REVIEW ARTICLE

The overall knowledge characterising the training process of young sambo athletes

Authors' Contribution:
A Study Design
B Data Collection
C Statistical Analysis
D Manuscript Preparation
E Funds Collection

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Abstract

Background and Study Aim: Experts point to the lack of high-quality scientific research highlighting the initial training stage of young sambo athletes. The purpose of the research is knowledge based on scientific publications about the training process among young sambo athletes.

Material and Methods: The data search was carried out in scientific databases: SCOPUS, PubMed, Web of Science, Google Scholar, SCIELO, eLIBRARY. Searches included terms: *sambo*, *judo*, *young athletes*, *training process*. Besides, implementation recommendations of the review and meta-analysis (PRISMA-P) were used for data analysis. Criteria for the inclusion of the revealed documents in the review: the actual problem and the purpose of the study, a significant sample of the studied athletes, the duration of the study is at least one year, tests and measurements and data statistical analysis.

Results: Eighty-seven studies that best meets the search criteria have been found. Direction of research (ordinal variable: number of publications): development of physical qualities of combat athletes (28); improvement of tactical and technical base (23); course training of young athletes (18); sports selection quality (7); control of training load (6); the methods of psychological readiness of athletes (5).

Conclusions: The contradiction has been revealed between the pedagogical need to start learning from the study of martial arts techniques and the techniques predominance for the development of physical qualities of athletes during the first study years. Moreover, unreasonable acceleration of training process of young sambo athletes was found during the initial period of training. The lack of coordination abilities development was found among young athletes.

Keywords: coordination abilities • Sambo sport schools • structural analysis • training cycle • training loads

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INTRODUCTION

Sambo is a relatively young international martial art (combat sport) that appeared in the USSR in the 1930s. This type of martial arts is characterized by the performance of various throws, grabs, holds and painful techniques. Successful activities depend on the technical base, tactical skills and optimal physical conditioning of athletes in sambo [1]. However, the training process of qualified sambists (sambo athlete) is quite lengthy and depends on a large number of different factors. Experts argue that the most difficult problem of sambo training is the optimal planning of the long-term training process of athletes starting from the initial stage of training [2]. Also, experts believe that the main indicator of the effectiveness of training effects is the level of athletes' competitive results in wrestling [3]. Unfortunately, this evaluation criterion cannot be applied to the training process of young and beginning martial arts athletes. Full-fledged competitions are not held for the first 2-3 years of young athletes training. If mistakes were made during the training of young athletes at the initial training stage, they could be identified and corrected only in a few years. Consequently, close attention needs to be given to the process of training young athletes in wrestling.

A review of scientific studies on the preparation of sports reserve in judo and sambo showed that experts consider the search for effective means of physical and technical training of athletes to be a priority for the training of young and beginning sambo athletes. A serious problem is also called the need for effective control and correction of the muscular efforts of young athletes when performing various techniques [4]. It was also revealed that a significant part of junior and young sambo athletes does not demonstrate indicators of how reliable they are during the competitions [5]. According to Nikitushkin and Alkhasov [6], the study and development of the training methodology basics of martial arts should take a leading role in the training of beginning young athletes. The effectiveness of such exercises depends on the quality of the methods used by coaches [6]. At the same time, experts point to a fairly small number of completed scientific studies covering the process of preparing young combat sports athletes. The low efficiency of the most methodical training programs was also revealed for young athletes in specialised sambo sports schools. One of the main problems is speeding up the initial training process of young athletes to the detriment of the multi-year plans frameworks of training of elite combat sports athletes as it was indicated by Vorobev on a wrestlers example [7].

In this regard, we have identified the main research problem as significant scientific data collected by Russian and foreign experts on the organisation of the training process for young athletes at the initial and subsequent training stages in sambo schools.

The purpose of the research is knowledge based on scientific publications about the training process among young sambo athletes.

MATERIAL AND METHODS

The review and analysis of data were carried out in accordance with the recommendations of the implementation of the systematic review and meta-analysis protocols (PRISMA-P). The search for scientific documents was conducted in the international scientific information bases: SCOPUS, PubMed, Web of Science, Google Scholar, SCIELO and the largest Russian scientific database: eLIBRARY. Significant scientific publications and dissertations of Russian scientists (published over the past 40 years) are compulsorily loaded into the eLIBRARY database to form the Russian Science Citation Index. Searches included terms: *sambo*, *judo*, *young athletes*, *beginning athletes*, the training process of young athletes and other related terms. We decided to include the term "judo" in the search query because it was decided that many athletes compete in two kinds of combat sports of wrestling type at once: judo and sambo starting from a young age in Russia. The period was being taken from 2007 to 2018 for the search query. We believe this period is optimal for identifying relevant scientific data that have the results of practical use in the training activities of athletes.

