Effect of Body Image on Self-esteem Among Undergraduate Students in a Kenyan Public University

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Abstract

Background: Body image is the mental picture individuals have of their physical appearance and the resulting attitude towards themselves. University students experiencing negative body image have high tendencies for low self-esteem, depressive illness, anxiety, poor feeding habits, suicidality, internet addiction, cyber bullying and risky health behaviors including alcoholism, drug abuse and unsafe sexual activities. This creates the need to understand the relationship between body image, self-esteem and health-related behaviors.

Broad Objective: This study aimed to establish the level of body image satisfaction and the relationship between body image, self-esteem, and health-related behaviors among Moi University, Eldoret West Campus students. Specific objectives were body image satisfaction level and its relationship with body image and self-esteem. Furthermore, it assessed the association between body image, self-esteem, and sociodemographic characteristics as well as health-related behaviors.

Methods: A cross-sectional study was conducted among 421 undergraduate students who were stratified by academic year and sampled randomly from Eldoret West Campus' Schools of Business Management, School of Education and School of Arts in Eldoret-Kenya. Data was collected using a validated and pretested structured questionnaire entailing sociodemographic characteristics, Body Mass Index (BMI), Multi-Dimensional Body Self-Relations Questionnaire (MBSRQ), Rosenberg Self-Esteem Scale and Contour Drawing Rating Scale (CDRS) Descriptive data were analyzed as frequencies with corresponding proportions as well as mean and corresponding standard deviation. Tests of association were conducted using both Pearson Chi-square and Fisher's exact test at a critical value of $p \leq 0.05$. Odds ratios were computed at 95% confidence interval for statistically significant relationships.

Results: This study enrolled nearly equal proportions of male (48.2%; n=203) and female (51.8%; n=218); with 53.5% of all the students aged between 18-21 years. On body image, 344 (81.7%) were satisfied with their self-attitudinal aspect of appearance, 317 (75.3%) invested in their appearance, 258 (61.3%) were dissatisfied with their contour drawings (global aspect of body image) while 311 (73.9%) classified themselves as having a normal weight. There was a statistically significant association between having a normal self-classified weight and a normal BMI status (p=0.004). Gender positively affected appearance evaluation (p=0.028), appearance orientation (p<0.001), overweight preoccupation (p=0.014), weight classification (p=0.001), contour drawing rating scale (p=0.001), anxiety (p=0.001) and positive wellbeing (p=0.021). Female students were more likely (OR=1.122, 95% CI: 1.023, 1.231) to be satisfied with their appearance evaluation compared to male students. Body image was significantly affected by overweight preoccupation (p=0.035) and anxiety (p<0.001). High self-esteem positively affected overweight preoccupation (p=0.032) while anxiety significantly associated (p=0.009) with having an abnormal BMI.

Conclusions: Majority of students were satisfied with their self-attitudinal aspect of their body image (MBSRQ) but dissatisfied with their global aspect of body image (CDRS) and this was gender specific.

Anxiety predisposed the students to having an abnormal BMI while those with a high self-esteem had an overweight preoccupation.

Introduction

Body image is a mental picture of one's physical body (size, shape and appearance), and one's attitude toward the physical self (thoughts, feelings and beliefs about one's body) influenced by our psychobiological makeup, family and the society. It is the way a person perceives or thinks about his body and how it appears to others [1]. This is because it is "a subjective picture of one's own physical appearance established both by self-observation and by noting the reactions of others" [2]. Previous studies have defined body image as a multidimensional construct broadly describing internal, subjective representations of physical appearance and bodily experience, our attitude towards body, in particular, size, shape and aesthetics [3]. Furthermore, physiological functions such as appetite, food consumption and body weight are intricately linked to psychological constructs such as body image, self-esteem and psychosocial adjustment [3].

Self-esteem is a person's general assessment of his or her own worth. An individual whose self-esteem is reduced portrays self-hate and lack of self-respect [4]. The value an individual accords his/her physique depends on their ability to participate in sporting activities, weight monitoring and physical well-being. This is because negative body image is linked with low self-esteem. It has also been demonstrated that there is a positive association between low self-esteem and negative body image [5]; as well as low self-esteem and unhealthy eating behaviours. The problem is worse among adolescents who have experienced body shaming as a result of their weight early in life have ended up with high levels of negative body image [6].

