

Research and Development of Sports Psychology in the Field of Competitive Sports

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[Abstract] Compared with the field of mass exercise and physical education, competitive sports have received more attention from sports psychology. A series of sports psychological intervention techniques have been used in the Beijing Olympic Games, such as psychological countermeasures library, bio-feedback technology, psychological film and music, psychological website, psychological testing for athletes and rapid adjustment of multi-functional service vehicles. Leading technologies in the psychological field such as electroencephalography (EEG), event-related potential (ERP) and computer quadrant map (EEQG) are used to diagnose the mental state or training effect of athletes during exercise. The rise of positive psychology has a rich theoretical and applied field, and also enriches the theory and application fields of modern sports psychology. Sports psychology has seen many new trends in the 20th century, and smooth experience is one of them. In the field of competitive sports, the connection between psychological monitoring and sports practice is the closest. Psychological monitoring is also moving towards a systematic and specialized direction. It is suggested that the research results of sports psychology that have been obtained can be applied more in future practice.

[Keywords] Sports psychology; Competitive sports; Psychological monitoring

1. Introduction

With the success of the 29th Beijing Olympic Games in 2008, Chinese sports psychologists have received more attention from insiders and outsiders, and the scientific and applied research of competitive sports psychology has been more widely recognized. At present, the research and application team of competitive sports psychology in China has continued to grow and develop, and has gradually embarked on a more standardized and sustainable development path.^[1]

2. Research and Application of Competitive Sports

Psychology in Beijing Olympic Games

In preparing for the psychological training of the Beijing Olympic Games, Chinese sports psychologists used a variety of methods to carry out a variety of psychological services for athletes of key projects. The psychological support provided to athletes mainly involves the following aspects: concentration, emotional control, emotional stability, goal orientation and role positioning, psychological stability, psychological

fatigue recovery, self-confidence, wake-up level adjustment, psychological preparation before the competition And psychological training, adjustment of negative emotions caused by weight control, training communication, team cohesion and so on.

2.1 The Main Psychological Problems of Chinese Athletes

The main psychological problems of Chinese athletes include: cognition-psychological pressure at home, lack of tactical awareness; emotion-excessive anxiety, emotional instability; willpower-insufficient anti-frustration ability; attention-difficult to control attention, poor anti-interference ability; Motivation and Attitudes-Training motivation is not strong, it is difficult to adhere to correct psychological orientation; self-evaluation is inaccurate, lack of self-confidence; interpersonal relationship-lack of communication between teammates, poor communication with coaches; psychological fatigue - some athletes have more serious psychological fatigue.

2.2 Psychological Diagnosis and Monitoring Methods

Traditional methods of psychological diagnosis and monitoring include: literature, on-site observation, questionnaire survey, follow-up test, case analysis, expert interview, oral report, etc.

The latest psychological diagnosis and monitoring methods include: (1) Brain image (EEQG). Brain image analysis technology can display valuable information such as the efficiency and competitive state of the athlete's brain processing information. (2) EEG topographic map (BEAM). (3) EEG ultra-slow fluctuation analysis technology (ET). Organizational theory emphasizes the importance of brain function in the regulation of sports training and competitive state during the formation of motor skills. Based on this theory, the ultra-slow fluctuation analysis technology of brain waves can be used to assess athletes' athletic ability, training intensity, central fatigue, stress level, and learning ability. (4) Heart rate variability (HRV).

2.3 Psychological Training Method

The game psychological countermeasures library refers to any problems that may be encountered in the game or each preparation step, and there are corresponding coping strategies, including effective behaviors, word prompts, etc., and classifies all coping strategies. It includes a game pre-emptive event countermeasure library and a game program activity countermeasure library. Ding Xueqin, Zhang Zhongqiu, Zhang Liwei, Li Jingcheng, Wang Changsheng, Wang Zhi, Chi Lizhong and others helped the national weightlifting team, the national gymnastics team, the national diving team, the national artistic gymnastics team, the national shooting team, the national taekwondo team, and the national ping pong team establish a pool of psychological countermeasures for athletes from all teams to participate in the Beijing Olympic Games.^[2]

2.4 Founding a Psychological Service Website

The Beijing Olympic Psychology Expert Group also specially designed and established the “Olympic Psychological Service Network.” The site combines confidentiality, security, knowledge, professionalism and fun, and leverages the site’s unique psychological support capabilities and strong expert resources. The Olympic Psychological Service website has a variety of columns, including the athlete’s home, the coach’s home, the team home, multimedia psychological adjustment counseling, leisure clubs, and psychological assessment. On the basis of effectively integrating relevant professional knowledge resources at home and abroad, it has built a psychological assistance platform integrating knowledge, professionalism and fun.

2.5 Making “Olympic Psychological Duel” Series of Science and Education Films

This series of special science and education films fully integrates the comprehensive research experience of the domestic sports psychology expert team, as well as the valuable opinions and suggestions from the first-line coaches and athletes. The production is completed from the specific application aspects of the influence and function of psychological factors on major competitions, the psychological control mechanism of athletes participating in major competitions, and the establishment of home psychological adjustment countermeasures pool. It aims to help athletes and coaches to better use the methods and means of psychological regulation to obtain the best psychological state of the game, fully tap and play their own competitive potential, and create great achievements in the Beijing Olympic Games.

