

## An exploration to preferred and non-preferred body parts in university students

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### Abstract:

The purpose of the study was to describe the anatomical preferences of students from an university located in Central America. Participants were university females ( $n = 259$ , mean age, height, weight and BMI =  $18.8 \pm 2.9$  yr.,  $159.6 \pm 5.9$  cm,  $57.6 \pm 11.9$  kg, and  $22.6 \pm 4.3$  kg/m<sup>2</sup>, respectively) and males ( $n = 263$ ; mean age, height, weight and BMI =  $18.9 \pm 2.5$  yr.,  $172.9 \pm 6.3$  cm,  $69.0 \pm 13.1$  kg, and  $23.0 \pm 3.8$  kg/m<sup>2</sup>, respectively). Participants rated their preferred and non-preferred body parts with a questionnaire. For both genders, the head, neck and face zones were the preferred anatomical area and the non-preferred anatomical areas were the torso and abdomen. Body mass index (BMI) was positively correlated to non-preferred body parts in females ( $r = 0.164$ ,  $p = 0.008$ ). In males, BMI was positively correlated to their preferred body parts ( $r = 0.160$ ,  $p = 0.009$ ). In conclusion, students from a Central American university rated similarly their preferred but differently their non-preferred anatomical parts.

**Key words:** - Hispanics; body parts; body image; gender.

### Introduction

Body image is psychological construct defined as the internal representation of the external appearance (Hausenblas & Symons Downs, 2001). Body image dissatisfaction is frequently reported among college students (Meneses-Montero & Moncada-Jiménez, 2008), a managed properly could help achieving a healthier body; for example, when an obese person fights to reduce body fat to achieve a healthier profile and look slimmer. However, an uncontrolled or untreated body dissatisfaction might produce impairments in self-esteem and other quality of life and psychological and social functioning variables (Cash, Morrow, Hrabosky, & Perry, 2004).

Meta-analytical studies have examined relevant features of the body image from the psychology (Feingold & Mazzella, 1998), sociology (Cafri, Yamamiya, Brannick, & Thompson, 2005) and the human movement sciences (Hausenblas & Fallon, 2006) approaches. In general, evidence suggests that media (Holmstrom, 2004), as well as social and cultural characteristics (Cafri et al., 2005), exert remarkable pressure on females, leading them to report body image dissatisfaction. This dissatisfaction exceeds progressively over the years and is higher in females than in males (Feingold & Mazzella, 1998). It is also reported that those who remain physically active (i.e., exercise), have a better body image than their sedentary counterparts (Campbell & Hausenblas, 2009; Hausenblas & Fallon, 2006).

A series of descriptive and experimental studies and literature reviews on the topic of body image of college students have been reported in Costa Rican college students (Castillo-Hernández & Moncada-Jiménez, 2010, 2013; Chacón-Araya & Moncada-Jiménez, 2013; Meneses-Montero & Moncada-Jiménez, 2008; Moncada-Jiménez, 2010) and adolescents (García Fernández & Garita Azofeifa, 2007; Mora Zúñiga, Muñoz Porras, & Villarreal Montoya, 2011; Salazar Mora, 2008). However, the subject of dissatisfaction or satisfaction with specific body parts has not been described before in this Hispanic population. The relevance of this particular topic lies in that some body parts might be modified through diet, exercise or surgery, or any combination of these. It is important to understand the perception of body parts in different populations because specific anatomical zones belong to the body image construct as a whole. Therefore, the purpose of this study was to describe the anatomical preferences in a sample of students at an university from a Central American country.

### Material & methods

#### Participants

This is a descriptive cross-sectional study involving students from the University of Costa Rica (UCR), in Costa Rica. Based on the student population enrolled, the formula for infinite populations (Kish, 1965), identified a minimum sample of 326 students for this study, with a 95% confidence level and a 5% error. For this study 522 students were recruited (49.6% female, 50.4% male) from mandatory physical activity courses offered at the UCR. The Scientific Ethics Committee of the UCR approved the study protocol. Written informed consent was obtained from every student participating in the study.

### Measurement instruments

Body height (cm) and weight (kg) were measured using standard procedures (American College of Sports Medicine, 2014). Then, the body mass index (BMI) was calculated by dividing body weight by the body height ( $\text{BMI} = \text{kg}/\text{m}^2$ ). Finally, the participants rated their preferred and non-preferred body parts (Wooley & Roll, 1991). On the scale, two human figures (male and female) are depicted, and participants marked their preferred and non-preferred anatomical areas.