Health-related behaviour is any overt behaviour or personal attribute that either enhances or damages physical, psychological, and social wellbeing now and in the future [7]; with hereditary or environmental factors influencing negatively or positively [8]. Approximately 70%-80% of an individual's way of life depends on the decisions one makes [9]. The decisions made develop into habits which include eating habits, ability to exercise, drug use or abuse [10]. A meta-analysis of the relationship between physical activity and body image among men and boys showed that physical activity is positively related to body image [11]. Lack of a healthy diet and physical activity has been shown to result into feelings of low body-esteem [12]. Health behaviours involve neurotransmitters [13]. Physical activities, positive attitudes and ability to manage stress have been shown to boost serotonin levels hence improved mood [14,15].

Currently, a person's image is considered a means through which an individual can exploit in order to access certain privileges within the social environment. People are therefore increasingly investing in cosmetic products and other body modification procedures such as plastic surgeries so as to achieve their preferred societal status [16]. Appearance and body image are regarded highly in contemporary Western societies [17]. Body image is more than a cognitive construct; it is also about the attitudes and interactions that exist between individuals. Mass media advertisement imply that "what is beautiful is

good," and has linked physical beauty with success [18]. Most behaviours gained in early childhood often persist into adulthood. During childhood, individuals are exposed to different societal concepts of what should be considered as positive body image [19]. Both sexes operate on peer influence with their peers dictating the ideals hence negative impact on the adolescent's body image [20]. The negative body image finally leads to low self-esteem, poor eating habits and risky lifestyle behaviours [21].

The majority of undergraduate university students fall into the categories of late adolescence (ages 18–21 years) and early adulthood (ages 21–34 years) [22]. As they enter adulthood, they create their own niche targeted towards independent functioning because they are completely focused inwardly and outwardly on themselves. This makes them believe other people's attention is equally on them and for this reason they believe in acting right in all aspects [23]. Body image perceptions are vital for university students due to the need to remain popular by adhering to the set standards of an ideal body image and appearance. In Spain, more than half a sample of college students (55% of women, 63% of men) had poor body image perceptions [24]. Similarly, research across undergraduate college students in Austria, France and USA observed a wide discrepancy between men's actual muscularity and their body ideals [25]. Likewise, university students in Denmark and the UK perceived themselves as either 'too thin' or 'too fat' [26]. In Lebanon, 19%, 12% and 5% of students were either slightly, moderately or extremely worried, respectively, with regard to how they perceived their bodies [27].Females' body image concerns are related to poor health, stressors for instance studies and lack of exercise. In contrast, body image issues in males are linked with low quality of life and advancement in age [28].

Research indicates that poor body image[29] has been on the rise since the 1980s and is associated with increasing cases of depression [30], anxiety, low self-esteem [31], eating disorders and dieting [32]. Lack of satisfaction with one's body has become "a normative discontent" in today's culture, and therefore related to an overwhelming desire for thinness. Thus, inability to lose the unwanted weight has a big impact on an individual's overall mood and confidence. Body image dissatisfaction is a normal occurrence for most people, but others experience extreme levels of dissatisfaction resulting in inability to cope with daily activities and societal expectations [33]. Understanding body image and lifestyle habits is crucial in the development of corrective measures aimed at enabling the youth gain a positive outlook [34]. Being satisfied with one's self-image enhances the need for an individual to adopt a healthy lifestyle [6].

There are multiple approaches to test the relationship between body image dissatisfaction and its predictors. These include Structural equation modeling (SEM) that tests the relationships between body image, eating attitudes, body mass index and physical activity [35]. Additionally, anthropometric measures (height and weight) as objective tools alongside subjective body image assessment tools have been used in combination. Body Mass Index (BMI) as an independent anthropometric parameter cannot independently explain wide variation in body fat distribution, correspond to the same degree of fatness or associated health risks [36]. In this study, BMI was used as an objective measure and not to assess health risk as the tools used in this study, body image, self-esteem, and health-related behavior, were subjective in nature. For assessment of health risk (the probability to develop health problems such

as Diabetes and Hypertension) for an individual, the waist circumference and height to weight ratio are used. Sociodemographic and general characteristics of the participants such as age, sex, residence, religion, ethnicity/race, marital status, income, area of residence are used to control for confounders.

