

# PARTICULAR CHARACTERISTICS OF PHYSICAL FITNESS IN THE TRAINING OF DANCERS



ORIGINAL ARTICLE  
ARTIGO ORIGINAL  
ARTÍCULO ORIGINAL

CARACTERÍSTICAS PARTICULARES DE APTIDÃO FÍSICA NO TREINAMENTO DE DANÇARINOS

CARACTERÍSTICAS PARTICULARES DE LA APTITUD FÍSICA EN EL ENTRENAMIENTO DE BAILARINES

Honggang Shan<sup>1</sup>   
(Physical Education Professional)

Yu Liu<sup>1</sup>   
(Physical Education Professional)

Jianfeng Gong<sup>2</sup>   
(Physical Education Professional)

1. Hebei Sport University, Shijiazhuang, Hebei, China.
2. Caochangjie Primary School, Shijiazhuang, Hebei, China.

## Correspondence:

Yu Liu  
Shijiazhuang, Hebei, China. 050021.  
Liuyu5515@sina.com

## ABSTRACT

**Introduction:** Chinese sports dance has occupied a prominent place worldwide due to its rapid development and the exchange between countries has gradually increased, requiring studies on the improvement in the training of these athletes. **Objective:** Study the particular characteristics of physical fitness and its insertion methods in the training of sport dancers. **Methods:** The author used the method of literature data, questionnaire survey and mathematical statistics to take the students specializing in sports dance in the School of Physical Education as research volunteers, performing a series of fitness index tests to check the most relevant characteristics to the fitness of their training. **Results:** The body shape training and special strength training, including special flexibility training is organized according to the demand standards. As for the physical training specific to dancers, the basic ballet training reaches 32 exercises, the strength training of the costal muscles, waist and abdomen 32 exercises, and the flexibility of the groin and legs 25 exercises, the latter being the key quality content for athletes. **Conclusion:** In-depth investigations and research are constantly being conducted into the content of special fitness training for students specializing in sports dance, and the factors influencing the particular fitness training have the potential to most effectively promote the development of sports dance. **Level of evidence II; Therapeutic studies - investigation of treatment outcomes.**

**Keywords:** Sports; Physical Education and Training; Physical Fitness.

## RESUMO

**Introdução:** A dança esportiva chinesa tem ocupado um lugar de destaque mundial pelo seu rápido desenvolvimento e o intercâmbio entre países tem aumentado gradualmente, exigindo estudos sobre o aprimoramento no treino desses atletas. **Objetivo:** Estudar as características particulares de aptidão física e os seus métodos de inserção no treinamento dos dançarinos esportivos. **Métodos:** O autor utilizou o método de dados da literatura, levantamento de questionários e estatísticas matemáticas para levar os estudantes especializados em dança esportiva na Escola de Educação Física como voluntários de pesquisa, realizando uma série de testes de índice de aptidão física para verificar as características mais relevantes à aptidão física de seu treinamento. **Resultados:** O treinamento de forma corporal e o treinamento de força especial, incluindo o treinamento de flexibilidade especial e organizado conforme os padrões de exigência. Quanto ao treinamento físico específico aos dançarinos, o treinamento básico do balé atinge 32 exercícios, o treinamento de força da musculatura costal, cintura e abdômen 32 exercícios, e a flexibilidade da virilha e pernas 25 exercícios, sendo estes últimos o conteúdo chave de qualidade aos atletas. **Conclusão:** Investigações e pesquisas aprofundadas estão em constante atualização sobre o conteúdo do treinamento especial de aptidão física para estudantes especializados em dança esportiva e os fatores que influenciam o treinamento particular de aptidão física tem o potencial de promoverem de forma mais eficaz o desenvolvimento da dança esportiva. **Nível de evidência II; Estudos terapêuticos - investigação dos resultados do tratamento.**

**Descritores:** Esportes; Educação Física e Treinamento; Aptidão Física.

## RESUMEN

**Introducción:** La danza deportiva china ha ocupado un lugar destacado en todo el mundo por su rápido desarrollo y el intercambio entre países ha aumentado gradualmente, lo que exige estudios sobre la mejora en la formación de estos atletas. **Objetivo:** Estudiar las características particulares de la aptitud física y sus métodos de inserción en el entrenamiento de los bailarines deportivos. **Métodos:** El autor utilizó el método de datos bibliográficos, encuesta por cuestionario y estadística matemática para tomar a los alumnos especializados en danza deportiva de la Escuela de Educación Física como voluntarios de la investigación, realizando una serie de pruebas de índice de aptitud física para comprobar las características más relevantes para la aptitud de su entrenamiento. **Resultados:** El entrenamiento de la forma del cuerpo y el entrenamiento especial de la fuerza, incluido el entrenamiento especial de la flexibilidad, se organizan de acuerdo con las normas de la demanda. En cuanto a la formación física específica de los bailarines, el entrenamiento básico de ballet alcanza los 32 ejercicios, el entrenamiento de la fuerza de los músculos costales, la cintura y el abdomen 32 ejercicios, y la flexibilidad de la ingle y las piernas 25 ejercicios, siendo este último el contenido de calidad clave para los atletas. **Conclusión:** Se están actualizando constantemente las investigaciones y



los estudios sobre el contenido de la preparación física especial para los estudiantes que se especializan en la danza deportiva y los factores que influyen en la preparación física particular tienen el potencial de promover el desarrollo de la danza deportiva con mayor eficacia. **Nivel de evidencia II; Estudios terapéuticos - investigación de los resultados del tratamiento.**

