



PECULIARITIES OF PLANNING  
SEVERAL VARIANTS  
OF THE PRE-COMPETITION STAGE  
OF TRAINING IN TAEKWONDO  
(POOMSAE&FREESTYLE)

*Koshcheyev Alexander*

Prydniprovsk State Academy of Physical Culture and Sports

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**Annotation**

**Introduction.** On the basis of pedagogical testing, questionnaires, analysis of work documentation, sportsmen's and coaches' diaries, the peculiarities of the construction of the pre-competition stage of preparation, the leading characteristics of the morphofunctional, physical and technical indicators of taekwondo players, which determine the success of the competition, were revealed. These regularities were studied at the stages of preparation for various competitions. The identified features were taken into account when planning the preparation of athletes for competitions of various levels.

**The purpose of the study.** Develop a plan for the stage of immediate pre-competition training for taekwondo competitions of different ranks (Poomsae & freestyle).

**Research material and methods.** The research used methods of analysis of scientific and methodological literature, sociological research methods (questionnaires), generalization and systematization of expert assessments, methods of mathematical statistics.

**The results.** In the process of direct preparation of taekwondo players for competitions of various ranks, it is necessary to take into account the following dynamics of the volume and intensity of training loads: reduction of the total volume of training loads from the 1st qualifying competition to the 3rd; reduction of the volume of load in all intensity zones in the III-th (leading) microcycle of all qualifying competitions; increasing the amount of load in the II-th (impact) microcycle of the I-th competition in the I, III and IV intensity zones; 2nd competition – in IV and V zones; III – in III, IV and V zones; the amount of training load in the IV and V intensity zones in preparation for the III competition should significantly exceed the similar values for the I and II competitions. Control of the state of special endurance (index of special endurance) is necessary for each microcycle in all competitions. **Conclusion.** Summarizing our pedagogical research in the development of several options for pre-competition training, taking into account the rank of the competition, we reached several conclusions that will be the basis for further plans for pre-competition training of highly qualified taekwondo players.

**Key words:** taekwondo, pre-competition stage, training of athletes, microcycle, competition, load dynamics.

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**Анотація**

На підставі педагогічного тестування, анкетування, аналізу робочої документації, щоденників спортсменів і тренерів були виявлені особливості побудови передзмагального етапу підготовки. Враховані провідні характеристики морфофункціональних, фізичних і технічних показників тхеквондистів, що зумовлюють успішність змагальної діяльності. Ці закономірності вивчалися на етапах підготовки до різних за рангом змагань. Виявлені особливості враховувалися під час планування підготовки спортсменів до змагань різного рівня.

**Ціль дослідження.** Розробити план етапу безпосередньої передзмагальної підготовки для різних за рангом змагань з тхеквондо (Poomsae&freestyle).

**Матеріал та методи дослідження.** У дослідженні використовувалися методи аналізу науково-методичної літератури, соціологічні методи дослідження (анкетування), узагальнення та систематизації експертних оцінок, методи математичної статистики.

**Результати.** У процесі безпосередньої підготовки тхеквондистів до змагань різного рангу необхідно враховувати наступну динаміку обсягу та інтенсивності тренувальних навантажень: зменшення загального обсягу тренувальних навантажень від I-го відбіркового змагання до III-го; зниження обсягу навантаження у всіх зонах інтенсивності в III-му (підвідному) мікроциклі всіх відбіркових змагань; збільшення обсягу навантаження у II-му (ударному) мікроциклі I-го змагання в I, III та IV зонах інтенсивності; II-го змагання – у IV та V зонах; III-го – у III, IV та V зонах; обсяг тренувального навантаження в IV і V зонах інтенсивності при підготовці до III-го змагання повинен значно перевищувати аналогічні значення до I-го та II-го змагань. Контроль за станом спеціальної витривалості (індекс спеціальної витривалості) виконувався в кожному мікроциклі усіх змагань.

