America, there have been increasing reports of disturbances of attitudes and behaviour related to eating, especially among educated people, e.g. in an English medium school in Pakistan (Mumford et al., 1992) and among school girls in Hong Kong (Lee & Lee, 1996). Several studies have been reported from Southern Africa. Well over thirty years ago, Beumont (1970) observed that anorexia nervosa was being found in South Africans of European, Indian and Coloured ethnicity, but had seen no reports of it among blacks. The authors of another early South African report, who examined the prevalence of anorexia nervosa in schoolgirls, did not even mention ethnicity as a fac-

tor. Presumably their sample of 1246 girls from provincial and private schools were all white (Ballot et al., 1981). Norris' (1979) series of hospitalised patients in Johannesburg included only white patients (English, Afrikaans and Jewish). This probably cannot be entirely attributed to the racial segregation in medical services of that time, because Nash and Colborn (1994), who did a retrospective study of 49 of a total of 73 anorexics and bulimics hospitalised in Cape Town between 1979 and 1989, found that all patients were white, but they also mentioned that a few coloureds were referred but did not complete treatment, and that "No blacks have so far been referred ... although the services are available to all" (p. 78).

In the first reported study of a non-patient sample in Southern Africa, Hooper and Garner (1986) administered the EDI to high school girls in Zimbabwe. Respondents were classified into three ethnic groups, White, Black and Mixed race. Blacks had lower scores than Whites or the Mixed ethnic group on Drive for Thinness and Body Dissatisfaction, but higher scores on Interpersonal Distrust, Maturity Fears and Perfectionism. In interviews, whites reported "considerable concern with dieting, tension, and guilt surrounding eating as well as a greater tendency towards self-induced vomiting" (p. 165) while dieting was limited among blacks. Thus, black scholars were more vulnerable to the psychological factors that have been implicated in the aetiology of eating disorders in the West, but were not as prone to develop the actual attitudes and behaviour associated with these disorders.

It has been suggested that, traditionally, African people have not striven for slimness as the ideal for attractiveness in women. For example, young Zulu women preparing to undergo the initiation ceremonies, were traditionally "fattened-up" (Mwamwenda, 1995). Furnham and Baguma (1994) provided evidence that African ideals of beauty for the female figure are different from those of the western culture of slimness. They gave British and Ugandan students the task of rating the attractiveness of a set of male and female figures ranging from extremely thin to obese. Although both groups perceived an intermediate body shape as most attractive the Ugandans perceived it as more attractive than did the Britons. For the British respondents, the degree of attractiveness decreased very sharply with increasing enlargement of this most preferred shape. The Ugandans did not indicate such a sharp decline in attractiveness as the figures became larger with the result that the differences between the two groups "grew wider as the figures got fatter" (p.85). Obese figures were therefore judged more attractive (and healthy) by the Ugandans than by the British.

Shefer (1987) administered the Eating Attitudes Test (EAT) to female students at the University of Cape Town. Levels of abnormal eating habits and weight control behaviours were found to be similar to those found in North American and British studies. Eighty-eight percent of re-

spondents were white and no analysis was described in which comparisons between ethnic groups were made. However, several, more recent studies in South Africa, have examined ethnic differences and there is increasing evidence that blacks are as affected as whites affected by disturbances in attitudes related to eating, perhaps even more so. Szabo, Berk, Tlou and Allwood (1995) published the first clinical case descriptions of black women with demonstrable eating pathology. In a very large study carried out between 1992 and 1994 (le Grange, Telch & Tibbs, 1998; Swartz & Sheward, 1995), the EAT and the BITE (Bulimic Investigatory Test, Edinburgh) were administered to nearly 1500 male and female South African university students under 26 years of age in Cape Town and Durban at six different universities. Respondents were classified into four ethnic groups, Asian, Black, Mixed and Caucasian. On the BITE, black males had a mean score twice as high as that of males in the other ethnic groups, the difference being significant in each case. Black females also scored higher than females from other ethnic groups. On the EAT, a similar pattern of results was found although fewer differences were significant. For both males and females taken together, blacks scored significantly higher than each of the other ethnic groups, while, for females alone, only the difference between blacks and Asians was statistically significant. In response to an item which asked respondents whether they believed they had ever had a serious eating difficulty in the past, affirmative responses were given by 14,3% of Caucasians, 15% of blacks, 13% of mixed and 3,5% of Asians. For males, 20 of the 26 males who answered in the affirmative were black. Despite this, when asked whether they considered themselves to be of normal weight, overweight or underweight, it was Caucasians who viewed themselves as overweight more than the other ethnic groups.