Materials and Methods

This was a descriptive cross-sectional study conducted among undergraduate students in varied academic programmes at Moi University -West Campus in Eldoret, Kenya. A sample size of 423 participants was obtained objectively using Fisher's formula (Rosner, 2010). Participants were stratified proportionately by academic year of study to ensure that they were evenly distributed; with students considered to have severe mental or physical illness or recovering from these conditions excluded. Prior to commencement of the study, a written informed consent was obtained from all participants. Data was collected over a 12-week period with multiple data collection approaches adopted to assess students' perception of their body image, self-esteem and health related behaviour. A self-administered questionnaires encompassed five sections namely: socio-demographic characteristics and Body Mass Index (BMI), Multidimensional body self-relations questionnaire (MBSRQ), Contour Drawing Rating Scale (CDRS) and Rosenberg Self-Esteem Scale (RSES). Sociodemographic data was collected to describe the study participants and determine any relationship between their demographic characteristics and body image perception. Anthropometric data on BMI was collected to objectively determine the participants morphology and their health status (Supplementary Material 1). The weight was obtained using a calibrated digital weighing scale without shoes and any heavy clothing on, while the height was measured using a standard meter rule (obtained from the same suppliers as those for the national hospital's nutrition department) with no shoes on.

The MBSRQ tool entailed a 69-item self-report inventory to assess self-attitudinal aspects of the body-image construct. Though not locally validated, all subscales had acceptable internal consistency and stability. Moreover, the physical self encompasses not only one's physical appearance but also the body's competence or "fitness" and its biological integrity or "health/illness." This is because the MBSRQ has been used extensively and successfully in body-image research (Supplementary Material 1). Contour Drawing Rating Scale (CDRS) consists of nine drawings of a female and male figure, each drawing increasing in size from extremely thin scored as (1) to very obese (9). The participants rated their ideal figure (how they would ideally love to look like) and their current size (perceived figure). The discrepancy between the ideal and perceived current size score (current - ideal $\neq 0$) implied body image dissatisfaction (Supplementary Material 1). Self-esteem was assessed using Rosenberg Self-Esteem Scale - RSES [37] which is a 10-item questionnaire. The scale has been used widely and has a high internal reliability ($\alpha = .96$) and validity. The Rosenberg Self-esteem Scale has been used locally in a study done at the United States International University, Kenya [38]. The Rosenberg Self-Esteem Scale contains an equal number of positively and negatively worded items. Responses are coded on a four-point scale ranging from 0 (strongly disagree) to 3 (strongly agree), the higher the score, the higher the self-esteem level. Scores between 15 and 25 are within normal range; scores below 15 suggest low self-esteem, while scores above 25 correspond to high self-esteem [18]. For this study, ≤ 25 was equated to high self-

esteem while > 25 was equated to low self-esteem. Negatively worded statements with asterisk were reverse-scored and denoted low self-esteem while the positively worded statements denoted high self-esteem (Supplementary Material 1). The filled questionnaires were safely kept in a locked cabinet prior to data entry. The data was entered into statistical package for social sciences (SPSS) version 24 database for analysis. Double data entry was performed to ensure completeness, reliability and accuracy of the data. Descriptive statistical analysis was conducted for categorical data (academic year, gender, participants responses) as frequency (with corresponding proportions) and continuous data summarized as mean (with corresponding standard deviation). Inferentially, Pearson test of association as well as Fischer's exact test (where Pearson test was statistically significant) were used to test for the association between predictor (independent) and outcome (dependent) variables. The predictors considered to affect body image, self-esteem and health related behaviour were gender, age, academic year of study, religion, marital status, number of children, level of income, history of smoking and alcohol consumption. A test of association ($p \leq 0.05$) was also conducted to determine the effect of body image and self-esteem. Odds ratios were computed to compare the effect of gender and BMI on body image, self-esteem and health related behaviour indicators at 95% confidence interval. This study received ethical approval from the Institutional Research and Ethics Committee (IREC) of Moi University and Moi Teaching and Referral Hospital prior to study commencement (*Approval number 0003271*). Additionally, permission to conduct the study was obtained from the Deputy Vice Chancellor in charge of Academics Research and Extension Services (DVC-AR&E) of Moi University.

Results

This study enrolled 421 students of whom 225 (53.4%) were aged between 18 to 21 years, 218 (51.8 %) were female, while the highest proportion (32.1%), by academic year, were fourth year students. Nearly all (95%) of the students professed the Christian faith, while 370 (87.9%) were not married and 219 (58.0%) depended on their parents or guardians for financial support (Table 1).