It is believed that the criteria for the inclusion of scientific data in the review are: the presence of a topical problem and the achievement of the research goal, a significant sample of the studied persons (the presence of a control and experimental group), a sufficient period of research (at least 1 year), tests and measurements availability and correct statistical data analysis.

Sambo – is a Russian martial art and combat sport. The word "SAMBO" is an acronym for SAMozashchita Bez Oruzhiya, which literally translates as "self-defence without weapons". Sambo is relatively modern since its development began in the early 1920s by the Soviet Red Army to improve its hand-to-hand combat abilities. It was intended to be a merger of the most effective techniques of other martial arts. The pioneers of Sambo were Viktor Spiridonov and Vasili Oshchepkov. Oshchepkov died in prison as a result of the Great Purge after being accused of being a Japanese spy. Oshchepkov spent several years living in Japan and training in judo under its founder Jigoro Kano [Wikipedia].

Technique– *noun* a way of performing an action [61].

Tactics – *plural noun* the art of finding and implementing means to achieve immediate or short-term aims [61].

Sports technique – a method of performing a motor task specified in the rules of a given sports discipline that depends on particular athletes' somatic, motor and psychic properties [63].

Physical conditioning – *noun* same as conditioning *noun* the work or programme used to bring somebody or something to a good physical state [61].

Physical performance test – set of tests to evaluate speed, strength, and flexibility in a specific context.

Motor coordination test – a test designed to evaluate the ability to organise one's movements successfully.

Training session – *noun* a period of time during which an athlete trains, either alone, with a trainer or with their team [61].

Weight categories – are divisions used to match competitors against others of their weight.

Psychological preparation – mental preparation in which competitors learn how to deal with psychological stresses and achieve an optimal level of arousal so that they will be able to perform the best of their ability [62].

It turned out that the query has highlighted 87 studies that satisfy the conditions of information retrieval. Sixty-eight scientific articles, 18 candidate dissertations (PhD thesis) and one postdoctoral dissertation have been found.

RESULTS

The analysis in the databases showed that out of 87 studies, the most (n = 28) are devoted to the search for opportunities to improve certain physical qualities and motor abilities of the students. Nevertheless, 23 studies contain data on the possibilities of improving technical and tactical training of young athletes in the initial training period. Eighteen studies are devoted to the problems of building long training cycles for training young athletes. Seven scientific articles cover the problems of qualitative children selection and young men in martial arts schools. Six studies reflect the possibilities of organising effective pedagogical control over the volume of training load among young wrestlers. There is data on increasing the level of psychological children readiness to engage in martial arts and the beginning of competitive activities in 5 scientific articles. However, this distribution is somewhat arbitrary, since some studies can be attributed to several subjects at once.

The period of the researches was from 1 to 10 years of observations. The shortest duration of the study period (1-2 years) was found in the following topics: methods of effective pedagogical control over the training load. The longest duration (1-10 years) has been revealed in the following topics: Problems of organising effective sports selection in wrestling schools (sambo sport schools). The age of the studied athletes from 7 to 15 years old. The smallest number of participants (n = 86) is presented in studies devoted to the subject of psychological preparation of young athletes for competitive activity. The largest number (n = 1,027) of young combat sports athletes of the wrestling type took part in studies highlighting the problems of creating optimal training cycles of training.

Characteristics of scientific data corresponding to a specific subject of research are presented in Table 1.

Most coaches consider the main selection criterion – the level of physical fitness of candidates for martial arts training. First of all, during the selection, coaches assess the physical fitness level of children and young people. Dworkin has observed 30 young athletes (8-10 years old) selected for the year according to estimates. The criteria for a positive assessment are the compliance of the physical conditions of the subjects with the control tests (30 m run, 3x10 m shuttle run, long jump from the spot, arm flexion and extension, etc.). The scientist found out that the young judo athletes who showed an advantage in the level of physical fitness show better results in the speed of the combat techniques at the selection time in a year of training [8].