In a study carried out in 1993-1994 using the EDI, Wassenaar, le Grange, Winship and Lachenicht (2000) also found differences related to ethnicity. Whites had higher Body Dissatisfaction scores than Blacks or Asians. Blacks had rather higher Drive for Thinness scores than Whites and considerably higher scores than Whites or Asians on Perfectionism and Maturity Fears. Blacks also had a higher Body Mass Index (BMI) than Whites or Asians and there was a significant positive relationship between BMI and both Body Dissatisfaction and Drive for Thinness. In a study of South African black, female first year university students in 1994, Senekal, Steyn, Mashego and Nel (2001) found that most of those who were of normal weight thought that their weight was normal, in contrast to normal weight whites who, in other studies, have been found to believe they are overweight. Respondents were also more satisfied with their body shape than whites in other studies. However dissatisfaction with body shape was associated with disturbed eating attitudes and behaviours, dietary restraint, lower self-concept and higher BMI. Forty-two percent had tried to reduce

weight during the past two years, a figure comparable to that found in white students in South Africa and the USA. On the EAT, the percentage classified as disordered was higher than that found in previous studies of whites in South Africa and the USA. Urban and rural students did not differ on most measures, but urban students reported more dietary restraint, had made more attempts to lose weight in the past and showed more interest in losing weight in the future.

Ziervogel's (1995) clinical observations also show that eating disorders in South Africa are not confined to whites. "Increasing numbers of young women presenting at these clinics are from Muslim, Indian, coloured and black communities" (p. 543), he noted. This conclusion is supported by a study conducted of 213 girls at a girls' private high school in Johannesburg, using the EAT (Szabo & Hollands, 1995). Abnormal eating attitudes were found in 20,6% of whites, while among blacks the proportion was 37,5%. In a study of rural black women, and black and white university students, matched for age, rural black women scored lower on a measure of acculturation and higher on a measure of body image satisfaction (Haynes, 1995). This finding supports the view that the increasing prevalence among blacks of disturbed cognitions and behaviour related to eating is at least in part an effect of acculturation. These studies have put paid to speculation that eating disorders are unlikely to be a problem among black populations in Africa. As Swartz and Sheward (1995, p. 541) note, "the stereotypical view that blacks value a fat shape was not confirmed." On the contrary, black respondents from some subcultures have been found to be even more prone than Caucasians to the kinds of psychopathology related to disturbances of eating.

This paper reports two further South African studies both of which aimed to examine whether there were differences between black and white girls and women in their attitudes and behaviours related to eating. Because existing research findings presented a mixed picture with regard to ethnic differences in these variables, the studies aimed to document the similarities and differences rather than test specific hypotheses. However as both studies involved scholars and students in urban areas it was expected that some degree of disturbance of eating attitudes would be found in both ethnic groups.

Study One

Method

The research instrument was the EDI, a 64-item questionnaire that yields scores on 8 sub-scales and for which good reliability and validity have been reported in North America (Garner, Olmstead & Polivy, 1983). This was

presented with a demographic questionnaire which requested information about age, year of study, degree being studied, body mass and height. The EDI has been widely used in studies in Southern Africa without modification and no problems have been reported with respondents for whom English is a second language, but whose medium of education is English. Wassenaar et al. (2000) obtained alphas for the EDI of, 64 (black female university students) and, 77 (whites female university students). Respondents were female students living in residences at the Durban and Pietermaritzburg campuses of the University of Natal, and at the University of Durban-Westville. Between June and October, 1993, 400 questionnaires were distributed, with a covering letter. Students were invited to complete them anonymously and then to seal them in an envelope and to post them in a collection box situated at the entrance to the residence. There was a return rate of 22,5% yielding a total of 90 usable responses. Respondents ranged in age from 17 to 32 years (mean = 20). They included 39 blacks, 41 whites, six Indians and four coloureds. Because of their small numbers, Indian and coloured respondents were excluded from the analysis.