Table 1: Participants Sociodemographic Characteristics

Sociodemographic Characteristic		n (%)
Sex	Male	203 (48.2)
	Female	218 (51.8)
Age (years)	18-21 years	225 (53.4)
	22-25 years	180 (42.8)
	26-29 years	11 (2.6)
	>=30 years	5 (1.2)
Academic year of study	First	96 (22.8)
	Second	100 (23.7)
	Third	90 (21.4)
	Fourth	135 (32.1)
Religion	Christian	400 (95.0)
	Muslim	20 (4.8)
	Hindu	1 (0.2)
Marital Status	Single	370 (87.9)
	Married	21 (5.0)
	Cohabiting (Living-together)	24 (5.7)
	Separated/Divorced	6 (1.4)
Source of Income	Student Loan	165 (39)
	Study Leave	8 (2.0)
	Scholarship	4 (1.0)
	Parent/Guardian	219 (58.0)

This study used multiple indicators to assess the satisfaction level with the body image such as: Appearance Evaluation (APPEV), Appearance Orientation (APPOR), Contour Drawing Rating Scale (CDRS) and Self-classified Weight (WTCLASS). As shown in table 2, majority of the students 344 (81.7%) were satisfied with their appearance, most 317 (75.3%) paid attention about their appearance, while 311 (73.9%) classified themselves as having a normal weight. However, more than half 258 (61.3%) were dissatisfied with their Contour Drawing Rating Scale (CDRS), as shown on Table 2.

Table 2: Satisfaction level with body image

Satisfaction Level Indicator	Response	n (%)
Appearance Evaluation (APPEV)	Neutral	72 (17.1)
	Satisfied with appearance.	344 (81.7)
	Dissatisfied with appearance	5 (1.2)
Appearance Orientation (APPOR)	Pays attention about appearance.	
	Neutral	317(75.3)
	Apathetic about appearance	98 (23.3)
		5 (1.2)
Contour Drawing Rating Scale (CDRS)	Satisfied	163 (38.7)
	Dissatisfied	258 (61.3)
Self-classified Weight (WTCLASS)	Overweight	57 (13.5)
	Normal weight	311 (73.9)
	Underweight	53 (12.6)

Participants self-classified their weight as either normal or abnormal. When the self-classified weight (WTCLASS) was compared to their body mass index (BMI) status, it was noted that most participants who thought that they had a normal weight (69.5%) were more likely to have a normal body mass index (OR= 1.295; 95% CI: 1.072, 1.564); a relationship that was statistically significant (p=0.004). Participants with fat anxiety were more likely (OR=1.047; 95% CI: 0.728, 1.506) to have an abnormal BMI compared to those without fat anxiety, however, this relationship was not statistically significant (p=0.884). Participants who were satisfied with their CDRS had a significantly (p=0.009) increased likelihood of having a normal BMI status (AOR=1.207; 95% CI: 1.054, 1.383) as demonstrated on Table 3.

Table 3: Comparison between participants' BMI status and self-classified weight, overweight preoccupation and contour drawing rating scale.

Indicator		BMI		Total	OR (95% CI:)/ p-value
		Abnormal (%)	Normal (%)		
WTCLASS	Normal	95 (30.5)	216 (69.5)	311	OR=1.295 (1.072, 1.564) p=**0.004**
	Abnormal	51 (46.4)	59 (53.6)	110	
OWPREOC	Fat Anxiety	22 (36.1)	39 (63.9)	61	OR = 1.047 (0.728, 1.506) p=0.884
	No Fat Anxiety	124 (34.4)	236 (65.6)	360	
CDRS	Satisfied	44 (27.0)	119 (73.0)	163	OR=1.207 (1.054,1.383) p=**0.009**
	Dissatisfied	102 (39.5)	156 (60.5)	258	

This study determined that there was no statistically significant association between participants' sociodemographic characteristics (sex, age, academic year of study, religion, marital status, number of children, income, alcohol use, and history of smoking) and their self-esteem. However, when gender was compared to body image and health-related behavior scales, it was noted that there was a statistically significant association between gender and appearance evaluation (p=0.028), appearance orientation (p<0.001), overweight preoccupation (p=0.014), weight classification (p=0.001), contour drawing rating scale (p=0.001), anxiety levels (p=0.001) and perception of positive wellbeing (p=0.021). Specifically, female students were more likely (OR=1.122, 95% CI: 1.023, 1.231) to be satisfied based on their appearance evaluation, appearance orientation, self-classified weight and overweight preoccupation compared to males. The male participants were however more likely to be satisfied with their contour drawing rating scale (OR = 1.500; 95% CI: 1.173, 1.918) and had an increased likelihood of a positive wellbeing (OR = 1.169; 95% CI: 1.023, 1.335). The results additionally revealed that 50% more males had anxiety (OR = 1.500; 95% CI: 1.173, 1.918) as compared to their female counterparts

Table 4: Effect of Sex on Body Image, Self-Esteem, and Health-Related Behavior.

