

Comparison and Research on the Construction of Chinese Curling Athletes Special Psychological Ability Index

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Abstract: Based on national curling team and Heilongjiang Province curling athletes psychological testing. The purpose is to provide the basis for China's curling athletes selection and psychological training. This paper uses literature data method, questionnaire survey method, psychological measurement, mathematical statistics of our country outstanding curling athletes special psychological ability of factors were analyzed. The results of the study show that curling athletes of the special psychological ability by psychological preparation capacity factor (29.25%) mental state factor (26.41%) pay attention to ability factor (23.34%) space-time judgment factor (21.07%) constitute. And draw the conclusion: the national team and the Heilongjiang provincial team athletes in the cognitive and attentional capacity factor, there was no significant difference, and in mental state factor and self regulatory factors showed significant difference.

1 INTRODUCTION

Curling (curling), originated in the 14th century Scotland, in team as a unit on the ice of a throwing event, is the Winter Olympics Games. Because it has the ornamental and skill, so people have called the "curling ice chess". Curling is a combination of skill and intelligence of athletes, projects, technical and tactical level higher requirements. At the same time, curling the project is a psychological self against the strong project, so mental ability of athletes have a higher requirements. Research shows that: in some key curling competition, psychological factors affect the outcome of the game is about 90%. In recent years, China's curling has achieved good results in the international competition. But curling sport in China started relatively late, also has certain disparity in the selection and training of the athletes, especially in psychological training needed to improve. In the past competition, choking phenomenon, Clark phenomenon and so is because the players in the game when the emotional stress, thinking, psychological problems caused by the lack of psychological problems caused by the technology play disorders.

A good competitive state is an important condition for the creation of an athlete. The change of competitive state depends on many factors, and the special psychological ability of athletes plays an

important role. This article from the perspective of mental training of athletes and the material of special psychological abilities of China's outstanding curling athletes to study and analysis, trying to find the special psychological abilities of curling athletes of different levels, different gender, different position difference, in order to curling athletes psychological diagnosis, psychological training, psychological counselling, study skills, sports management team and athletes of the material provided reliable basis.

2 RESEARCH OBJECTS AND METHODS

2.1 Research Object

National curling team and Heilongjiang Province curling team, a total of 17 athletes, athletes national curling team 4, Heilongjiang Province curling team 13 people. Male athletes 9, female athletes 8 people, average age 23 years old.

2.2 Research Methods

In this paper, we use seven kinds of psychological scale to test the Athletes. Used the " Attention Test

Psychological Scales" of Yin Hengchan to test athletes attention ability, Used the "Psychological Scales of competitive motivation" of Ye Ping Dr. to test athletes' competitive motivation, Used Yin Xiaochuan's "scale of elite athlete's willpower" to test athlete's willpower, Used the "Psychological Scales of athletes trait self-confidence" to test athletes' self-confidence, Except for these scales, there are Martens's "The state anxiety questionnaire for sports competitions", Ye, Ping's "Sports cognitive trait anxiety scale", Zhang Liwei's "pre game mood scale -T" and so on. strictly according to the testing rules for operation in the whole testing process.

3 RESULTS AND ANALYSIS

3.1 The Construction of the Curling Athletes Special Mental Ability Index

This paper used factor analysis method to determine the factors of special psychological ability of curling athletes. R type factor analysis was conducted on eleven psychological indexes of temporal and spatial judgment, speed perception, attention allocation, attention shift, competitive motivation, willpower, sports competition anxiety, cognitive trait anxiety, self-confidence, attention stability and emotional stability. Then the characteristic value, the contribution rate and the cumulative contribution rate of the factors are obtained. According to the statistical principle, the selection of the characteristic value is greater than 1 and the cumulative contribution rate is higher than 85%. The first 4 factors are the main factors. According to the characteristics of four main factors were obtained by initial factor loading matrix, using the variance maximization of orthogonal rotation, it is concluded that the rotation of the orthogonal factor matrix (see Table 1). According to the contribution rate to the degree of importance of as follows: psychological preparation capacity factor (29.25%) mental state factor (26.41%) pay attention to ability factor (23.34%) space-time judgment ability factor (21.07%) with these four aspects constitute the curling athletes of the special psychological ability of the system.

We call it a mental preparation factor. Mental preparation is a correct understanding of the athletes, fully adapted to the game, the psychological ability to face the game. These indicators can reflect the

curling athletes in the game of mental control ability, degree of anti-interference ability and attention for the game. It is the primary psychological ability to decide the competitive ability. Good mental preparation ability can be in the tension and intense competition can give full play to the athletes' physical ability, skills and tactical ability to create good results. Lewis Carle, the four gold medal winner in the Losangeles Olympic Games, said the US track and field athlete, who said the usual training was to do physical and technical preparation, and 90% of the energy used in the game. It is obvious that the importance of Mental preparation.

Table 1: Curling athletes special psychological ability elements of rotated factor matrix.

Test index	First factors	Second factors	Third factors	Fourth factors
Judgment ability Of time and space	-.187	.035	-.145	.137
Speed perception ability	-.589	.513	.469	.330
Attention distribution ability	-.118	-.107	.328	.254
Attention transfer ability	-.024	.015	.237	-.061
Attention stability	-.267	-.016	.572	.234
Self-confidence	.508	.407	.537	.763
willpower	.287	.206	.667	.723
Competitive motivation	-.310	.717	-.235	.318
Sports competition anxiety	-.168	.744	.212	.341
Cognitive trait anxiety	-.250	.533	.349	.391
Emotional stability	.309	.727	.571	.288

The first factor includes three indicators, willpower, competitive motivation, self-confidence.

