

Renewal of Psychophysical Qualities of Professional Sportsman

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Abstract

Purpose: To prove scientifically the necessity of using massage and functional music for athletes of various sports as the means of restoration of psychophysical qualities during the preparation time.

Methods: Analysis of scientific literature, questionnaires (Eysenck-Q, SAM-Q), assessment of recovery rate after a special work and statistical analysis.

Sample: A total of 12 subjects were recruited for the trial. All study participants were within the age range of 18 to 30 years old. They were professional athletes of shooting and cycling who had more than 10 years of experience in sports.

Results: The combination of sports massage and well-designed music enhances the recovery of sportsmen according to SAM-Q (shooting: group +28%; cycling: group +23%). Also, according to a special work on training (with a recovery rate of shooters: group +28%; the recovery rate in riders: group +26%).

Conclusions: The combination of sports massage and efficient music does make the process of renewal of sportsmen's psychophysical qualities more effective. During the research, we observed that the shooters had better results in recovery of psychophysical qualities than the sportsman of cycling.

Implications: Understanding the processes of restoring the psychophysical qualities of athletes can help to increase their sports endurance and improve their performance in sports.

Keywords: training, postworkout recovery, psychophysical qualities, fatigue, shooters, cycling

Introduction

At the present stage, one of the manifestations of the development of the sports industry is the increase in the intensity and volume of sports loads. In the context of increasing requirements for maintaining the athletes' ability to work at the required level, the relevance of the scientific substantiation of the specifics of the use of restoration measures in a specific sport is outlined. As a result of the analysis of scientific and methodological literature and interviews with coaches and athletes, some uncertainty has emerged regarding the use of recovery tools. In addition, on the basis of practical experience of operating the means of restoration in various sports, the importance of the principle of an integrated approach to the use of highly effective and accessible psychological and medical-biological means of recovery in the process of exercises, as well as the need for systematic compliance with the implementation of reducing agents in all parts of the training process (Scherbtiiy, 2006).

In order to ensure the growth of efficiency, productive activities play an important role in individual psychological peculiarities of the nervous system. Of great importance are the laws of the formation of psycho-physiological functions, the connection of the nervous processes with mental, vegetative reactions and their relationship with the formation of recovery means.

Efficiency of use in the nearest recovery period after training sessions with high load of complexes of restorative means directly depends on the specificity of the latest features of fatigue athletes. In the case of the correspondence of the direction of the influence of restorative complexes on the nature of fatigue, there is an acceleration of the restoration of functional systems that are most depressed through the implementation of a program of appropriate occupations with a high load. The use of restorative remedies should be directed at both the restoration of general physical capacity and the restoration of psychophysical qualities such as balance, static balance, coordination, activity, state of health, pulse characteristics. The leading factor is the level of functional state.

The analysis all of the mentioned literature and author's observations showed an insufficiency of attention to the application of recuperative means during the preparation of athletes for training and competitions (Vanderbilt, 2001; Petruk, 2007).

Scientific publications differ and do not show many attempts for research of a complex recovery means for a different kind of sports and stages of annual training cycle (Rodionov, 1983; Zotov, 1987; Birukov, 2003). According to the most of the researches, the application of sportsman restorative means is necessary because of that great amount of psychological and physical work which makes special capacities to decrease during the training and competition (Kellmann, 2002; Kentt, 2002). The application of recovery means showed how important the restorative methods during the training process (Volkov, 1997). Also, the effectiveness of complex means of recovery after an intensive training depends on the personal features of the endurance in sportsman.

Methods

During the research, the following methods were used: analysis of scientific literature, questionnaires (Eysenck, SAM-Q), assessment of recovery rate after a particular work and statistical analysis.

Subject of recruitment and Research Design.