**Висновок.** Підбиваючи підсумки нашого педагогічного дослідження у розробці кількох варіантів передзмагальної підготовки, з урахуванням рангу змагань, ми дійшли висновків, які будуть основою для подальших планів передзмагальної підготовки висококваліфікованих тхеквондистів до різних змагань.

**Ключові слова:** тхеквондо, передзмагальний етап, підготовка спортсменів, мікроцикл, змагання, динаміка навантажень.

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**Introduction.** The requirements for training athletes and participating in various competitions are constantly changing, taking into account new trends in the development of sports, in particular taekwondo [3, 6, 11]. This largely depends on various factors that affect the athlete's condition, load tolerance, their preparedness and ultimately reflect the result of competitive activity. The nature of the competition, its focus, target setting and effectiveness are all the main vectors to which coaches and specialists should pay their attention when planning the training process in the pre-competition period [1, 4, 7, 8]. Taking into account the constant change in the competition calendar, increasing competition in taekwondo among athletes of various age and competitive categories leads to a constant search for new ways to solve complex issues related to the rational preparation of athletes at the final pre-competition stage. These and other issues related to the dynamics of loads, the structure and content of training programs, increasing functional readiness, as well as various types of control are a current area of science and practice for leading Ukrainian taekwondo trainers [2, 5, 10].

Planning the training process immediately before important competitions is a challenge for many coaches. Analysis of training loads at the final stage of preparation, the dynamics of the functional state, the rate of growth of skill and the level of development of special endurance have shown, and the results of qualified athletes at major competitions have confirmed that the most optimal is a mesocycle lasting three weeks, which fits well into the calendar of the competitive period. The duration of the stage of immediate pre-competition preparation (ENPP-1) was also determined by us as a result of sociological research of coaches. Moreover, the distribution of training loads different in the regime across microcycles in a certain way is of significant importance [2, 6, 9].

Based on pedagogical testing, questionnaires, analysis of working documentation, diaries of athletes and coaches, the features of the structure of the pre-competition stage of preparation, the leading characteristics of the morphofunctional, physical and technical indicators of taekwondo sportsman's, which determine the success of competitive activity, were identified. These patterns were studied at the stages of preparation for various

competitions. The identified features were taken into account when planning the preparation of athletes for competitions at various levels [3, 5, 11].

**Purpose of the study.** Develop a plan for the immediate pre-competition preparation stage for various rank-based taekwondo competitions (Poomsae&freestyle). **Material and research methods.** The research study used methods of analysis of scientific and methodological literature, sociological research methods (questionnaires), formalization and systematization of expert assessments, methods of mathematical statistics.

**Participants:** According to these rules, the investigation required praise to the sports club «Olimp TKD» for conducting a questionnaire among athletes and leading coaches before analyzing and developing training plans. The participation of the trainers was not obligatory and was of a voluntary nature. In this way, the selection of participants included 10 experts (trainers), which became 60% of the total number. All participants in the survey were subject to ethical principles to ensure confidentiality and anonymity of their responses. Athletes who were trained before the pedagogical

experiment do not need to be trained in accordance with the sports qualifications of taekwondo wrestlers. The total number of athletes received from our investigator included 16 highly qualified athletes; most of them are members of the national team of Ukraine.

**Organization of investigation.**

The investigation was carried out during the week of 2024 during the preparation period for the preparation of the various levels from Taekwondo (Poomsae&freestyle) according to the competitions calendar. **Research results and discussion.** As a result of preliminary studies, the following features of planning training loads at the stage of immediate pre-competition preparation for competitions (SIPP) were established (Fig. 1):

1 microcycle – shock, duration – 7 days.

Training load volume:

- total training time – from 12 to 15 hours;
- total number of demonstrations – from 30 to 50.

The intensity is average.

Microcycle 2 – basic, duration – 7 days.

Training load volume:

- the total training time increases to 16-17 hours;
- total number of demonstrations – from 50 to 60.

The intensity is high.

Microcycle 3 – introductory, duration – 7 days.

Training load volume:

- total training time has been reduced to 10-11 hours;
- total number of demonstrations – from 20 to 30.

