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THE STUDY ON RELATION BETWEEN SELECTED ANTHROPOMETRIC VARIABLES WITH PERFORMANCE OF THE MALE SWIMMERS

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Abstract: *This study aimed at find out relationship between selected anthropometric variables with performance of the Male swimmers. For the collection of data total 20 swimmers were selected. Swimmers who represented and participated in district level, state level and intercollegiate tournaments were selected. The selected subject's age ranges between 18-25 years and the study restricted to Dakshina Kannada district of Karnataka state only. Correlation techniques will be used in order to investigate the relationship between each of anthropometric variables with performance correspondingly. The level of significance will be set at 0.05 level of confidence. After statistical analysis the results shown by using suitable tables and figures.*

Keywords*: Anthropometric, swimmers, Dakshina kannda, performance etc…*

1. INTRODUCTION:

Evidence of recreational swimming in prehistoric times has been found, with the earliest evidence dating to Stone Age paintings from around 10,000 years ago. Written references date from 2000 BC, with some of the earliest references to swimming including the Iliad, the Odyssey, the Bible, Beowulf, the Quran and others. In 1538, Nikolaus Wynmann, a Swiss–German professor of languages, wrote the earliest known complete book about swimming, Swimming emerged as a competitive recreational activity in the 1830s in England. In 1828, the first indoor swimming pool, St George's Baths was opened to the public. By 1837, the National Swimming Society was holding regular swimming competitions in six artificial swimming pools, built around London. The recreational activity grew in popularity and by 1880, when the first national governing body, the Amateur Swimming Association was formed, there were already over 300 regional clubs in operation across the country. In 1844 two Native American participants at a swimming competition in London introduced the front crawl to a European audience. Sir John Arthur Trudgen picked up the hand-over stroke from some South American natives and successfully debuted the new stroke in 1873, winning a local competition in England. His stroke is still regarded as the most powerful to use today. Men's swimming became part of the first modern Olympic Games in 1896 in Athens. In 1902 the world swimming association FINA was formed. Women's swimming was introduced into the Olympics in 1912; the first international swim meet for women outside the Olympics was the 1922 Women's Olympiad. Butterfly was developed in the 1930s and was at first a variant of breaststroke, until it was accepted as a separate style in 1952.

Swimming is an important sport and should be enjoyed by everybody as it has several health benefits. Swimming increases the metabolism and helps energize body and mind. Doctors suggest swimming to patients after surgery because the density of water takes pressure off of their bones and joints which helps them recover without additional pain. It really is the only exercise like it. Additionally, swimming is the only exercise that has an effect on the entire body. There are numerous benefits from swimming such as:

- It maintains your heart rate and takes away stress from the body.
- It builds muscular strength and increases immunity.
- Exercises your lungs and helps to keep you fit.
- It helps to burn calories which in turn reduces weight
  It is the only physical activity which involves and tones all of body's muscles.

Anthropometry

Anthropometry is a branch of anthropology that is concerned with the measurement of the human body , usually includes girth or circumference of limbs or segments e.g. girths of the calf, breadths, diameters of bones, weight, height,

arm length, leg length etc.. This definition has been confined to the kind of measurements commonly used in associated physical performance with body build up. Both individuals and populations of individuals vary in their size and shape. Anthropometry represents the different measuring techniques, usually made with callipers, which are used to analyse this physical variation as it occurs both in the living body and in the skeleton. Anthropometric measurements were central concern of the first phase of the scientific era of measurement, which began in the year 1860. Current interest in anthropometric measurements focuses on three areas; growth measures, body types and body composition. The uses of such measure include classification, prediction of growth patterns and prediction of success in motor activities as well as assessment of obesity. Alkay Dubey and Mall (April 1987) suggest that although speed is a little influenced by the physique of a swimmer, the combination of stroke length and stroke frequency used to attain a given speed is very much a function of his physique. According to Geladas, N.D and Nassis, G.P. (2005) in early adolescence body height and upper limb dimensions affect swimming performance much more than body composition.

