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RELATIONSHIP BETWEEN BODY IMAGE AND SOCIO-ECONOMIC STATUS IN SOUTH AFRICAN ADOLESCENTS: PAHL-STUDY

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ABSTRACT

The aim of this study was to determine the body image (BI) and its relationship with socio-economic status (SES) among adolescents. The 15-year-old adolescents (N=287), consisting of 111 boys and 176 girls, were grouped according to SES. They completed the Body-Image Ideals Questionnaire (BIQ) to assess any discrepancy between ideal and perceived body image on a 4-point Likert-type scale. Cross products for each question were calculated, as well as a mean summarised body-image value for the BIQ. No significant differences for BIQ were found between boys and girls, but significant differences were found for body image between high and low SES with respect to weight, muscle tone, chest size and body proportion. A more pronounced discrepancy in body image was noted for higher SES than for low SES. In conclusion, adolescents of low and high SES perceived their body image significantly differently with regard to physical appearance. Future interventions aimed to facilitate changes in body composition should take cognisance of these perceptions.

Key words: Body image; Adolescents; Socio-economic status.

INTRODUCTION

Body image (BI) is an important aspect of self-representation and self-evaluation throughout life. It is a multidimensional construct, defined most frequently as the degree of satisfaction about oneself with regard to size, shape and general appearance (Cash & Deagle, 1997; Bosi *et al.*, 2006). The self-discrepancy theory proposed by Higgins (1987) concerns people's emotional vulnerabilities and motivations that result from discrepancies in their patterns of belief about themselves. In addition, this theory states that a discrepancy between the actual self and the ideal/ought self, leads to discomfort and body dissatisfaction.

It is through body image that an individual maintains internal equilibrium, while interacting with the world, since this provides a person with a sense of identity and influences his or her behaviour (Santos & Sawala, 2000). As such, body image is intimately related to other aspects of body perception, such as self-concept, self-esteem, self-image, bodily concept and bodily scheme (Santos & Sawala, 2000). In general, body images impose the necessity for reflection on health and illness, socio-economic status (SES) and differing cultural beliefs and practices. South Africa is no exception. In the past decades, its people have faced challenges of epidemic proportions, such as obesity, underweight and HIV/AIDS, which have been

associated with specifically national perceptions. Many adults in the country perceive ample abdominal fat as a sign of wealth and success, for example, whereas a lean body creates the perception that a person may be malnourished or suffering from HIV or AIDS (Kruger *et al*., 2005; Armstrong *et al*., 2006).

Many factors influence the perception of body image. The subjective perception that individuals have of their body image may be more important to them than the objective reality of their appearance. The factors that have an effect include gender, age, ethnicity (Powell & Kahn, 1995; Puoane *et al*., 2005; Sano *et al*., 2008), and perceptions of physical appearance and cultural background (Dawson, 1988). Weight by itself, therefore, does not seem to be the only determinant in the level of satisfaction with one's personal body image (Davis & Claridge, 1998). The consequences of these various perceptions, as individuals try to improve their body image are associated, amongst other things, with eating disorders, depression, anxiety and risk behaviour (Johnson *et al*., 1984; Rosen *et al*., 1990; Kumanyika *et al*., 1993; Stevens *et al*., 1994; Kanayama *et al*., 2001).

Inconsistent results regarding connections between cultural preoccupation and socio-economic status on body image have been reported in the literature (Toro *et al*., 1989; Wardle & Marsland, 1990; Monteath & McCabe, 1997). One of the reasons, as concluded by Grogan (2008), is a lack of consistency in the classification criteria for SES. In addition, most studies have focused mainly on adults. Given that adolescence is a period during which physical appearance is emphasised and lifetime habits are formed, it was of interest to study the body image of adolescents from different SES.