Results

The questionnaires were scored and Body Mass Index (BMI) calculated from the self-reported body mass and height scores. Mean scores on the EDI sub-scales and BMI are presented in Table 1.

Garner et al.'s (1984) normative data is included for comparative purposes. The *t*-test was used to determine whether the scores of blacks and whites differed significantly from each other. There was no effect of Ethnicity on Drive for Thinness, Bulimia, Body Dissatisfaction, Ineffectiveness and Interoceptive awareness. However, black respondents had significantly higher scores on Perfectionism, Interpersonal distrust and Maturity fears. They also had a significantly higher BMI than whites (as determined by the Kolmogorov-Smirnov test). The Pearson correlation coefficient between BMI and Drive for Thinness scores was close to zero ($r = 0,05$). When correlations were computed separately for Blacks and for Whites, values were slightly higher, but still far short of being significant (Blacks: $n = 25$, $r = 0,16$; Whites: $n = 41$, $r = 0,10$).

Table 1, Study 1: Means and standard deviations of EDI subscale scores and BMI

	Black (n= 39)		White (n=41)		Canadian norms‡	
	Mean	SD	Mean	SD	Mean	SD
Drive for Thinness	6,9	6,3	6,2	5,5	5,1	5,5
Bulimia	1,5	2,0	1,9	2,7	1,7	3,1
Body Dissatisfaction	9,6	8,7	13,1	8,3	9,7	8,1
Ineffectiveness	2,9	3,4	2,8	3,7	2,3	3,8
Perfectionism *	8,8	4,8	3,8	3,1	6,4	4,3
Interpersonal distrust *	4,8	3,6	3,2	3,3	2,4	3,0
Interoceptive awareness	3,5	3,6	2,9	2,8	2,3	3,6
Maturity fears *	6,4	4,7	2,4	2,7	2,2	2,5
BMI †	25,6	7,1	21,3	2,1		

* Difference between black and white significant at $p < .05$ by *t*-test.

† Difference between black and white significant at $p < .05$ by Kolomogorov-Smirnov test.

‡ Canadian college students: Normative data from Garner & Olmstead (1984).

The very poor return rate of questionnaires is a methodological weakness of this study, which raises questions with regard to the representativeness of the samples and the extent to which the scores provide a fair reflection of the scores of the populations from which they were drawn. However, the standard deviations of the EDI subscale scores are similar to those obtained by Wassenaar et al. (2000) in their study of students from University of Natal, Pietermaritzburg and the University of Zululand carried out in 1994 and 1995. Here the EDI was administered to over 500 students in lectures and a very low refusal rate was reported. Further, the significant differences between blacks and whites found in the present study here are also found in the Wassenaar et al. data: a higher level of Maturity Fears among blacks than among whites (means: blacks = 6,5; whites = 2,6); a higher level of Perfectionism among blacks than among whites (means: blacks = 9,6; whites = 5,2); a higher level of Interpersonal Distrust among blacks than among whites (means: blacks = 4,2; whites = 3,2); a higher level of Body Dissatisfaction among whites than among blacks (means: blacks = 8,4; whites = 12,7; in the present study the means are similar, but the difference was not statistically significant). In the Wassenaar et al.

study, Blacks also had a significantly higher Drive for Thinness score than whites (means: blacks = 7,9; whites = 6,6); in the present study, there was a difference in the same direction, which was not statistically significant. In the present study the positive relationship between BMI and Drive for Thinness found by Wassenaar et al. was not replicated. However, the marked similarities in most other respects between the present findings and those of Wassenaar et al. provide evidence that despite the low return rate of questionnaires, the samples in the present study were reasonably representative. The similarity between the findings of these independent studies provides support for their validity.

