

RELIABILITY OF CIRCUMFERENCE MEASUREMENT OF PHYSICAL EDUCATION STUDENTS

* **BHANU PRATAP SINGH**

****PROF.DHANANJOY SHAW**

* Research Scholar, *Department of Physical Education and Sports Sciences, University of Delhi, India*

** Head: *Department of Physical Education and Sports Sciences, University of Delhi, India*

ABSTRACT

The study entitled as “A Study on Reliability of Selected Circumference Measurements using Circumference Anthropometric Tapes”. Objectives of the study were Reliability of Circumference Measurement to measure calf, forearm, hand (palm), thigh, upper arm, wrist, ankle of right and left side. Reliability of Circumference measurement to measure Chest, Hip, Waist, Neck. This study was delimited to Male Physical Education students within the age group 18-25 years. Anthropometric Steel Tape. The Limitation of the study was possible time & other complications due to Covid-19. It was hypothesized that there will be excellent or very high reliability in regards to selected Circumference measurements of Right and Left. The major findings were Reliability of Circumference Measurement to measure calf, forearm, hand(palm), thigh, upper arm, wrist, ankle of right side are found to be reliable. Reliability of Circumference measurement to measure calf, forearm, hand(palm), thigh, upper arm, wrist, ankle of left side are found to be reliable. Reliability of Circumference measurement to measure Chest, Hip, Waist, Neck are found to be reliable.

INTRODUCTION: Circumference Measurement is a method to know the changes in body dimensions over time. Circumference measures at standard anatomical sites around the

body. It is measured with a tape and can be used in determining body size, composition and to monitor changes in these parameters. Equipment required flexible metal tape measure and pen for marking the skin. If a plastic or cloth tape is used, it should be checked regularly against a metal tape as others may stretch over time. The MYOTAPE is useful for the self-assessment of circumference measurement. First of all, Body Circumference measurement test is one common method of determining athlete's individual body composition and body fat percentage. This test estimates the percentage of body fat by measuring girth at specific locations on the body with relatively more accuracy. It involves using a device called anthropometric steel tape that's very reliable when performed on populations who are average to above average body fat. This quick and simple method that used to assess body fat percentage is easy to calculate and can easily be performed. The assessment of body composition is routine practice in many sport organizations that doesn't cost much in the particular testing procedure and for many sites the measurement can be self-administered. Whilst total body mass (BM) assessments can be important in some situations (e.g., in sports where there is a given weight classification), the wider examination of body composition, specifically lean mass (LM) and fat mass (FM), is more informative for athletes and their coaches. Reliability is the overall consistency of a measure. A measure is said to have a high reliability if it produces similar results under consistent conditions. Reliability is the agreement between two efforts to measure the same trait through maximally similar methods. Depending on the type of measurement that is performed, different types of reliability coefficients can be calculated. In all coefficients, the closer the value is to 1, the higher the reliability.

DISCUSSION OF FINDINGS:

The major findings were as follows:

- The reliability coefficient of the neck circumference of reading one and two, one and three, two and three were .997, .997 and 1.000 respectively. Hence considered Excellent. It is hypothesized that there was excellent or very high reliability in regards to selected Circumference measurements of Right and Left at 0.05 significance level.
- The reliability coefficient of the chest circumference of reading one and two, one and three, two and three were .997, .998 and .998 respectively. Hence considered Excellent. It is hypothesized that there was excellent or very high reliability in regards to selected Circumference measurements of Right and Left at 0.05 significance level.
- The reliability coefficient of the chest nipple circumference of reading one and two, one and three, two and three were .998, .999 and .997 respectively. Hence considered Excellent. It is hypothesized that there was excellent or very high reliability in regards to selected Circumference measurements of Right and Left at 0.05 significance level.
- The reliability coefficient of the upper arm flexed left circumference of reading one and two, one and three, two and three were .998, .997 and .999 respectively. Hence considered Excellent. It is hypothesized that there was excellent or very high reliability in regards to selected Circumference measurements of Right and Left at 0.05 significance level.
- The reliability coefficient of the upper arm flexed right circumference of reading one and two, one and three, two and three were .998, .999 and .999 respectively. Hence considered Excellent. It is hypothesized that there was excellent or very high reliability in regards to selected Circumference measurements of Right and Left at 0.05

significance level.

- The reliability coefficient of the upper arm relaxed left circumference of reading one and two, one and three, two and three were .997, .997 and .997 respectively. Hence considered Excellent. It is hypothesized that there was excellent or very high reliability in regards to selected Circumference measurements of Right and Left at 0.05 significance level.
- The reliability coefficient of the upper arm relaxed right circumference of reading one and two, one and three, two and three were .998, .999 and .999 respectively. Hence considered Excellent. It is hypothesized that there was excellent or very high reliability in regards to selected Circumference measurements of Right and Left at 0.05 significance level
- The reliability coefficient of the calf left circumference of reading one and two were .997. Hence considered Excellent. It is hypothesized that there was excellent or very high reliability in regards to selected Circumference measurements of Right and Left at 0.05 significance level.
- The reliability coefficient of the calf right circumference of reading one and two were .998. Hence considered Excellent. It is hypothesized that there was excellent or very high reliability in regards to selected Circumference measurements of Right and Left at 0.05 significance level.
- The reliability coefficient of the ankle left circumference of reading one and two, one and three, two and three were .987, .982 and .986 respectively. Hence considered Excellent. It is hypothesized that there was excellent or very high reliability in regards to selected Circumference measurements of Right and Left at 0.05 significance level.

- The reliability coefficient of the ankle right circumference of reading one and two, one and three, two and three were .987, .983 and .984 respectively. Hence considered Excellent. It is hypothesized that there was excellent or very high reliability in regards to selected Circumference measurements of Right and Left at 0.05 significance level.

CONCLUSION:

On the basis of my research the conclusion have been drawn Reliability of Circumference Measurement using Anthropometric Steel Tape to measure calf, forearm, hand(palm), thigh, upper arm, wrist, ankle of right and left side are found to be reliable. Reliability of Circumference measurement to measure Chest, Hip, Waist, Neck are found to be reliable. The findings will be further useful for further research and measurement applications, specifically integrated to these specific products. Reliability of coefficient will vary from Circumference to Circumference, which will be additional to this specific field of knowledge. These findings will further useful for further research and measurement application. Reliability coefficient will vary from different circumference, which will add the specific field of knowledge.

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