
INFLUENCE OF PSYCHOLOGICAL EMOTIONS ON COGNITIVE CAPACITY OF TAEKWONDO ATHLETES

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Abstract

Taekwondo helps to strength health and cultivate moral character. However, taekwondo athletes have different emotional states under competitive pressure, which may affect their cognitive capacity. Drawing on the theories of sports psychological emotion, this paper explores the psychological emotion of taekwondo athletes, and discusses how different psychological emotions affect the cognitive capacity of these athletes. Professional taekwondo athletes in Henan and Shandong were randomly sampled for a questionnaire survey, using a five-point scale. The survey results were subjected to detailed statistical analysis. The results show that taekwondo athletes produce negative psychology emotions under competitive pressure, such as anxiety, hostility and fear; positive emotion promotes the cognitive capacity of taekwondo athletes; positive and negative emotions differ greatly in their impacts on the cognitive capacity of taekwondo athletes. The research results lay the theoretical basis for the scientific training of taekwondo athletes.

Key words: Taekwondo athletes, Competitive pressure, Cognitive capacity, Psychological emotion, Psychological health.

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INTRODUCTION

Taekwondo, with its exquisite body art, flexible tactical skills and scientific fitness method, is deeply loved by many people. Taekwondo, as a new sports item, has been rapidly developed in China (De Castella, Platow, Tamir et al., 2017). Taekwondo athletes are required to have strong explosive force, good suppleness and flexibility. In addition, they are required to have long lower limbs, long tendo calcaneus and high foot arch in body shape, and to have high sense of perception, reaction time and thinking, nervous type and volitional quality (Talebzadeh & Jafari, 2012). Due to the characteristics of taekwondo, athletes must master the skills under fighting, concentrate their attention in the actual combat process, and run through every movement link. In this process, they must have a clear understanding of

the movements and routines of their opponents and themselves (Patterson, Lenartowicz, Berkman et al., 2016). In the sport training process of taekwondo athletes, the coach team will train the athletes' psychological activities consciously, purposefully and systematically, and exert positive influence in the training process to create positive emotion for taekwondo athletes, so that athletes can effectively regulate or control their psychological emotion during the course of the competition (Sharma, Bottom, & Elfenbein, 2013; Ahn, Kim, Hwang et al., 2015).

The cognitive behavior capacity of taekwondo athletes is influenced by psychological factors and psychological emotion is an important component influencing psychological activities. The performance of taekwondo athletes during the competition is closely related to psychological emotion (Reeve, Bonaccio, & Winford, 2014). Cognitive behavior capacity varies from person to person, generally including cognitive thinking and discovery thinking. Cognitive capacity can reflect the

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individual psychological characteristics and psychological quality of athletes to a certain extent, so it is often taken as an important factor in the selection of taekwondo athletes (Garner & Waajid, 2012). Psychological emotion and cognitive behavior, as human physiological characteristics, are controlled by the nervous system. The refractory period of neural control leads to different psychological emotions of athletes. Changes in psychological emotion will have a certain effect on the cognitive behavior of taekwondo athletes (Ward, Duncan, Jarden et al., 2016; Simpson, Pinkham, Kelsven et al., 2013). Based on the research of sports psychological emotion, this study explores the psychological emotional characteristics of taekwondo athletes and the effect of different psychological emotions on their cognitive behavior capacity. This study provides a theoretical basis for the training of taekwondo athletes and the tactical training of the team.

