Body figure preference in South African adolescent females: a cross cultural study.

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Abstract

Background: Eating disorders have traditionally been associated with the white community in South Africa. The emergence of eating disorders among blacks in the mid 1990's appeared to signal a demographic shift. Subsequent data suggested that eating disorders would increase in prevalence amongst black South Africans.

Objective: The current study sought to explore body figure preference in a cross cultural South African sample, given the established relationship between body dissatisfaction and eating disorders.

Methods: The sample comprised a community based, multi-racial adolescent population in both urban (n=1353) and rural (n=361) areas. The Body Figure Preference Test [BFPT] was administered.

Results: Most urban respondents had a desire to be smaller (white=72%; black=61%), whereas rural black respondents were more evenly divided amongst those who were content (31%), desiring to be larger (29%) and desiring to be smaller (40%) [Chi square value=105.309, df=4, p=0.001].

Conclusions: The findings of the study demonstrate that racial homogenization exists regarding body figure preference within the urban setting. Data from the rural area suggests milieu specific factors in this regard with fewer respondents desiring to be smaller. This may have implications for the emergence of eating disorders in black South African populations, more specifically those in urban areas.

Keywords body, figure, South Africa, cross-cultural
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Introduction

There is a tendency for women to judge themselves to be overweight and aspire to a smaller body size [1] , as well as perceive themselves to be overweight when not objectively so as measured by their body mass index (BMI). [2] Body dissatisfaction has been shown to have an important influence on weight control behaviour in women which may ultimately lead to the onset and development of an eating disorder [3] or behaviours associated with an eating disorder. [4] Specifically, there appears to be a compelling link between weight control behaviours e.g. dieting and the development of eating disorders. [5]

Eating disorders have been described amongst white South Africans since the 1970s [6,7] with the first description amongst black South Africans in the 1990s. [8] Subsequent community based, cross-cultural studies of adolescents have suggested that within urban settings such numbers would increase . [9,10,11] Data from a rural sample suggests that the likelihood of eating disorders emerging in this setting is less likely. [12]

Given the relationship between body dissatisfaction and eating disorders, an exploration of such feelings is important in developing an understanding of the emergence of eating disorders. Cross cultural South African data in this regard is limited. A study involving adolescents demonstrated that in samples of both urban white and black girls there were substantially greater numbers with body dissatisfaction than amongst black rural girls. [13] Urban white girls had the greatest level of body dissatisfaction, black rural girls the least with black urban girls closer to their white counterparts. More recently, in an urban setting, it has been found that body dissatisfaction was significantly higher in white adolescent compared to black adolescent girls. [10] In a multiracial urban sample of adolescent schoolgirls, it was found that almost 50% perceived themselves to be overweight yet their mean BMI was 20.01 placing them within a normal range. [9] The South African data to date suggest that body dissatisfaction exists amongst a substantial number of adolescent females (both black and white), specifically in the urban setting. The current study sought to explore this phenomenon in both an

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urban and rural setting, using a recognised instrument. The hypothesis was that black urban females would be similar to white urban females, with both urban populations differing from the rural, black, female population studied.

Methods

Participants

A sample of black and white female adolescents (generally aged 13 -18) in an urban setting (n=1353) participated, as did an exclusively black, Zulu speaking sample in a rural setting (n=361). The sample size was statistically derived based on data from an earlier pilot study. [10] [The size of the sample for the current study was likely to yield a prevalence of abnormal eating attitudes (as measured by the Eating Attitudes Test, EAT-26) within 4% of the actual figure. The current sample had also completed the EAT-26 which has been reported .[12]]All participants (in either location) were at secondary school. The study was conducted on site at the schools concerned. There were a total of 5 schools involved, 3 urban (girls only schools) and 2 rural (co-educational schools). In the urban setting, the study was conducted in English, whereas in the rural setting it was conducted in Zulu. Non-probability sampling was used whereby all those present on the day of the study participated. Such an approach was certainly a limitation in terms of being able to generalize any findings. In the urban setting, girls of all race groups participated but with black and white females being the focus of the study. In the rural setting, the medium of instruction i.e. Zulu, determined the racial composition of the schools i.e. exclusively black. Measures of height (metres) and weight (kilograms), in addition to questionnaire completion, were undertaken on the day of study. This data enabled calculation of body mass index, weight (Kilograms)/ height^2 (Metres). [14] The study was carried out by the researcher (CPS) at each site. Written, informed consent to participate was obtained from each participant and their parents. The study was approved by the then Committee for Research on Human Subjects (now the Human Research Ethics Committee) at the University of the Witwatersrand.