However, such selection criteria are criticized by a number of domestic and foreign experts. Vorobev [7] indicates that tests for the children selection in martial arts schools contain too many tasks of power and speed-power orientation to the detriment of other physical qualities. Also, these tests weakly take into account the specifics of martial arts and do not always provide for a differentiated assessment of young athletes results [7]. Moreover, foreign experts use motor coordination tests when evaluating the motor skills of young athletes [9]. In the opinion of Osipov et al. [10], in addition to the ability to maintain body balance taking into account the candidates' ability to perform certain wrestling techniques type when selecting children in sambo and judo schools. At the same time, the level of physical fitness of young candidates for training is not the main criterion for a successful sports career. At the same time, 60 athletes were monitored from the moment they were selected in wrestling schools (11-12 years old) on reaching 21 years' age by the athletes.

Besides, observations showed that the advantage of more physically developed athletes at the selection time, in competitive results, was being observed in the first 3-4 years of wrestling type of training. Then, competitive results were significantly better for athletes who showed a high ability to maintain a body balance and master the procedures techniques in judo[10]. It should be taken into account the data on the need of the morphological features of young candidates which have been found for training in sambo and judo sports schools. Makhalin et al. [11] surveyed 65 young sambo athletes in Altai. The scientists revealed that there are significant morphological differences among the boys from the north and south of Altai. According to the data which shows that climatic and geographical living conditions

Candidate dissertation – according to the Russian system PhD thesis.

Doctoral dissertation – according to Russian nomenclature means postdoctoral dissertation (or habilitation).

Combat sport – *noun* a sport in which one person fights another, e.g. wrestling, boxing and the martial arts [61].

Martial arts – *plural noun* any of various systems of combat and self-defence, e.g. Judo or karate, developed especially in Japan and Korea and now usually practised as a sport [61].

Combat sport & martial art – relation according to the theory of combat sport: "every combat sport is martial arts but not vice versa" [64, p. 18].

Training load – "A simple mathematical model of training load can be defined as the product of qualitative and quantitative factor. This reasoning may become unclear whenever the quantitative factor is called 'workload volume' or 'training volume' interchangeably with 'volume of physical activity'. Various units have been adopted as measures, i.e. the number of repetitions, kilometres, tons, kilocalories, etc. as well as various units of time (seconds, minutes, hours) (...) As in the real world, nothing happens beyond the time, the basic procedure of improvement of workload measurement should logically start with separation of the time factor from the set of phenomena so far classified together as '***workload volume***'. (...) Due to the fact that the heart rate (HR) is commonly accepted as the universal measure of workload intensity, the product of effort duration and HR seems to be the general indicator of ***training load*** defined as the amount of workload. It is useful in analyses with a high level of generality. (...) In current research and training practice, the product of effort duration and HR was referred to as conventional units', or further calculations have been made to convert it into points." [65, p. 238].

Tatami – traditional straw mats used in ***jūdō*** and ***aikidō*** training halls [66].

Randori – sparring in judo in which both participants practice attacking and defending [66].

Table 1. General research characteristics found during the overall analysis of the scientific works in period 2007-2018 (ordinal variable: number of publications).

Topic	Studies range	Research interval	Athletes	Outcomes
Physical skills development	28 (18 Ar; 10 Cd)	1-4 years	911 young men (8-15 years)	The lack of coordination abilities development. Training forcing of athletes by increasing the amount of general physical readiness.
Wrestling training techniques and tactics	23 (14 Ar; 9 Cd)	1-3 years	618 young men (10-14 years)	The use of games and tasks that simulate the wrestling against the enemy. Reduction of the general physical preparedness of the total volume of tasks.
Training cycle	18 (13 Ar; 4 Cd; 1 Dd)	1-5 years	1027 young men (7-14 years old)	A significant increase in the volume of training load of young athletes was revealed at the initial training stage.
Sport selection	7 (4 Ar; 3 Cd)	1-10 years	729 young men (8-12 years)	Different selection criteria are proposed: testing of physical condition, psychological state, level of coordination abilities (CA) and the ability to perform methods of wrestling.
Training load oversight	6 (4 Ar; 2 Cd)	1-2 years	112 young men (10-15 years)	Use of ECG indications and informative psychophysiological tests was recommended.
Psychological preparation of athletes	5 (3 Ar; 2 Cd)	1-3 years	86 young men (10-13 years)	Inviting of psychologists, modelling of difficult situations, demonstration performances in front of famous fighters.