In a review by Cohane and Pope (2001), it was reported that boys generally have fewer body image concerns than girls do. The dissatisfaction with body image is associated with low self-esteem and increased distress. Gender differences observed include the tendency for boys to aspire to be more muscular than they are and for girls to want to be thinner (Harrison & Bond, 2007). In the study by Rozin and Fallon (1988), adult men reported notable differences between their ideals and self-perceptions of body image, but these discrepancies did not necessarily imply dissatisfaction with their bodies. The argument presented was that men may understand more clearly that some of their ideals are unattainable, which makes them more content with their body image.

PURPOSE OF THE STUDY

There is little in the peer-reviewed literature on body image in adolescents of differing SES, especially in the South African context. Only one study could be found that reported a lower physical self-concept in obese children than in others whose weight was normal (Monyeki *et al*., 2009). The purpose of the study, therefore, was to determine and compare the body image of adolescent boys and girls of high and low SES and to establish whether a relationship between their body image (BI) and their SES exists. Knowledge about perceptions of BI among adolescents in differing economic circumstances will add new information, which could be of benefit when developing appropriately targeted interventions that focus on changing adolescent behaviour in ways that improve and maintain their health in the long term.

METHOD

Study design

This investigation is part of the Physical Activity and Health Longitudinal Study (PAHLS), which is a 5-year investigation into the development of physical activity and determinants of health risk factors among adolescents aged 14 to 18 years in selected high and low socio-economic areas in South Africa. Of the 8 high schools purposefully recruited in the Tlokwe Municipality of the North-West Province for participation in the PAHL-study, 4 were from a low socio-economic area and 4 from a high socio-economic area. 2 of the 4 selected high SES schools withdrew from participation without giving reasons except to say that they were not interested, leaving 2 that agreed to participate. Socio-economic classification followed the classification system currently used by the South African Department of Basic Education to categorise low to high SES schools in quintiles (Department of Education, 2003). The quintiles system (1–5) rank schools based on physical condition, facilities and crowding, and the relative poverty of the surrounding community. Baseline data were collected in 2010 and the data presented here are from the second year of data collection.

Ethical considerations

The Ethics Committee of the North-West University (NWU–0058-01–A1) granted ethical approval for the study.

Participants

A group of 287 (boys=111; girls=176) learners aged 15 years from the baseline sample of 400 learners initially recruited, participated in this study. The participants were boys and girls who were aged 14 years in 2010 and were either from an African or Caucasian descent and their parents had given informed consent for their participation. The ancestry of the learners was primarily Tswana and Afrikaans. Learners with physical disabilities were excluded from the study because of their inability to undergo the physical measurements that formed part of the larger PAHL-study, as described elsewhere (Monyeki *et al*., 2012).

Measurements

Demographic information regarding the date of birth of each learner and the locality of his or her school was obtained by means of a questionnaire. Body image was measured by means of the *Body-Image Ideals Questionnaire (BIQ),* which was developed as a unique attitudinal body-image assessment that considers a person's perceived discrepancy from and degree of investment in personal ideals relating to multiple physical attributes (Cash & Szymanski, 1995).

During the completion of the questionnaires, participants were seated approximately 1m apart in a lecture room and no talking was permitted. To ensure anonymity, questionnaires were collected *en massé* in a large box as participants left the room.

The BIQ covers 11 physical attributes: height, skin complexion, hair texture and thickness, facial features, muscle tone and definition, body proportions, weight, chest (or breast) size,

physical strength, physical coordination and overall physical appearance. For each attribute, participants were asked to report how they actually perceived their body and then to consider what importance they would assign to each of these attributes. In Part A of the questionnaire, participants rated the extent to which they resembled or matched their personal physical ideal on a 4-point Likert scale, where 0="exactly as I am"; 1="almost as I am"; 2="fairly unlike me"; 3="very unlike me". In Part B of the questionnaire, participants indicated how important it was to them to resemble each physical ideal: 0="not important"; 1="somewhat important"; 2="moderately important"; 3="very important".