**Descriptores:** Deportes; Educación y Entrenamiento Físico; Aptitud Física.

DOI: [http://dx.doi.org/10.1590/1517-8692202329012022\\_0615](http://dx.doi.org/10.1590/1517-8692202329012022_0615)

Article received on 10/31/2022 accepted on 11/30/2022

## INTRODUCTION

With the rapid development of sports dance, Chinese sports dance has occupied a place in the world, and the exchanges between domestic and foreign countries have gradually increased, more and more outstanding sports dancers are among the top in the world, but there is still a big difference with the excellent sports dancers in foreign countries.<sup>1</sup>

In recent years, China has vigorously developed the cause of dance sports, competitions at all levels have been held one after another, clubs and vocational schools have been organized, and college sports departments have also successively opened sports dance majors. Park J I's definition of "physical fitness" is: The ability to express the functions of various organ systems in the human body through muscle activity through training the body, it includes physical shape, strength, endurance and other related sports qualities.<sup>2</sup> Park J W believes that physical training can induce changes in human cardiopulmonary function and can change the function of human cardiopulmonary organs.<sup>3</sup> Song H R mentioned that the concept of physical fitness still has a lot of controversy in the field of sports academic research, and analyzed the close relationship between genetics and physical fitness, body shape and physical fitness.<sup>4</sup> Gong L expounded the concept of special physical fitness in competitive aerobics and its constituent factors, and distinguished between physical fitness training and physical fitness training.<sup>5</sup> Lieberman LD In the current situation of physical function of high-level rhythmic gymnasts in my country, elaborate on strengthening the physical function reserve of athletes and improving the physical fitness level of athletes.<sup>6</sup>

From the literature analysis, it is found that the research on the athletic quality characteristics and indicators of sports dancers is mainly carried out in combination with the technical structure characteristics of the project and the requirements of physical quality. The special sports qualities of sports dancers include: Strength, flexibility, speed and coordination; But the research on quality indicators is still blank. In general, there is still a lack of systematic and in-depth research on the special physical fitness of sports dancers.

## METHOD

### Documentation method

According to the actual needs of the research, the author uses books in the physical education college library, sports training, pedagogy and psychology, etc., mainly consulted the basic theoretical knowledge about sports dance and group ability training of difficult and aesthetic items, at the same time, various websites and journal database resources are used to provide a more comprehensive and comprehensive theoretical basis for the author's writing, the design of the questionnaire and the design of the interview content, and play a role in ensuring the smooth progress of the research.

### Questionnaire survey method

According to the years of the sports dance major in each sports college, the author selects the sports dance professional teachers and the third-year students of the sports dance major in the representative sports colleges of the sports college as the survey objects.

The design of the scale of influencing factors of special physical training for sports dance students in sports colleges is through the Delphi method, experts screened the initial 53 factors for 3 rounds, and after sorting, an initial questionnaire with 21 factors was finally formed.<sup>7</sup> The questionnaire for this study will be distributed in December 2021, questionnaire 1 A total of 34 questionnaires were distributed to teachers of sports dance majors in 6 sports colleges, 32 were recovered, and the recovery rate was 94%, the details of the distribution are shown in Table 1.

### Mathematical Statistics

The author assigns scores to the five items of the influencing factors questionnaire according to the five-level standard, which are 5, 4, 3, 2, and 1, respectively, by using SPSS 17.0 software to carry out statistical analysis on the collected data, the method of dimensionality reduction factor analysis is mainly used to determine the influencing factors that affect the special physical training of sports dance students in physical education colleges.<sup>8</sup> For the questionnaire of special physical training of sports dance students in physical education colleges, Excel2003 data statistics software is used for statistical analysis.<sup>9</sup>

### Ethical Compliance

Research experiments conducted in this article with animals or humans were approved by the Ethical Committee and responsible authorities of Hebei Sport University following all guidelines, regulations, legal, and ethical standards as required for humans or animals.