EFFECT OF COGNITIVE BEHAVIOR ON THE SELF-CONFIDENCE OF TAEKWONDO ATHLETES

Taekwondo, based on competitive fighting, can play a role in honing people's will and inspiring spiritual temperament, which mainly reflects in promoting psychological health, improving will quality, self-concept and self-efficacy (Lim & O'Sullivan, 2016). For taekwondo athletes, self-confidence is very important. Self-confidence, an important characteristic of psychological health and sound personality, directly affects the psychological healthy emotion of taekwondo athletes (Puce, Marinelli,

Mori et al., 2017). Self-confidence of taekwondo athletes mainly comes from social self-confidence and body self-confidence. As shown in Figure 1, social self-confidence includes professional social circle and life social circle while body self-confidence includes health quality, body shape and appearance, and expression. Researches show that self-confidence (both social self-confidence and body self-confidence) of taekwondo is dependent on cognitive behavioral psychology. Cognitive psychology of taekwondo athletes plays a key role (Soflu, Esfahani, & Assadi, 2011).

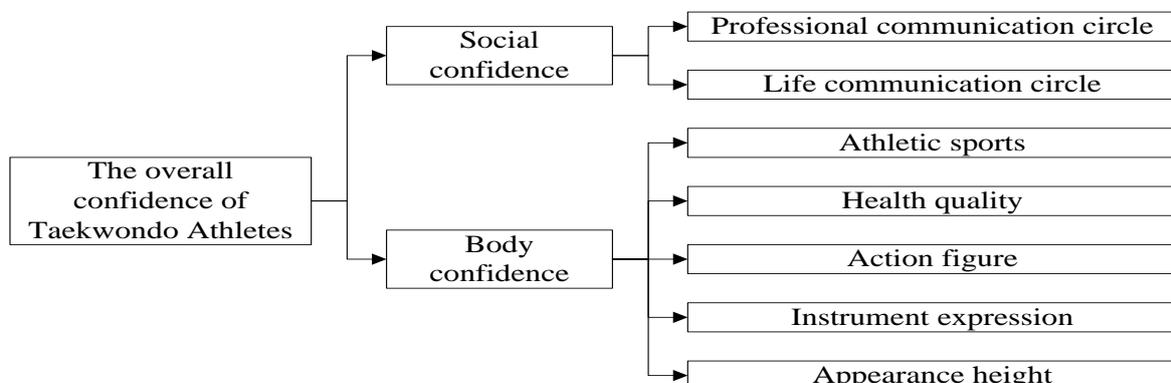
Taekwondo plays a role in promoting the self-confidence of people. Cece et al. found that the self-confidence of taekwondo athletes is significantly higher than that of ordinary people, mainly because taekwondo athletes show good cognitive behavior capacity in fighting, which could promote the overall development of strength, speed, agility, endurance and coordination. Good cognitive behavior virtually increases the self-confidence of actions (Cece, Guillet-Descas, Nicaise et al., 2019).

STATUS QUO OF PSYCHOLOGICAL EMOTIONAL STATE OF TAEKWONDO ATHLETES

Research object and method

Taekwondo is a sports item that can exercise physical quality in an all-round way, including endurance quality, flexibility quality, agility quality, strength quality and speed quality. China's taekwondo athletes have always been the powerful contenders for the gold medals in the world competitions. As the number of

Figure 1. A structural model of taekwondo athletes' self-confidence



competitive taekwondo increases, China's taekwondo gradually shows unique style characteristics. The psychological emotional state of taekwondo athletes has a direct impact on their normal performance. A great number of researches show that taekwondo has a positive effect on people's physical and psychological health, but the researches on the psychological emotional state of taekwondo athletes are in a blank state. Positive psychological emotion is an important embodiment of psychological health. The purpose of this study is to explore the psychological state and to understand the psychological state of taekwondo athletes by adopting the dimension indicator of average psychological health problem. This study investigates and studies some professional taekwondo athletes in Henan Province and Shandong Province by means of survey study and statistical analysis. Table 1 is the basic data of the investigators. To explore the effect of gender and age of taekwondo athletes on their psychological emotional state, the questionnaire adopts the system of five points. The higher the score is, the worse the psychological emotional characteristics are. In order to accurately measure the psychological emotional state of taekwondo athletes, we randomly investigate non-taekwondo athletes of the same age group and compare them with the national norm.

