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COMPARISON OF BODY PERCEPTION AND PHYSICAL ACTIVITY IN PEOPLE AGED 20 TO 49 IN THE YEAR 2023

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Abstract: Introduction: A total of 65% of the world's population [1] and 66% of the population of Costa Rica [2] there are levels of overweight and obesity and according to data from the National Institute of Statistics and Censuses of Costa Rica (INEC), people who have this condition are those who do not do physical activity or have a healthy and balanced diet. [3]. **Goal:** To compare body perception and physical activity in people aged 20 to 49 in 2023. **Materials and methods:** 50 people aged between 20 and 49 years of both sexes from areas far from and close to the capital of Costa Rica, these subjects being 10 from the canton of Goicoechea, 10 from the canton of Desamparados, 10 from the canton of Mora, 10 from the canton of Sarapiquí and 10 from the Pérez Zeledón canton, 5 from the districts of San Isidro de El General and another 5 from San Pedro; who participated voluntarily and anonymously by filling out an electronic survey built in Google Forms and taking anthropometric measurements by specialist personnel. Data was collected from July 22 to 27, 2023. **Results:** A total of 38% of the participants present body distortion, and of them, 75% of the participants report engaging in intense physical activity, 21% moderate physical activity, and 10% mild physical activity. 71% of the people surveyed have a nutritional status of malnutrition (whether overweight, obesity or underweight), however, they do not present a body distortion, that is, those who have malnutrition know it and recognize it in the silhouettes. Conclusion: Body perception and physical activity are related in people aged 20 to 49 years participating in this study, they have a medium association. People with body distortion report higher intensity physical activity ratings than those without body distortion.

Keywords: Self-image, Physical Exercise, Body Image [4]

INTRODUCTION

A total of 65% of the world's population [1] and 66% of the population of Costa Rica [2] There are levels of overweight and obesity, according to indices that determine these values through a relationship between weight and height, however, not all people really perceive themselves as having the same nutritional status, because some perceive themselves in different ways. This self-perception that individuals have of themselves could be influenced so that people decide that the most optimal thing is to gain or lose weight according to their criteria. [1]

Currently, in Costa Rica, men perform 1 hour and 55 minutes of physical activity, and women an average of 1 hour, according to data recorded by the National Institute of Statistics and Censuses of Costa Rica (INEC), which is also known, is that the highest percentage of people who are sedentary are those who are overweight, and those who are not overweight perform physical activity at levels between moderate to intense. [3]

People who do less physical activity only do it recreationally and with less travel, so it is not a created routine, nor with a specific time, and they are people who usually do not worry about having a healthy and balanced diet, so it is considered that those who maintain physical activity on a regular basis are because they seek to have a better body image and also personal satisfaction in their physical appearance. [5]

MATERIALS AND METHODS

The research is quantitative descriptive; The population between 20 and 49 years of age of both sexes is taken as the study unit, being a convenience sample made up of 50 people from areas near and far from the country's capital; of which, 10 people belong to the canton of Goicoechea (4.6 km), 10 people from the canton of Desamparados (5.7 km),

10 people from the canton of Mora (35 km), 10 people from the canton Sarapiquí (87 km), 10 people from the canton of Pérez Zeledón (134 km). It is worth mentioning that everyone participated voluntarily, anonymously and without financial remuneration.

The instrument used for data collection was an electronic survey built in Google Forms. Prior to the application of the instrument, a pilot test was carried out, with the objective of increasing its reliability. This pilot test was applied to a sample of 10% of people who had similar characteristics to the study population, in order to detect irregularities and, once corrected, be able to guarantee a better result during the evaluation. The final instrument was delivered personally by the researchers after taking anthropometric measurements. Data was collected from July 22 to 27, 2023.

Anthropometric measurements are taken, specifically weight and height of all participants. Once these data are obtained, the BMI of each of them is obtained.

The body perception variable was evaluated using Collins figures, based on the silhouettes of Stunkard Sorenson & Schlusinger, with the continuous representation of a series of figure models ranging from the thinnest to very thick, in addition to this to complement the information, questions about body satisfaction were applied, and elements such as frequency of thinking about body image were used based on the validated Body Shape Questionnaire (BSQ), in which attitudinal aspects of body image are evaluated in relation to dissatisfaction and concern about body weight.

The physical activity variable was evaluated by applying the validated short version of the International Physical Activity Questionnaire (IPAQ), which consists of seven questions about the time the subject spends performing moderate and vigorous activities, as well as minutes sitting and walking. It is an instrument with international validity and used by various studies on all continents.