Study Two

Method

The research instrument was the BULIT, a 36 item self-report questionnaire based on the definition of bulimia in the DSM-III, which has good reliability and validity in North America (Smith & Thelen, 1984). In addition to an overall score, 7 sub-scales can be scored. It was not thought necessary to make any alterations to the instrument because it is similar to others widely used in the Southern African studies cited above. Very satisfactory alpha coefficients of 0,9 for black females and 0,95 for white females were obtained in another study with university students in South Africa (Edwards & Moldan, in preparation). Note: At the time we conducted this study, the BULIT-R had already been published (Welch, Thompson & Hall, 1993). This was a revision of the BULIT designed to bring it in line diagnostically with the revised criteria for bulimia nervosa of the DSM-III-R (American Psychiatric Association, 1987). However, this does not prejudice the value of the present data since the present study was not concerned with making formal diagnoses of respondents, but rather with making comparisons between blacks and whites in terms of the relative degrees of the kinds of disturbed attitudes and behaviour associated with eating disorders.

Respondents were female scholars and University students from Grahamstown in the Eastern Cape, from three Education levels. The younger two groups were from a government high school and a private high school. There was one group from Standard 6 (13-14 years of age) and another from the final year of High school, Standard 10 (17-19 years of age). A third group were third year students living in a residence at Rhodes University (aged 20-21). Data were collected between May and August 1997. The respondents at the schools were boarders in a hostel. They were called to an after dinner meeting by their house matrons and invited to participate in the study. They then completed the BULIT anonymously and

each one also went and stood on a scale that was provided so that they could weigh themselves and measure their height. They recorded this information on the response forms. As far as could be ascertained, there were no refusals. In the case of the University sample, the house wardens of three women's residences asked all third year students to come to a meeting after dinner one evening. They were informed about the study and asked to complete the BULIT. No formal attempt was made to estimate what percentage of first year women in the residence who were available at the time and who failed to attend, but the impression given was that there was a positive attitude towards the study by the women and that there was at least an 80% response rate. Altogether 134 questionnaires were completed. The majority of respondents were either black or white. The number of respondents in each of the 3 Education Level x 2 Ethnicity cells of the design is shown in Table 2. Data from two coloured scholars and nine Indian university students were excluded from the analysis.

Results

Table 2 shows the means and standard deviations of the BULIT scores for the black and white respondents at each of the three Education Levels.

Table 2, Study 2: Means and standard deviations of BULIT scores by Education Level and Ethnic group

		Std 6	Std 10	Univ
Black	Mean	71,2	64,9	58,7
	SD	18,4	19,5	13,5
	n	30	20	16
White	Mean	65,3	64,5	55,6
	SD	18,9	25,5	17,3
	n	19	22	15
Total	Mean	68,1	64,7	57,2
	SD	18,6	22,5	15,4

Table 3 reports 3 x 2 analyses of variance of the BULIT full-scale scores, the seven BULIT sub-scale scores and the BMI scores.

Table 3, Study 2: Summary of analyses of variance of BULIT full scale and subscale scores and BMI

	Ethnic Group	Education Level	Education Level x ethnic group
BULIT full scale	$F = 0,58$ n.s.	$F = 3,18$ $p < ,05$	$F = 0,05$ n.s.
Bingeing	$F = 0,21$ n.s.	$F = 2,61$ n.s.	$F = 0,159$ n.s.
Feelings	$F = 0,15$ n.s.	$F = 0,97$ n.s.	$F = 0,10$ n.s.
Vomiting	$F = 0,13$ n.s.	$F = 0,85$ n.s.	$F = 0,39$ n.s.
Type of food	$F = 6,06$ $p < ,02$	$F = 3,82$ $p < ,05$	$F = 0,502$ n.s.
Lax/diuretic abuse	$F = 0,04$ n.s.	$F = 1,56$ n.s.	$F = 0,37$ n.s.
Weight	$F = 0,29$ n.s.	$F = 0,13$ n.s.	$F = 0,70$ n.s.
Menstrual	$F = 0,33$ n.s.	$F = 3,03$ $p = ,052$	$F = 3,44$ $p < ,05$
BMI	$F = 10,54$ $p < ,01$	$F = 1,09$ n.s.	$F = 1,15$ n.s.