The current study was one component of a broader study exploring cross cultural aspects of eating attitudes and body dissatisfaction amongst adolescents in both urban and rural settings in South Africa. [11,12]The primary objective of this work has been to establish the potential for the emergence of eating disorders amongst black, female South African adolescents.

Instrument

Body Figure Preference Test

The *Body Figure Preference Test* (BFPT) comprises a series of drawings depicting various body sizes of an adolescent figure. [15]The body sizes range from emaciated to obese. The figures used are child adaptations of adult drawings which were developed earlier. [16] These drawings have been used to determine body image perceptions in other populations. [1, 17] A study by Cohn et al (1987) [17] utilized the original adult drawings in their study of an adolescent population, however for the purposes of the current study the author chose to use the adolescent adaptations as they appeared to represent the population to be studied more accurately. The instrument was used without any further refinement e.g. in terms of figures being further modified to depict black female forms. This is a limitation of the instrument in a cross-cultural setting. Further, the use of the same instrument, albeit in different languages i.e. English and Zulu in different settings i.e. urban and rural might be viewed as a source of error. The respondents were required to specify which figure most represents their current body shape and which one they would ideally prefer to be. Based on discrepancies or lack thereof, one is able to assess body dissatisfaction (and the direction of this dissatisfaction i.e. desire to be smaller or larger). Each figure was allocated a number, with "1" representing the smallest and "8" the largest figure.

Results

Age and body dimension data

Within the urban setting, there were 578 black respondents, who constituted 43% of the total urban sample . The mean age was 14.8 (sd= 1.7), the mean height was 1.57 (sd= 0.1) metres, the mean weight was 53.91 (sd= 10.25) kilograms and the mean BMI was 21.88 (sd= 5.17). Within the same setting, the number of white respondents was 506, constituting 37% of the total urban sample. Those of other racial groups comprised 20% of the urban sample. The mean age of the sample was 14.98 (sd= 1.59). The mean height was 1.63 metres (SD= 0.08). The mean weight was 54.74 kilograms (sd= 9.56) and the mean Body Mass Index was 20.47 (sd= 3.88). The mean age of the rural respondents (n=361) was 17.87 (sd= 2.77), the mean weight was 59.16 (sd= 11.41) kilograms, the mean height was 1.57 (sd= 0.06) metres, the mean body mass index was 23.8 (sd= 3.95) [Table 1].

Comparison of the means for age, height, weight and BMI between the groups was conducted using an ANOVA (one way) with post-hoc Bonferroni t-tests to determine where significant differences exist.

A significant difference for mean age was found (df=2, F=292.33,
p=0.0001) with rural blacks being significantly older than both urban black and white respondents. ($p<0.05$). The difference between urban black and urban white samples was not significant. A significant difference for mean weight was found (df=2, F=29.94, p=0.0001) with rural blacks being heavier than either urban blacks or whites ($p<0.05$), which might reflect the fact that the rural sample were significantly older. The difference between urban black and urban white samples was not significant.

A significant difference for mean height was found (df=2, F=75.66, p=0.0001) with urban whites being taller than either urban or rural blacks ($p<0.05$). The difference between urban and rural blacks was not significant. A significant difference for mean BMI was found (df=2, F=59.04, p=0.0001) with rural blacks having a greater BMI than either urban whites or blacks, and urban blacks having a greater BMI than urban whites ($p<0.05$).

Table 1: ***Mean, (Standard Deviation), age and body dimension data***

	Urban White	*Urban Black*	*Rural Black*
Age(years)	14.98(1.59)	14.88(1.71)	17.87(2.77)
	[n=504]	[n=577]	[n=361]
Weight(Kg)	54.74(9.56)	53.91(10.25)	59.16(11.41)
	[n=498]	[n=508]	[n=361]
Height(m)	1.63(0.08)	1.57(0.1)	1.57(0.06)
	[n=488]	[n=475]	[n=361]
BMI	20.47(3.88)	21.88(5.17)	23.80(3.95)
	[n=481]	[n=457]	[n=361]

Body figure preference

Of the total sample of black respondents (n=578), within the urban
setting, 19.03% (n= 110) desired to be larger, with 19.38% (n=112) content with their current body size and 61.59% (n=356) desiring to be smaller than their current body size. Hence approximately 80% demonstrated body dissatisfaction. Of the total white sample within the urban setting, 18.58% (n=94) were content with their current body size whereas 72.73% (n=368) desired to be smaller and 8.7% (n= 44) desired to be larger. Hence just over 80% of the sample demonstrated some degree of body dissatisfaction. The majority of rural (black) respondents [69%; n=248] demonstrated some degree of body dissatisfaction, with 31% (n=113) being content, 40% (n=144) desiring to be smaller and 29% (n=104) desiring to be larger [Table 2].