The mean BIQ score from the 22 items was calculated as the mean of all cross products of discrepancy (Part A) and importance ratings (Part B). These were computed after recoding all discrepancy ratings (Part A) from 0 to –1. This calculation permits extending the range of scores to include importance-weighted self-ideal congruence ("exactly as I am"), for each item. Otherwise, item cross-product scores would always equal 0 for self-ideal congruity regardless of the importance of the ideal for which the person reported matching the ideal. The potential range of these composite BIQ scores is –3 (for very important congruence across all physical attributes) to +9 (for very important and maximum discrepancies across all physical attributes). Higher scores reflect greater self-ideal disparity with strongly held physical ideals. Cash and Szymanski (1995) provide evidence in support of the incremental validity of multiple self-ideal discrepancies.

The reliability of the BIQ was verified before it was introduced to the participants, as the questionnaire had not previously been used in a South African context. The reliability was verified by means of the test/re-test technique, with a 4-day interval between test and re-test. The participants in the test/re-test were learners who attended the same schools as those participating in the PAHL-study, but who were not themselves participants in the PAHL-study. The number of participants in the test/re-test procedure were 41 adolescents (girls=21; boys=20), aged 15 years. Cronbach's alpha for the questionnaire completed by the South African adolescents was acceptable (α=0.92). The data from the learners participating in the reliability tests were not used for any further analyses of this study.

Statistical analyses

Firstly, the data on the participants in the main study was analysed to determine the consistency of the BIQ for the 287 participants according to the BIQ manual (Cash, 2000). Results from the Cronbach's alpha analyses for internal consistency indicated an alpha of 0.77 was obtained. The item cross-product scores were calculated after recoding questions from Part A from 0 to –1 and multiplying scores from Part A and Part B item by item. Discrepancy scores, importance scores, as well as item cross-product scores were recorded in an ordinal scale; therefore, the median and percentiles were calculated. Since the BIQ is based on the 4-point Likert-scale, the Mann-Whitney U-test (non-parametric statistics) was used to establish the differences between boys and girls and between high and low SES. Item cross-product rating was done with the use of Friedman's ANOVA (non-parametric statistics). It was of interest to compare the results with the norms expressed as mean values reported for college men and women (Cash & Szymanski, 1995), thus the means and standard deviations for the summarised BIQ scores were also computed. Spearman correlation coefficients were computed for all 11 composite BIQ scores between the ideal BI (Part A) and the importance

of the BI (Part B) to examine relationships. Frequency analyses indicated the percentage adolescents per SES group for each BI category.

RESULTS

The descriptive results (Table 1) indicate that in this population there was a high discrepancy between perceived ideal and body image with regard to muscle tone and definition (M=2), as well as overall physical appearance (M=2). Higher congruence was observed in the skin complexion (M=0), hair texture and thickness (M=0) and facial features (M=0). The summarised BIQ indicate that the mean value for boys (0.69±2.01) was lower than that for the girls (1.07±2.18). When comparing the summarised BIQ scores, no differences were noted between girls and boys (z=–1.17; p=0.24), or between high and low socio-economic status (SES) (z=1.90; p=0.06).

TABLE 1. **DESCRIPTIVE VALUES OF ITEM CROSS-PRODUCT SCORES AND SUMMARISED VALUES: BODY-IMAGE IDEALS QUESTIONNAIRE (BIQ)**

BIQ	Mean±SD	Median	25th Perc.	75th Perc.
Cross-product scores (N=287)				
Height	0.73±3.15	1.00	–3.00	3.00
Skin complexion	0.59±3.24	0.00	–3.00	3.00
Hair texture and thickness	0.79±3.16	0.00	–2.00	3.00
Facial features	0.22±3.23	0.00	–3.00	2.00
Muscle tone & definition	1.35±3.62	2.00	–3.00	3.00
Body proportions	1.13±3.52	1.00	–3.00	3.00
Weight	1.47±3.84	1.00	–3.00	3.00
Chest size	0.78±3.11	1.00	–2.00	3.00
Physical strength	1.09±3.55	1.00	–3.00	3.00
Coordination	0.73±3.19	1.00	–3.00	3.00
Overall phys. appearance	1.29±3.58	2.00	–2.00	3.00
Summarised BIQ				
TOTAL (N=287)	0.93±2.12	1.00	–0.54	2.27
Boys (n=111)	0.69±2.01	1.09	–0.82	2.09
Girls (n=176)	1.07±2.18	1.18	–0.36	2.50