Indicator	Odds Ratio (95% CI)	p-value
Appearance Evaluation	1.122 (1.023, 1.231)	**0.028**
Appearance Orientation	1.333 (1.187, 1.497)	**<0.001**
Overweight preoccupation (Fat Anxiety)	1.538 (0.951, 2.489)	**0.014**
Weight Classification (WTCLASS)	1.229 (1.097, 1.378)	**0.001**
CDRS	1.500 (1.173, 1.918)	**0.001**
Anxiety	1.500 (1.173, 1.918)	**0.001**
Positive Wellbeing	1.169 (1.023, 1.335)	**0.021**

Discussion

study set out to assess level of satisfaction of Moi University West Campus Students with their body image. The mean satisfaction level with appearance evaluation among the study participants enrolled in this study was 4.04 (± 0.68). This shows that majority of participants had a good attitude towards their physical appearance whereby attitude refers to their thoughts, feelings and beliefs about their physical selves. This finding matched that of Denver, Colorado in the United States of America [1] at 3.36 (± 0.94) and Nigeria [2] at 3.86 (± 0.87). The findings were however way higher than that reported in the Netherlands [3] at 2.62 (± 0.73). The difference between the current study and the Dutch study (Grift et al., 2016) is that the Dutch study comprised of trans-sexual men who were undergoing mastectomy as part of their medical transition as opposed to this study which did not focus on the sexual orientation of the study participants. Furthermore, the Dutch study (Grift et al., 2016) adopted a prospective design whereas the current study was cross-sectional study. Variations in study designs have been associated with difference in study outcomes.

Appearance orientation which shows the extent of investment by an individual in his or her appearance was the second indicator of body image satisfaction with a mean value of 3.72 (± 0.48). A finding similar to this was found in the study done by Hamilton in the United States of America [1] 3.43 (± 0.65) and the Netherlands study by Van de Grift (Grift et al., 2016) at 3.29 (± 0.72). In a study conducted at the Midwestern University in the United States of America (Gitimu et al., 2016) that employed the contour drawing rating scale to measure body image dissatisfaction, 68.6% of the students reported an ideal body shape that was smaller than their current body shape, a sign of dissatisfaction with their body image. This is three-fold more than the current study's finding of 19% of the university students enrolled who desired to be thinner. A study done among slum dwellers in Nairobi Kenya [5] also indicates preference for a larger body size for both genders. This could be attributed to the African culture that associates thinness to poor socioeconomic well-being [6,7]. For example, curvy women are considered

beautiful while men who appear fat are perceived to be wealthier and therefore accorded higher social status.

This study also set out to determine the relationship between satisfaction level of body image and self-esteem. The study determined that nearly all the study participants who were satisfied with their appearance, invested in their appearance, and self-classified their weight as normal had a high self-esteem. Dissatisfaction with body image has been previously associated with low self-esteem[8]. This finding was also confirmed by other authors who reported a direct relationship between body image dissatisfaction and low self-esteem[9]. Furthermore, there is a statistically significant association between unhealthy eating behavior as a result of dissatisfaction with body image and low self-esteem[9]. Cristiana Pop also found a direct relationship between body mass index versus body image with a low self-esteem prevalence of 1.87%[10].

On the other hand, in an exploration of body image perception among African American population residing in the United States of America, there was no statistically significant association between body weight dissatisfaction, body size silhouettes and self-esteem[11]. This could be attributed to other factors such as ability to exercise and availability of funds to access various fitness programs.