A total of 12 subjects were recruited for this trial. All study participants were within the age range of 18 to 30 years old. These were athletes of the national team of Ukraine for shooting

and athletes from the Saudi national team from cycling. The research was conducted during my practical work with these teams (2014-2017 years). The specificity of working with national teams does not allow to divide its participants into two groups - experimental and control as all athletes need post-workout recovery and leave the control group without restoration of psychophysical qualities would be wrong for pedagogical and ethical reasons. All of them were the professional sportsman with more than 10 years of experience in sports. The recovery means were realized during the recovery cycles twice a week. These were a massage and well-designed music. The music was performed at a slow pace such as largo, adagio, andante. The recovery means were realized in the both group. It was a group of professional cyclist athletes and a group of professional athletes of shooting.

All subjects were given a written consent and asked to fill out the Self-sense, Activity, Mood Questionnaire (SAM-Q) before and after using of recovery means. All subjects were a written consent and asked according to two-factor model of personality of Eysenck with questionnaire too.

The SAM-Q along with was served as self-administered questionnaire of a different self-assessment of fatigue. These were long-standard methods which were invented on the subjective approach and aimed to monitor emotional and functional conditions at the beginning and end of the research (Doskin et al., 1973).

Assessment of recovery rate after a special work.

These were estimates of pulse recovery after a special training session (shooting: training for strength and endurance of the dynamic and static regimen duration 2.5 hours; cycling: training for endurance duration 2.5 hours).

Statistical analysis

Descriptive statistics: method, range, length of recovery in minutes, Eysenck-Q, SAM-Q, the total score in percentage.

Results and Descriptions

Our hypothesis is an implication of how to improve the performance and recovery of psychophysical qualities by combining massage and well-selected music. And, our next task is to include this restorative program as an indication of recovery.

The performance of massage has its own specifics. It is very important if it is performed professionally (Birukov, 2003). The massage itself is not just the series of a learned technique movement, it is much more than that. The effectiveness of massage involves neurological and emotional moments. In fact, the benefits of massage are more psychological than physiological (Grant, 2000; Hemmings et al., 2000; Hemmings, 2001). The speed of recovery after massage also depends on the psychological state of sportsman and his or her self-motivation (Petruk, 2007).

Music has a psycho-physiological effect. There was a scientific inquiry that revealed a psycho-physiological influence of music on the process of recovery by regulation of the arousal mechanism and acquisition of motor skills (Yanushevski, 1997; Bacon et al., 2008; Karageorghis et al., 2008).

We examined the interactive effects of massage and music on the process of recovery of shooters and athletes of cycling by doing the questionnaires and estimating the pulse speed before and after the special functional trials (strength-endurance in the dynamic and static

regimen).

Athletes of cycling and shooters were examined at the level-phase recovery during the recovery micro cycle in 2014-2016th. The age of participants was from 18 to 30 years old. The estimation of athlete's psychological type was made according to two-factor model of personality of Eysenck with questionnaire. Also, a diagnosis of psycho-functional status was performed according to the self-test of fatigue SAM for athletes. There was a psycho-functional diagnosis of a self-test of fatigue SAM, defined by neuro-psychological stress (pulse) and recovery standard loads (stress endurance in dynamic and static modes, speed-power endurance) before and after the processes of recovery (Doskin et al, 1973).

The estimate according to two-factor model of personality of Eysenck questionnaire: for shooters introverts' 99% and 1% in extraverts (Chart 1); for the athletes of cycling 55% in introverts and 45% in extraverts (Chart 2).

Restorative massage also was combined with well-selected music. Two times during one recovery micro cycle. We were using calming music, lyrical compositions and instrumental performances in largo, adagio and andante tempos. The effectiveness of the supposed recovery was determined by analyzing the results of participants on the basis of 6 persons of cycling and 6 persons of shooting.