SD=Standard Deviation Perc.=Percentile

The results of the discrepancy ratings of BIQ reflecting the ideal body image (Part A of the questionnaire), indicated that the median for all the questions was 1 ("almost as I am"), except for the question on facial features that was reported as 0 ("exactly as I am"). The results of the importance rating (Part B of the questionnaire), indicated a median=3 (very

important) for questions 2, 5-7, 9 and 11. Calculations for the rest of the questions resulted in a median=2 (moderately important).

Significant high correlation coefficients ($p<0.05$) were found among all 11 composite BIQ scores (Table 2). No significant differences were noted between boys and girls and between high and low SES for Part A and Part B of the questionnaire.

TABLE 2. **SPEARMAN'S CORRELATION COEFFICIENT FOR ITEMS OF QUESTIONNAIRE**

BIQ items	Height	Skin complexion	Hair texture & thickness	Facial features	Muscle tone & definition	Body proportions	Weight	Chest size	Physical strength	Coordination	Overall phys. Appear.
Height	1.00										
Skin complexion	0.37	1.00									
Hair texture & thickness	0.31	0.29	1.00								
Facial features	0.32	0.41	0.19	1.00							
Muscle tone & def.	0.42	0.36	0.21	0.28	1.00						
Body proportions	0.38	0.27	0.20	0.37	0.42	1.00					
Weight	0.28	0.28	0.20	0.28	0.46	0.35	1.00				
Chest size	0.33	0.29	0.27	0.25	0.46	0.42	0.44	1.00			
Physical strength	0.36	0.36	0.24	0.32	0.45	0.35	0.39	0.31	1.00		
Coordination	0.43	0.30	0.28	0.29	0.42	0.38	0.38	0.38	0.48	1.00	
Overall phys. appearance	0.36	0.39	0.21	0.42	0.40	0.39	0.40	0.35	0.45	0.34	1.00

All correlations were significant at $p<0.05$.

The analysis of BIQ scores (computed as an item-by-item multiplication with the recoded 0 to –1 in Part A), turned out to be significantly different in the 4 questions. The BIQ showed a significantly higher discrepancy in the high SES group when considering muscle tone and definition (z=3.03, p=0.002), body proportions (z=2.58, p=0.009), weight (z=3.59, p=0.0002), and chest size (z=2.26, p=0.02). In all these questions the main differences were noted in the group that scored –3 (very important congruence) in the cross products of Part A and Part B (Figure 1). For 61 participants with low SES, the ideal muscle tone and definition matched their feelings about themselves, whereas there were only 11 participants from the high socio-economic group with the same match (Figure 1A). This trend was noticed for other questions

regarding body proportion (68 and 4 participants, respectively; Figure 1B), weight (66 and 7 participants, respectively, Figure 1C) and chest size (62 and 8 participants, respectively; Figure 1D).

DISCUSSION

The body image of adolescent boys and girls from high and low SES was determined. No gender differences between girls and boys were found when considering physical ideals, importance of physical features or self-ideal congruence. However, there were differences between high and low SES in four of the questions regarding self-ideal congruence.

