

Ways to overcome confounding factors in powerlifters' training workouts

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Abstract. Training activities in powerlifting involve a variety of circumstances that constrain their optimal procedure. Exploring ways to overcome the confounding factors reveals possible ways to solve the problem. The study comprises observation and interviewing 80 men and 80 women involved in powerlifting. The analysis of the questionnaires shows that the top position is occupied by the method “coach’s assistance”. Following it in the hierarchy arranged according to the order of significance for athletes-powerlifters are: 2nd – mental attitude, 3^d – selection of partners for training, 4th – instructional techniques, 5th – changing the training methods, 6th – medication, 7th – social isolation, 8th – selective communication, 9th – home-like behavior. The study is a discussion of the top five ways to overcome the confounding factors in the conditions of training activities that are most important from the standpoint of powerlifters.

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Introduction

Every event begins long before it starts - with the training process. The key to athletes' successful performances in competitions is correct and well-built training activities, which include physical training and nutrition, equipment, rehabilitation and undoubtedly psychic load. The same can be referred to athletes-powerlifters.

Powerlifting is a relatively young sport, which emerged as an independent discipline in the middle of the 20th century. Athletes demonstrate the power quality in squats, bench press and deadlift. Powerlifting training process, just like any other sport, cannot always go without a cinch. Any interference can disrupt the athlete's emotional and physical balance. “Stress will degrade performance. Under the pressure of an emergency, close examination by others, time urgency, threat of bodily harm, or other strong stressors, people often falter” [1].

The effects that hinder the achievement of high sports results are considered to be the confounding factors. Foreign scientists indicate these situations as stressors. Following the idea of the Canadian scientist H. Selye that “activities associated with stress, can be either pleasant or unpleasant” [2], we believe that the term “confounding factor” is more accurate, since the term “stress” has a more generalized meaning.

The athlete's psychological training methods have been developing for more than half a century. Scientists are investigating the circumstances that can prevent the achievement of high sport results even at the training stage. Scientists Puente-Diaz and Anshel [3] have studied the issues of highly skilled Mexican and US tennis-players' acute stress and strategies to

overcome it. Besides, Nicholls [4] with a team of scientists studied golf-playing teenagers' stress specific features and ways to overcome it. Professional rugby players' stress and stress-coping strategies were described in the work by Nicholls et al. [5], the same problem with English rugby junior team was considered by a group of scientists – the Nicholls et al. [6].

Various stressors and the related possible strategies to address the problem among skippers are considered by Weston et al. [7]. Reeves et al. [8] identified common and opposite results in stress and strategies to overcome it among football players in two age groups: younger adolescents (12-14 years old) and middle adolescents (15-18 years old). Research on stress and ways of its solution in basketball was also conducted [9]. Based on the results of work with Olympic champions the research by Sarkar and Fletcher [10] gives an overview of stress and its defensive factors as the basis of athletes' psychological stability.

The list of works in this field can be continued, but even this brief survey shows that interest in the problems concerning the confounding factors in sport and strategies to overcome them is increasing. However, few works are related to confounding factors in powerlifting, therefore there is still much to be researched in this field [11].

Consideration of ways to overcome the confounding factors within a particular sport expands the boundaries of athletes' sports performance and increases athletes' productivity in training activities. In this regard, our research may occupy an important place among the works in this direction. The paper's scientific novelty consists in considering and

determining the significance of the ways to overcome athletes-powerlifters' confounding factors.

Methodology

The methods used in this study include analysis of scientific literature on research, observation, interview, and questionnaire.

To determine the significance of the ways to overcome confounding factors in powerlifting we developed a questionnaire, which outlines 9 ways to overcome the confounding factors, and tenth factor was supposed to be specified by the respondents. Respondents were to arrange the ways in the order of their importance: the way to overcome the confounding factor #1 being the most significant, and way # 10 being the least significant for the powerlifter.

The novelty of this questionnaire is in grouping many ways to address the confounding factors which cause changes in athletes-powerlifters' training activities.

To solve the problem 160 athletes involved in powerlifting answered the questionnaire. The sample included 80 women and 80 men aged from 16 to 49 with sports experience from 1 year to 34 years possessing sport skills from third junior rank to the Master of Sports, and those having the title of "Master of Sports of Russia" and "Master of Sports of Russia of International Class". Such sampling is justified because it provides an opportunity for subsequent studies to examine ways to overcome the confounding factors from different perspectives: gender, age, athlete's qualification, and etc.

Experts in the field of powerlifting professional activity (S.M. Kosarev, President of Russian Powerlifting Federation, Honored Coach of Russia, Associate Professor of Moscow Aviation Institute) and sports psychology (A.I. Fukin, Doctor of Psychology, Professor of Institute of Economics, Management and Law, Kazan) recognize the questionnaire as valid.

Discussion

The measurement of the significant ways to overcome the confounding factors given to the athletes for evaluation was carried out through calculating the arithmetic mean, and then the list of methods was ranked (see table 1).

The following is a detailed analysis of the top five ways to overcome the confounding factors in training activities that are considered most significant by the powerlifters.