Importance of anthropometric study in sports

The study of body type has a significant place in the field of sports. Physical structure especially the height, weight, leg length and arm length have definite decisive advantage in many games and sports. Similarly, segmental length of individual body parts, specifically the leg length, arm length has one of considerable advantage in certain games. The anthropometric variables selected for this study are height, body weight, leg length, arm length, chest circumference, arm girth and thigh girth. This plays vital role in the performance of the physical activity. The physique and body composition including the size shape and form are known to play a significant role in this regard. The performance of the sportsman in any game depends on skill training, motivation and on various other physiological and anthropometric factors. Age, sex, physiological and growth have also been noticed to influence a person's ability for physical activities.

Delimitations of the study

- This study is delimited to 20 male swimmers only.
- This study is delimited of to the age group of 12 to 25 years.
- This study is delimited to Dakshina Kannada district.

Limitations of the study

- The different modes of training of the subject selected for the present study and their influence on the data collected on subsequently on the results of study is identified as a limitation of the study.
- The personal routine and dietary habits of the subjects selected and their influence on the data collecting has considered as limitations of the study.
- Non - availability of some very sophisticated instruments was also considered as a limitation of this study

2. METHODOLOGY:

The main purpose of present investigation is to find out the relationship between selected anthropometric variables with performance in swimmer of Dakshina Kannada.

Selection of the subject

For the collection of data total 20 swimmers were selected. Swimmers who represented and participated in district level, state level and intercollegiate tournaments were selected. The selected subject's age ranges between 18-25 years and the study restricted to Dakshina Kannada district only.

Selection of test items

Table no 1

The following table showing test items and test tools

Sl.no	Test item	Test tool
1	Performance level	Self-prepared Questionnaire
2	Height	Stadio-meter
3	Weight	Weighing machine
4	Hand Length	Measuring tape
5	Leg Length	Measuring tape
6	Arm Length	Measuring tape
7	Foot Length	Measuring tape
8	Chest Girth	Measuring tape
9	Hip girth	Measuring tape

Procedure for test administration

All the subject was briefed about the purpose and importance of the investigation before the subject has administered different test and measures. The test items were explained and demonstrated to the selected subjects by the investigator himself, and the subject has oriented to the ways of performing different test items.

- Before giving the questioner, researcher explained about the importance of research and explained the instruction and the procedure of filling the questionnaire.
- If any subject unable to understand the questionnaire meaning of that word.
- After fillings questionnaire the subjects were to return the questionnaire to the investigator. Then researcher set out to do another test for the same subject.

All the anthropometric measurements will be taken with care and precision. Investigator was taking the co-operation of coaches to collect the data. All the anthropometric measurements were taken in morning in minimum clothing. All the measurements were taken on the right side of the subject.