Seven categories were created *a priori* based on the scale: 1) head, neck and face; 2) shoulders and arms; 3) torso, including the abdomen; 4) genital areas; 5) legs; 6) feet; and 7) hands.

### Statistical analysis

Statistical analysis was performed with the Statistical Package for the Social Sciences (IBM-SPSS) version 20. Results are presented as percentages, means and standard deviations (mean  $\pm$  SD). The Mann-Whitney U-test was used to determine significant differences in the distribution of preferred and non-preferred body parts between males and females. Pearson correlations were computed between BMI and number of preferred and non-preferred body parts by gender. Analysis were considered significant at a  $p \leq 0.05$ .

### Results

In this study participated 522 students. The mean age, height, weight and BMI for females ( $n = 259$ ) were  $18.8 \pm 2.9$  yr.,  $159.6 \pm 5.9$  cm,  $57.6 \pm 11.9$  kg, and  $22.6 \pm 4.3$   $\text{kg}/\text{m}^2$ , respectively. The mean age, height, weight and BMI for males ( $n = 263$ ) were  $18.9 \pm 2.5$  yr.,  $172.9 \pm 6.3$  cm,  $69.0 \pm 13.1$  kg, and  $23.0 \pm 3.8$   $\text{kg}/\text{m}^2$ , respectively.

In general, for both genders, the features located in the head were considered as their preferred anatomical zones (36.3 and 32.6%, respectively). Similarly, the non-preferred anatomical features selected mostly by females and males were located in the torso (51.4 and 55.0%, respectively) (Fig. 1).

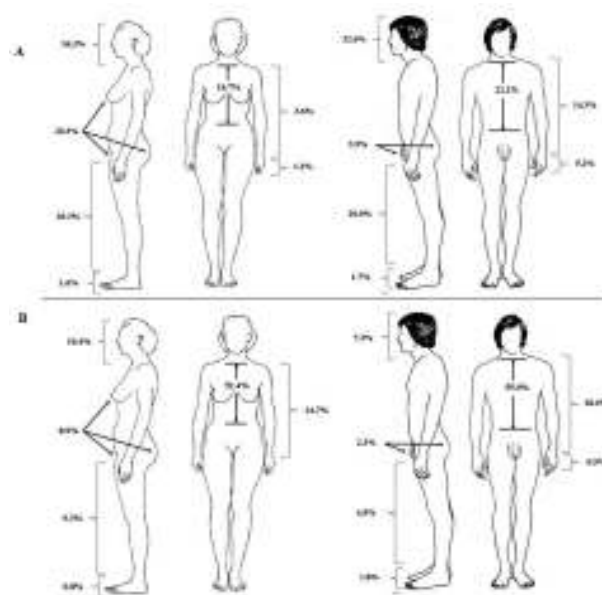


Fig. 1. Participant's preferred (panel A) and non-preferred (panel B) anatomical areas by gender (Wooley & Roll, 1991)

The Mann-Whitney U-test was unable to determine significant differences between males and females in the distribution of preferred body parts ( $p = 0.688$ ); however, significant differences between males and females in the distribution of non-preferred body parts were detected ( $p = 0.008$ ). For females, BMI was positively associated to non-preferred body parts ( $r = 0.164$ ,  $p = 0.008$ ). In males, BMI was positively associated to preferred body parts ( $r = 0.160$ ,  $p = 0.009$ ).

### Discussion

The purpose of the study was to describe the anatomical preferences in students from the University of Costa Rica. The main finding was that females and males rated similarly their body parts. In general, both, females and males, rated the head as their preferred body part and the torso as their non-preferred anatomic part. Also, the association between BMI and preferred and non-preferred body parts was different between genders.

