

# A cross-cultural study of eating attitudes in adolescent South African females

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*Eating disorders were first described in black females in South Africa in 1995. A subsequent community based study of eating attitudes amongst adolescent females in an urban setting suggested that there would be increasing numbers of sufferers from within the black community. The current study sought to extend these findings using a larger, more representative urban sample. The results support those of the preliminary study. The underlying basis for the emerging phenomenon is discussed.*

**Key words:** Eating disorders, eating attitudes, South Africa

The published literature on eating disorders in white South Africans dates back to the 1970s (1,2). In a South African study on treatment outcome for hospitalised anorexics and bulimics (3), it was mentioned that no blacks had been referred for treatment of either condition. In January 1993, one of the authors (CPS) first diagnosed an eating disorder in an adolescent black female, leading ultimately to the first published series of such cases in South Africa (4). Subsequently there has been an increase in the number of black eating disordered patients hospitalised for the treatment of their illness (5). The question arose as to whether the initial cases described were forerunners of further cases, in greater numbers, signalling a shift in the demographic profile of eating disorders (4).

The 1990s were a time of increasing racial integration at various levels of South African society, despite the existence of apartheid. One specific area of racial integration was at privately funded schools. Such schools seemed appropriate for the exploration of eating attitudes. Underlying this approach was the theory of socio-cultural factors impacting on the occurrence of eating disorders, whereby the ideals of Western society are specifically implicated (6). In this regard, private schools were viewed as institutions dominated by Western values. Given the existing literature on the link between acculturation and eating disorders (7,8), it was hypothesized that black females (constituting a minority group in an alien cultural milieu) in such a setting may demonstrate an inclination towards the development of eating disorders.

This was explored through the measurement of eating attitudes at a private, all-girl, secondary school in the greater Johannesburg area (i.e. an urban setting). Using the Eating Attitudes Test (EAT-26) (9), a surprising number of black respondents (37.5%) demonstrated potentially pathological eating attitudes (10). This finding suggested that the initial cases described were indeed part of an emerging phenomenon (5). The current study was undertaken to provide further support for this through a larger sample, attending state funded schools, in an urban location.

In essence, the hypothesis of the current study is that black adolescents in an urban setting will demonstrate eating attitudes similar to their white counterparts. The ultimate aim of the study is to demonstrate that setting, and not race or ethnic group, has an important influence on eating attitudes. Within the South African context such data is important in terms of dispelling notions of racial exclusivity regarding the risk for the development of eating disorders, i.e. that only whites and not blacks are at risk, which may have implications for resource allocation.

## METHODS

The study was conducted on separate days during 1996 at three secondary schools, which were in an urban area (Johannesburg: Gauteng province). The schools were single sex (i.e. all girls) and were racially diverse in composition. The decision to use three schools in the urban sample was influenced by the required sample size, which was calculated from a pilot study (10).

Prior to commencing the study, extensive liaison took place between the various school principals and the researcher in terms of establishing the acceptability and viability of conducting research at their respective schools. The study was approved by the Committee for Research on Human Subjects at the University of the Witwatersrand.

The completion of questionnaires at each school took place on a designated day at a specific time such that an entire school was simultaneously involved in the process. The process was monitored and supervised by teachers and the researcher. In general the procedure was completed within one hour. During the time of questionnaire completion, no discussion was permitted between respondents. Participation in the study was voluntary and each girl who participated provided written informed consent. Parental permission to participate was also required. Anonymity was guaranteed.

A demographic questionnaire and the EAT-26 were employed. The demographic questionnaire sought to col-

lect information on age, school standard, race, home language, current height, current weight. The last two parameters were directly measured and the value was given to the respondent to fill in on the questionnaire. In addition, the respondent was required to specify paternal/maternal occupation, which was for the purpose of establishing socio-economic status. The EAT-26 (9) is a self report questionnaire comprising questions dealing with attitudes, concerns and behaviours related to food, weight and body shape. A total score of 20 or more represents the cut-off for the existence of disturbed eating attitudes and behaviours.

Prior to conducting the study, the EAT-26 was discussed with each school principal with regard to the terminology used. The wording of the questionnaire was altered in certain instances, based on recommendations from the various schools, e.g. the word "impulse" was replaced by the word "urge". Within the South African context, the EAT-26 has previously been employed in several studies. The study by Szabo and Hollands (10) established, but did not report, Cronbach's alpha values of 0.75 for black respondents and 0.79 for white respondents, whereas the study by Senekal et al (11), involving black university students, established a value of 0.62.

## RESULTS

The total sample consisted of 1353 female respondents. The total enrolment of pupils at the three schools was 1579, giving a response rate of 86%. Of the 226 non-responders, 46 had been absent on the day of the study. The racial composition was as follows: black 43% (n=578), white 37% (n=506), other 20% (n=269). Only the data derived from the black and white respondents are reported.

