

Anthropometric Measurements of the Kung Fu Players

EssamAbdelfatah¹, Mohammed Housain Saad²

¹ College of Physical Education, Minia University, Egypt

² College of Physical Education, Beni Suef University, Egypt

Abstract

Background: Kung fu is extra than physical exercise or an extremely technical way of self-defense. Kung fu is a manner of exercising the mind together with a way of life. The mystical side of kung fu cannot be educated by fact-finding or training. It must develop spontaneously in a mind free from requirements and reactions. The core value of Kung Fu is Tao - the impulsiveness of the world. **Aim of the research:** To examine the relationship stuck between anthropometric measurements and physical characteristics with the explosive strength of the upper and lower limbs of the players under study. **Methods:** Prospective correlational study. **Sample** contained Kung Fu players in Minia Governorate for the sports season 2018-2019. Samalot sport club, from September 2018 to December 2018. The research sample was randomly selected from the Kung Fu players, Minia Governorate, (20) players out of the total number of (88) players. **Results:** The mean age was (20y ± 3.6). There was a significant association between leg length and wide jump. **Conclusion:** Earning body abilities like anthropometric and physiological features is a necessity to success in any competition. Anthropometric measurements of sportspersons represent important requirements for effective presence at the similar sport, achieving athlete's performance and are essential to achieve excellent performance of sports skills.

Keywords: Kung Fu players, Anthropometric Measurements

Date of Submission: 01-05-2020

Date of Acceptance: 14-05-2020

I. Introduction

Kung fu is extra than physical exercise or an extremely technical way of self-defense. Kung fu is a manner of exercising the mind together with a way of life. The mystical side of kung fu cannot be educated by fact-finding or training. It has to develop spontaneously in a mind free from requirements and reactions. The core value of Kung Fu is Tao - the impulsiveness of the world (Lee & Little, 1997).

Self-defense sport is a complete interaction sport which permits the use of facing and engaging methods, either upright or on the pitch. Its wide-ranging sub-sport sections consist of many individual sports like kung fu (Alm & Yu, 2013; Tota, et al., 2014)

Anthropometric measurements of sportspersons signify important requirements for effective presence at the similar sport, achieving athlete's action and are essential to achieve outstanding implementation of athletic abilities (Bayois et al., 2006; Duncan et al., 2006; Ibrahim, 2010). It is expected special sports' accomplishment is clearly related to athlete's anthropometric characteristics of similar sport (Catagay et al., 2008; Gualdi-Rosso & Zaccogni, 2009; Malousaris et al., 2008).

Body profile and size, has an significant part in the individual choosing for individual sporting. There is an extensive quality of evidence in the sport skill about the appropriateness of several body categories, not only for specific sports but also for definite trials or situations in various sports event actions. In combat sports, the body figure of the athlete permits us to recognize diverse performance points, determine the achievement of top act and influence on the performing of different procedures, related to motion skills, and perfect body masses (Baez et al., 2014; Casals, Drid, Stojanović, Drapšin, & Ostojić, 2014; Franchini, Sterkowicz-Przybycien, & Takito 2014; Noh et al., 2014; Sterkowicz-Przybycień, Sterkowicz, & Żarów, 2011).

Kung fu involves multifaceted abilities and tactical strategy of success. To support the sport more expand, several experts approve the requirements to be a perfect and authorized physical shape on Kung fu competitors (James, et al., 2013; La Bounty et al., 2011; Lenetsky & Harris, 2012; Tack, 2013).

Accompanied by the essential bodily characteristics of intensity, power, and technical ability is an essential aspect of being an effective Kung fu player. Player with fewer skills, and less professional skills, have a higher probability of injury [Gartland S, 2005].

Profiling means of recognizing talent, powers, and faintness, and assisting in the plan of ideal power and training plans [Chaouachi A, 2009]. Physical assessment can evaluate the total strength intensity of the athletes and set rules for personalized Kung fu coaching plans.

The goal of the research was to examine the association between anthropometric measurements and physical characteristics with the explosive strength of the upper and lower extremities of the players under study.

Research Hypothesis

There is an association between anthropometric measurements and the explosive strength of the upper and lower limbs of the players under study.

Methods

Study design: prospective correlational study.

Study Setting and population: Kung Fu players in Minia Governorate for the sports season 2018-2019. Samalot sport club, from September 2018 to December 2018.