BODY PERCEPTION

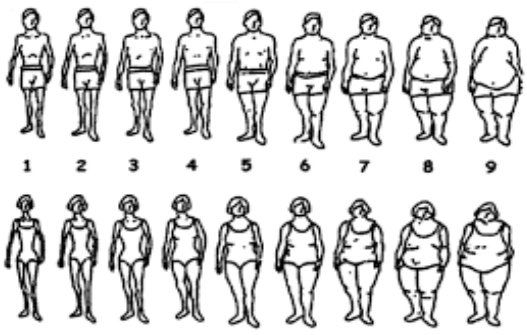

Figure 1. Stunkard and Collins scale

Source: Body Shape Questionnaire [6]

According to the Stunkard and Collins scale, the people surveyed choose the number that represents the body figure with which they feel most identified; this is the body perception they attribute to themselves. To know the rating and compare it with their BMI that shows their real nutritional status, they were classified as follows: 1 corresponds to Low Weight II, 2 corresponds to Low Weight I, 3 and 4 are assigned to which they attribute a Normal body perception., 5 and 6 are assigned to Overweight, 7 corresponds to Obesity grade I, 8 in turn is assigned to Obesity grade II and, finally, figure 9 corresponds to Obesity grade III.

ANTHROPOMETRY

The anthropometric data determined in the study population were weight and height, weight was obtained using scales, people were asked to be in the lightest clothing possible, fasting or 1 hour after eating food, people They were placed facing forward with their arms at their sides, and without accessories or items in their bags; The weight is taken twice, if the data returned is different, it is taken a third time and the average is taken.

Regarding size, people stand on a wall,

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shoulders down, heels against the wall, jaw at a right angle, in the case of women without hairstyles that interfere with the shot. These measurements are taken in order to evaluate nutritional status according to the BMI classification, which is the relationship between a person's weight in kilograms and height in meters squared. It is worth mentioning that the personnel in charge are specialists in taking these measures. The characteristics of the instruments used to obtain the anthropometric results are the following:

Instruments for taking weight	Instruments for taking sizes
Taylor professional scale, capacity 180kg x 500g.	Wall measuring tape.
Tanita innerscan Mod. BC-534, capacity 150kg.	Seca brand wall height meter.
Arboleaf Body Scale CS2N, 400 lb capacity.	Thincol brand wall height meter.
CAMRY Scale Mod. EB930, capacity 150kg.	Wall height meter with Seca brand.

Table 1: Characteristics of the instruments to obtain anthropometric data.

Source: own elaboration, 2023.

The following parameters are used to classify BMI:

Classification	IMC
Under weight	18.5 Kg/m2
Normal	18.5-24.9 Kg/m2
Overweight	25.0-29.9 Kg/m2
Obesity I	30.0-34.9 Kg/m2
Obesity II	35.0-39.9Kg/m2
Obesity III	> 40 Kg/m2

Table 2. Classification parameters of nutritional status according to BMI

Source: OMS. [7]

PHYSICAL ACTIVITY

The IPAQ instrument for classifying physical activity takes into account the METs used by people. METs are the energy consumption of an individual in a resting state (basal metabolic expenditure), which is equivalent to approximately 1 kcal per kilo of weight per hour; The duration, frequency, intensity or environment in which the activity is carried out can be measured to measure the MET, which assigns a MET number to each activity. (8)

The IPAQ questionnaire includes the following questions: How many days do you do intense physical activity? How much time do you dedicate to intense physical activity? How many days a week do you do moderate physical activity? How much time do you dedicate to the activity? moderate physical activity? How many days a week do you walk for 10 minutes straight? How much time do you spend walking?

Physical activity	Parameters
Intense (Vigorous)	• Vigorous physical activity at least 3 days per week achieving a total of at least 1500 METs. [9] • 7 days of any combination of walking, with moderate physical activity and/or vigorous physical activity, achieving a total of at least 3000 METs. [9]
Moderate	• 3 or more days of vigorous physical activity for at least 20 minutes per day. [9] • 5 or more days of moderate physical activity and/or walking at least 30 minutes per day. [9] • 5 or more days of any combination of walking, moderate or vigorous physical activity, achieving at least 600 METs. [9]
Light	• More than 150 minutes of physical activity per week, without reaching moderate physical activity. [10]
No physical activity	• Less than 150 minutes of physical activity per week.

Table 3. Physical Activity Classification

Source: own elaboration, 2023

The relationship between the physical activity variable and body perception is analyzed using the Chi square test, with: α = 0.05, where;

Hypothesis:

H0 The variables "x, y" are independent.

H1 The variables "x, y" are dependent.

The variable "y" is body perception.

The variable "x" is physical activity.

Subsequently, the effect between them is measured with Cramer's V value analysis using the following parameters.

Cramer's V index value	Criterion
0 to 0.10	There is no effect
0.11 to 0.30	Small effect
0.31 to 0.50	Moderate effect
0.51 to 1.00	Big effect

Table 4. Criteria for analysis of Cramer's V value

Source: Faculty of Statistics of the Universidad Santo Tomás Colombia cited by Betancourt V. Andrea & Caviedes N. Ivonne 2018.

RESULTS

Table 5 performs a statistical analysis of the data by applying Cramer's V to obtain the distribution according to classification of the body perception of the sample.

Nutritional condition	With distortion	Without distortion
Normal	7	9
Malnourished	12	22
Total	19	31

Table 5. Distribution of people from 20 to 49 years old according to classification of body perception, (n=50)

Source: own elaboration, 2023.