Table 1. Basic information of investigators

| Type | Classification | Quantity | Proportion |
|--------|----------------|----------|------------|
| Gender | Male | 93 | 81.58% |
| | Female | 21 | 18.42% |
| Age | <20 | 22 | 19.30% |
| | 20-28 | 72 | 63.16% |
| | >28 | 20 | 17.54% |

Research results and analysis

There is a consistent identity between psychological emotion and psychological health, and there is complete coordination between the two. Positive psychological emotion is a state in which the psychological emotion does not conflict with other people in terms of body and intelligence, and the psychological health situation is adjusted to be the best. Figure 2 is a comparison between the psychological emotion of taekwondo athletes and the national norm, which shows that the scores of anxiety, hostility, fear and interpersonal relationship of taekwondo athletes are higher than the national norm. This indicates that taekwondo athletes

show stronger anxiety, hostility and fear, which are negative emotions that directly affect the development of psychological health and cognitive behavior capacity of taekwondo athletes. Figure 3 is a survey of the psychological emotion of taekwondo athletes, clearly showing that taekwondo athletes have more positive psychological emotion than non-taekwondo athletes of similar age groups except the interpersonal relationship emotion. Figure 4 is the influence of gender factor on the psychological emotion of taekwondo athletes, showing that boys have more positive psychological emotional state than girls, and boys show negative emotion in interpersonal communication. Figure 5 shows the influence of age factor on the psychological emotion of taekwondo athletes, and it is obvious that taekwondo athletes of 20-28 years show the worst psychological emotion mainly because taekwondo athletes in this age group are under pressure to compete for honor and too much pressure leads to an apparent negative emotion.

Figure 2. Comparison of Taekwondo athletes' psychological emotion with national norm

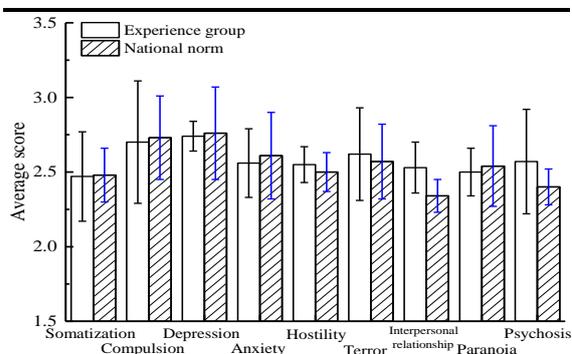


Figure 3. A survey of the psychological emotion of taekwondo athletes

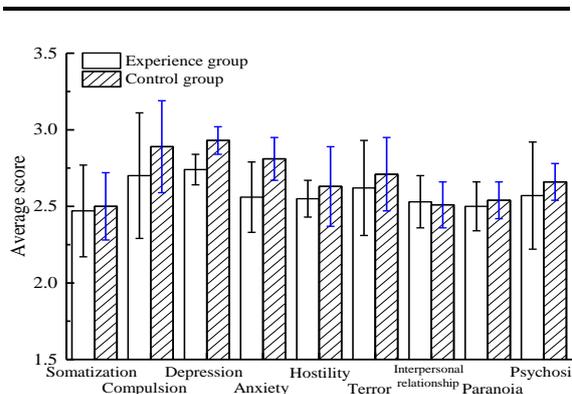


Figure 4. The influence of gender factor on the psychological emotion of taekwondo athletes