A Chi-square test demonstrated a significant relationship between group and category (Chi-square value = 105.309, df=4, p=0.001) with the urban white sample predominantly wanting to be smaller and the rural black sample most inclined to want to be larger.

Table 2 : ***Body figure preference data (%)***

	Urban White [n=506]	Urban Black [n=578]	Rural Black [n=361]
Desire to be smaller	72.73 [n=368]	61.59 [n=356]	39.8 [n=144]
Content	18.58 [n=94]	19.38 [n=112]	31.3 [n=113]
Desire to be larger	8.7 [n=44]	19.03 [n=110]	28.8 [n=104]

Drive for thinness

A mean value for both body figure perception (current) and body figure preference was calculated for each sample, based on each chosen figure's number ("1" - "8") being taken as a value [Table 3]. Within each group there were differences between current body figure perception and body figure preference. In each group the direction of the difference was towards being smaller/ thinner. The mean differences of these values between the groups (using a one way ANOVA) was significant (df=2, F=44.61, p=0.0001). Bonferroni t-tests revealed that the urban white group had a significantly greater difference ($p<0.05$) than the urban black group who in

turn had a significantly greater difference than the rural black group. The greatest difference was observed in the urban white group and the least in the rural black group. By implication, the potential drive to be thinner is greatest in the urban white group and least in the rural black group.

Table 3: ***Mean (sd) body figure perception value and mean (sd) body figure preference value***

	Urban White	*Urban Black*	*Rural Black*
Body figure perception	4.36(1.23)	4.55(1.36)	4.46(1.37)
	[n=503]	[n=567]	[n=361]
Body figure preference	3.18(0.63)	3.6(0.87)	4.18(1.23)
	[n=494]	[n=560]	[n=361]

The relationship between body mass index and body figure preference

The exploration of the relationship between these variables revealed that within each group (urban black, urban white and rural black), there was a consistent trend where those respondents who desired to be larger had the lowest body mass index and those desiring to be smaller, the highest [Table 4]. Those who were content had body mass index values falling between those desiring to be either larger or smaller. However, the body mass index value of respondents in the various body figure preference categories differed according to location and race. In each category, rural black respondents had the highest body mass index value and urban white respondents the lowest. Urban black respondents had body mass index values that were intermediate. An ANOVA (two way) was used to measure combined effect of body figure preference and group on BMI. A non significant interaction was observed (df=4, F=1.75, p=0.1372). When examining the body figure preference and group effects, both body figure preference (df=2, F=124.75, p=0.0001) and group (df=2, F=89.61, p=0.0001) as main effect were significant. Of specific interest is that at an almost identical BMI, the rural black sample (21.54) had a "desire to be larger" and the urban white sample (21.25) a "desire to be smaller".

Table 4 : ***Relationship between body mass index(sd) and body figure preference***

	Rural Black	*Urban Black*	*Urban White*
Desire to be larger	21.54(2.82)	19.04(3.05)	17.8(2.73)
	[n=104]	[n=88]	[n=43]
Content	22.79(3.02)	19.43(2.84)	18.7(4.71)
	[n=113]	[n=89]	[n=89]
Desire to be smaller	26.23(4.01)	23.55(5.57)	21.25(3.46)
	[n=144]	[n=280]	[n=349]

Discussion

The data derived from the Body Figure Preference Test revealed significant differences both in terms of race and milieu. There appeared to be a continuum within the "desire to be smaller" and "desire to be larger" categories in terms of prevalence. In the former category urban whites demonstrated the highest prevalence and rural blacks the lowest, with urban blacks closer to urban whites in this regard but with a significantly lower prevalence rate than urban whites and a significantly higher prevalence rate than rural blacks. In the latter category the highest prevalence was demonstrated by rural blacks and the lowest by urban whites, with urban blacks intermediate but with a significantly greater prevalence than urban whites and a significantly lower prevalence than rural blacks. A significantly higher prevalence of contentment was found in rural blacks than urban black respondents who did not significantly differ from urban white respondents in this regard. Findings from an earlier, comparable study [13] had found that body shape dissatisfaction occurred in white as well as black (urban/rural) girls in South Africa. The rates of dissatisfaction differed with white (urban) girls experiencing the most dissatisfaction, black urban girls somewhat less dissatisfaction and black rural girls the least. Whilst the phenomenon of body dissatisfaction had previously been documented amongst South African adolescents from black and white racial groups [10,13] , the current study

appears to demonstrate homogenisation of preferences in the urban setting (black/white), but with distinct differences existing between urban and rural settings with what appears to be an accentuation of urban-rural differences in relation to earlier work. [13]