2.6 Create a Mental Mobility Vehicle

In order to better help athletes adjust their mental state before the Olympic Games, the key psychological laboratory of the National Sports General Administration of China has specifically designed and implemented the “Olympic Psychological Adjustment Vehicle”. The Olympic psychological adjustment vehicle plays an important role for the Olympic athletes to reduce neuropsychological fatigue, decompression and relaxation, enjoy the body and mind, and strengthen self-confidence, so that athletes can adjust their minds at any time when needed. During the Olympics, psychological adjustment services were provided for the national judo team, boxing team, wrestling team, women’s water polo team and diving team.

2.7 Prepare a Functional Music Album

Music is a sound composed of regular sound waves, and it is the art of hearing and time. Through its “sounding” and the “moving” of the musical image, the music art directly exerts regular sound vibration on the human ear, which in turn affects people’s physical and mental activities.

After comprehensive research and targeted analysis, Zhang Zhongqiu and others compiled four functional music monographs for the main participants of the Olympic Games in China - “Relieving Stress”, “Meditation Music”, “Enhancing Spirit” and “Relaxation and Hypnosis”. It has its clear primary targeting function.^[2]

3. The development trend of competitive sports psychology

3.1 Positive Sports Psychology

In August 2010, the first International Conference on Positive Psychology was held in China, marking the increasing attention of psychologists in studying the positive experiences of human beings and the potential, motivation, and will of human beings. Positive Psychology is a new field of research that is emerging in the American psychology community. It focuses on the positive aspects of human power and virtue, and requires psychologists to look at human potential, motivation, and abilities in a more open and appreciative way. Positive psychology is a new model of psychological research, which is relative to negative psychology. The so-called negative psychology (Negative Psychology) is mainly based on human psychological problems, mental illness diagnosis and treatment. For example, in the past century of psychological research, the familiar vocabulary is morbidity, hallucinations, anxiety, arrogance, etc., and rarely involves health, courage and love.

3.2 Smooth Experience

In the field of sports psychology, Flow is generally considered to be a positive emotion. It refers to an emotional experience in which people show a strong interest in an activity or thing and push the individual into a certain activity or thing. JACKSON and MARSH introduce Flow into the field of sports psychology and define it as “the best state of experience, in which athletes are fully engaged in a task and create a state of consciousness that exerts the best level of exercise.”^[3] In the field of sports psychology, psychologists’ discussion of flow state is not limited to descriptive research. They also pay attention to the psychological mechanism of fluent state and its influencing factors, so as to better help athletes reach the peak experience. In past studies, researchers proposed precompetitive plans, confidence, optimal arousal, motivational focus, and intrinsic motivation, which are factors of influencing the flow state of athletes.^[4-8]

3.3 Sports Investment

The concept of exercise engagement (Athlete Engagement) comes from Positivity In Sport Psychology. In China, research on sports investment is still blank. So far, through the search of the four core journals of international sports psychology, we have only found two articles on sports investment, and both of these articles only provide a preliminary descriptive analysis of sports investment.

As an important indicator of athletes' positive psychological aspect, sports input can reflect the active and healthy psychological state of athletes, and is conducive to stimulating athletes' positive qualities, such as: optimism, resilience, sense of meaning and creativity, thus effectively promoting the development of athletes and mature, laying a solid foundation for enhancing athletic ability and improving sports performance.

3.4 The Systematic and Special Trend of Psychological Monitoring of

High-level Athletes

At present, there are a number of projects in China that have conducted psychological monitoring studies on training or competition processes for high-level athletes. Zhang Zhongqiu et al. used systematic exercises, psychological intervention procedures, biofeedback techniques, pre-match behavioral procedures, and short-term counseling focus resolution methods to systematically train and monitor the key athletes of the National Diving Team.^[9]

Traditional psychological monitoring methods include: psychological testing, questionnaires, and physiological indicators. For psychological regulation, sports psychologists adopt different methods. At present, most studies focus on the impact of individual psychological skills training or comprehensive psychological skills training on operational performance. The research on targeted and systematic psychological training combined with project characteristics and athlete characteristics is not rich. Therefore, it is still necessary to further explore how to implement psychological skills training reasonably and effectively.

4. Conclusion

After the 2008 Beijing Olympic Games, the research and application of China's competitive sports psychology has made a historic breakthrough, and has now stood at a new height and a new starting point.

First of all, we must pay attention to the research materials from the first-line coaches, which can bring great inspiration to our research, we should learn from it effectively. At this stage, based on psychological monitoring combined with the characteristics of special sports to carry out reasonable and effective comprehensive psychological control remains to be further studied. Secondly, coaches and athletes still lack sufficient understanding of psychological training. Psychologists must first establish a good relationship with them, communicate the scientific nature of psychological training to them with a sincere attitude and practical actions. Psychological training can only achieve results if it is supported by the coaches and the active participation of the athletes.

Finally, we should strive to improve the objectivity of the evaluation of psychological training effects. Combine psychological indicators, physiological indicators and behavioral indicators, combine laboratory observations and sports field qualitative evaluations, combine cross-sectional research and tracking research, and combine others' evaluation with self-evaluation. Construct a structural model for evaluating the effects of sports psychology training. This is an important challenge for sports psychology and an important guarantee for the effectiveness of athletes' psychological monitoring, psychological training and psychological counseling.

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