One of the main findings is that, unlike reports in other studies by, for example, Moore (1990) and Stanford and McCabe (2002), there were no differences between boys and girls regarding body image. Some studies suggest that dissatisfaction and a preference for a thin body may start in girls as young as 5 years of age (Williamson & Delin, 2001). Tiggemann and Pennington (1990) noted differences between an "ideal" and "current" figure in 8-year-old Australian girls. Similar findings were reported in studies in Great Britain and the USA (Grogan, 2008). The fact that boys and girls in the present study did not differ significantly with regard to body image, is an indication that South African adolescents have a different view about body image than those in developed countries. Therefore, it may be surprising that no differences were found in our group of 15-year-old participants

In other studies, it has been reported that boys more often wish to be heavier than they are, rather than thinner (Hill *et al*., 1992). In a study by Ricciardelli and McCabe (2001), the majority of boys who were dissatisfied with their bodies wanted a larger body size. Boys normally idealise a muscular body shape more than girls do (Grogan & Richards, 2002). Body dissatisfaction in adolescents, as well as body ideals, are strongly influenced by cultural pressure, especially in girls (Nichter, 2000). However, cultural influence does not make girls behave in a healthy way but, rather, encourages unhealthy methods of weight control (Nichter, 2000). In this study, body proportions, weight, muscle tone and definition, which may be considered with regard to body size and musculature, did not differentiate girls from boys.

Physical strength and coordination did not differentiate girls from boys either; these two features are strongly linked to muscularity, since they provide an appropriate context for sports abilities (Ricciardelli *et al*., 2006). The lack of difference between the South African boys and girls may be due to weaker cultural influence or, more likely, to different cultural patterns than those more common in Western developed countries. Adolescent girls and boys might not have been influenced by the expectation created through the media on what it is to be a woman or a man in Western society (Grogan, 2008), or they may have different cultural expectations of being a man or woman in their environment. Such a hypothesis may be supported by other findings of this study, namely the discovery that SES was an important factor affecting the body image satisfaction-dissatisfaction.

