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Sport massage, an option in the preparation of the elite soccer player

Masaje deportivo, una opción en la preparación del futbolista élite

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ABSTRACT

For the future increase of the sport achievements it becomes necessary a structure of the process of training and an entire set of means should be used, aimed at improving the capacity of the sportsmen's work. The sport massage constitutes one of the most effective means to achieve these objectives, as a part of training having great importance as means to achieve the sportsman's physical improvement, to reach and to keep for longer the sport body shape. This is mainly the reason which it is intended as a means in the preparation of the soccer players. For the realization of this work the author sets as objective: to propose a planning for the application of the sport massage in the preparation of the players of a team of soccer of first category. Theoretical methods were used as: historical-logical, analysis and synthesis, analysis of documents, modeling, systemic structural, and empiric methods as the survey, as well as the statistic of percentage analysis. A population of three coaches, a masagist, a sports doctor and 17 players from a first class football team were selected to know the criteria, from the theoretical and practical point of view, that they have on sports massage as a means of preparation of the team.

Keywords: methodology; sports massage; soccer player preparation.

RESUMEN

Para el futuro incremento de los logros deportivos, se hace necesaria una estructura del proceso de entrenamiento y debe utilizarse todo un arsenal de medios, dirigidos a elevar la capacidad de trabajo de los deportistas. El masaje deportivo constituye uno de los medios más eficaces para lograr estos objetivos, como parte del entrenamiento, además, tiene gran importancia como medio para lograr el perfeccionamiento físico del deportista, alcanzar y mantener por más tiempo la forma deportiva. Por esta razón se propone como un medio en la preparación de los jugadores de fútbol. Para la realización de este trabajo, el autor se plantea como objetivo: proponer una planificación para la aplicación del masaje deportivo en la preparación de los jugadores de un equipo de fútbol de primera categoría. Se utilizaron métodos teóricos como: histórico-lógico, análisis y síntesis, análisis de

documentos, modelación y sistémico estructural y métodos empíricos como: la encuesta y la estadística de análisis porcentual. Se seleccionó una población de tres entrenadores, un masajista, un médico deportivo y 17 jugadores de un equipo de fútbol de primera categoría para conocer los criterios, desde el punto de vista teórico como práctico, que tienen sobre el masaje deportivo como medio de preparación del equipo.

Palabras clave: metodología; masaje deportivo y preparación del futbolista.

INTRODUCTION

Today's sport is related to high physical loads and considerable emotional stress. In order to increase sporting achievements, it is necessary to structure the training process, in addition to using a whole arsenal of means, aimed at increasing the work capacity of athletes.

Sports massage is one of the most effective means to achieve these objectives within the training, which has great importance, for the sake of the physical improvement of the athlete, to reach and maintain the sports form for longer, as well as to recover more effectively the ability to work.

There are recent studies that demonstrate the effectiveness of sports massage to contribute to the health of the athlete, especially in the form of football, where, mainly, the lower limbs are more vulnerable. Chipantiza, C., and Noralma, T. (2016); Mónica Cecilia (2017); Yanchapaxi, (2018); Umaña, F., Berfalia, G., García Guevara, D. M., and Gómez Díaz, A. R. (2016).

Massage is a very effective means within the therapy of different diseases of the locomotor system and is widely applied as a means of rehabilitation of traumas and osteomioarticular injuries that often affect the sports population, but in this case a therapeutic massage is performed.

So all this has made sports massage an integral part of the athlete's preparation program, although it is not widely used, sometimes for lack of qualified personnel, other times for lack of knowledge and a structure appropriate to the training process. Biriukov, (2001)

Based on the above, the objective of the research is to propose a planning for the application of sports massage in the preparation of football players, first category. With the development of biological sciences and the new discoveries of the 20th century, the effect of massage was convincingly demonstrated, based on two independent indications: sports massage for healthy people who practice exercises and therapeutic massage as an integral part of the treatment of illnesses; aware of authors and works on this subject.

For the first time, in 1900, during the second Olympic Games, held in Paris, sports massage was introduced in order to ensure a better preparation of athletes. Studies carried out in the chair of therapeutic physical culture at the Higher Institute of Physical Culture, order Lenin, directed by Persikov Sarazini, described the physiological influence of massage, which, above all, exerts an action on the nervous mechanisms found in the skin and are related to the central nervous system (CNS)

and the SNV, so its action generally influences all organs and systems. Vázquez Gallego, (2005).