The second factor includes sports competition anxiety, cognitive trait anxiety, emotional stability. These indicators are curling athletes to reflect on the emotional state, is to determine the athletes are actively involved in the game of the important indicators we call for Mental state ability factor. Mental state is the psychological process of the players in the game to complete or exceed the level of the game. Obviously, the athlete's good mental

state is one kind of positive mental state, has the vital significance for the athlete to obtain the good competition performance. Therefore, coaches, athletes and athletes psychologists are very concerned about how to make the athletes in the game in this state, in order to obtain a good sports performance.

The third factors include attention stability, attention shift, attention allocation. They reflect the curling athletes in the match to the attention of stability, transfer, distribution, we call for attention ability factor. Attention is a kind of conscious adjustment state of psychological activity to stimulate and make a choice response to it, it plays a role in adjusting and controlling the information and processing of the brain. So attention is the regulation of human activity performance. Nedf thought that the structure of attention includes two dimensions, that is, the range and direction of attention. The characteristics of the curling sport needs to be able to determine lasting concentration of athletes.

The fourth factor includes the time and space and speed. They reflect the curling athletes capacity to perceive objects, they called space-time judgment factor. Temporal and spatial judgment is the ability of the athletes to the outside world of the perception of things is the beginning of the objective things. The formation of motor skills is also the beginning of feeling and consciousness. Curling athletes through on the curling of the moving and rotating control the speed and direction, on the curling operation needs a strong spatial and temporal judgment. The ability to have genetic factors and training factors.

3.2 Comparison Results of Curling Athletes Special Psychological Ability

3.2.1 The Comparison Results of the National Team Curling Athletes and Professional Athletes Special Mental Ability

See the Table 2, Special psychological abilities of national team and member of the provincial team, psychological preparation ability and cognitive decision making ability of the five indicators had no significant difference. Good psychological preparation ability and cognitive decision-making ability is outstanding curling athletes should have the psychological ability, Whether the national or provincial team athletes to have such psychological ability. This is the basis for our selection of athletes.

The mental state and ability to pay attention to the six indexes had significant differences compared with the Chinese national team and professional athletes, the national team is better than the provincial athlete. Mental state is long years of competition and training to improve the psychological ability, apparently the national team than the strength of the provincial team training and competition. Therefore, the psychological state of the ability of the national team athletes and professional athletes are better than the ability of attention.

Table 2: the national team and professional athletes special psychological ability in T test.

Test index	National athletes	Professional athletes	T test
willpower	167.14 ±22.12	165.09 ±23.19	P>0.05
Self-confidence	97.01 ±13.18	96.13 ±15.01	P>0.05
Competitive motivation	83.27 ±11.77	81.25 ±12.33	P>0.05
Sports competition anxiety	72.34 ±12.88	85.16 ±11.66	P<0.05
Cognitive trait anxiety	79.14 ±11.02	89.13 ±15.37	P<0.05
Emotional stability	99.54 ±13.51	90.26 ±12.56	P<0.05
Attention stability	18.73 ±2.51	14.21 ±2.17	P<0.05
Attention distribution	166.36 ±29.21	143.11 ±37.12	P<0.05
Attention shift	89.38 ±10.18	73.69 ±12.28	P<0.05
Speed perception	12.17 ±1.17	12.26 ±1.15	P>0.05
Temporal and spatial judgment	92.17 ±12.60	91.37 ±13.28	P>0.05

3.2.2 Comparative Analysis of Male and Female Member of the Curling Team of Special

From the Table 3 can know there is no significant difference between male and female athletes in the comparison of mental preparation and psychological status, This shows that the elite male athletes and female athletes after years of training have a good psychological ability. While in the attention ability and the time and space to judge the ability of the comparison of the show a significant difference, Male athletes are better than female athletes, This may be related to genetic factors. Psychological

training should enable athletes to understand and grasp the basic knowledge of sports psychological skills, training athletes to use their own psychological skills to control the awareness of self psychology, learn to use the psychological skills in training and competition, improve the athletes' psychological quality and ability, and promote the growth and perfection of athletes personality.

Table 3: Special psychological ability of male athletes and female athletes T test.

Test index	male athlete	female athlete	T test
willpower	162.5 ±22.68	160.70±2 3.88	P>0.05
Self-confidence	95.60 ±14.28	93.37 ±15.96	P>0.05
Competitive motivation	81.35 ±11.69	82.17 ±12.57	P>0.05
Sports competition anxiety	76.56 ±12.12	77.08 ±11.93	P>0.05
Cognitive trait anxiety	80.77 ±19.18	81.32 ±24.83	P>0.05
Emotional stability	95.76 ±19.51	94.84 ±24.91	P>0.05
Attention stability	18.03 ±2.67	13.80 ±2.97	P<0.05
Attention distribution	161.87 ±28.16	140.19±3 4.52	P<0.05
Attention shift	88.44 ±10.07	72.16 ±13.30	P<0.05
Speed perception	14.18 ±1.06	11.26 ±1.18	P<0.05
Temporal and spatial judgment	94.25 ±11.34	87.06 ±15.38	P<0.05

4 CONCLUSIONS

The special psychological ability of Chinese curling athletes by psychological preparation ability factor and Mental state ability factor and Attention ability factor and time space judgment ability factor.

There is no significant difference between male and female athletes in psychological preparation and psychological status, while male and female athletes have significant differences in the comparison of attention ability and time and space.

Curling athletes psychological material should be the psychological preparation and psychological state, pay attention to take into account the ability and the ability to judge the time and space.

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