Statistical analysis

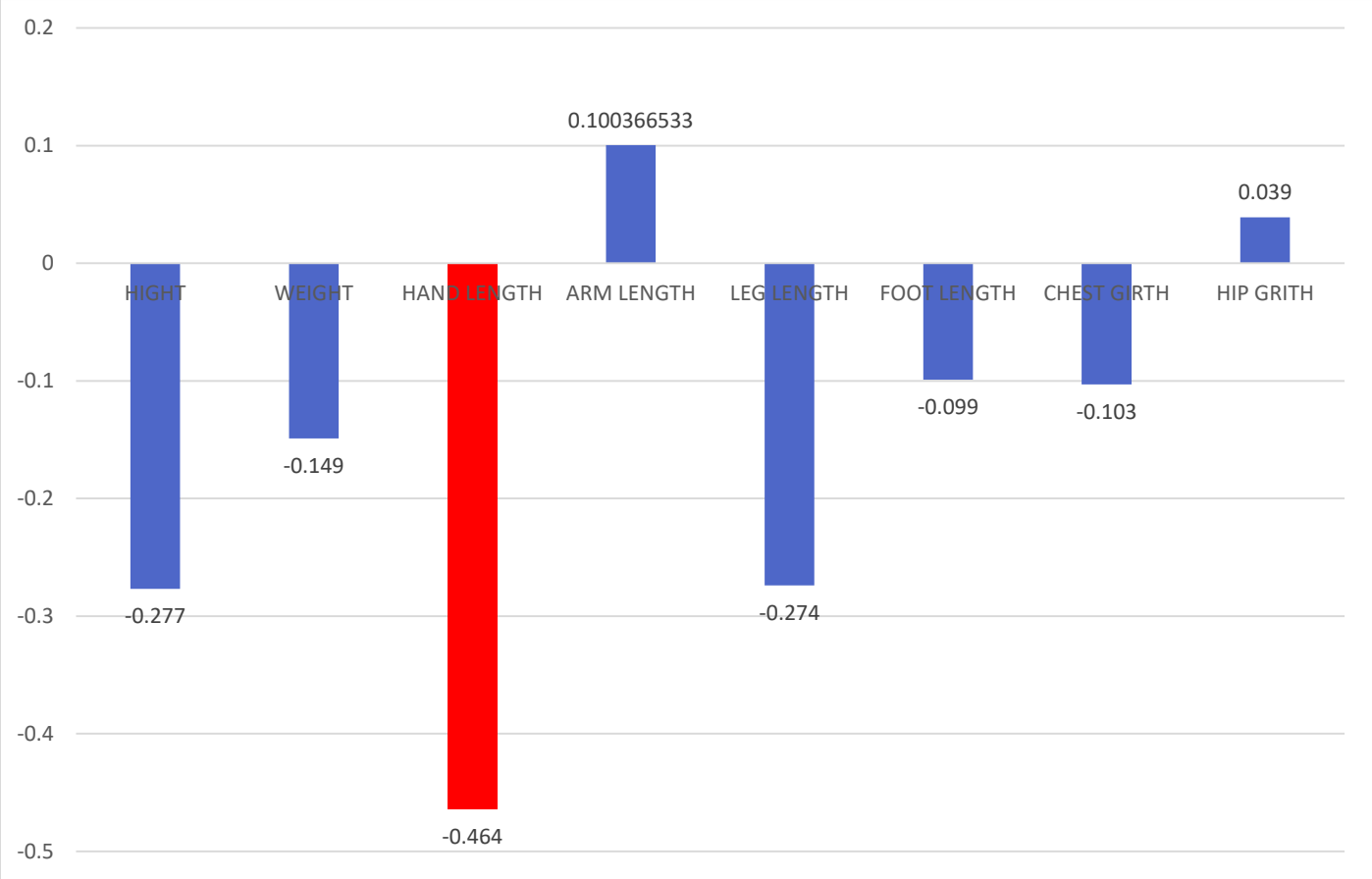
Correlation techniques will be used in order to investigate the relationship between each of anthropometric variables with performance correspondingly. The level of significance will be set at 0.05 level of confidence.

3. ANALYSIS AND INTERPRETON OF THE DATA:

The collected data was analysis and interpretation through specific test. The collected data shows co-relation between anthropometric and performance of swimmer. Result was represented by suitable figures and tables.

