

# The “Core Strength” of Dance Cheerleading and its Training Research

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**Abstract:** With the development of sports in China, cheerleading is popular among the domestic people. As cheerleading is a highly technical sport and requires high skill of athletes, technical training has become the main purpose of Cheerleading training. At the same time, the concept of core strength of athletes is of great significance to promote the stability of athletes and enhance the ability of power transmission. Therefore, through the experiment of Cheerleading athletes, this paper draws the conclusion of the importance of core strength in sports, and puts forward the training methods of core strength.

## 1. Research background

### 1.1 Literature review

With the continuous development of Cheerleading in recent years, the requirement of technical practice is getting higher and higher, and the requirement of physical fitness of Cheerleading athletes is more stringent (Sun, 2017). How to effectively improve the stability and strength of Cheerleading athletes through training has become a current concern. Athletes believe that as long as the strength of upper limbs and lower limbs is strengthened, they can strengthen their own stability, thus making difficult movements, but ignoring the importance of core strength (Zhang and Li, 2017). In cheerleading skills, most of the movements need to be completed by many people. The importance of core strength is highlighted in order to transfer strength among athletes to better accomplish technical movements (Shan, 2012). Strengthen the core strength training, can make athletes better enhance their own stability, to achieve power transmission between each other, so as to better complete the difficult technical movements. As cheerleading is a kind of collective sport, in order to improve the physical strength of Cheerleading athletes, it is necessary to accelerate the pace of research on core strength training methods (Zhao, 2013). Through the research on the training methods of the core strength of cheerleading, strengthening the core strength of athletes can effectively improve the skill level of athletes and enhance the skill and appreciation of Cheerleading (Guan, 2011). At the same time, strengthen the core strength of athletes to improve security, reduce injuries in training, enhance athletes' safety awareness.

### 1.2 Purpose of research

Under the Chinese environment, cheerleading conquers the masses with its unique courage and is in the process of continuous development. In addition, cheerleading shows new vitality in various ways, such as competition, communication and so on (Ji, 2015). Generally speaking, cheerleading belongs to a technical project, with various forms of action and high technical requirements. In the training process, the individual needs large-scale and high-frequency movements, so the stability of the athletes themselves is demanded. Athletes need to transfer the strength of upper and lower limbs on the premise of maintaining their own stability. At this stage, Cheerleading Coaches only pay attention to the skill training of cheerleading, neglecting the importance of core strength to cheerleading, and lack of core strength training for athletes (Li and Yu, 2017). At present, some people have realized the importance of the core force, and carried out research on the core force. How to standardize core strength training and put forward the direction of core strength training is a problem that needs to be solved at present.

## 2. Research object and research method

### 2.1 Research object

This paper takes the amateur cheerleading team of a city as the research object, and studies the technical training of the core strength of the cheerleading team. research method

### 2.2 Research method

In order to study the importance of the core strength of Cheerleading to its technical training, the methods involved in this paper are divided into three categories. Firstly, the method of literature research. By inquiring about books about sports and cheerleading core strength training, and referring to relevant research articles, this paper studies cheerleading core strength from various perspectives. After summarizing, the conclusion is drawn, which provides a theoretical basis for the study (Guo, 2016). Second, questionnaire survey method. In order to ensure the accuracy of the research, the author made 500 questionnaires on the core strength training of cheerleading, and investigated the city cheerleading team members. First of all, 300 questionnaires were sent out to 300 cheerleading athletes, 278 were recovered, 272 were valid questionnaires, the efficiency was 90.6%. 200 teenage cheerleading athletes were tested, 200 questionnaires were issued and 187 were recovered, of which 179 were valid questionnaires, the efficiency was 89.5%. Third, experimental method. In order to analyze the influence of Cheerleading core strength training on cheerleading training, the author selected 40 cheerleading athletes with the same physical condition. 40 people were divided into experimental group and control group, 20 people in each group. The experimental group was trained for two months, and then the physical fitness of the experimental group was compared with that of the control group to verify the experimental effect.

## 3. Training Test of “Core Strength” In Dance Cheerleading

### 3.1 Preparation before training

Taking the gymnastic rotation of Cheerleading as an example, 16 amateur cheerleading athletes were selected to carry out pre-training data test. The test contents include 720 degree vertical rotation, 1 080 degree vertical rotation and 3 laps of Alar C bar. Record the completion of Cheerleading athletes, as shown in Table 1.

Table 1. The completion of the body-turning exercise of cheerleading athletes

Completion status	Turn720°	Turn 1080°	Ala C Bar 3 laps
Dare not try	0	5	10
Not completed	0	11	14
Finish 1 times	16	5	2
Finish 2 times	12	2	0
Finish 3 times	4	0	0

According to Table 1, it can be seen that the 720 degree vertical rotation can be completed, indicating that athletes have basic physical fitness. About 69% of athletes can't complete vertical rotation at 1080 degrees, even a few of them lack stability. The number of people who could not finish three laps of the Ala C Bar accounted for 88%, and only a few could finish it. Through the investigation of Cheerleading athletes, we know that the reason why the vertical rotation of 1 080 degrees can not be completed is that the athletes have not been taught to turn correctly. The increase in the number of turns will lead to the athletes' timidity, so they can not complete the vertical rotation of 1080 degrees. Although the athletes know the movement of the Alar C Bar, most of them are amateur. Therefore, no attempt has been made on the movement of the Ara C bar.