For the BULIT full scale, there was no significant effect of Ethnicity. There was, however, a significant main effect of Education Level: the University sample had significantly lower scores than the Standard 6 sample (as ascertained by Tukey's test). There was no significant interaction between Education Level and Ethnicity. Thus, although, in the Standard 6 group, the mean of the blacks is somewhat higher than that of the whites, this difference is consistent with chance. There were significant effects on only two of the seven sub-scales. On Type of food, the effects of Education Level and Ethnicity were both significant. On Menstruation there was a significant interaction between Education Level and Ethnicity and the main effect of Education Level was close to significance. Means and standard deviations of the 6 groups on these sub-scales are shown in Table 4.

Table 4, Study 2: Means and standard deviations of two BULIT subscale scores by Education Level and Ethnic group

		Type of food			Menstruation		
		Std 6	Std 10	Univ.	Std 6	Std 10	Univ.
Black	Mean	5,0	4,5	4,1	3,1	2,3	2,2
	SD	2,4	2,2	2,2	2,0	0,7	0,6
White	Mean	4,4	3,6	2,5	2,4	2,6	2,6
	SD	2,5	2,2	0,7	0,6	1,2	1,1

On BMI there was a strong main effect of Ethnicity, with the mean BMI of blacks (= 23,7; SD = 5,0) being higher than that of whites (=20,7; SD = 3,1). The correlation between BMI and BULIT full scale was significant in the case of both blacks ($r = 0,39; p < ,01$) and whites ($r = 0,38; p < ,05$).

The Type of Food sub-scale taps the extent to which respondents eat sugary and starchy foods. Blacks scored significantly higher than whites and younger respondents scored higher than older ones. One hypothesis that might account for this is that avoidance of sugary and starchy foods occurs as individuals develop a more sophisticated understanding of the relationship between calories and body mass and use this understanding as a basis for food selection. It can be hypothesized that blacks in general develop this understanding and practice to a lesser extent than do whites, and that this understanding and practice becomes more developed as individuals are exposed to more information through the media and discuss more with the peer group. Another hypothesis is that the findings are related to individuals' economic status. Sweet starchy foods are less expensive than more sophisticated alternatives, which may, therefore, be less available to younger women and blacks.

The significant effects on the Menstruation sub-scale are difficult to interpret. The means in Table 4 suggest that younger blacks have rather less regular periods than the other groups. One hypothesis is that this might be a result of the tendency for this group in particular to have higher BULIT full-scale scores.

Discussion

No significant differences were found in either study between black and white women with respect to the degree of disturbed eating patterns or attitudes. This finding confirms the findings of previous studies that, in South Africa, eating related disturbances are as prevalent among blacks as among whites. This contrasts with the findings of le Grange et al. (1998) who found that blacks showed a higher level of disturbance with regard to behaviour and cognitions specifically related to eating.

Although, in Study One, blacks scored higher on the sub-scales of Perfectionism, Interpersonal distrust, and Maturity fears, which are regarded as risk factors for disturbances of eating, there were no significant differences on the scales which directly measure behaviour and cognition related to eating (Drive for Thinness, Bulimia and Body Dissatisfaction) -- although the means for Body Dissatisfaction are similar to those obtained by Wassenaar et al. (2000) where a significant difference was found. Simi-

larly, in Study Two, there was no difference between blacks and whites on the BULIT sub-scales measuring Binging, Vomiting, and Laxative/diuretic abuse. These findings contrast with those of le Grange et al. (1998) who found that black females scored higher than white females on the BITE, a scale whose items focus directly on patterns of eating, experiences of control over eating, weight and weight changes and fears of becoming fat.

The finding in Study One that blacks scored higher than whites on Perfectionism, Interpersonal distrust, and Maturity fears replicates the results of Hooper and Garner's (1986) study in Zimbabwe, which also used the EDI. Hooper and Garner's black respondents also scored lower than whites on Body Dissatisfaction, a finding which was replicated by the Wassenaar et al. study, and in the present study the means were in the same direction.