Figure no - 1

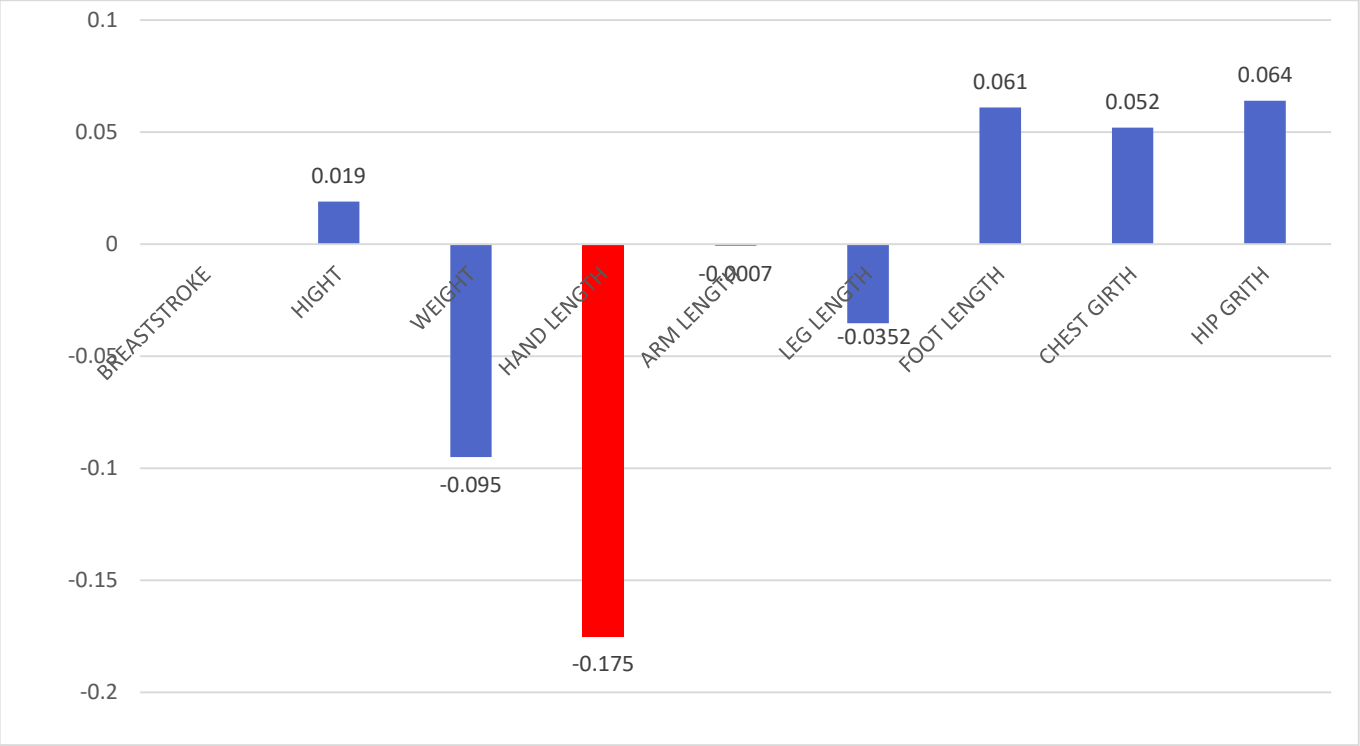
The below figure shows relationship between anthropometric measurements with freestyle swimming



The above fig.1 shows correlation values between freestyle swimming and selected anthropometric measurements of swimmers. It shows correlation of freestyle with height (-0.2776), weight (-0.1493), Hand length (-0.4645), arm length (0.10036), leg length (-0.2740), foot length (-0.09911), chest girth (-0.10357), hip girth (0.03990).it clear in above table that, freestyle swimmers have negative low correlation with hand length and low positive correlation with arm length.

Figure no – 2.