The analysis of the table shows that the most important way to overcome the confounding factors at a training session is the coach's assistance (2.5). Currently training load in powerlifting and the overall

time in the athletes' preparation reach significant values. This places high demands on mental qualities and properties of the individual athlete. Only a highly motivated athlete, being dedicated to the achievement of high results and laying strict demands on himself, can withstand such loads. The efficiency of the preparation system is determined by modern methods of training, usage of advanced techniques and tactics, medical and biomedical support, etc.

Table 1. Hierarchy of the ways to overcome confounding factors in powerlifters' training process

	Ways to overcome confounding factors	Rank	Mean Value
1	Selecting training partners (more experienced, successful, congenial, having similar goals and objectives)	IV	4.73
2	Changing training methods (training according to the competition model: change in training time, diet, mode of the day)	VI	5.19
3	Coach's assistance (analysis of approaches, strategy and tactics of behavior development, encouraging)	I	2.63
4	Medication	VII	5.72
5	Instructional techniques (meditation, hypnosis, autogenic training, visualization of a successful attempt, music)	III	3.6
6	Home-like behaviour (normal diet, a date with a friend/ girlfriend, car repairs, listening to music, chat with friends, etc.)	IX	6.55
7	Social isolation (to be alone, read a book, etc.)	V	5.08
8	Selective communication (communication with a more calm, or, conversely, more active companion)	VIII	6.53
9	Mental attitude (formation of alert status)		3.43
10	Other (to be specified)	II	

The task of the powerlifter's training process is to increase results in the squat, bench press and deadlift. This can be achieved by a regular increase in the intensity and work weight. But thoughtless increase in weight leads to overtraining. Therefore the role of the coach in the training cycle is significant and cannot be underestimated. Only his encouragement, research and methodical analysis of the approach allow the athlete to achieve good results.

Next in importance is the mental attitude (3.21). Psychological mood, alertness – is the highest point at the peak of fitness. It is difficult to achieve, it rarely occurs by itself. It is unstable unless the athlete does not know how to reach such a state of mind. Besides, every athlete has his particular level of mental attitude, and "martial" readiness. In order to understand the nature of this condition and to learn how to achieve it, the athletes need regular exercise. Over time, with experience, the process of indulging into a state of combat readiness will take several minutes. In the training workout it is important to orient yourself to the good, positive and useful, that arises in the process of acquiring a sports experience [12]. Mental attitude during the training session allows to depart from the confounding factors (noise, strangers, etc.) and focus only on the training process, thus bringing the athlete into competitive event conditions.

The third position is such an unusual way to overcome the confounding factors as selecting partners for training workouts (3.5). In the process of

training the athletes are not competitors, they are associates who have common goals and objectives. A good coach gives the athletes an opportunity for a self-presentation and self-assessment, as well as creates a working environment in the gym. During the training session a less experienced athlete can ask his more experienced training partners for advice. A prominent athlete can act as a coach for the beginners. Such interaction rallies the trainees. An opportunity appears not only to identify the leaders, but also to improve the weaker sportsmen's skills. All this, undoubtedly, contributes to the development and establishment of moral and psychological climate in the group of the exercising athletes.

The next, fourth position is occupied by instructional techniques (4.3) having a psychological basis in their majority: meditation, hypnosis, autogenic training, visualization and music. These techniques are designed to regulate the level of muscle activity. They are easy to master. Controlling muscles one can control emotions, and this is an important part of the preparation for a competition. Possessing such skills as an ability to check anger, self-hypnosis and visualization can quickly relieve anxiety and tension. Anchored a thousand times in training, these techniques allow the athlete to quickly remove the muscle clamp and enter a state of alert at the competition.

The fifth position is taken by a change of the training method (4.67). This method is frequently referred to as "model training". This technique involves using elements of competition in training workouts and is designed to control the pre-start excitement. It is often a case that competitions are held in a different time zone, so it is important for the athlete to change the mode of the day, time and number of workouts, diet and nutrition. At the training session, it is important for the athlete to generate behavioral and emotional acts exhibited while exercising in competition (exclamations, hugging, jumping, etc.). One can simulate conditions that can arise during the competition. It is useful, for example, to work with the barbell, which had not been used in training; or one can train in bench press on the bench, which seems inconvenient for this exercise. Thus, it is necessary to create the external stimuli that increase the athlete's resistance to them.

Conclusions

Preparation of highly skilled powerlifters involves not only investing in the purchase of equipment and the use of modern restorative procedures, but also introducing innovations directly into the structure of the training process, which is the main way of increasing both the athlete's and the coach's efficiency. The most important aspect in this

process is to master the ways of fighting the confounding factors.

Athletes actively use the existing techniques, defense mechanisms, and techniques to overcome stress factors [13]. But an interest in research on issues of stress and strategies for its solutions is growing steadily. The present work is another proof of the fact. The problem of confounding factors is to be addressed within a particular sport, because every discipline has its own specifics. Introduced into research for the first time, the material on powerlifting showed the following results. The leading position among the ways to overcome the confounding factors in the training activity belongs to "coach's assistance". The second most favored in significance way is "mental attitude". Further popular ways out of confounding situations during training activities are: training partner selection, instructional techniques, and change of training methods.

The submitted materials are a promising stage of research on the development and application of techniques and methods that determine performance in powerlifting.

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