Therefore, in order to strengthen the level of the cheerleading athletes' turning skills, the cheerleading athletes have made training plans. Cheerleading athletes are taught professional rotation courses twice a week for 3 hours each time. Before sports, let the athletes warm up and explain their skills to improve their theoretical knowledge. After two months of training, the athletes

were reexamined, as shown in Table 2.

Table 2. The completion of the body-turning exercise of cheerleading athletes

<b>Completion status</b>	<b>Turn720°</b>	<b>Turn 1080°</b>	<b>Ala C Bar 3 laps</b>
<b>Dare not try</b>	0	0	0
<b>Not completed</b>	0	0	0
<b>Finish 1 times</b>	16	16	16
<b>Finish 2 times</b>	16	15	12
<b>Finish 3 times</b>	16	12	10

By comparing the data of the athletes before and after two months, the stability of the athletes is greatly improved after training. At the same time, the number and number of completed laps of vertical rotation 1 080 degree and Alar C bar are significantly increased.

### 3.2 Basic principles of core strength training in dance cheerleading

Dance cheerleading core strength training has three basic principles. First, the principle of systematization. Some Cheerleading Coaches lack the research on the core strength of cheerleading, which leads to the lack of systematic training for athletes in the training process, and the lack of muscle strength in the core area, which affects the completion of Cheerleading movements. Therefore, the coach should step by step in cheerleading training, the intensity of pre-training should not be too high, and the training intensity and training time should be continuously increased in the training process. Let athletes constantly improve themselves in the training process, adapt to the training intensity and establish a balance. Whenever athletes establish a balance, coaches should constantly break the balance of athletes in training, by increasing training intensity and extending training time, so that athletes always maintain an efficient training state, and then let athletes establish a new balance. Strengthen the core strength training of athletes by constantly establishing and breaking the balance. Second, the principle of specificity. Combining core strength training with cheerleading special training can enhance the core strength of Cheerleading athletes and maximize the specific ability of Cheerleading athletes. Therefore, coaches need to focus on core strength training and combine core strength training with cheerleading training. In terms of exercise intensity, coaches need to find ways to overcome athletes' body weight, increase the frequency and range of athletes' movements, so as to enhance athletes' physical ability. Third, the principle of instability. In cheerleading, the athletes' body is in an unstable state. Especially in large-scale rotation, the stability of athletes is more demanding. Therefore, coaches in cheerleading training, need to add stability training, so that athletes overcome their weight, under the premise of mobilizing more muscles to maintain balance, improve their own stability.

## 4. Training method of “core strength” in dance cheerleading rotation

### 4.1 Training method of standing and turning movements

Vertical movement training can be divided into three steps: learning technical theory knowledge, skill assistant exercises and improving strength quality. Through the analysis of vertical rotation, the following vertical rotation training methods are put forward. First, video learning. By playing professional cheerleading videos, slow down the gymnastic rotation of cheerleading. The coach gives a theoretical explanation of the technical movements of cheerleading, and then makes an action demonstration to enhance the athletes' understanding of the requirements of the technical movements. Secondly, assistant exercises. Auxiliary exercises include skill exercises and strength exercises. Among them, head training is needed for skill training. Athletes can choose a reference for independent practice. When practicing, face the reference object, stand on your toes, rotate 90 degrees counter-clockwise, and drop your heels. Keep the head facing the reference object and rotate counter-clockwise 270 degrees again. When the body cannot turn, turn it clockwise back to the reference point. Repeated exercises to enhance physical stability. Secondly, the technical action is decomposed into the starting action and the turning action. Only by ensuring the stability of the

initial movement can the stability of the rotation be ensured. Athletes keep four foot squat after step-up, dock the follow-up action, and complete movement training. When standing on the heel, open both hands from the side of the body, then slowly close to the chest, point the tips of the left foot, close to the knee joint of the main leg, the main leg quickly stand to the highest point. Repeated practice for stability training. Third, waist and abdomen strength training. Lumbar and abdominal strength is the key factor of stability in vertical rotation. During vertical rotation, abdominal closure is needed to keep breathing stable, so as to control its own stability. During the training, we can use the method of fast starting from both ends to require the number of starting from both ends of athletes within the specified time. Strengthen athletes' waist and abdomen strength through continuous training.

#### **4.2 Training method of “arac bar” movement**

The training of the Arac Bar can be divided into two parts: the training of the whipping speed and the swing height of the legs. Firstly, about the speed training of leg whipping. The practice of holding the bar is a common practice of the Arac bar, and is similar to the actual rotation exercise. The practice of holding the bar can enhance the whipping speed of iliopsoas muscle and leg. When practicing, one hand is on the handle, the body is standing side by side, the swing leg is extended to the main leg at 45 degrees, while the main leg is bent and balanced, and the hands are placed in front of the body. When the main leg reaches the highest point, the swing leg whips outward quickly, and the hands extend to the side of the body. Action Requirements: When the main leg reaches the highest point and swinging leg whips, it is necessary to ensure the strength speed of the whipping leg, and the swinging leg needs to be kept at the level of water. Second, swing height training. Because the swing leg height can not be lower than the horizontal level in the movement of the Arabic Bar, it is necessary to strengthen leg training to enhance the endurance of iliopsoas muscle. When practicing in pairs, the athletes put one hand on the shoulder of the assistant, one hand on the waist, keep the swing leg in the horizontal position in front of the body, and then slowly move the swing leg to the side of the body. They also control the swing leg to keep the horizontal plane, and repeat the exercises to improve the muscle endurance of iliopsoas muscle. In order to achieve better results in training, it can increase the weight of athletes, thereby enhancing the training effect.

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