In order to achieve the objective we have to do the following tasks:

- Analysis of the literature on sports results from a position of sexual dimorphism:
- Finding the differences in the competition results in the clean and the jerk by age and the sex,
- Finding the difference in the ratio between competing groups—in the snatch and the clean jerk.

In general, a research on this complex and multi engine quality as a force in women’s heavy athletics is insufficient. Furthermore, the knowledge about the adaptation characteristics of the female body to intense the extreme training loads are also inadequate and the knowledge of the body’s reserves of ordinary women are not relevant for assessing the functionality of women athletes demonstrating high sports results.

**Keywords:** male & female weightlifters, world records, percentages

**INTRODUCTION**

The involvement of women in weightlifting competitive practice since 1987. has had an important role. Natural development of human power abilities marks significant differences in the ontogenesis. It is known that there are many significant differences defined by the gender, anthropometric parameters, and the level of development of motor skills. They are identified both in terms of their values, dynamics, and various muscle groups. It was found that the men have more absolute power than the women (Lukanov, & Flameev (Лукянов & Фаламеев), 1973; Wirhed, 1985; Crapelet & Craplet, 1986. Soha (Соха), 2002), but this difference relative to every muscle mass unit is small to negligible (Krestovnikov (Крестовников), 1961) and in some cases (for separate muscle groups), women predominate the men Wirhed, 1985). Particularly important for determining the functional and adaptive abilities for women weightlifters is the analysis of sports results through the sexual dimorphism.

**METHODS**

The aim of our study was to determine the differences of sports results through sexual dimorphism by age groups with registered world records until 2014. The object of the study are the registered world records in weightlifting until 2014. by age groups and sex, using system-structural analysis of protocols of the registered records IWF until 2014. The World records are compared by age and sex, and by different competitive exercises at the competition. The obtained results suggest on a differences regarded sexual dimorphism. Largest differences are noted in strength and speed-strength sports. Differences are noted between the strength and the speed strength abilities regarded the age as well as regarded the sex in the same age. On the basis of the registered world records we found that the best achievements in various competitive categories are in the young age, when the power component is more characteristic to the male contingent as well as the strength component - in the female contingent. In general, a research on this complex and multi engine quality as a force in women’s heavy athletics is insufficient. Furthermore, the knowledge about the adaptation characteristics of the female body to intense the extreme training loads are also inadequate and the knowledge of the body’s reserves of ordinary women are not relevant for assessing the functionality of women athletes demonstrating high sports results.
categories of registered world records until 1997.

The analysis of dimorphic differences in weightlifting until 2000 shows that there are differences (on average for all weight categories) above 30%. In the snatch - 32.17%, in the clean jerk - 30.38% and in the game - 31.37%. Registered for the period from 1998 to 2000, the world records for women - weightlifters increase on average by 7.1% and for men - weightlifters only by 0.92% (Soha (Coxa), 1999).

In sports where the force is predominantly used, the female contingent show high adaptation capacities. This is proved by the comparative analysis of world records in weightlifting - men / women, junior men / junior women and youth men / youth women (Figure 1.).

Collected data related to differences between women and girls in Figure 2. show that juniors regarding to individual competitive exercises demonstrate improved strength abilities, i.e., the difference in competitive snatch is smaller.

Meanwhile, the differences (Figure 3.) in the male contingent suggest that regarding to individual competitive exercises juniors show better speed-strength and coordination abilities, while in power they are not sufficiently adapted.

The more significant was the power differentiation in youth age more obvious is the tendency to convergence of achievements during the adulthood. On the basis of the registered world records we found that the best achievements in various competitive categories are in the young age, when the power component is more characteristic to the male contingent and strength component - in the female contingent.
the sports performance, not the age.

Differences on average between competitive exercises snatch and clean jerk by age groups and sex are illustrated on the Figure 4.

Average optimum ratio between the competitive exercises is about 25 kg. (Gjurkov (Гюрков), 1992). The data show that the female contingent differences are minimal, respectively: young women - 26.60 kg., women - 27.40 kg. and junior women - 27.60 kg. In the male contingent these differences are larger: junior men - 33.50 kg., men - 33.67 kg. and young men - 48.00 kg. These larger differences especially in the male contingent are due to individual weightlifters “phenomena” who have exceptional physical abilities, as well as that these records are not improved to the present day.

CONCLUSION

The analysis between male and female contingent in different age groups reveals a variation of about 20% lower in the female contingent, which differ significantly in the three age groups. Introduction of early specialization and its further deepening in the current circumstances is a natural and positive development in weightlifting. There is a gradual tendency towards convergence of the average equality.

Current level of knowledge does not allow determining which factors are related to these large differences in sports performance in weightlifting. Many scientists point to genetic factors. We assume that the main reason is insufficient research on speed-strength training for women. That plays an important role of the sports training which is confirmed by the high pace of growth of the sport mastery in women. Increasing the strength of the muscles in women equal to the increase in strength in men can be attributed to the improvement of the reflex regulation inside and intramuscular coordination and integration of the functions of the motor unit.

In general, researches on this complex and multi engine quality as a force in women’s heavy athletics are insufficient. Furthermore, the knowledge about adaptation characteristics of the female body to intense training loads are also inadequate and knowledge of the body’s reserves of ordinary women are not relevant for assessing the functionality of women athletes demonstrating high sports results.

REFERENCES


Войанов, В. (2014). Comparative analysis of the relationships between competitive and basic auxiliary exercises by men, juniors and cadets weightlifters. Research in Kinesiology, 42(1), 9-14.


Панайотов, В. (2007). Сравнение на максималната и връзнатата сила на долните крайници на състезатели по вдигане на тежестите [Comparisons of maximal and explosive force abilities of lower limbs depending on the body composition. In Bulgarian.] Спорт и Наука 51(Приложение към брой 1), 74-81.


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