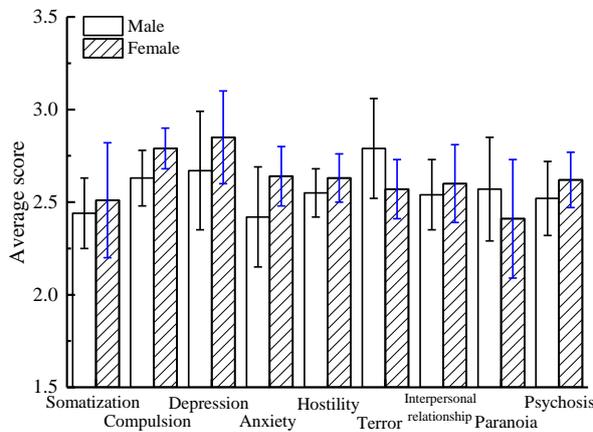
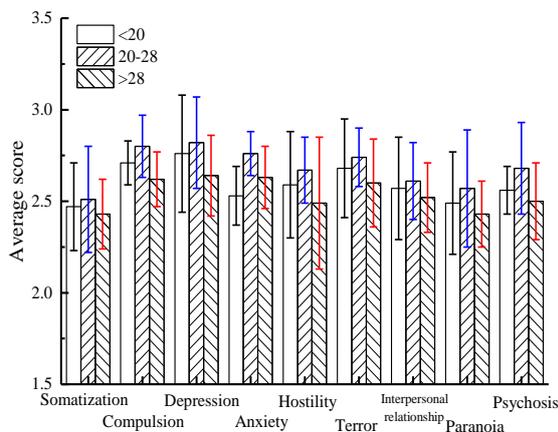


Figure 5. The influence of age on the psychological emotion of taekwondo athletes



EFFECT OF DIFFERENT PSYCHOLOGICAL EMOTIONAL CHARACTERISTICS ON COGNITIVE BEHAVIOR CAPACITY

Research object and method

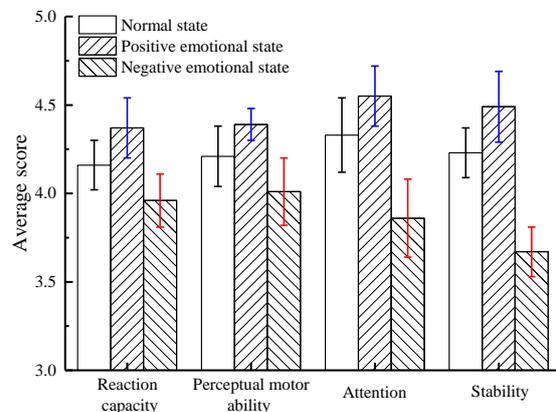
Cognitive behavior capacity belongs to the category of behavior consciousness, which is related to human’s physical and psychological health and psychological emotion. From the perspective of cognitive behavior, cognitive behavior capacity includes four indicators: reaction capacity, perceptual motor capacity, attention and stability. This study is also to evaluate four indicators of cognitive behavior

capacity. This study divides psychological emotional characteristics into positive emotional state and negative emotional state, and uses questionnaire and statistical method to probe into cognitive behavior capacity of taekwondo athletes. Table 2 shows the basic data of investigators. Taekwondo athletes are randomly divided into two groups. Before the experiment, two groups of taekwondo athletes are trained with positive emotion and negative emotion respectively. Two emotional states are obtained by watching videos of positive emotion and negative emotion, respectively. The scoring of cognitive behavior capacity adopts the system of five points. The higher the score is, the stronger the cognitive behavior capacity is.

Table 2. Basic information of investigators

| | Classification | Quantity | Proportion |
|-------------------|----------------|----------|------------|
| Positive emotions | Male | 45 | 43.69% |
| | Female | 10 | 9.71% |
| Negative emotions | Male | 38 | 36.89% |
| | Female | 10 | 9.71% |

Figure 6. The results of cognitive and behavioral abilities of Taekwondo Athletes in different psychological states



Research results and analysis

Through the previous research, it is shown that the psychological emotion of taekwondo athletes is not all positive, and has a great relationship with age. Competitive pressure brings many negative emotions to taekwondo athletes, which will lead to the development of psychological health. In turn, it will affect the performance of competitive competition, forming a cycle. The athlete’s cognitive behavior capacity is very helpful to relieve the competitive

pressure. The athlete with strong cognitive behavior capacity has stronger reaction capacity, perceptual motor capacity, attention and stability, which is beneficial to the cultivation of positive psychological health emotion. Figure 6 shows the results of cognitive behavior capacity of taekwondo athletes under different psychological emotional states, and it can be clearly seen that positive emotion is beneficial to the cultivation of cognitive behavior capacity of taekwondo athletes. Moreover, positive emotion and negative emotion have significant differences in the cognitive behavior capacity of taekwondo athletes.