In Study Two, there was a main effect of Education Level, on the BULIT. Although the pattern of means suggests that younger blacks are particularly vulnerable to eating disturbances, the statistical analysis does not support this conclusion since there is no interaction between Education Level and Ethnicity. There are three possible explanations for the finding that the degree of disturbance is greater in those young women still at school than in those completing university. The first is that it may reflect the different sampling methods used at the school as compared to the University. However, as pointed out above, there is evidence that a volunteer sample of university students is reasonably representative. A second possible explanation is also related to sampling. The university students are a more selected group than the scholars since not all scholars go on to university. It is possible that those who go on to university are less vulnerable to eating disorders than those who do not. Finally, the hypothesis can be advanced that the university students are less influenced by group pressure since they have had more opportunity to individuate and to develop a separate identity. In addition, they may also have had time to reflect on their disturbed eating behaviour and its consequences and so to reduce its impact on their lives. The present data do not provide evidence that enable these hypotheses to be tested.

In both studies, blacks had a significantly higher BMI. The same was found by Wassenaar et al. (2000). It might be expected that the higher the BMI, the greater would be the risk of the development of disturbances of eating-related cognition and behaviour. This was indeed the case in Study Two where, for both blacks and whites, the correlation between BMI and BULIT scores was significant. In Study One, however, the correlation between BMI and Drive for Thinness was close to zero for both blacks and whites and blacks reported less Body Dissatisfaction despite having a higher BMI.

Conclusions

The results of these two studies carried out four years apart in two different geographic regions provide further evidence for the conclusions of several other studies, that, in South Africa, black females are just as prone to disturbances in patterns of cognition and behaviour related to eating as are whites. However, neither study found significantly higher levels of disturbed eating behaviour in black females as reported by le Grange et al. (1998) although, in Study One, blacks were higher on several factors which are associated with vulnerability to such disturbances. Study Two showed that these patterns of disturbed behaviour and cognition are already present at the beginning of High School for both blacks and whites, and might be taken as suggesting that these younger girls are in fact the most vulnerable. Both studies confirmed the already known tendency of black women to have a higher BMI than whites. It might be expected that, as blacks are increasingly exposed to the same cultural and social pressures to become thin as whites, their higher BMI would make them even more vulnerable to disturbances of behaviour and cognition around eating. The significant correlation between BMI and BULIT scores in both ethnic groups in Study Two supports the hypothesis that less slim females feel more pressure to diet reduce weight. However, it is hard to explain the absence of a correlation between Drive for Thinness and BMI in Study One, and further research is needed to clarify the matter.

It should be noted that, although we have discussed differences in terms of ethnicity (black or white), any differences or similarities observed are likely to be the effects of cultural conditioning in particular groups. Ethnicity as a biological variable might be expected to have an impact only in so far as black women tend to have a higher BMI than whites. However, this factor would have an impact only if black respondents were to adopt as normative the same ultra-slim figure that is fashionable among whites. So far, no attempt has been made to study black respondents with little or no education or in very rural settings. In both our studies black and white respondents were at the same educational institutions, at which English was the medium of instruction, and they shared the same educational level. They also shared the same urban environments. They were therefore subject to a range of similar cultural influences in terms of exposure to educational material, media portrayals of women and peer group discourses around attractiveness and its relationship to the body. Studies with respondents with little or no knowledge of English will be technically more difficult to carry out, and there is clearly a need for future research to examine a wider range of the population.