Sample size: The research sample was randomly selected from the Kung Fu players, Minia Governorate, (20) players out of the total number of (88) players.

Tools and Measurements:

For all of the participants, the subsequent measurements and assessments have been completed: Personal data sheet were completed. The age, height and body mass of participant determined, measurements of leg and palm, and skin-fold measures. Percentage of body fat was estimated from the sum of 3 site sizes of skin-fold thickness. Speed, quickness, muscular endurance and elasticity were assessed.

II. Results

Statistical analysis was done using SPSS Statistics (version 20, IBM Corp). All variables were stated as means ± standard deviation (SD) unless otherwise specified.

Table (1): General Characteristics of the study population

Measures	Mean	Std div ±
Age	20 Y	3.6
Height	168 Cm	12
Wt	63 kg	6.7
Shoulder width	39.5 cm	2.6
Arm length	70 cm	3.3
Leg length	75.2 cm	3.7
Palm length	16.3 cm	1.2
Vertical jump	41.2 cm	8.8
Wide jump	230 cm	0.16
Throw a medical ball	10.5 m	1.8

Table 1 shows the overall characteristics of the study participants. The mean age was (20y ± 3.6). the mean height was (168 cm ± 12). The mean weight was (63kg ± 6.7). The mean shoulder width was (39.5 cm ± 2.6). The mean arm length was (70 cm ± 3.3). The mean palm length was (16.3 cm ± 1.2). The mean vertical jump was (41.2 cm ± 8.8). The mean wide jump was (230 cm ± 16). The mean length for throwing a medical ball which wight 2 kg was (10.5 m ± 1.8).

Table (2): Correlation between the explosive strength of the legs and arms, and some selected measurements

Explosive strength Meaurements	Vertical jump	Widejump	Throw a medical ball
	Correlation coefficient	Correlation coefficient	Correlation coefficient
Age	-0.3	- 0.2	- 0.5
Height	0.3	0.2	0.2
Weight	-0.01	- 0.1	0.4
Shoulder width	0.2	0.2	0.4
Arm length	0.35	0.33	0.3
Leg length	0.4	0.53 *	0.43
Palm length	0.1	- 0.2	0.2

* Significant, p < 5% * Tabulated value level of significance (5%) is equal to (0.47)

Table 2 shows an inverse correlation between age and the capacity of the upper and lower extremities, as their capacity decreases with increasing age. Additionally, an inverse correlation between weight and the capacity of

the lower limbs, as the capacity of the lower limbs decreases with increasing weight. Also, a positive correlation between body length and the capacity of the upper and lower extremities. As well as, the capacity of the upper and lower extremities also increases with the length of the arm, leg, and shoulder widths. The ability of the upper limbs increases with weight. Although weight gain negatively affects the ability of the legs. There was a significant correlation between leg length and wide jump.

III. Discussion

Kung Fu exercises focus on the body, the mind, and the soul as total. Kung fu includes both repetitive explosive actions and dynamic work. Power is an important aspect of Kung fu as its rapid actions and wide-ranging use of the energy system (Schick M.G., 2010).

The present study results showed that mean age was (20y \pm 3.6) and the mean height was 168 Cm \pm 12. In the same line with our results, the results of Franchini E et al. (2009), who reported that the mean age of his study was (21y \pm 3) and height was ranged from (159-200 cm).

Body mass and weight considered a signal for fitness. In this study the mean weight was (63kg \pm 6.7). This result near to the results of Marinho B. (2012) who found that the players body mass was 82.1 \pm 10.9 Kg. Another study done by Schick M.G. (2010) who reported that MMA fighters had similar body fat percentage to judokas, but greater than wrestlers and kung fu. Franchini E et al. (2007), found that a greater proportion of body fat is negatively associated with performance in activities with body mass.

Vertical jump is a simple measure to estimate lower body power. The results of our study revealed that the vertical jump measures were (41.2 cm \pm 8.8). this results in contrast with Schick M.G. (2010) who found that MMA fighters in his study jumped a mean of (57.6 \pm 7.3cm).

The results of this study showed significant correlation between leg length and lower body maximum strength. This result is in the same line with Marinho B. (2012) who stated that body fat was in the negative correlate with both power and strength endurance performance, while arm circumference was positively related to upper body maximum strength.