Thanks to sports massage, the work capacity is restored faster, fatigue disappears and the athlete's condition is maintained. Its effectiveness depends on the intensity, duration, methodology and individual reactions, moreover, massage should not be applied for the first time before a competition because the effectiveness also depends on the regularity and habit of the massage. Quetglas and Rodríguez, (2008). For its application, it is necessary to know the degree of participation of the muscles in the activity, e.g., the archers require a good massage of the biceps and triceps.

Football is characterised by a variety of dynamic movements, the constant change in the intensity of muscular activity and the characteristics of the sport itself as a mixed activity, where sudden stops, jumps, falls, quick starts, shocks, ball receipts, etc. are common.

Unlike the consulted authors, the authors of this article are of the opinion that it is necessary that the massage be part of the training plan, so it must be properly planned depending on the stage in which the training is. Thus, local and general massage sessions are programmed taking into account the particularities of the training and its direct influence on different muscle groups. In the preparatory period, when the preparation is general, the methodology of sports massage in the different athletes does not have marked differences, but, throughout the macrocycle, it must be planned taking into account the work done by each player and the time of preparation in which he is, Quetglas and Rodriguez (2008) so that sports massage, according to the objective and its tasks, is classified in:

- Massage training.
- Preparatory massage.
- Restoration massage.

Massage training is the process of preparation of high-performance athletes is characterized by a large volume and intensity of training loads, the level of psychic and physical preparation of these athletes presents serious demands, both in their preparation and recovery, so that, if the appropriate means and methods are applied at all times, could lead to considerable fatigue, over tension and even overtraining. Training massage helps to correct these phenomena, thus maintaining a high level of training. For this reason, this type of massage is part of the means of sports training. Massage deserves to be placed at the same level as training. Just as without intense training loads, without massage, a high level of sports mastery cannot be achieved.

These are two fundamental parts of sports training that make up the training process. The training massage should be planned and performed in such a way as to help solve the training tasks. Training massage tasks not only consist in helping to partially solve the tasks of the training session through manipulations and special exercises that can contribute to increase the articular amplitude, to improve the elasticity of the ligament apparatus, to relax different muscular groups, etc., but also to prepare the organism to receive the subsequent training sessions. Quetglas and Rodríguez (2008).

The desired effect, through training massage, can only be achieved when it is applied correctly from the methodological point of view; in this case, the duration of the loads, the particularity of the sport and of the athlete must be taken into consideration as a fundamental aspect; and it is applied at training intervals to improve the general working capacity of the athlete's body, increase the functional possibilities of the body, improve the activity of the central nervous system (regulate the excitation and inhibition processes) and maintain or increase the athlete's sporting performance.

It can be general, i.e. massage is applied to the whole body or to a region of the body. The duration of a general massage is 60 minutes on average when the weight of the person is 70 kg. With the weight change, it is plus-minus 1 kg; the duration of the session varies by plus-minus 1 minute. The duration of the local massage session (20-40 minutes on average) depends on the part of the body being massaged.

The general training massage is a strong influential means; therefore, it should be included in an apprenticeship-training process plan and employed within 5-6 hours after the training. When the training takes place at night, the massage is indicated for the next day. The general training massage is recommendable to signal it for the rest day and in the remaining days to use the local training massage or the recovery massage. It is not recommended to perform the massage before two to three days of competition, neither before nor after a meal; the interval between the meal and the massage should not be less than two hours.

In general training massage, all fundamental manipulations are used. 30-40 % of all the time is dedicated to rubbing, to kneading, as a fundamental manipulation for the treatment of the muscles, 50-60 % is dedicated and the rest, 10 %. The distribution of time between the manipulations can be varied, depending on the objective of the massage, the particularities of the training process and the specialization of the athlete. For example, in the preparatory period, when the general physical priority is carried out, the methodology of massage training in different athletes does not have a substantial difference.

The muscles of the lower extremities have a large muscle mass; therefore, they can be massaged with approximately the same force throughout. The massage of the upper extremities requires a differential treatment with respect to strength, manipulations, as well as the doses of these. A great significance, for the training massage, has the calculation of the load that falls on the group of muscles and joints, determined in each type of sport.

The training massage usually begins with gentle frictions, through which the person adapts to the rubbing with the masseur and begins to relax their muscles better, then passes to rubbing, kneading, tapping massage and in the middle of these manipulations are made periodically frictions.