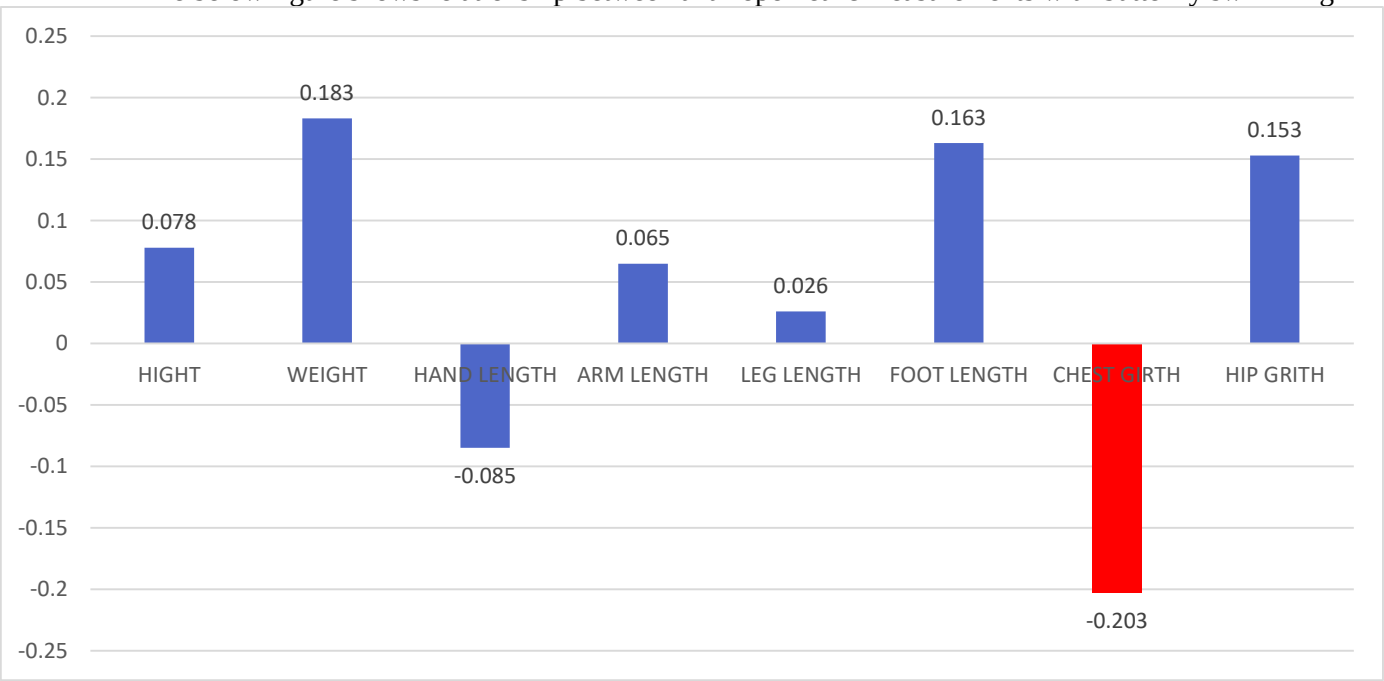
The below figure shows relationship between anthropometric measurements with breast stroke swimming



The above fig.2 shows correlation values between breaststroke swimming and selected anthropometric measurements of swimmers. It shows correlation of breaststroke with height (0.01984), weight (-0.0951), Hand length (-0.1751), arm length (-0.0007), leg length (-0.0352), foot length (0.0613), chest girth (0.0524), hip girth (0.00640).it clear in above table that, breaststroke swimmers low negative correlation with hand length and low positive correlation with hip girth.

Figure no - 3

The below figure shows relationship between anthropometric measurements with butterfly swimming