IV. Conclusion

Earning body abilities like anthropometric and physiological features is a necessity to success in any competition. Anthropometric measurements of sportspersons represent important requirements for effective presence at the similar sport, achieving athlete's performance and are essential to achieve excellent performance of sports skills. Along with the required physical characteristics of strength, power, and endurance, technical proficiency is a vital aspect of being a successful Kung fu fighter.

References

- [1]. Alm, P., & Yu, J. (2013). Physiological characters in mixed martial arts. *American Journal of Sports Science*, 1(2), 12-17.
- [2]. Amtmann, J. A., Amtmann, K. A., & Spath, W. K. (2008). Lactate and rate of perceived exertion responses of athletes training for and competing in a mixed martial arts event. *The Journal of Strength & Conditioning Research*, 22(2), 645-647
- [3]. Bertini I, Pujia A, Giampietro M. A follow-up study of the variations in the body composition of karate athletes. *Acta Diabetol* 2003; 40(Suppl 1): S142-4.
- [4]. Birrer RB. Trauma epidemiology in the martial arts. The results of an eighteen year survey. *Am J Sports Med* 1996;24:S72-9.
- [5]. Bolelli D. Mixed Martial Arts: A technical analysis of the Ultimate Fighting Championship in its formative years. *Journal of Asian Martial Arts* 2003; 12(3): 40-1.
- [6]. Chaouachi A, Brughelli M, Levin G, et al. Anthropometric, physiological and performance characteristics of elite teamhandball players. *J Sports Sci* 2009; 27(2): 151-7.
- [7]. Franchini E, Nunes AV, Moraes JM, Del Vecchio FB. (2007). Physical fitness and anthropometrical profile of the Brazilian male judo team. *J PhysiolAnthropol*; 26(2): 59-67.
- [8]. Franchini E, Nunes AV, Moraes JM, Del Vecchio FB. (2009). A special judo fitness test classificatory table. Retrieved from: https://www.researchgate.net/publication/285235416_A_special_judo_fitness_test_classificatory_table
- [9]. Franchini E, Nunes AV, Moraes JM, Del Vecchio FB. Physical fitness and anthropometrical profile of the Brazilian male judo team. *J PhysiolAnthropol* 2007; 26(2): 59-67.
- [10]. Gartland S, Malik MH, Lovell M. A prospective study of injuries sustained during competitive Muay Thai kickboxing. *Clin J Sport Med* 2005; 15(1): 34-6.
- [11]. Giampietro M, Pujia A, Bertini I. Anthropometric features and body composition of young athletes practicing karate at a high and medium competitive level. *Acta Diabetol* 2003;40(Suppl 1): S145-8.
- [12]. Iwai K, Okada T, Nakazato K, et al. Sport-specific characteristics of trunk muscles in collegiate wrestlers and judokas. *J Strength Cond Res* 2008; 22(2): 350-8.
- [13]. Lee, B., & Little, J. (1997). *The Tao of Gung Fu: A study in the way of Chinese martial art* (Vol. 2). Tuttle Publishing.
- [14]. Marinho B, Del Vecchio F, Franchini E (2012). Physical fitness and anthropometric profile of mixed martial arts athletes. Retrieved from: https://www.researchgate.net/publication/279493270_Physical_fitness_and_anthropometric_profile_of_mixed_martial_arts_athlete
- [15]. Padulo J, Chamari K, Chaabène H, Ruscello B, Maurino L, SylosLabini P, et al. The effects of one-week training camp on motor skills in Karate kids. *J Sports Med Phys Fitness* 2014;54:715-24.
- [16]. Schick M.G., Brown L.E., Coburn J.W., Beam W.C., Schick E.E., Dabbs N.C. (2010). Physiological Profile of Mixed Martial artists. *MedicinaSportiva* 14 (4): 182-187.

- [17]. Tota, L., Drwal, T., Maciejczyk, M., Szygula, Z., Pilch, W., Pałka, T. & Lech, G. (2014). Effects of original physical training program on changes in body composition, upper limb peak power and aerobic performance of a mixed martial arts fighter. *MedicinaSportiva*, 18(2), 78. doi: 10.5604/17342260.1110317
- [18]. Ylinen JJ, Julin M, Rezasoltani A, et al. Effect of training in Greco-Roman wrestling on neck strength at the elite level. *J Strength Cond Res* 2003; 17(4): 755-9

EssamAbdelfatah, et. al. "Anthropometric Measurements of the Kung Fu Players." *IOSR Journal of Sports and Physical Education (IOSR-JSPE)*, 7(3) (2020): 21-24.