White respondents were significantly taller ( $t = -9.82$ ,  $df = 961$ ,  $p < 0.0001$ ) but had a significantly lower body mass index ( $t = 4.73$ ,  $df = 936$ ,  $p < 0.0001$ ) than black respondents. No significant difference was found for either age ( $t = 0.95$ ,  $df = 1079$ ,  $p = 0.34$ ) or weight ( $t = 1.32$ ,  $df = 1004$ ,  $p = 0.18$ ). The socio-economic status of the white sample was significantly higher ( $p = 0.001$ ).

Within the black sample, 18.7% (108/578) scored 20 or above. The mean score for the entire sample (n=578) was 12.48 (SD = 8.94). The scores for the various subscales were as follows: Dieting = 7.68 (6.75), Bulimic = 1.61 (2.38), Oral control = 3.17 (3.04). For those scoring 20 or above (n=108) on the EAT-26, the mean score was 27.19 (SD = 7.19). Mean scores for the subscales were as follows: Dieting = 18.04 (5.98), Bulimic = 3.84 (3.3), Oral control = 5.3 (3.73). For those scoring below 20 (n=470) on the EAT-26, the mean score was 9.1 (5.02). Mean scores for the various subscales were as follows: Dieting = 5.3 (4.19), Bulimic = 1.1(1.76), Oral control = 2.68 (2.63). Cronbach's alpha was 0.74.

A principal component factor analysis with varimax

rotation revealed that 31% of the variance could be explained by three factors, with factor 1 accounting for 16.6% of the total variance. The first three factors (corresponding to the subscales as follows: Factor 1 = Dieting, Factor 2 = Bulimia, Factor 3 = Oral control) had eigen values of 4.32, 1.95 and 1.78 respectively. Using an orthogonal transformation matrix demonstrated 8/13, 3/6 and 3/7 items for factors 1,2 and 3 respectively with a loading of  $>0.4$ .

Within the white sample, 18.6% (94/506) scored 20 or above. The mean score on the EAT-26 for the entire sample (n=506) was 12.27 (SD = 10.21). The scores on the subscales for the entire sample (n=506) were as follows: Dieting = 8.47 (7.88), Bulimic = 1.29 (2.55), Oral control = 2.5 (2.71). For those scoring 20 or above (n=94), the mean total score was 29.65 (8.53), with scores on the subscales as follows: Dieting = 21.44 (5.84), Bulimic = 4.43 (4.08), Oral control = 3.77(3.58). For those scoring below 20 (n= 412), the mean total score was 8.30 (5.18), with scores on the subscales as follows: Dieting = 5.5(4.62), Bulimic = 0.5(1.21), Oral control = 2.21(2.38). Cronbach's alpha was 0.85.

A principal component factor analysis with varimax rotation revealed that 44% of the variance could be explained by three factors, with factor 1 accounting for 28% of the total variance. The eigen values of the first three factors were 7.38, 2.27 and 1.8 respectively. Using an orthogonal transformation matrix demonstrated 11/13, 5/6 and 6/7 items for factors 1,2 and 3 respectively with a factor loading  $>0.4$ .

The samples did not differ significantly (using a two sample t-test) for either total EAT-26 score ( $t = 0.36$ ,  $df = 1082$ ,  $p = 0.71$ ) or the Dieting subscale ( $t = 1.75$ ,  $df = 1082$ ,  $p = 0.07$ ). However, black respondents scored significantly higher on both the Bulimia subscale ( $t = 2.15$ ,  $df = 1082$ ,  $p = 0.03$ ) and the Oral control subscale ( $t = 3.81$ ,  $df = 1082$ ,  $p = 0.001$ ). Amongst those respondents who scored 20 or above, white respondents had a significantly higher total score than black respondents, utilising two sample t-tests ( $t = -2.22$ ,  $df = 200$ ,  $p = 0.02$ ). This was also observed for the Dieting subscale ( $t = -4.07$ ,  $df = 200$ ,  $p = 0.0001$ ). Black respondents scored significantly higher on the Oral control subscale ( $t = 2.95$ ,  $df = 200$ ,  $p = 0.0035$ ). There was no significant difference for the Bulimia subscale ( $t = -1.14$ ,  $df = 200$ ,  $p = 0.255$ ).

## DISCUSSION

The EAT-26 provides information on the possible risk for developing an eating disorder by virtue of the total score obtained, as well as a profile of eating attitudes in terms of the subscale scores obtained. The total EAT-26 scores for the black (12.48) and white (12.27) samples were not significantly different, which concurs with an earlier South African study using the EAT-26 in a racially mixed urban, adolescent sample (10).