Note: **Ar** article, **Cd** PhD thesis, **Dd** doctoral dissertation (habilitation).

Overtrain – *verb* to train or exercise, or make somebody train or exercise, excessively, especially before a competition, with a resulting decrease in effectiveness [61].

Overload – *verb* to give a part of the body too much weight to bear [61].

can affect the performance of the cardiorespiratory fitness of young athletes which contribute to better results of sports activity in the first years [11].

Consequently, there are proposals to move from testing the children level of physical fitness to an assessment of their psychological state. Hmeleva [12]proposes to conduct psychological testing of children and adolescents selection of young athletes at the initial training stage in sambo sport schools. During 6 years, 529 young men aged 10-12 years underwent similar testing during the selection to sambo sport schools and during the first year of training. At the same time, the test consists of 60 questions reflecting the level of the individual psychological state of young athletes. Questions are divided into 2 halves where in each half the questions are repeated in a different order. Testing time is limited to no more than 10 minutes. The received answers are compared. Matches in answers to the same question are considered the correct answer and inconsistencies are false. The norm for successful testing is if there are no more than 5 false answers. This author argues that taking into account the individual psychological characteristics of young wrestlers at the initial training stage increases the effectiveness of their subsequent sports activities the next years of training significantly in sambo [12].

Thus, it was found a lack of a unified position of scientists on the planning of long cycles of training load of young athletes at the beginning of their training. At the preliminary preparation stage for children on reaching 8-10 years' age Vorobev [13] proposes to use a two-year cycle which includes 2 annual courses with a total workload (based on the time indicator – and consistently in further argumentation): 156 hours are in the first year of study and 208 hours are in the second year. At the same time, the amount of general physical preparedness (GPP) should significantly prevail in the total amount of workload of a two-year cycle [13]. However, there is a significant acceleration in the training process of young athletes. Khomichev and Tarakanov [14] note that the amount of training load of young wrestlers has increased significantly in recent years. An increase was revealed in the training workload from 312 hours to 624 hours of classes per year when young athletes moved from the initial training stage to the training stage. The scientist recommends that the total amount of workload should be no more than 260 hours during the year for 7-8 years old children. The amount of training load is no more than 312

hours for children reaching 9-10 years' age during the year.

Furthermore, during each study year, the time of workload should be increased by about 140-160 hours per year [14]. The change in the ratio between workload and rest is associated with forcing the training of young wrestlers to competitive activity [15]. Also, the increase of competitive activity entails an increase in the number of training loads in preparation for tournaments among young athletes [16].

Podoruev [17] indicates the congestion of the long-term training programs for athletes with a large amount of general physical exercises (GPP) to the detriment of the technical and tactical base for training of judo athletes[17]. The negative impact of a large number of training loads was revealed on the health of young combat sports practitioners [18]. At the same time, confirmed data has been found that the accentuated improvement of physical qualities using additional exercises from other kinds of sport provides young athletes with a significant indicators increase of speed-strength endurance and explosive power [19].

However, there are studies proving that the training process of young athletes both in sambo, wrestling and judo should be built on the foundation of young wrestlers' qualitative mastery of wrestling techniques. Besides, Osipov [20] points to the possibility of a significant increase in the amount of technical training time by reducing the amount of GPP of young athletes to 40-50% of existing standards [20]. The research involved 24 young athletes (13-14 years old). In the experimental group of athletes, the time of study of combat technique was increased by 50% due to the reduction in the amount of GPP during the year of training. The scientist found out that the athletes who used this training method discovered the best results in the number and quality of technical actions performed for a certain period of time (3 minutes). Vandyshev's [21] research was also found proving the possibility of faster training of young athletes to technical actions when using a sufficient amount of mobile games and special coordination tasks (more than 50% of the total training effects) in the learning process [21]. When planning training courses, the need for young athletes for some rest and rehydration should be taken into account to prevent dehydration during training sessions [22].