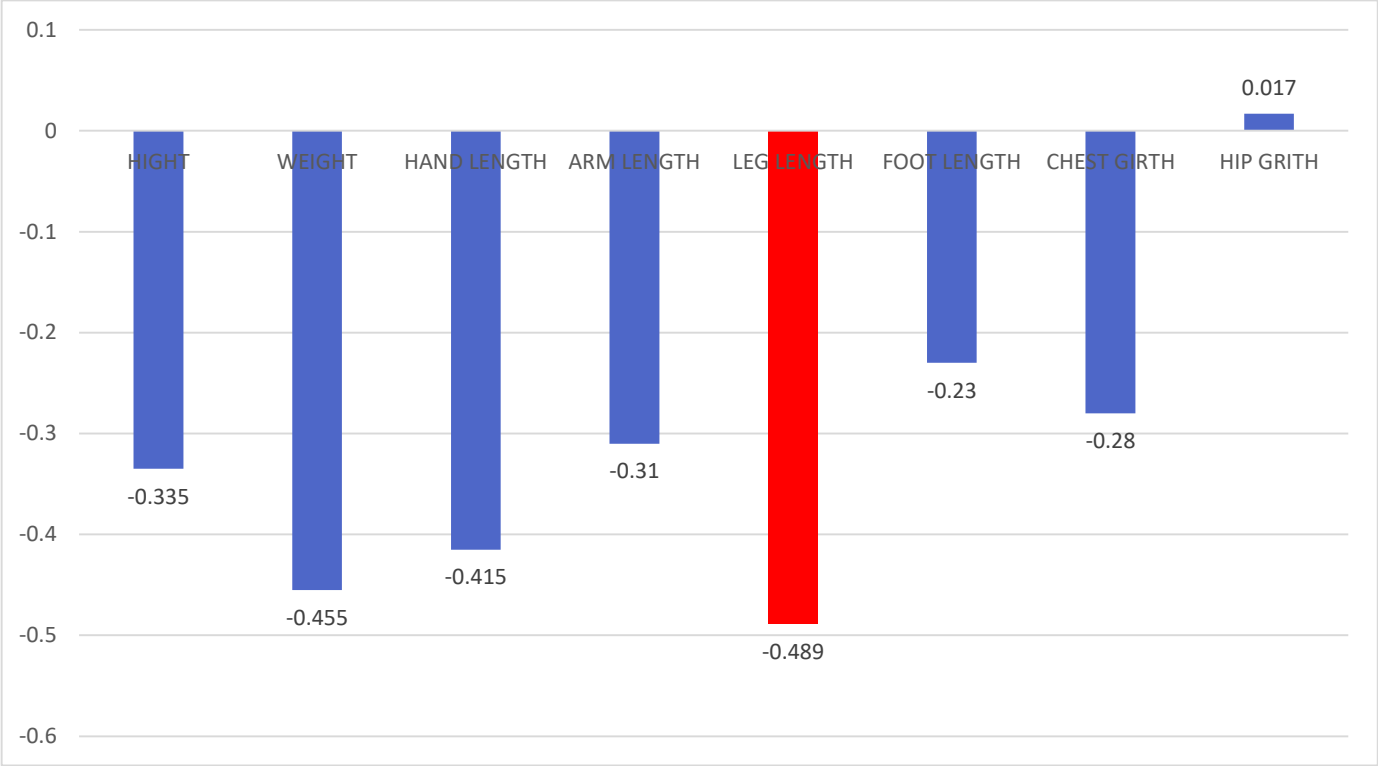


The above fig.3 shows correlation values between butterfly swimming and selected anthropometric measurements of swimmers. It shows correlation of butterfly with height (0.0787), weight (0.1832), Hand length (-

0.0855), arm length (0.0265), leg length (0.1633), foot length (0.1622), chest girth (-0.2030), hip girth (0.1531).it clear in above table that, butterfly swimmers have low negative correlation with chest girth and low positive correlation with weight.

Figure no - 4

The below figure shows relationship between anthropometric measurements with backstroke swimming



The above fig.4 shows correlation values between backstroke swimming and selected anthropometric measurements of swimmers. It shows correlation of butterfly with height (-0.3350), weight (-0.4558), Hand length (-0.4159), arm length (-0.3107), leg length (-0.4894), foot length (-0.2308), chest girth (-0.2809), hip girth (0.0171).it clear in above table that, backstroke swimmers have negative low correlation with leg length and low positive correlation with hip girth.

Discussion on Hypothesis

The formulated hypothesis there is high positive correlation between selected anthropometric variables with performance of swimmers. The result of the study was revels that there is low negative correlation with anthropometric variables so we rejected the hypothesis and conclude that there is notable low level negative relationship with anthropometric variables and performance in male swimmers.