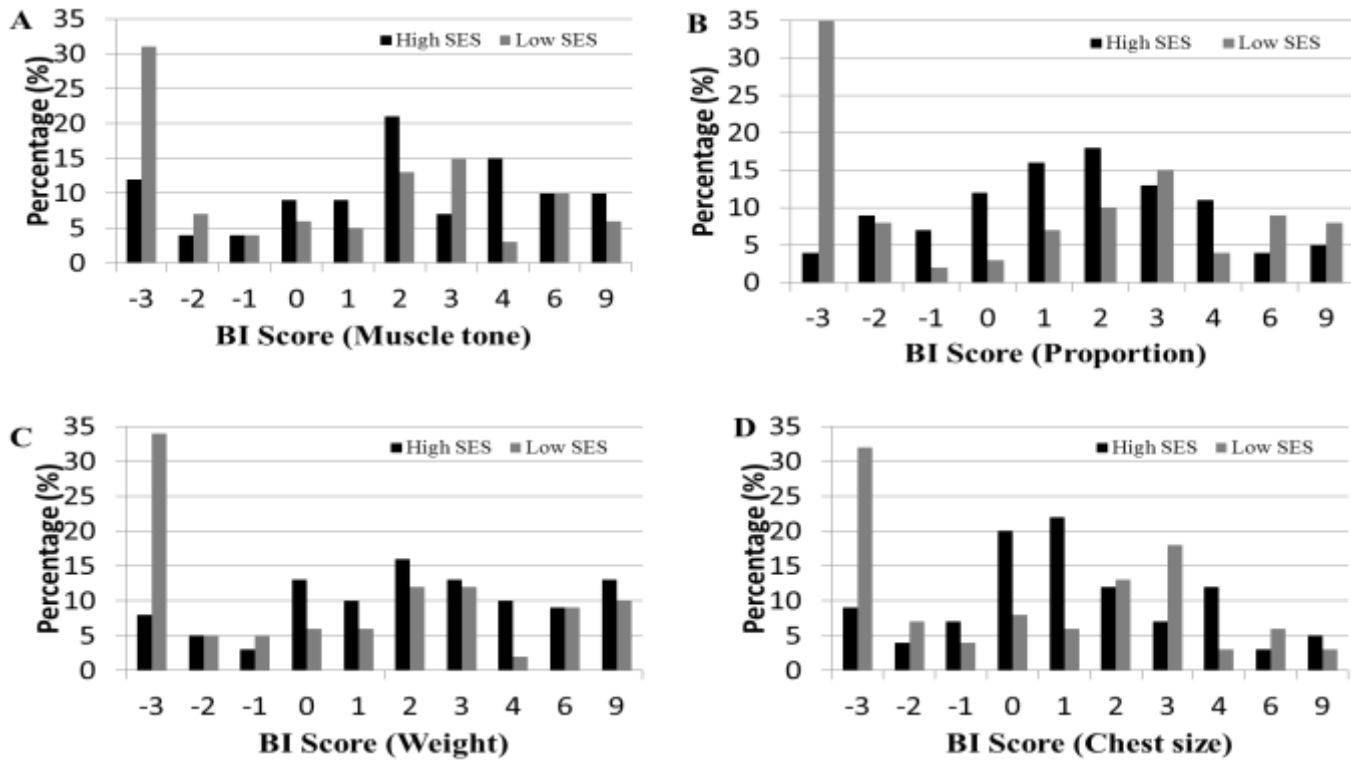

FIGURE 1. **PERCENTAGE SCORE: (A) MUSCLE TONE AND DEFINITION, (B) BODY PROPORTION, (C) WEIGHT AND (D) CHEST SIZE FOR LOW AND HIGH SOCIO-ECONOMIC ADOLESCENTS**

The adolescents with high SES had higher discrepancy regarding muscle tone and definition, body proportions, height and chest size than those adolescents with low SES had. One could speculate that the adolescents with high SES were more westernised than those with low SES, which would make the effects noticed in their case and similar to those reported by other authors, namely high discrepancy when addressing musculature and body size. Regarding the current study, it may be worth mentioning that, SES in many cases could also reflect cultural representation. In the black culture (48% of the sample had Tswana ancestry), being overweight is traditionally symbolic of wealth, autonomy, attractiveness and happiness, while by contrast, in the Caucasian community (52% of the study sample had Afrikaans ancestry), lean body size is associated with beauty, health and happiness (Puoane *et al*., 2005).

The results of this study support the findings of Bordo (2003), in that Western cultures place greater pressure on people to be thin than other cultures do. It is most probably for this reason that dissatisfaction was higher in the high SES group. Although SES could be related to cultural influences, it is not possible at this stage to determine exactly what and how strong such a relationship might be.

There are some limitations to our study. The relatively small sample did not allow application of analysis of variance, in which gender, SES as well as ethnicity could have been included. It is very likely, however, that such analysis would further reinforce our current conclusions about ethnicity and cultural influence on body image. The classification of SES based on the quintile school attended, is a course sieve that provides blanket classification, since individual SES was not determined for each participant. These limitations should be addressed in future PAHL studies, where the longitudinal study design will allow estimations of how westernisation would affect adolescents from different socio-economic status and to what extent the body image discrepancy is influenced.

CONCLUSION

Adolescents with low and high socio-economic status, respectively, perceive their body image significantly differently with regard to physical appearance as represented by muscle tone, weight, chest size and body proportion. For this reason, educators and health-workers would do well to consider socio-economic status when planning and implementing health and physical activity interventions directed at addressing body shape and size. The differences in expectations about body image by adolescents from different SES should guide educators, social workers and physical activity educators to promote the desirability of a healthy body, and thereby reduce potentially undesirable consequences of a body image overly based on social acceptability.

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Disclaimer

Any opinion, findings and conclusions or recommendations expressed in this material are those of the authors and, therefore, the National Research Foundation and the Medical Research Council of South Africa do not accept any liability with regard thereto.

REFERENCES

ARMSTRONG, M.E.G.; LAMBERT, M.I.; SHARWOOD, K.A. & LAMBERT, E.V. (2006). Obesity and overweight in South African primary school children: The Health of the Nation Study. *South African Medical Journal*, 96(5): 439-444.