It should be noted that scientists suggest using heart rate analysis (ECG data) solving the problem of organising operational and objective control over the level of training load of young athletes. Pseunok and Gayrabekov [23] point out that the training process of sambo athletes reaching 12-14 years' age needs careful monitoring of the functional capabilities of children and the correct assessment of the young athlete's reactions to training loads. The scientists have been carried out the monitoring of the adaptive capacity among 31 young athletes for 2 years. For monitoring, the analysis of heart contractions rhythm was used according to the Bayevsky method [23]. The saliva analysis of young athletes was also used, in particular, the level assessment of potassium and sodium elements concentration. It was revealed that the adaptation processes of young athletes to an increasing exercise amount are disrupted in the absence of proper control [24]. Also, a method of controlling the ECG data of athletes using the Zavyalov [25] method has been implemented in the practice of training young sambo athletes. This method consists of recording and evaluating data on the appearance of the ischemic *ST* segment and the flattening of the *T* wave as objective indicators of acute fatigue of the heart muscle during training. Data evaluation is the assignment of certain points to the ECG indications of athletes (from 19 to 31 points). It is recommended to stop the training sessions when determining the 26-29 points [25]. It should be noted that many specialists use only indicators of the heart rate of wrestlers monitoring the load of athletes in the practice of judo [26].

In the practice of sambo, scientists have implemented more effective methods of using an electrocardiogram to determine the response of the body of young athletes to training loads [27]. Also, technologies are applied for monitoring the heartbeats rhythm of martial arts athletes using modern mobile devices [28]. There are methods for determining the psycho-physiological status of young martial arts athletes using a set of psychophysiological tests (visual-motor reaction, recognition reaction, etc.). Podrigalo et al. [29] indicate that these tests are informative for assessing the functional state of athletes and can be used to predict the success of athletes practising different styles of martial arts [29].

Moreover, there are proposals to involve sports psychologists to work with young athletes to form the psychology of a winner among children

starting from the initial stage of sambo training. Usually, psychologists start working with athletes with competitive experience. Esaulov et al. [30] offer to use the experience of sports psychologists already at the stage of initial training of young athletes. It is believed that children with a winner's mentality will have an advantage over their peers in competitive activities [30]. Experts draw their attention to the need for regulating aggression (aggressiveness) level among young men training martial arts [31]. Coaches should pay their attention to the possibility of inviting psychologists advising at martial arts schools. Some experts suggest using the individually oriented methodology in training young sambo athletes of age 10-12 years actively. It is proposed to use motivational and moral components in the training process. Specialists refer to these components: conversations about the impact of sambo on the character of young people in combination with various exercises with famous sambo athletes [32].

Noskov [33] proposes using challenge prizes to the best athletes of the school to increase motivation for sambo classes. Also, this author recommends beginning sambists to keep sports diaries indicating specific learning objectives and describing ways to achieve them [33]. Ivankin [34] proposes to use the methodology of using situational tasks for the formation of the optimal combat status of young sambists.

The scientists have conducted a research with 40 sambo athletes (12-13 years old) for 3 years. It was revealed that the use of situational tasks and portfolio technology as a reflexive technology for assessing sports results optimises the process of preparing young sambo athletes for competitive activities [34]. Experts say that the use of individually oriented techniques along with the formation of moral motivational attitudes allows improving the implementation quality of the combat sports techniques [35]. Also, the formation of the moral responsibility of students is necessary for the proper execution of training tasks [36].

Therefore, the literature presents data that training contributes to the development of stability and maintaining the body balance of athletes under various influences in martial arts [37]. However, Russian scientists pay their attention to the insufficient level of coordination abilities development among young athletes which negatively affects technical training level of sambo [38] and judo athletes [39, 40].

At the same time, Vandyshev [21] points out that it is necessary to pay special attention to the development of coordination abilities (CA) among young (8-11 years old) sambo athletes. Game tasks and exercises that simulate the practice of martial arts should be used for the successful development of coordination abilities. The 40 of athletes who participated in the research were divided into experimental and control groups. The study period has been for 3 years. Thus, physical exercises aimed at the accuracy and speed movement with restrictions as to execution time were used in the training program of athletes of the experimental group. Methodical features of the exercises: the use of unusual starting positions, changing counterpartner, change the pace of movement, etc. The scientist points out that this technique allows us to accelerate the development of technical actions at the initial and subsequent stages of training athletes [21].