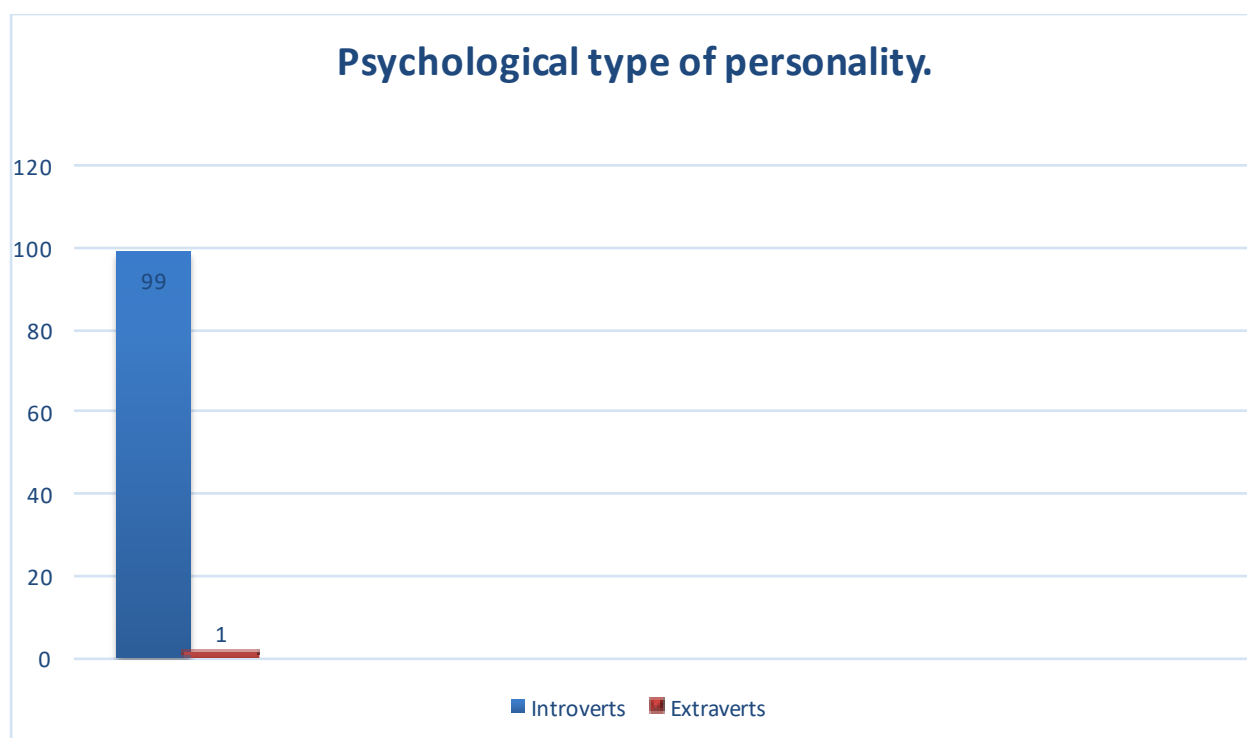


Chart 1. Psychological type of personality (%) Shooting

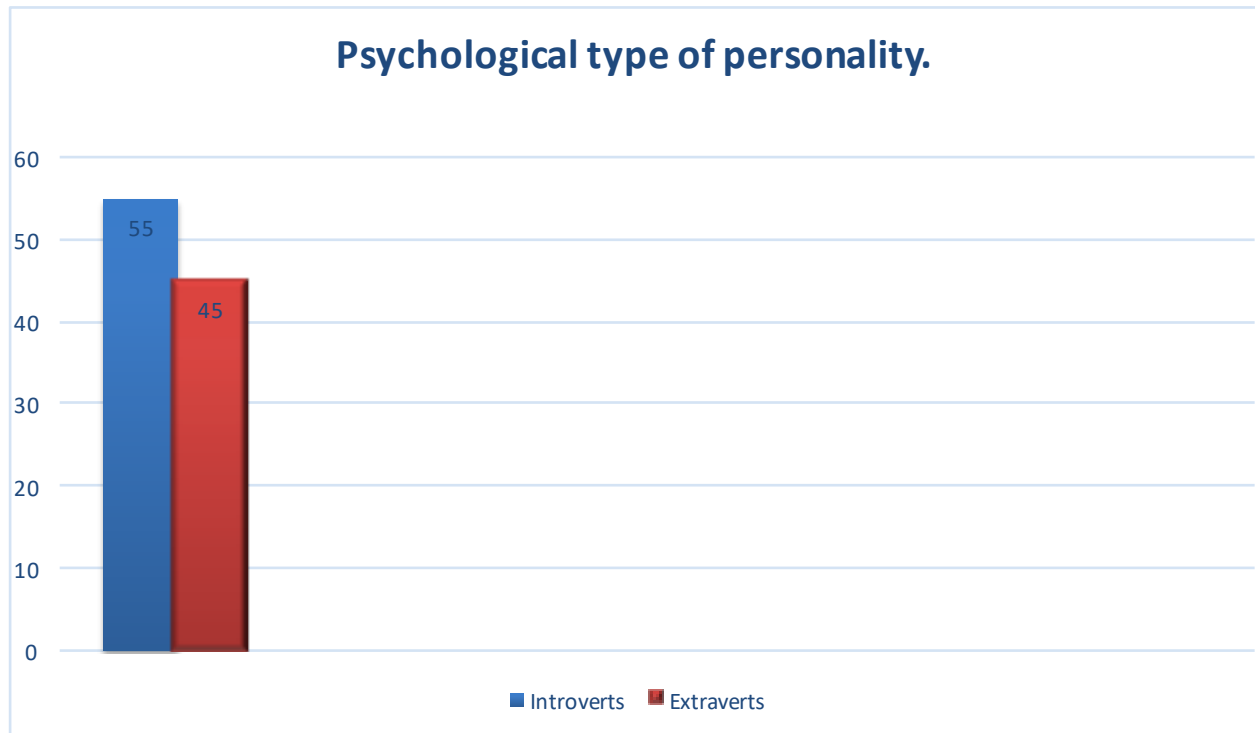


Chart 2. Psychological type of personality (%) Cycling.

According to the results of the research, the athletes of cycling after combining the massage and well-designed music the integral evaluation SAM got higher up to +26% (4.90points). Meanwhile, the shooters showed different results. Which were +31% (5.08 points), (Table 1).

The recovery of pulse rate after a special functional trial in athletes of shooting showed better results +22% (2.2 minutes). The recovery of pulse rate after a special functional trial in athletes of cycling was higher up to +17% (2 minutes), (Table 2).

Also, before using the recovery processes in both groups we found the lower indexes of self-sense (S) and activity (A) compared with mood (M); after the research, the indexes mostly of S and A in compare with M showed much better results (test SAM).

Table 1. An integral estimation of the subjective state during the recovering micro cycle of athletes from shooting and cycling (SAM-Q, points,%)

Groups before and after restoration		An integral estimation of the subjective state (SAM-Q)
group of shooting n=10	Before	3.88p.
	After	5.08p.
Efficiency		+31%
group of cycling n=10	Before	3.89p.
	After	4.90p.
Efficiency		+26%

Table 2. Indexed of pulse recovering after special training session during the recovering micro cycle of athletes from shooting and cycling (minutes,%)

Groups before and after restoration		Indexed of pulse recovering
group of shooting n=10	Before	2.8m.
	After	2.2m.
Efficiency		+22%
group of cycling n=10	Before	3m.
	After	2.49m.
Efficiency		+17%

Conclusions

The analysis of scientific literature shows an insufficiency of publications about a complex of recovery used during the different stages of annual cycles of sportsman's preparation.

The combination of sports massage and well-designed music makes the process of the recovery for sportsman more effective.

During the research, we observed that the shooters had better results in recovery than the sportsman of cycling. Obviously, the reason for this was individual psychological peculiarities and other personal features such as emotional stability, introversion and adaptation to relaxation music of shooters.

The results of the study showed that for the effective use of means of restoration of professional athletes it is necessary to use specially developed complexes taking into account the structure of the training microcycle, the dynamics of fatigue and recovery processes, and the individual characteristics of athletes.

The study demonstrated that for effective training of athletes is important to use in the form of specially designed facilities such means restoring mental and physical qualities of an athlete as mental and physical relaxation in the form of combined use of massage and functional music with the general and specific psychological characteristics of athletes.

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Conflict of Interest

The author has not declared any conflicts of interest.

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