A statistical analysis of the data is carried out by applying Cramer's V to obtain classification of physical activity with or without the presence of body distortion in the sample.

Physical Activity Classification	With body distortion	No body distortion	Total
Intense	9	3	12
Light	2	15	17
Moderate	4	9	13
No physical activity	4	4	8
Grand Total	**19**	**31**	**50**

Table 6. Distribution of people from 20 to 49 years old according to physical activity classification based on whether or not they have body distortion, (n=50)

Source: own elaboration, 2023.

A statistical analysis of the data is carried out by applying Chi Square and an association is obtained between the study variables.

DISCUSSION OF RESULTS

When analyzing the results of the perception of body image, a medium association is found. More than 50% of the population perceives itself according to its real nutritional status according to BMI, specifically being overweight and obese, which agrees with the result of the Chilean article by Durán-Agüero and others. [11], showing not having any type of distortion in their body image.

The erroneous self-perception of nutritional status, whether underweight, overweight or obesity, is worrying for health professionals, because this condition can have consequences, which can lead to effects on mental health and unhealthy behaviors for the patient. weight control [12]. People's body dissatisfaction in recent years has been attributed to the amount of influence of social networks, advertisements that promote the ideal body, which in turn could even generate Eating Disorders (ED), for example. what is important to know this data. [13]

Although it is true that the importance of body image is a factor that occurs at any stage of life, adolescence is a critical stage where this is a predominant concern in adolescents. It

Associated variable	Chi Square Test	P value according to Chi square test	Decision	Cramer V	Decision
Physical activity	12.7167	0.0477	It is rejected H0	0.3566	Media Association

Table 7. Analysis of statistical tests for body perception and physical activity, (n=50)

Source: Own elaboration, 2023.

has been observed that a low level of physical fitness leads to Greater body dissatisfaction while higher levels of self-perceived physical fitness have been related to a better perception of the body image that each individual has of themselves. (14)

The perception of body image refers to the subjective part of each individual and how they consider themselves to look physically, however, this depends on various factors, such as the configuration of each individual, how they perceive situations and others. people, the cognitive factor of each person also comes into play; behavioral, emotional and cultural factors are some of those that could change this perception and generate distortion in it. (15)

In recent years, hand in hand with the influence of social networks so widely available, they have caused people to be dissatisfied with their body image or there is a distortion in the perception of it, so these people take measures to amend the situation such as physical activity at high intensities to achieve the desired image. (15)

The current study highlights that the majority of participants who present distortion in their body image are in a state of malnutrition. This agrees with various studies, such as the one carried out with 792 volunteer students from universities in Chile and Panama, where an inversely proportional relationship was found between BMI and weight estimation, that is, the higher the BMI, the underestimation of weight and vice versa. (16)

The self-perception of body image is a positive determinant of physical-sports behavior in men and women, which is evident in the present study and agrees with the research carried out in Peru with 108 adolescents of both sexes, when the interviewees claimed to carry out physical activity mainly to lose weight and stay in shape, as well as perform different practices to try to correct your body image. (17)

The current study shows that people with body distortion report a higher intensity physical activity rating than those without body distortion. Moreno and Perea mention that the practice of excessive sports physical exercise can have a negative impact on the health of those who want to lose weight, and directly affects the perception of body image. (18)

In another study carried out by Cabral and Leal (19), mention that body dissatisfaction causes adolescents to practice physical exercises excessively. Currently, concern about the body, about the external appearance or about achieving the current standards of beauty, causes severe repercussions on health with extremist behaviors. (20)

Studies such as the one carried out by González-Montero et al. (21) where 523 people between the ages of 13 and 19 participated show that, generally, those who show a certain degree of dissatisfaction with their physical appearance since they perceive themselves as having a higher BMI than they would like to have, opt to practice individual sports, or Well, they do team sports but they complement it with fitness activities related to body shaping, such as aerobics and rhythmic gymnastics,

which are done individually, while those who are more satisfied with their figure usually participate in team sports. For their part, Kirkcaldy et al. [22], they delve deeper into the topic and explain that team sports started in childhood are being replaced from puberty by regular aerobic exercise, especially with the intention of modeling the body silhouette.

On the other hand, a study in which 400 university students participated sought to analyze the relationship between body composition, distortion of body image and the level of physical activity, highlighting that the most physically active subjects are those who presented healthier composition values. body, and they are the most satisfied and least worried about it, data very different from the current study [23]

Regarding the results when relating the physical activity of the participants to whether or not they have body image distortion, an association was found between the study variables. 75% of the participants who report performing intense physical activity indicate having body image distortion. It is true that physical activity practiced regularly and in moderation is recommended at any stage of development, however, sometimes this physical activity becomes intense and excessive due to a great concern about weight.

CONCLUSIONS

Body perception and physical activity are related in people between 20 and 49 years old; the participants in this study have a medium association. People with body distortion report higher intensity physical activity ratings than those without body distortion.

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