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References

- Abrams, K. K., Allen, L. R., & Gray, J. J. (1993). Disordered eating attitudes and behaviors, psychological adjustment, and ethnic identity: A comparison of Black and White female college students. *International Journal of Eating Disorders, 14*(1), 49-57.
- Altabe, M. (1998). Ethnicity and body image: *Quantitative and qualitative analysis. International Journal of Eating Disorders, 23*, 153-159.
- American Psychiatric Association (1987). *DSM-III-R. Diagnostic and statistical manual of mental disorders* (3rd ed., revised). Washington, DC: Author.
- American Psychiatric Association (2000). *DSM-IV-TR. Diagnostic and statistical manual of mental disorders* (4th ed., Text Revision). Washington, DC: Author.
- Ballot, N.S., Delaney, N.E., Erskine, P.J., Langridge, P.J., Smit, K., van Niekerk, M.S., Winters, Z.E., & Wright, N.C. (1981). Anorexia nervosa - a prevalence study. *South African Medical Journal, 59*, 992-993.
- Beumont, P. J. V. (1970). Anorexia nervosa: A review. *South African Medical Journal, 44*, 911-915.
- Caldwell, M. B., Brownell, K. D., & Wilfley, D. E. (1997). Relationship of weight, body dissatisfaction, and self-esteem in African American and White female dieters. *International Journal of Eating Disorders, 22*, 127-130.
- Davis, C., & Yager, J. (1992). Transcultural aspects of eating disorders: A critical literature review. *Culture, Medicine and Psychiatry, 16*, 377-394.
- Dolan, B. (1991). Cross-cultural aspects of anorexia nervosa and bulimia: A review. *International Journal of Eating Disorders, 10*(1), 67-78.
- Edwards, D. J. A. & Moldan, S. (in preparation). Bulimic pathology in Black students in South Africa: Some unexpected findings.
- Fairburn, C. G., Hay, P. J. & Welch, S. L. (1993). Binge-eating and bulimia nervosa: Distribution and determinants. In C. G. Fairburn & G. T. Wilson (Eds.), *Binge eating: Nature, assessment and treatment* (pp. 123-143). New York: Guilford.
- Fitzgibbon, M. L., Spring, B., Avellone, M. E., Blackman, L. R., Pingitore, R., & Stolley, M. R. (1998). Correlates of binge eating in Hispanic, Black and White women. *International Journal of Eating Disorders, 24*, 43-52.
- Furnham, A., & Baguma, P. (1994). Cross-cultural differences in the evaluation of male and female body shapes. *International Journal of Eating Disorders, 15*(1), 81-89.
- Garner, D. M. (1997). Psychoeducational principles in treatment. In D. M. Garner & P. E. Garfinkel (Eds.), *Handbook of treatment for eating disorders* (pp. 145-177). New York: Guilford.

- Garner, D. M., Olmstead, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, 2, 15-34.
- Gray, J. J., Ford, K., & Kelly, S. (1987). The prevalence of bulimia in a black college population. *International Journal of Eating Disorders*, 6(6), 733-740.
- Haynes, H. (1995). An investigation of the relationship between body image and culture: A pilot study. University of Natal, Pietermaritzburg, South Africa.
- Hooper, M. S. H., & Garner, D. M. (1986). Application of the Eating Disorders Inventory to a sample of black, white and mixed race schoolgirls in Zimbabwe. *International Journal of Eating Disorders*, 5(1), 161-168.
- le Grange, D., Teich, C. F., & Tibbs, J. (1998). Eating attitudes and behaviors in 1435 South African Caucasian and non-Caucasian college students. *American Journal of Psychiatry*, 155(2), 250-254.
- Lee, A. M., & Lee, S. (1996). Disordered eating and its psychosocial correlates among Chinese adolescent females in Hong Kong. *International Journal of Eating Disorders*, 20(2), 177-183.
- Mumford, D.B., Whitehouse, A.M., & Chowdry, I.Y. (1992). Survey of eating disorders in English medium schools in Lahore, Pakistan. *International Journal of Eating Disorders*, 11(2), 173-184.
- Mwamwenda, T. S. (1995). *Educational psychology: An African perspective*. (2nd ed.). Durban, South Africa: Butterworths.
- Nash, E. S. & Colborn, A. I. (1994). Outcomes of hospitalized anorexics and bulimics in Cape town, 1979-1989. *South African Medical Journal*, 84, 74-79.
- Nasser, M. (1986). Comparative study of the prevalence of abnormal eating attitudes among Arab females of both London and Cairo universities. *Psychological Medicine*, 16, 621-625.
- Norris, D.L. (1979). Clinical diagnostic criteria for primary anorexia nervosa. *South African Medical Journal*, 56, 987-993.
- Polivy, J., & Herman, C.P. (1995). Dieting and its relation to eating disorders. In K. D. Brownell & C. G. Fairburn (Eds.), *Eating disorders and obesity: A comprehensive handbook*. (pp. 83-86). New York: Guilford.
- Rand, C.S.W., & Kuldau, J.M. (1992). Epidemiology of bulimia and symptoms in a general population: Sex, age, race and socio-economic status. *International Journal of Eating Disorders*, 11, 37-44.
- Rucker, C.E., & Cash, T.F. (1992). Body images, body-size perceptions, and eating behaviors among African-American and White College women. *International Journal of Eating Disorders*, 12(3), 291-299.
- Russell, G. F. M. (1997). The history of bulimia nervosa. In D. M. Garner & P. E. Garfinkel (Eds.), *Handbook of treatment for eating disorders*. (pp. 11-24). New York: Guilford.
- Senekal, M., Steyn, N. P., Mashego, T., & Nel, J. H. (2001). Evaluation of body shape, eating disorders and weight management related parameters in black female student of rural and urban origins. *South African Journal of Psychology*, 31 (1), 46-53.
- Shefer, T. (1987). 'Abnormal' eating attitudes and behaviours among women students. *South African Medical Journal*, 72, 419-421.
- Silverman, J. A. (1997). Anorexia nervosa: Historical perspective on treatment. In D. M. Garner & P. E. Garfinkel (Eds.), *Handbook of treatment for eating disorders*. (pp. 3-10). New York: Guilford.