In terms of body figure preference the situation is somewhat different with a clearly significant difference between the groups (despite respondents in each group wanting to be thinner). In each group, the body figure preference is thinner than the perceived current size/shape with the greatest difference (current perception versus preference) demonstrated by the urban white sample and the least by the rural black sample. The value, of this difference, for the urban black sample is significantly less than the urban white sample but significantly greater than the rural black sample. In essence one is measuring the potential drive for thinness or possibility of future weight control measures based on current body dissatisfaction. Thus it can be seen that whilst the perception of ideal as thinner is pervasive, the race and milieu of respondents appears to be influential at the level of possible intent (to initiate attempts to achieve greater body satisfaction) with urban black respondents being closer to urban white respondents than they are to rural black respondents. A recent meta-analysis demonstrated that whilst white women tend to have greater body dissatisfaction than black women, the difference in extent of dissatisfaction is small. [18] Given the link between weight control behaviours and eating disorders [5] and the increased likelihood of such behaviours in the urban samples, based on the extent of body dissatisfaction, the emergence of eating disorders does seem more likely from urban black than from rural black populations in South Africa.

Comparable data in terms of the methodology of the current study was found in a North American study which established that Caucasians showed a greater perceived-ideal discrepancy (with respect to body image) than African-Americans. [19] Eating disorders are more common amongst white women in the United States [20] seemingly because of greater societal pressure to be thin. [21] It has been found that white women in the United States choose a significantly thinner ideal body size than do black women, and that black women demonstrate a smaller discrepancy between current and ideal body size than do white women, despite also desiring to be thinner. [21] These findings are in keeping with and relevant to the current study with regard to the urban black and white groups.

A study of cross- cultural preferences for body shape using three samples (British, Kenyan Asian resident in Britain, Kenyan Asian resident in Kenya) of women to study this phenomenon would appear to have relevance in terms of assimilation of cultural values. [22] This study found that Asian women of Kenyan origin but resident in Britain shared preferences for body shapes with British women rather than Asian women of Kenyan origin and resident in Kenya. There was a tendency to respond positively to thinner figures and negatively to larger ones in the former two groups which was in contrast to the latter group. In some ways this is similar to the findings of the current study where the urban black group are closer to the urban white group in terms of body figure preferences than the rural black group. One cannot assume that any similarities between groups reflects an assimilation of values by one group of those of another, in this instance urban black of urban white. A North American study found no relationship between assimilation into the mainstream Western culture, among African-Americans, and eating and dieting behaviours as well as associated attitudes and body image. [23] The findings of this particular study suggested that weight, eating behaviours and attitudes, and body dissatisfaction are influenced by cultural factors specific to a given group. [21] The current study did not explore possible factors relevant to particular groups which may influence eating attitudes and behaviours and the relationship with eating disorders. This requires elucidation, with a focus on location specific factors e.g. relative poverty as mediating factors in such a relationship.

Conclusion

Whilst the current study was conducted in 1996, there has been no subsequent comparable published data. In this regard, the current findings appear to represent the status quo of knowledge. The study has demonstrated that desire to be thinner is a pervasive, cross-cultural phenomenon in South Africa amongst adolescents. However, in terms of the original hypothesis, milieu seemingly influences the extent to which such a desire exists and the possible intensity of such a desire. This has potential implications for the emergence of eating disorders, in different settings, amongst black, female South African populations. In addition, body image dissatisfaction has been associated with an increased risk of perceived negative health generally, amongst adolescents. [24] The factors which may influence this process are yet to be determined in South Africa. As we approach a decade following the original research it will be critical to reassess the situation which will give some indication of the evolution of the phenomenon. Specifically the extent to which urbanisation remains as an apparent mediating factor in body figure preference and ultimately

body dissatisfaction, given that weight concerns and dieting behaviour are not exclusively found amongst urban girls. [25]

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