Furthermore, Kondakov [41] points to the possibility of improving the level of technical and tactical training of sambo athletes of age 11-12 years using special coordination exercises. It is also necessary to take into account the weight categories of young athletes. The study involved 112 young athletes in reaching 11-12 years' age. Depending on the weight category of athletes: light, medium or heavy the use of coordination exercises was regulated: from 10-20% of the total time of training effects of light and medium weight categories of athletes and 20-30% of medium and heavyweight categories of the athletes. The research data show that the use of coordination exercises in the required training amount has a positive effect on the level of technical training of young athletes of various weight categories [41]. However, the scientist notes that the effectiveness of this approach is closely related to the successful prediction of young athletes belonging to a particular weight category in the early stages of sambo combat sport. Errors in forecasting will significantly affect the effectiveness of using this approach during the teaching practice of young sambo athletes. Most of the domestic experts predict the affiliation of young athletes to a particular weight category in the later stages of training. Most accurately, coaches can only identify athletes of the lightest and heaviest category due to the manifestation of their constitutional traits: height, body weight, proportions and body type [42].

Accordingly, Filin and Strizhak [43] note that the problem analysis of technical and tactical skills of young sambo athletes revealed some lack of information about the possibilities for the development of the CA and the formation of technical skills of young and novice sambists [43]. Scientists also affirm that the final effectiveness of the technical and tactical training of novice sambo athletes will be due to the high development level of motor-coordination abilities, speed-strength abilities and endurance. It should be noted that motor coordination capabilities are one of the leading factors in achieving success in judo among young athletes [44]. It was found that the activity of athletes correlates with the reaction rate and accuracy of junior judokas movements significantly during fights [45].

Podoruev [17] draws his attention to the inability of many athletes implementing difficult-coordination techniques successfully. This is due to a rather early sporting specialisation of children and the attributes existence of sporting confrontation at the primary education stage. The scientist conducted a biomechanical analysis of the technique of throwing: *ouchi-gari*, *kouchi-gari*, *uchi-mata*, *harai-tsurikomi-ashi*. At the same time, the study involved 40 young athletes of ages 10-13 years who had experience in sambo and judo at least one year. Besides, a large number of redundant and multidirectional movements was revealed in the implementation structure of these techniques among athletes. Also, scientist proposes using motor actions in the training process of young athletes that imitate the structures of various difficult-coordination shots but without falling down and dropping an opponent on the carpet or tatami [17].

Dzhalilov [46] recommends that for the development of the GPP of beginning sambo athletes should be paid more attention to the improvement of technical actions in a state of "unusualness" – conditions that are complicated or unaccustomed to young athletes. Therefore, these conditions include limiting the area of the carpet for throwing, frequent changes of partners of various anthropometry, etc. [46].

Osipov et al. [47] propose using the complex of special exercises for the development of the CA and for maintaining the body balance of young athletes for each training lesson. Studies have been conducted for 1 year. Besides, 28 athletes (aged 11-12 years) were the participants of the study, and they were divided into experimental and control groups. In our studies, experts from the experimental group were asked to make attempts of mutual stalling, shoving and pushing the partner in an unstable position. It was also recommended to perform various jumps, turns, tumbling and rotation. Exercise duration – at least 20 minutes on each training session. A year later, the results revealed a significant increase in the ability to maintain body balance under dynamic conditions among athletes of the experimental group [47].

Meshavkin [48] proposes using the elements of pedagogical control in the process of technical actions training young athletes of ages 10-12 years. The studies involved 60 young judo athletes (their age was 10-12 years) who were divided into experimental and control groups. The research duration has been for 2 years. Besides, during the classes, athletes from the experimental group had to perform technical activities assessed by a special commission the members of which were coaches and judges. Also, the scientist applied the method of using verbal reports on the description of the performed movements. According to the scientist, the introduction of assessments for the implementation of technical elements during each training session contributes to improving the quality of technical and tactical training of young judo athletes at the stage of initial sports specialisation [48].

Koptev [49] recommends the use of 16 different criteria for evaluating the competitive competence of judo athletes (the quality of the struggle, activity during the match, the judge's scores, etc.). Criteria are determined by analysing the competitive practice of young athletes and *randori* [49]. Scientists point to the need for developing competitive competence of Russian athletes starting at a young age [50].

Unfortunately, there was a lack of meaningful research on weight control among young sambo athletes. Such studies are necessary because there is a risk of health deterioration of young athletes with rapid weight loss [51]. Also, there is insufficient data on the effective injuries prevention of young athletes during martial arts. Statistics show that the risk of various injuries is relatively high in the practice of sambo and judo [52].