The intensity remains high.

The effectiveness of the proposed option is confirmed by favorable changes in the functional state of the body and physical indicators. With the recommended planning of training loads in microcycles, options are possible that are determined by the timing between qualifying and main competitions, the level of athletes' preparedness, and the state of the body [4, 8].

What is new in this construction of the pre-competition mesocycle is not a gradual increase or decrease in load in terms of volume and intensity, but a large total volume of training loads at the very beginning of the mesocycle (impact microcycle), with maintaining a high intensity and volume of load in the middle (basic microcycle) and then reducing it volume and intensity before competitions (leading microcycle) [1, 11].

This construction of the training load, based on the intensification of the training process using a sufficient percentage of special loads of a mixed nature, contributes to the improvement of not only motor skills, but also increases the economization of biological processes, which ensures high power and a significant increase in the level of special per-

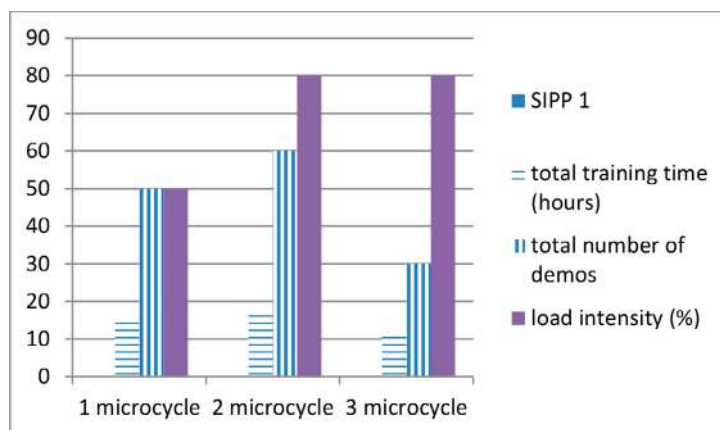
formance of athletes, and, consequently, the level of development special endurance [7, 9, 10].

However, it should be noted that, despite the general principles of constructing SIPP, when preparing for individual competitions, there are specific features, such as the timing between competitions, the duration of the preparation period, the direction and content of the training process, as well as the level of preparedness and motivation of athletes [6, 8, 11].

Taking into account the preliminary research conducted and the developed model plan for pre-competition training (Fig. 1) for taekwondo athletes, we took into account all the characteristics and features, as a result of which we developed the following several training plans for athletes, taking into account the nature of the competition, training conditions and tasks of the pre-competition stage.

**Planning training load in preparation for regional qualifying competitions in taekwondo (Poomsae&freestyle)** All planning of the pre-competition stage of training (SIPP-2) of athletes was carried out taking into account the duration, focus and preparedness of the athletes (Fig. 2).

Planning the 1st microcycle – shock – has the following features. With a weekly microcycle, the distribution of loads is two-peak, the largest volume is planned for days



**Fig. 1. Dynamics of planning training loads at the stage of immediate pre-competition preparation (SIPP 1).**



**Fig. 2. Dynamics of planning training loads at the stage of immediate pre-competition preparation (SIPP 2).**

1, 4 and 6 – up to 3.5 hours per day with a total volume of up to 15 hours, the maximum volume of demonstrations is up to 50. Each day one main or impact lesson is planned with a large or significant load.

Distribution of loads by day of the microcycle – day 1 – predominantly aerobic for developing endurance, days 2 and 5 – mixed aerobic and strength. Days 3, 4 and 6 – mainly speed and strength focused.

2nd microcycle – the basic microcycle is of a slightly different nature. Load distribution is also two-peak. To increase the impact, 2 classes with a large and significant load are planned on the 2nd and 4th days, and one on other days. The total volume is up to 18 hours per week, the total number of demonstrations is up to 30, with most of them in intensity zone II. In comparison with the 1st microcycle, strength training doubles – on the 1st and 4th days – the development of special strength and strength endurance.

On the 2nd and 5th days – the development of speed qualities and speed endurance, the 3rd and 6th days – the development of special endurance.