Recent studies carried out in South Africa using the EAT-26 found a mean total score of 12.1 in a black, female, university sample with a mean age of 20 (11), and total scores of 11.7 and 12.5 in black and white, respectively, adolescent schoolgirls with mean ages of 16.3 and 16.5 (12). These findings demonstrate a remarkable similarity with the findings of the current study, despite different mean ages between the samples as well different locations for the studies.

It has been proposed that EAT-26 scores be categorised in terms of potential risk for the development of an eating disorder: a score of less than 10 would denote no risk, a score of 10-19 would denote a low risk and a score of 20 or above a high risk (13). From this, 43.4% of our black sample and 50.6% of our white sample would have been categorised as having no risk, compared to 77.5% of the Swiss adolescent sample studied by Buddeburg-Fisher et al (13). It should be borne in mind that scores on the EAT-26 do vary over time in adolescents (14) and thus the significance of a given score at a particular point in time should not be overestimated.

In our study, the percentage of those scoring above the EAT-26 cut-off score of 20 was almost identical for black and white (18.6% versus 18.7%). These findings are comparable to recent South African data which established prevalence rates of 17.9% for black female adolescents and 21.2% for white female adolescents scoring 20 or above (12). Beyond comparisons with South African data, there are studies from the African continent that provide a broader context. The closest study to the current one was conducted in Nigeria, where, utilising the EAT-26, a prevalence figure for abnormal eating attitudes of 18.6% was established (15). Their sample was black and urban in location, comprising secondary school pupils and university students. An Egyptian study (16), conducted at a secondary school in Cairo, established a prevalence rate for abnormal eating attitudes of 11.4% using the EAT-40 (17). It has been noted within the South African setting that utilisation of the EAT-40 was associated with lower prevalence figures for abnormal eating attitudes. A study conducted amongst white adolescents in Cape Town, utilising the EAT-40, revealed the prevalence of abnormal eating attitudes to be 15% amongst the female respondents (18).

From an international perspective, the findings of the current study are generally closer to those in North America than Europe. The application of the EAT-26 and EAT-40 to North American samples of adolescents has generally yielded higher prevalence figures, e.g. 17.5% (19) and 22% (20), whereas in the United Kingdom prevalence figures have been somewhat lower, e.g. 6.9% (21) and 9.3% (14). However, a recent British study conducted on 11-16 year old females established that 18.6% of this population have attitudes and concerns regarding weight and shape which place them at risk for the development of eating disorders (22). In general it would seem that the findings

of the current study, regarding the prevalence of abnormal eating attitudes using the EAT-26, are within the spectrum of findings from around the world.

South Africa is a country in transition (23). Transformation of all aspects of societal functioning is evident and reflective of this transition. Cultures that previously coexisted as almost mutually exclusive entities are now engaging. As a consequence, beliefs and value systems are potentially changing and evolving in the direction of homogeneity within specific settings. The school system provides a possible model for the exploration of this phenomenon given the fluidity of identity within the age group of school attending children and adolescents. Adolescence is a time of significant self awareness and critical self evaluation (24). It is generally during this developmental period that, amongst females predominantly, body dissatisfaction and subsequent efforts to address this through dieting occur (25). Against this background, which involves more than aesthetic concerns (26), conditions such as eating disorders emerge. Western culture appears to have a powerful impact on the development of such conditions (27). Whilst clinical experience has contributed to the understanding that these conditions affect predominantly white females (28), the emergence of black sufferers in urban settings in both the Western (29) and non-Western world (4) suggests culture relates to milieu and value system rather than race, and by implication, is a more powerful mediator of illness expression than race. With the advent of and the means for mass communication, Western culture is becoming increasingly pervasive. With a seductive emphasis on consumerism (30), it is indeed a powerful culture. Assimilation of the associated Western value system, where physical appearance and self worth are seemingly synonymous (31), seems inevitable.

Contemporary South African society provides an opportunity for exploring the impact of this phenomenon. Rural dwellers with so-called traditional beliefs (32) are migrating into the cities, interfacing with urban dwellers of all races who, with the advent of desegregation, are in turn being more vigorously exposed to one another's cultures. In this instance, adolescent eating attitudes and their putative relationship with eating disorders provide a perspective for exploration of this phenomenon. On one level this study may be viewed as a measure of the prevalence of abnormal eating attitudes, which may have implications for the future epidemiology of eating disorders, within various groups of South African adolescents. However, beyond the concrete measures and data, there would appear to be implications for an urbanizing, female African population within the broader context of identity. Within the South African setting it has been proposed that black, female emancipation at both a political and socio-economic level has occurred rapidly and without either historical precedent or meaningful mentorship, thus creating circumstances that may increase vulnerability to iden-

tity seeking through weight and shape preoccupations leading potentially to abnormal eating attitudes and the possible development of eating disorders (33).

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