BORDO, S. (2003). *Unbearable weight: Feminism, Western culture, and the body* (10th Anniversary ed.). Berkeley, CA: University of California Press.

BOSI, M.L.M.; LUIZ, R.R.; MORGADO, C.M.; COSTA, M.L.S. & CARVALHO, R.J. (2006). Autopercepção da imagem corporal entre estudantes de nutrição: um estudo no município do Rio de Janeiro [*trans*.: Self-perception of body image among nutrition students: A study in the city of Rio de Janeiro]. *Revista Brasileira de Psiquiatria* [*trans*.: *Brazilian Journal of Psychiatry*], 55(2): 108-113.

CASH, T.F. (2000). "Manual for the body-image ideals questionnaire". Hyperlink: [www.body-images.com]. Retrieved on 10 March 2011.

CASH, T.F. & DEAGLE, E.A. (1997). The nature and extent of body-image disturbances in anorexia nervosa and bulimia nervosa: A meta-analysis. *International Journal of Eating Disorders*, 22(2): 107-126.

CASH, T.F. & SZYMANSKI, M.L. (1995). The development and validation of the Body-Image Ideals Questionnaire. *Journal of Personality Assessment*, 64(3): 466-477.

COHANE, G.H. & POPE, H.G. (2001). Body-Image in boys: A review of the literature. *International Journal of Eating Disorders*, 29(4): 373-379.

DAVIS, C. & CLARIDGE, G. (1998). The eating disorders as addiction: A psychobiological perspective. *Addictive Behaviours*, 23(4): 463-475.

DAWSON, D. (1988). Ethnic differences in female overweight: Data from the 1985 National Health Interview Survey. *American Journal of Public Health*, 78(10): 1326-1329.

GROGAN, S. (2008). *Body Image: Understanding body dissatisfaction in men, women and children* (2nd ed.). London, UK: Routledge.

GROGAN, S. & RICHARDS, H. (2002). Body image: Focus groups with boys and men. *Men and Masculinities*, 4(3): 219-232.

HARRISON, K. & BOND, B.J. (2007). Gaming magazines and the drive for muscularity in preadolescent boys: A longitudinal examination. *Body Image*, 4(3): 269-277.

HIGGINS, E.T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94(3): 319-340.

HILL, A.J.; OLIVER, S. & ROGERS, P.J. (1992). Eating in the adult world: The rise of dieting in childhood and adolescence. *British Journal of Clinical Psychology*, 31(1): 95-106.

JOHNSON, C.; LEWIS, C.; LOVE, S.; LEWIS, L. & STUCKEY, M. (1984). Incidence and correlates of bulimic behaviour in a female high school population. *Journal of Youth and Adolescence*, 13(1): 15-26.

KANAYAMA, G.; POPE, H.G. (Jr.) & HUDSON, J.I. (2001). 'Body image' drugs: A growing psychosomatic problem. *Psychotherapy and Psychosomatics*, 70(2): 61-65.

KRUGER, H.S.; PUOANE, T.; SENEKAL, M. & VAN DER MERWE, M.T. (2005). Obesity in South Africa: Challenges for government and health professionals. *Public Health Nutrition*, 8(5): 491-500.

KUMANYIKA, S.; WILSON, J.F. & GUILDFORD-DAVENPORT, M. (1993). Weight related attitudes and behaviours of black women. *Journal of the American Dietetic Association*, 93(4): 416-422.

MONTEATH, S.A. & MCCABE, M.P. (1997). The influence of societal factors on female body image. *Journal of Social Psychology*, 137(6): 708-727.

MONYEKI, M.A.; PIENAAR, A.E.; MAMABOLO, R.L. & TEMANE, M. (2009). Effect of obesity on physical self-concept of urban schoolchildren living in Potchefstroom, South Africa. *African Journal of Physical Health, Education, Recreation and Dance*, 15(1): 1-14.