This study examined age, gender, year of study, religion, marital status, number of children, income, alcohol use and smoking as sociodemographic variables. The current study did not report any statistical association between the participants' sociodemographic characteristics and self-esteem. This finding is similar to a British study[12] where no statistically significant difference was reported between gender and self-esteem. However, the finding contrasts studies conducted in India[13], Egypt[14], New Zealand[15] and Brazil[16]. In India, the authors[13] found a statistically significant difference between gender and self-esteem. In Egypt[14], there was a statistically significant difference between the participants self-esteem and academic year of study. This study did not control for probable confounders such as students' income levels which often changes with advancement in the academic year of study and further affect the students' self-esteem. This could explain the difference in self-esteem among university students in Egypt and those enrolled in the current study. In a study conducted in New Zealand, the authors[15] reported a statistically significant difference between the students' gender and self-esteem, their academic year of study also affected their self-esteem perception. The gender differences with respect to self-esteem often begin at a very young age because of differences in gender roles and physical development, impacting adolescents' body image and self-esteem differently between genders[17]. Therefore, as students advance in age and academic year of study, their self-esteem perception could be affected by their gender differences.

Sex was statistically significantly associated with body image indicators such as appearance evaluation ($p = 0.028$), appearance orientation ($p < 0.001$), self-classified weight ($p = 0.001$) and contour drawing rating scale ($p = 0.001$) in the current study. Female participants had a more positive evaluation (OR = 1.122, 95% CI: 1.023, 1.231) of their appearance compared to their male counterparts. Previous studies[18]

have indicated that women have a greater likelihood to base their perception of self-worth on their appearance and are more likely to monitor their bodies more closely. From the findings reported in Dublin-Ireland, female students were significantly ($p < 0.001$) more likely to have a body shape concern compared to their male counterparts[19]. These findings and that reported in the current study clearly indicate gender-differences in college students' perception of both their appearance evaluation and appearance orientation.

Being overweight is associated with body image dissatisfaction among more females than males[20]. Research has shown that higher BMI is associated with increased vigilance as far as weight monitoring is concerned by the adolescents [21,22] such that the effects of high body mass index in adolescents gives rise to body image concerns in young adulthood[23,24]. A large proportion of men and women have misconceptions regarding their weight to an extent that those that have normal weight or body mass index still perceive themselves as being underweight or overweight as evidenced in this study and that conducted in Spain among a Mediterranean population[20]. This could emanate from them comparing themselves to their peers or how they perceived their body image in the past.

While female participants had a higher likelihood of being satisfied with their appearance evaluation, this study reports that male participants had an increased likelihood of being satisfied with their contour drawing rating scale (OR = 1.500; 95% CI: 1.173, 1.918) as well as an increased likelihood of a positive wellbeing (OR = 1.169; 95% CI: 1.023, 1.335). Contour Drawing Rating Scales[12] are used to assess body dissatisfaction of the male and female figure from extremely thin to obese. This is because of the perceived gender-based difference in the rating of contour drawings as some individuals may desire to be either thinner or bigger. In a study conducted at the university college London[12], it was reported that 29.4% of the male participants desired to gain weight while 69% of the female participants desired to lose their weight. Similarly, another study[25] showed an increased desire for more musculature by the males in three countries (United States, Ukraine and Ghana). This statistically significant association is consistent with the findings of this study where gender was associated with differences in the assessment of contour drawing rating scales. As the females were keener on their appearance and showed greater ability to invest on their appearance (appearance orientation), men were more inclined towards the contour drawing rating scale. Social media images constantly portray the female body ideal as a thinner version hence the desire to lose weight by female participants while the male ideal body is shown to possess enhanced musculature hence the desire for weight gain by male participants. Social media therefore plays a huge role in influencing body image ideals amongst male and female adolescents and young adults.

Conclusions

This study determined that majority of the study participants were satisfied with the self-attitudinal aspect of their body image on the Multidimensional Body Self-Relations Questionnaire (MBSRQ) based on the appearance evaluation but dissatisfied with their global aspect of body image. About two-thirds

were dissatisfied on the Contour Drawing Rating Scale (CDRS) and this was sex specific. Specifically, nearly all students who were satisfied with their body image had a significantly high self-esteem. Female participants were significantly more satisfied with both their appearance evaluation and orientation compared to their male compatriots who in turn were satisfied with their contour drawing rating scale (CDRS) and had a higher proportion of positive wellbeing.

This is the first large study that utilized both objective and subjective scales to assess how self-esteem and health-related behaviors affect body image perception among young undergraduate students in a public university in Kenya. The findings could be adopted through a multidisciplinary approach by students, parents, university administrators, health practitioners, non-governmental organizations and policy makers both in the education and health sector to create screening programmes and interventions for body image concerns among university students. Parents are key players in body image concerns since factors such as parental and sibling comparisons and comments influence how individuals perceive their bodies and the effect and action thereafter.

Declarations

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