Figure 7. The influence of gender on the cognitive behavior capacity of taekwondo athletes

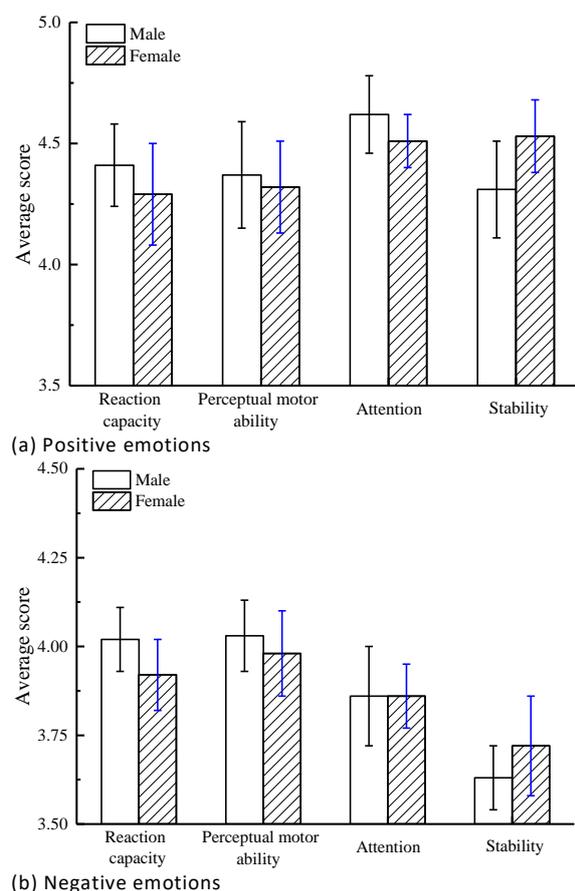


Figure 7 is the influence of gender factor on the cognitive behavior capacity of taekwondo athletes. Figure 7 (a) is a positive emotion factor, showing that male taekwondo athletes have stronger reaction capacity, perceptual motor capacity and attention under the positive

emotional state. However, female athletes have stronger stability, and each dimension of cognitive behavior capacity displays the significant difference under the positive emotional state to the gender factor. Figure 7 (b) is a negative emotion factor, and it can be clearly seen that under the negative emotional state, the boys and girls show no difference in the attention dimension and show differences in the other three dimensions. Male taekwondo athletes have stronger reaction ability and perceptual motor capacity while female taekwondo athletes have stronger stability.

CONCLUSIONS

Based on the research of sports psychological emotion, this study explores the psychological emotional characteristics of taekwondo athletes and the influence of different psychological emotions on their cognitive behavior capacity. The concrete conclusions have been drawn as follows:

(1) Taekwondo athletes also show strong negative emotions, which will directly affect the development of psychological health and cognitive behavior capacity of taekwondo athletes. The emotion of taekwondo athletes is influenced by gender and age, and excessive competitive pressure will result in obvious negative emotion.

(2) The athlete's cognitive behavior capacity is very helpful to relieve the competitive pressure. The athlete with strong cognitive behavior capacity has stronger reaction capacity, perceptual motor capacity, attention and stability, which is beneficial to the cultivation of positive psychological health emotion.

(3) Positive emotion is beneficial to the development of cognitive behavior capacity of taekwondo athletes, and positive emotion and negative emotion have significant differences in cognitive behavior capacity of taekwondo athletes. Male taekwondo athletes have stronger reaction capacity and perceptual motor capacity while female athletes have stronger stability.

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