The massage ends with soft movements and the shaking of the extremities. It is necessary to remember that only a sufficiently active massage can give a positive effect. Depending on the type of sport and the particularities of the sportsman, the massage will be carried out with different forces, although in most cases it is carried out with a medium force, having as a general premise that in no case should it provoke a painful sensation, above all, in those muscles that have been subjected to great unaccustomed loads, as well as after a long period of rest of the training. It is

very necessary to be careful, especially in the first sessions, as long as the tension of the muscles of the manipulated area does not diminish.

The intensity of the massage depends on the type of sport, the level of reaction of the subject's body, the athlete's body weight, the condition of the athlete's muscles, the sports form, the training stage, the training load and the athlete's specific features.

In sports practice, during the execution of general massage training sessions, one can start from the specific character of the given sport and from the particularities of the training load as we will see in more detail. During the training massage, the manipulation time of the areas of the body, which have received less load, decreases and increases in those parts and muscles that have had more activity, but the general time of the massage session remains the same. Quetglas and Rodríguez (2008)

The preparatory massage consists of a massage of little time, directed to the best way to prepare the athlete to the competition or to the practice of the training; the objectives of the preparatory massage are: to activate to the maximum the functional possibilities of the organisms before the present sport activity, to warm up the muscles before the competition or of the training and to raise the general tone of the organism to the decrease of the excitement of the athlete at the moment of the competition.

This type of sports massage is performed 10-20 minutes before the competition or training, its duration is 5-15 minutes. In the preparatory massage, generally, two or three manipulations of the massage are used. The elevation of these, as well as the methodology of their application, depends on the individual state of the athlete before the competition, of his specialty and of the atmospheric conditions etc. There are three forms of preparatory massage: exciting, sedative and warming-up. Exciting massage is useful for athletes who are exhausted, decayed, inhibited. Rapid manipulations such as kneading, shaking and tapping are used; these manipulations elevate the excitation of the nervous system.

The sedative massage is used in case of elevation of the excitability of the athlete. Massage is based on gentle manipulations such as friction and rubbing.

Warm-up massage is carried out before competitions or training, during competitions, between events, when it is necessary to maintain a competitive mentality or increase work capacity at the time of executing the exercises. It is used in order to warm up the athlete's muscles, which is usually essential when the temperature is low, when the muscles cool down quickly, using the rapid and energetic friction of the skin, combining it with rubbing, which causes in the person the flow of blood to the skin and the sensation of heat. Quetglas and Rodríguez (2008).

The preparatory massage must precede the warm-up and be combined with it, although according to the state of the athlete, a part can be applied first, then the warm-up and finally the massage again. The warm-up and massage will be applied taking into account the condition of the athlete and the activity to be performed. Quetglas and Rodríguez (2008)

The recovery massage is carried out after any physical or intellectual effort to recover, as quickly as possible, the various functions of the body and increase the ability to work of it. Its effect is positive and very fast. It is the one that is used with the objective of diminishing the time of the period of reestablishment; this type of massage is realized after the competitions, training and in the breaks between the same ones. Quetglas and Rodríguez (2008) The objectives are to help the fastest restoration of motor work capacity and eliminate feelings of tiredness.

The time of application, the duration of the sensation, as well as the depth and intensity of the massage should be individual for each athlete. The prescription of the restoring massage must be considered according to the type of sport, the load used, the functional state of the athlete, the dimension of the massage surface of the body and the development of the muscular apparatus. The prolongation of the general session of recovery massage is equal to 40-80 minutes on average (with a weight of up to 60 kg, 40 minutes, up to 75 kg, 50 minutes up to 100 kg, 60 minutes and more than 100 kg, 80 minutes). Quetglas and Rodríguez (2008).

The recovery massage is most effective when two daily sessions are used according to the following methodology: the first session, a light recovery massage with a duration of 10-15 minutes, performed two or three hours after training.

A good effect can also give a daily session of recovery massage, which is performed two or three hours and more after training, for example: before bed. The following manipulations are used: friction, rubbing, kneading and gentle movements. These manipulations should be applied gently and painlessly. In the recovery massage attention is paid to the careful massage of the places of implantation of the muscles. The approximate percentage of the interrelation of time is: friction 25 %, kneading 70 %, the remaining manipulations 5 %; do not apply percussion and shaking on tired and sore muscles. Quetglas and Rodríguez 2008)

MATERIALS AND METHODS

Theoretical methods used include logical history, synthesis analysis, modelling and structural systems. Within the empirical methods, a survey is applied to coaches, masseurs, doctors, and the players of the first-rate men's soccer team, Pinar del Río, in order to know their opinions about the importance of sports massage in the preparation of the team.