The subject of satisfaction with specific body parts has been described sparingly since the late 60's and early 70's (Clifford, 1971; Kurtz, 1969). In a study (Kurtz, 1969), 89 male and 80 female college students rated their body parts. From a list of 30 body parts (e.g., hair color, hand size, ears size, breast size (women), chest size (men), hips, etc.), females showed more satisfaction with their bodies in general and also more clearly identified their preferred and non-preferred body areas compared to males. In another study (Clifford, 1971), it was

reported that females and males tend to value body parts similarly (e.g., feet, chin, hands, lips, knees, eyes, ears, etc.). However, participants were adolescents between 11 and 19 yr. in age, so it would seem likely that as age increases, further differences in the valuations to different parts of the body by women and men might appear. This argument seems to be true up to an undetermined adult life age, as it has been found that body dissatisfaction in women is very stable over the years to an (unspecified) age of the older adult life (Tiggemann, 2004). However, in the present study on Hispanic university students, it was found that the rating on preferred and non-preferred body parts were similar between genders. More recently, a study was designed to determine the satisfaction with body parts in 200 heterosexual males (Tiggemann, Martins, & Churchett, 2008). Participants were required to fill a website survey about satisfaction to their hair, body hair, height, penis size, and body weight and muscularity. The main finding of the study was that males were dissatisfied with all the parts mentioned before; however, the biggest concerns were especially on their body weight, penis size and body height (Tiggemann et al., 2008). The issue of satisfaction and concern about penis size, in particular, has been described previously in the literature (Lever, Frederick, & Peplau, 2006). In the present study, the percentage of men who mentioned that their genitals were their preferred body part was higher (3.9%) than the percentage that indicated that this area was their non-preferred (2.3%). In other words, 2.3% of the male participants are dissatisfied with their genital area, which included the penis, testicles and buttocks. For females, the percentage who said their genitals were their preferred body parts was higher (20.3%) than the percentage indicated otherwise (8.9%). In other words, 8.9% of female participants are dissatisfied with their genital area, which included the vagina, breasts and buttocks.

Recent evidence suggests that females who have a similar-to-the “ideal” figure are more likely to be selected by males as a romantic partner (Murnen, Poinsett, Huntsman, Goldfarb, & Glaser, 2015). This feature creates a tremendous pressure on females, which can trigger feelings of anguish and despair. Since it has been mentioned that media promotes the “ideal figure” and females seem to be more susceptible to these messages, a study was designed to determine the body parts women put more attention when looking at the “ideal” female models in the media (Lykins, Ferris, & Graham, 2014). Healthy and young females (21.8 yr.), were presented with images of “ideal” female models. Eye movements were tracked with an electronic instrument to determine which body area was paid more attention to (Lykins et al., 2014). The main finding of the study was that females with lower levels of body satisfaction avoided observing the middle and lower torso of the body of the models. In contrast, females who had higher levels of body satisfaction looked more closely those areas. In the present study, about half of women surveyed (Figure 1) felt dissatisfied with their torso (upper and middle, which includes the abdomen), which could reflect the social pressure to obtain an “ideal” figure. However, this claim is beyond the scope of this study and further empirical data is needed to support it.

On the other hand, females have traditionally perceived more attractive males who have a lower waist:chest ratio (i.e., thin waist and wide chest) (Coy, Green, & Price, 2014). In a study, female participants (n = 151) were asked to evaluate the avatar of males created from 3D images to determine which was the most attractive. Male avatars with lower waist:chest ratio were perceived as the most physically dominant, with better fitness and that could better protect their loved ones. This “ideal” also imposes a pressure on males to change or manipulate their body image to meet the requirements or socially accepted standards. In this study, more than half of the males surveyed (Figure 1) felt dissatisfied with their torso, which could also be associated with the search for the “ideal” male. Again, this claim is beyond the scope of this study and further empirical data is needed to support it. Other studies including Hispanics have consistently found that females strive for a slimmer body (Meneses-Montero & Moncada-Jiménez, 2008; Stanford & McCabe, 2002), and that males are content with their looks or want to look thinner or wider (Meneses-Montero & Moncada-Jiménez, 2008; Stanford & McCabe, 2002). All these choices or preferences are determined by a large number of moderator variables, such as peer influence, parents and relatives, educational level, race or ethnicity, and members of the opposite sex.

Among the limitations of this study we can mention that this is a descriptive cross-sectional study and no causal conclusions can be drawn from the results presented. This is a first approach to better understand the topic of body image from the specific anatomical areas, which together form part of this broad construct. Further research is needed where moderator variables in the selection of body parts and avoidance or dissatisfaction of others are included.

## Conclusions

In conclusion, female and male Costa Rican university students rated similarly their body parts. Both genders prefer the areas of the head (e.g., face, eyebrows, eyes, eyelashes, nose, ears, and lips) rather than the torso areas (e.g., chest, abdomen). BMI is associated to body part preference in opposite manner between males and females. A higher BMI is associated to non-preferred body parts in females.

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