The 3rd microcycle is the leading one, linked to the task of realizing potential and achieving effectiveness. The total load volume is reduced to 30%.

The distribution of loads is single-peak in all microcycles of train-

ing with a high load of no more than 4, often these are double workouts – 2, 3, 4, 5 days. On days 4 and 6, individual training is planned. On the 5th day of the microcycle, control demonstrations are planned to be carried out twice. This is due to the tactical modeling of competitive activity. The first day of the microcycle was dedicated to the development of special speed.

Restoration measures were necessarily planned in the structure of all microcycles. This is the 3rd and 6th day – sauna, massage, half-day weekend; 3rd, 6th and 7th day completely.

**Planning training loads in preparation for the Ukrainian Taekwondo Championship (Poomsae&freestyle).** Considering the competitive complexity and psychological importance of the Ukrainian Championship, where selection for the Ukrainian national team is carried out, all this involves the development of the most effective option for training athletes, taking into account the developed concept of SIPP. The entire structure and content of SIPP -3 included three microcycles with their own specific tasks, the nature of the loads and the specifics of taekwondo (Fig. 3).

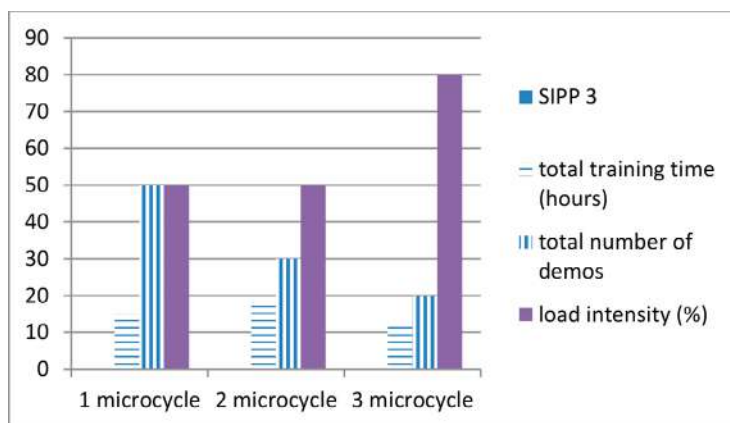
The highest loads in the first shock microcycle occur on the 1st, 3rd and 5th days. The total volume of demonstrations is up to 50. One shock training with a heavy load

is expected daily. At the beginning of the microcycle on days 1 and 3, training is planned to develop special strength and speed-strength endurance.

On the 2nd and 5th days, training is planned to simulate competitive activity. Two general physical fitness training sessions on days 2 and 5 of the microcycle. The training is supportive. On the 3rd day, the special endurance index is determined. On the 1st and 6th days, one aerobic-anaerobic training session is planned. On the 6th day, weight training is provided.

2nd microcycle – basic. The total amount of training time increases to 16 hours, the total number of demonstrations – to 20.

The main load is planned on the 2nd, 4th and 6th day of the microcycle. The first day is aerobic work. On days 2 and 5, two impact workouts are planned to develop special strength and speed endurance. On the 2nd and 3rd days of the microcycle, two double workouts take place. To determine the special endurance index, morning training is performed on the 4th day of the microcycle. General physical fitness training is planned on days 2 and 5. On the 3rd day – one double workout for the development of distance endurance; in the evening of the 3rd and 6th days, recovery activities are carried out – sauna, massage, shower, because the presence of a recovery pause in the



**Fig. 3. Dynamics of planning training loads at the stage of immediate pre-competition preparation (SIPP 3).**

middle of the microcycle improves the tolerance of large volumes of high-speed loads. Morning training on the 6th day of the microcycle is carried out to simulate competitive activity.

On days 1 and 3 of the microcycle, weight training is planned.

The 3rd microcycle is the leading one. The volume of workload is reduced to 12 hours, the volume of competitive (modeling) work is up to 20 demonstrations. The volume of speed work is reduced by 25-30%, but the intensity remains high.