MONYEKI, M.A.; NEETENS, R.; MOSS, S.J. & TWISK, J.W.R. (2012). The relationship between body composition and physical fitness in 14-year-old adolescents residing within the Tlokwe local municipality, South Africa: The PAHL-study. *BMC Public Health*, 12(May): 374-382.

MOORE, D.C. (1990). Body image and eating behaviour in adolescent boys. *American Journal of Diseases of the Child*, 144(4): 475-479.

NICHTER, M. (2000). *Fat talk: What girls and their parents say about dieting*. Cambridge, MA: Harvard University Press.

POWELL, A.D. & KHAN, A.S. (1995). Racial differences in women's desires to be thin. *International Journal of Eating Disorders*, 17(2): 191-195.

PUOANE, T.; FOURIE, J.M.; SHAPIRO, M.; ROSLING, L.; TSHAKA, N.C. & OELOFSE, A. (2005). "Big is beautiful": An exploration with urban black community health workers in a South African township. *South African Journal of Clinical Nutrition*, 18(1): 6-15.

RICCIARDELLI, L.A. & MCCABE, M.P. (2001). Children's body image concerns and eating disturbance: A review of the literature. *Clinical Psychology Review*, 21(3): 325-344.

RICCIARDELLI, L.A.; MCCABE, M.P. & RIDGE, D. (2006). The construction of the adolescent male body through sport. *Journal of Health Psychology*, 11(4): 577-587.

ROSEN, J.C.; STACY, B. & HOWELL, D. (1990). Life stress, psychological symptoms and weight reducing behaviour in adolescent girls: A positive study. *International Journal of Eating Disorders*, 9(1): 7-26.

ROZIN, P. & FALLON, A. (1988). Body image, attitudes to weight, and misperceptions of figure preferences of the opposite sex: A comparison of men and women in two generations. *Journal of Abnormal Psychology*, 97(3): 342-345.

SANO, A.; LE, D.S.; THI TRAN, M.H.; NGHAN PHAM, H.T.; KANEDA, M.; MURAI, E.; KAMIYAMA, H.; OOTA, Y. & YAMAMOTO, S. (2008). Study factors of body image in Japanese and Vietnamese Adolescents. *Journal of Nutritional Science and Vitaminology*, 54(2): 169-175.

SANTOS, V.L. & SAWALA, B.B. (2000). A bolsa na mediação "estar ostomizado"-"estar professional": Análise de uma estratégia pedagógica [*trans*.: Wearing a pouch shows the difference between "being an 'ostomized' person" and "being a professional": Analysis of a teaching strategy]. *Revista Latino-Americana de Enfermagem* (*RLAE*) [*trans*.: *Latin-American Journal of Nursing*], 8(3): 40-50.

STANFORD, J.N. & MCCABE, M.P. (2002). Body image ideal among males and females: Socio cultural influences and focus on different body parts. *Journal of Health Psychology*, 7(6): 675-684.

STEVENS, J.; KUMANYIKA, S.K. & KEIL, J.E. (1994). Attitudes towards body size and dieting: Differences between elderly black and white women. *American Journal of Public Health*, 84(8): 1322-1325.

TIGGEMANN, M. & PENNINGTON, B. (1990). The development of gender differences in body-size dissatisfaction. *Australian Psychologist*, 25(3): 306-313.

TORO, J.; CASTRO, J.; GARCIA, M.; PEREZ, P. & CUESTA L. (1989). Eating attitudes, socio-demographic factors and body shape evaluation in adolescence. *British Journal of Medical Psychology*, 62(1): 61-70.

WARDLE. J. & MARSLAND, L. (1990). Adolescent concerns about weight and eating: A social-developmental perspective. *Journal of Psychosomatic Research*, 34(4): 377-391.

WILLIAMSON, S. & DELIN, C. (2001). Young children's figural selections: Accuracy of reporting and body size dissatisfaction. *International Journal of Eating Disorders*, 29(1): 80-84.

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