4. SUMMARY CONCLUSION AND RECOMMENDATION:

The research work has been taken up with the purpose of analyse the relationship between anthropometric measurements and the performance in freestyle, backstroke, butterfly, and breaststroke swimming. Coaches in the sport concerned are trying to find out the basic physical, physiological, and psychological characteristics that might be the performance limiting factors. After the inception of Sports Authority of India in 1985-86, a scheme called "National Sports Talent Competition" (NSTC) was launched and the so-called talented children were selected and were put in Special Training Centres (William h freeman, 1982). The tests used for the selection led to lots of criticism from other experts and as expected the scheme collapsed after a decade of venture. The Swimming coaches, majority of whom are averse to the word "Scientific Training", selected their potential swimmers from the children visiting their pools mainly on the basis of their performance in some or the other competition, sometimes even forgetting that such talents have already reached their peak performances with little scope for much improvement in spite of intense schedules. After the failure of this Government sponsored NSTC scheme there has been no other attempt either by the Sports Authority of India or by Indian Swimming authorities. With the passage of time, the point of consensus that seems to be emerging among Indian Swimming organisers, coaches and researchers is that if our swimmers have to perform well, it is then necessary to catch them at an early age and nurture them systematically and scientifically.

5. CONCLUSION :

After the data interpretation following conclusion were drawn:

- Freestyle swimmers have low negative correlation with hand length and low positive correlation with arm length.
- Breaststroke swimmers low negative correlation with hand length and low positive correlation with hip girth.
- Butterfly swimmers have low negative correlation with chest girth and low positive correlation with weight.
- Backstroke swimmers have negative low correlation with leg length and low positive correlation with hip girth.

6. RECOMMENDATION:

- Similar study may be conducted for various age groups.
- The same study may be extended to various trainees.
- Same study may be conducted on different variables.
- The same study may be extended to over all state.
- The present study is mainly focused on males only. The same study may be done on females.

REFERENCES:

1. Alkay Dubey and Mall (April 1987) “Relationship of body composition and selected Anthropometric Measurements of the performance of swimmers.” *SNIPES journal.* 10:12. p.60-62.
2. Geladas, N.D.; Nassis, G.P. (2005), Pavlicevic, S. Somatic and physical traits affecting sprint swimming performance in young swimmers’’. *Int. J. Sports Med. 26*, 139–144.
3. Baten, Joerg; Komlos, John (2004*). "Looking Backward and Looking Forward: Anthropometric Research and the Development of Social Science History". Social Science History*. 28: 191–210 – via Elsevier Science Direct
4. Brozek, J. A. (1960) Handbook of Anthropometry, *spring field: I L Charles C. Thomas*, pp. 78. 136.
5. Baten, Joerg; Komlos, John (2004). "Looking Backward and Looking Forward: Anthropometric Research and the Development of Social Science History". *Social Science History*. 28: 191–210 – via Elsevier Science Direct.
6. David Wilkie and Kelviun Juda, (1986) “The Handbook of Swimming” *London: Pelham Limited* p. 88
7. Donald K. Mathews. Measurement in Physical Education, *Fourth Edition; Philadelphia: London, W. B. Saunders Company*, p. 133
8. Casadei K, Kiel J. (Updated 2020 Jan 28) Anthropometric measurement in stat pearls [Internet]. *Treasure Island (FL) Stat pearls Publishing*; 2020 Jan
9. J. Scott. and Guil Foll (1978) “The Relationship of Selected Anthropometric Measurement to Time in 100 Yards Crawls Stroke”, *Completed Research in Health, Physical Education and Recreation*, pp 20: 304.
10. Escalante, Yolanda; (30 May 2012) saavedra, jose M “Swimming and Aquatic Activities: State of the Art” *journal of Human kinetics*. 32: pp 5-7
11. G. Hey18 (February 1986): “Relationship among Anthropometric and Stroking Characteristics of College Swimmers.” *Medicine and Science in Sports and Exercise.*
12. Richardson AB (1992) Handbook of sports Medicine and science-swimming. *Blackwell scientific publications.*

Websites:

- www.kprschools.ca/en/our_schools/StudentCensus.html
- www.ifcss.in&rlz=1C1CHBD_enIN912IN912&oq
- www.isca.in+www.isca.me&rlz=1C1CHBD_enIN912IN912&oq