The three coaches, the masseuse, the doctor and 17 players (incumbent and change) who participated in all the matches of the 2018 national championship, of the 22 that make up the men's soccer team, 1st category of Pinar del Rio, which constitutes 77.27 %, were considered as samples. All were surveyed with the objective of knowing their opinions from the theoretical and practical point of view that they have on the sports massage in the preparation of the team.

RESULTS AND DISCUSSION

Two survey models were applied with the same objective, one aimed at coaches, masseurs, doctors and the other at football team players, where 100% of them had no knowledge of sports massage, therefore, it was not used either as a means of recovery of work capacity or within the preparation of the athlete.

It was also verified that there is a lack of qualified technicians for the development of this activity and there are no spaces or adequate means to carry it out, in addition, there is no bibliographic material relating to the activity to be able to overcome and consult the coaches with the aim of improving the preparation of the team.

After accumulating this information, the task was done to plan the sports massage inside the preparation macrocycle, in the players of the first category football team of Pinar del Río.

In the first ten weeks of the macrocycle, the massage of local and general training was applied since they correspond to the stage of general and specific physical preparation; the frequency can be of two local sessions and a general one or a local session and a general one, always leaving this last one for the day of rest, which depends on the needs and characteristics of the players.

The massage is applied as follows: the players are divided into two groups, the players in the first group receive two local and one general training massage sessions per week, while the others receive one local training massage session and one general training massage session. This general training massage session applies on rest days. Each week is exchanged until the end of the 10-week general fitness stage.

In the following (11-27) weeks, preparatory massages and restorative massages were applied, except that the preparatory began one week before the restorative week because here the player was prepared for the competition.

The preparatory massage was applied in the competitive period, every day, before the matches, to the players who opened playing regular and who required it according to their state of pre-start, always combined with the warm-up.

Finally, the recovery massage was applied on the days of the match, after the match and to the players who needed it most, according to the time played and their performance during the game. It was concluded that sports massage, in the preparation of first-rate football players, is based on the influence it exerts on the different organs and systems of the organism. According to the periods of preparation of these players, the sports massage must be applied in the following way:

- In the preparatory period, apply general and local training massage.
- In the competitive period, apply preparatory massage and recovery massage.

In the planning of the sports massage within the preparation of the first class football players, the application of the different types of sports massage was included, according to the purposes to be achieved and the work done each day. (Figure 1)

Periodo	PREPARATORIO												COMPETITIVO																		
Etapas	GENERAL						ESPECIAL						COMPETITIVO																		
Meses	MAYO					JUNIO			JULIO				AGOSTO					SEPTIEMBRE													
Mesociclos	1					2			3				4					5													
# DE SEMANA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
FECHAS	1	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24									
S. CAMPEONATO	PRETEMPORADA						ZONAL						TRAN.		NACIONAL					TRAN.		CUADRANGULAR FINAL									
DIRECCIONES	GENERAL						ESPECIAL						ESPECIFICO					PERSONALIZADO													
Dirección Aeróbica																															
Dirección Anaeróbica																															
Resistencia Aeróbica																															
Resistencia Anaeróbica																															
Fuerza Resistida																															
Fuerza Rapida																															
Potencia																															
Rapidez																															
Resistencia Velocidad																															
Flexibilidad																															
Test Físico-Teo.																															
Test Físico y Psico.																															
Pruebas medicas																															
Topes Preparat.																															
M. ENT. LOCAL																															
M. ENT. GENERAL	D	D	D	D	D	D	D	D	D	D	D	D	D																		
M. PREPARATORIO																															
M																															
.REESTABLECIMIENTO														M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S	M	S

Fig. 1 - Application of the different types of sports massage, according to the purposes to be achieved and the work done each day.
 D: Día del descanso. M, S: Posterior al partido.

As a conclusive note, it is proposed that sports massage is a very useful tool to promote the athlete's physical efficiency, which has shown that applying massage sessions in high competition teams can achieve superior results because, at the same time, this physical-therapeutic incidence contributes to the improvement of the athletes' health and to the technical and tactical preparation that must be taken into account by coaches and the training system in high performance sports, in the Cuban sports movement.

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