Day 1 begins with independent, individual training, restoration of muscle sensations after the day off and consolidation of them in the 2nd evening training session.

On the 2nd day, the special endurance index is determined. Twice in the microcycle, on the 3rd and 5th days, modeling of competitive activity is planned – control demonstrations. 50% of training in the final microcycle is individual and independent, where the tasks of improving the technique of individual elements and combinations are solved (days 1-2, 4-6). On the 4th day, during speed training, tasks with weights are planned.

**Planning training loads in preparation for international ranking competitions in taekwondo (Poomsae&freestyle).** Based on the analysis of the results of the athletes' performance at the previous stages, as well as taking into account the specifics of preparedness and

upcoming competitive activity, the SIPP -4 plan was developed (Fig. 4).

Arrangement of training loads in 1 microcycle – shock, three-peak. A large load is planned for the 2nd, 4th and 5th day, the total volume is relatively small – 13 hours. The total number of demonstrations is 50. Most of the speed work occurs in the 1st, 2nd and 3rd intensity zones.

Two workouts, on days 2 and 5, are planned to develop specific strength. Also on these intense days, one training session is planned to develop speed-strength endurance. On the 1st and 3rd days of the microcycle, the work is mainly anaerobic. To determine the index of special endurance, the 4th day of the microcycle is allocated. Day 6 – modeling of competitive activity. On the 2nd and 5th day of the microcycle, during evening training, work with weights is provided.

2nd microcycle – basic. The total load increases to 16 hours. The total number of demonstrations reaches 30. The volume of speed work is slightly reduced and moves to the 3rd, 4th and 5th intensity zones. A heavy load is planned on the 1st, 3rd, 4th and 5th day of the microcycle. To develop special strength, three workouts are carried out (days 1, 3 and 5) using additional weights. The special endurance index is determined on the 5th day. Double training plays a big role – days 1, 3, 4 and 6. General physical training is devoted to two training sessions on the 1st and 6th days.

Simulation of competitive activity occurs on the 2nd day. Test demonstrations are scheduled for the 5th day during evening training. Two workouts are planned with weights – evening on the 1st day of the microcycle and morning on the 4th day.

The 3rd microcycle is the leading one. The entire load volume is reduced. This applies primarily to the total training time (9 hours), the total number of demonstrations (20). It should be noted that the percentage of speed work in the 3rd, 4th and 5th intensity zones remains quite high. High speed work is scheduled for the beginning of the microcycle on days 1 and 2. Day 2 also includes control over the special endurance index. A large percentage of the work is independent and individual training (days 2-5 of the microcycle). Recovery activities are traditionally planned on the 3rd and 6th days. For control demonstrations, the 1st, 4th and 6th days of the microcycle were allocated. In the evening training of the 1st day, the development of speed endurance with weights is planned.

The presented planning differs from the traditional one in the sports practice of training taekwondo athletes in the following:

- increase in the total volume of speed load from the 1st to the 3rd competitive stage;
- time parameters of training at all SIPP remain almost the same (from 2510 minutes to 2540 minutes);

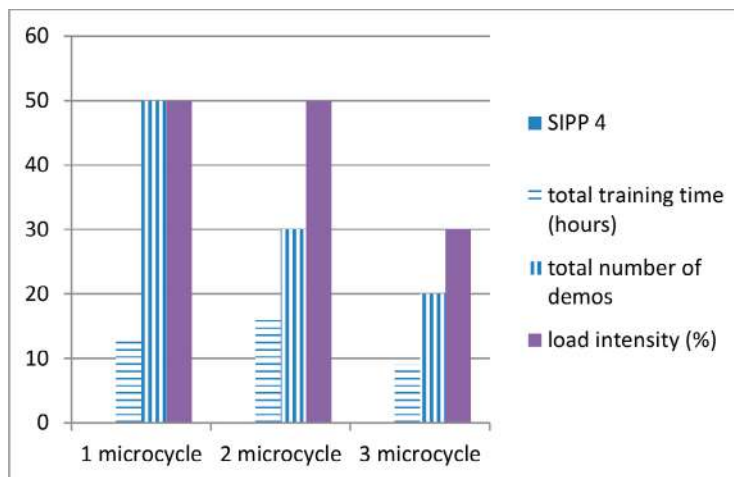


Fig. 4. Dynamics of planning training loads at the stage of immediate pre-competition preparation (SIPP 4).