DISCUSSION

Thus, the discussion of the obtained data should be started from the analysis of the methods of sports children selection to the stage of initial sambo, and judo training in combat sports schools belongs to wrestling type. It should be noted that many domestic experts primarily evaluate the children level of physical fitness in the selection of sambo and judo schools. There was a contradiction in the positions of scientists; some of them recommend choosing first of all the children and adolescents' level of physical fitness in the selection process. It was revealed that young athletes who have an advantage of physical fitness demonstrate the best results in the speed of throwing at the initial training stage [8]. Other experts recommend paying attention to the coordination and ability level to perform fighting techniques of candidates in sambo and judo sports schools. It was revealed that these criteria would have a significant impact on the growth of the athletic performance of athletes who have completed the initial and practice training phases [10]. Also, there is evidence of a decrease in the age threshold of children when recruiting in sambo and judo sports schools from 9-10 years old to 7 years old and in some schools up to 5-6 years old [7]. Luckily, coaches explain this by the presence of a large number of children of this age who want to engage in these types of martial arts. Such a trend will require specialists to improve existing selection methods taking into account the young age of candidates. Lowering of the children age will cause a discrepancy between the indicators of their physical condition and the existing regulatory framework of the test items used in the selection of sambo and judo schools.

The contradiction was discovered between the pedagogical need to begin training with the study of the technical base of martial arts and research data on the predominance of the physical skills development of beginning young athletes at the initial stage of training [13]. It goes without saying that scientists point out that training programs for beginning combat sports athletes (especially judokas) contain a large number of exercises (GPP) to the detriment of the technical training of young athletes [17]. There is scientific evidence that reduction of some exercises (GPP) and the inclusion of special coordination tasks in the process of training activities makes it possible to train young athletes to sambo techniques quickly [20].

It turned out that a significant increase has been revealed in the training load of young combat sports athletes in recent years of scientific observations. Moreover, a significant increase in training tasks has been done for young athletes since the second year of their training [14]. Such a sharp increase often leads to negative consequences: overtraining, overload, increased injuries [53] and reduced motivation to combat sports of wrestling type [18]. According to some scholars, a significant increase in training loads of young athletes is not reasonable at the initial training stages [14] and during the first 2 years of training activity [17].

The main conclusions from this review lead to a more thorough analysis of the discoveries of Polish and Lithuanian researchers regarding the use of "testing fights in a vertical posture" (TFVP [54, 55]) in the selection of candidates for long-term training of the wrestling type of combat sports from two perspectives. The first concerns are forecasting sports successes in the future [56]. The second, training self-defence specialists as future employees protecting security guards (people and property [57-59]. Researchers found a very low correlation (or lack) between TFVP results and physical fitness tests. Because correlation ($r = 0.892$, R^2 **= 80%) between the** number of victories in TFVP and TFHP ("testing fights in a horizontal posture" 33 military cadets is an important empirical evidence that both tests measure predisposition (talent) for combat sports of the wrestling type and self-defence [55, 59]. Furthermore, people who win in TFVP are also successful in combat sports in the long run [56]. Dadelo concludes that the S-Index (proportions of scuffles won) should be recommended as one of the basic criteria of guards' competence [58].

These observations are confirmed by an experiment by Sertić et al. [60]. Multiple correlation coefficients of the motor potential indices are statistically significant and almost equal to the number of victories ($r = 0.38$) and the sum of technical points ($r = 0.40$). Thus they explain about 15% of the common variance. Of the five individual dimensions, only two – flexibility and ability to perform complex motor tasks that require explosive speed – had a statistically significant individual contribution to explaining the variance of the combat efficiency measured by the number of victories [60].

CONCLUSIONS

The analysis of the discovered data showed differences in the views of Russian scientists on the organisation of sambo and judo training process to young and beginning athletes. Also, there are differences in the views on the criteria for the children selection to wrestling type of combat sports schools and nature of training effects at the initial training stage. It was revealed a significant acceleration of sports training of young athletes expressed in lowering children age at the stage of selection to wrestling type of combat sports schools and increasing the training load starting from the second year of study. Specialists draw their attention to the insufficient level of CA development among young athletes. The search for scientific data will be continued in order to implement optimal planning of the training process of young athletes in sambo and judo sports schools in the Russian Federation.

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