- Smith, J. E., & Krejci, J. (1991). Minorities join the majority: Eating disturbances among Hispanic and Native American youth. *International Journal of Eating Disorders*, 10(2), 179-186.
- Smith, M. C., & Thelen, M. H. (1984). Development and validation of a test for bulimia. *Journal of Consulting and Clinical Psychology*, 52, 863-872.
- Snow, J. T., & Harris, M. B. (1989). Disordered eating in South-western Pueblo Indians and Hispanics. *Journal of Adolescence*, 12, 329-336.
- Sobal, J. (1995). Social influences on body weight. In K. D. Brownell & C. G. Fairburn (Eds.), *Eating disorders and obesity: A comprehensive handbook*. (pp. 73-77). New York: Guilford.
- Striegel-Moore, R.H., Schreiber, G.B., Pike, K.M., Wilfley, D.E., & Rodin, J. (1995). Drive for Thinness in black and white preadolescent girls. *International Journal of Eating Disorders*, 18(1), 59-69.
- Stunkard, A. (1993). A history of binge eating. In C. G. Fairburn & G. T. Wilson (Eds.), *Binge eating: Nature, assessment and treatment*. (pp. 15-34). New York: Guilford.
- Swartz, L., & Sheward, D. (1995). The epidemiology of anorexia nervosa and bulimia nervosa in South Africa. *South African Journal of Continuing Medical Education*, 13(5), 541-542.
- Szabo, C.P., Berk, M., Tlou, E., & Allwood, C.W. (1995). Eating disorders in Black South African females - A series of cases. *South African Medical Journal*, 85(6), 588-590.
- Szabo, C. P. & Hollands, C. (1995). The prevalence of abnormal eating attitudes in a high school population: A preliminary study. Paper presented at the 10th National Association for Child and Adolescent Psychiatry and Psychology, Durban, South Africa.
- Wassenaar, D., le Grange, D., Winship, J. & Lachenicht, L. (2000). The prevalence of eating disorder pathology in a cross-ethnic population of female students in South Africa. *European Eating Disorders Review*, 8, 225-236.
- Welch, G., Thompson, L., & Hall, A. (1993). The BULIT-R: Its reliability and clinical validity as a screening tool for DSM-III-R bulimia nervosa in a female tertiary education population. *International Journal of Eating Disorders*, 14(1), 95-105.
- Wilfley, D. E., & Rodin, J. (1995). Cultural influences on eating disorders. In K. D. Brownell & C. G. Fairburn (Eds.), *Eating disorders and obesity: A comprehensive handbook*. (pp. 78-82). New York: Guilford.
- Ziervogel, C. F. (1995). Anorexia nervosa and bulimia nervosa in young women in South Africa. *South African Journal of Continuing Medical Education*, 13(5), 543.