- the volume of speed load from the I to the III qualifying stage increases due to an increase in work in the III and IV intensity zones;
- maintaining the volumes of training load in the IV and V intensity zones in preparation for the III qualifying stage, significantly exceeding the similar values of the SIPP for the I and II stages, the volumes of speed work in the III intensity zone in all SIPP;
- a significant increase in the total amount of work in all qualifying stages with modeling of competitive activity;
- control over the level of development of special endurance has been introduced in all microcycles of the qualifying stages.

When preparing qualified taekwondo athletes for individual qualifying competitions, the coach must pay special attention to the development of predictive significant speed, tempo and technical indicators. At the same time, in the conditions of training camps, control should be exercised over the dynamics of average group indicators and the growth rate of the assessed characteristics. This approach will allow the coach to more effectively manage the pre-competition preparation process.

To prepare athletes for competitive activity, it is necessary to use

training influences that are similar in nature or exceed its requirements. For this purpose, it is effective to use various training means and the competitive method, which ensures not only the intensification of the training process in the pre-competition mesocycle, but also creates an environment in training that, is close to a competitive one. When planning the stage of immediate pre-competition preparation for all competitions, it is recommended to increase the total amount of work with weights, but no more than 2 times in the 1st and 2nd microcycles. These exercises should not be used in the 3rd microcycle.

Modeling of competitive activity in preparation for the 1st qualifying competition is carried out only in the 3rd microcycle, for the 2nd – 2 times in the 1st and 2nd microcycles and 1 time in the 3rd microcycle, for the 3rd – 1 time in the 1st and 2nd microcycles and 2 times in the 3rd microcycle.

To plan training loads, it is necessary to take into account the priority of developing the athlete's special physical qualities. For this purpose, coaches are recommended to assess the level of development of special, speed-strength endurance, special speed and speed-strength qualities based on biomechanical indicators of speed and tempo of competitive demonstrations.

In contrast to the traditional construction of SIPP, the coach is recommended to significantly increase the total volume and intensity of training loads (impact microcycle) at the beginning of the pre-competition mesocycle. In the middle of the mesocycle (basic microcycle), you should maintain a high level of intensity and volume of load, followed by a decrease in them (feeding microcycle) immediately before the competition.

**Conclusion.** Summing up the results of our pedagogical research in the development of several options for pre-competitive training, taking into account the rank of competitions, we came to several conclusions that will be the basis for subsequent plans for pre-competitive training of highly qualified taekwondo athletes. In the process of direct preparation of taekwondo athletes for competitions of various ranks, it is necessary to take into account the following dynamics of the volume and intensity of training loads:

- reduction in the total volume of training loads from the 1st qualifying competition to the 3rd;
- reducing the load volume in all intensity zones in the III (leading) microcycle of all qualifying competitions;
- increasing the load volume in the II (impact) microcycle of

the I competition in I, III and IV intensity zones; II competition – in zones IV and V; III – in zones III, IV and V;  
- the volume of training load in intensity zones IV and V in preparation for the III

competition should significantly exceed similar values for the I and II competitions.

Monitoring the state of special endurance (special endurance index) is necessary in each microcycle in all competitions.

**Gratitude.** It is clear that the sports club «Olimp Tkd» and the experts in their roles were played by coaches of groups of high sports mastery for their assistance in organizing and conducting scientific research.

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**Кошчєв Олександр**

Придніпровська державна академія фізичної культури і спорту,  
Україна, м. Дніпро, Набережна Перемоги, 10, 49094  
e-mail: [alexolimptkd@gmail.com](mailto:alexolimptkd@gmail.com)  
<http://orcid.org/0000-0002-5232-7983>