## RESULTS

### Analysis of body shape training content

The body shape in sports dance refers to the body shape that needs to be completed to complete the sports dance movements to show the artistic beauty of sports dance. Sports dance is an art form characterized by external physical expression, and physical beauty runs through the entire dance work, which is the precondition for the formation of dance beauty.<sup>10</sup>

In Figure 1, the survey results show that the physical education academies have arranged the following training contents when conducting body shape training:

It can be seen from Figure 1 that, during body shape training, physical education academies have arranged basic ballet training, basic dance training and modeling movement training, among which basic ballet training is the main content of body shape training. Color budgies are the foundation of all dances, so a lot of ballet basic training needs to be adopted in the physical form training of sports dance, the dance and standing postures of sports dance are similar to those of ballet in many ways. Ways to perform body shape training: ①Basic training for ballet; Training methods such as open, stand, stretch, and straight can be used on the bar and the ground. ②Basic dance training and modeling

**Table 1.** Statistical table of the number of questionnaires issued and recovered.

Issue	Recycle	Efficient%
34	32	94%

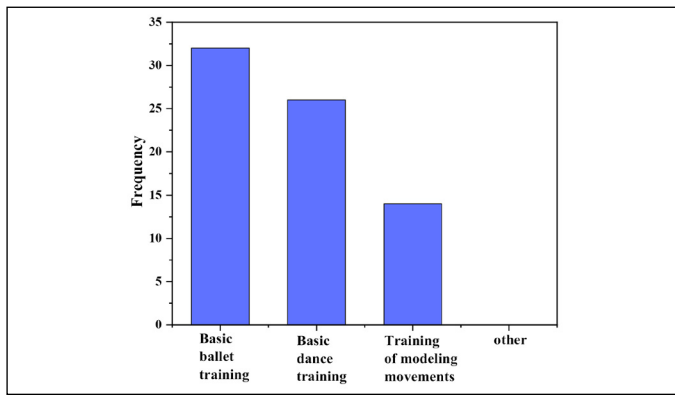


Figure 1. Histogram of body shape training content.

movement training; The repetitive training method can be used to repeatedly practice the posture of a certain basic movement such as lock step, broken step, etc. and fixed-point modeling movements.

### Analysis of the content of special strength training

For all sports, if you want to master the technology of the project, you need the athletes to complete it through the support of muscle strength, which is also a necessary condition to improve the athletes' performance. Special strength quality is the basis for the development of other sports qualities, when completing the entire sports dance competition, if the dance movements are not supported by special strength, the dancer's body may have a series of undesirable problems such as hunchback, slumped waist, pouty hips and abdomen, in terms of dance movements, there is no aesthetic feeling at all, it loses the most essential characteristics of dance, and the appreciation of art is greatly reduced, with special strength as the basis, the whole dance will give people the feeling of lifting a heavy weight.

In Figure 2, the survey results show that when special strength training is carried out, the sports academies have arranged the following training contents:

It can be seen from Figure 2 that during special strength training, the sports academy arranges strength training for the arms, strength training for the back, waist and abdomen, and strength training for the legs and ankles, among them, back and waist and abdominal strength training is the focus of special strength training.

The methods that can be used for special strength training: ① Arm strength training: push-ups, high-fives when pushing up, using dumbbells, controlling the interval time, and repeating several sets of exercises. ② Back, waist and abdominal strength training: You can use sit-ups, knee-lifting, prone two-headed and other methods to develop the strength of the waist and abdominal muscles.

### Content analysis of special flexibility training

Many dance movements in sports dance, such as swinging in modern dance, the degree of expansion of the chest and waist for women, the leg control movements, and the women's waist washing and splits in Latin dance all require good flexibility to reflect, without good flexibility, these movements cannot be completed at all. The elasticity and stretching ability of muscles, ligaments and tendons in various parts of the body determine the quality of flexibility, on the other hand, the coordination ability of contraction and relaxation of muscle activity in dance can also reflect the quality of flexibility.

In Figure 3, the survey results show that the sports academies have arranged the following training contents when conducting special flexibility training:

It can be seen from Figure 3 that when carrying out special flexibility training, sports academies have arranged flexibility training for the

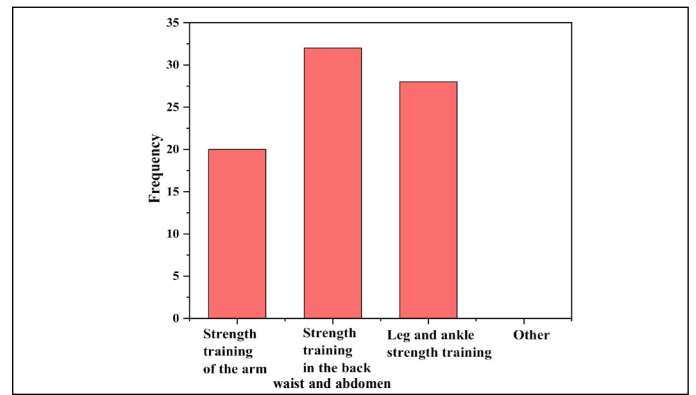


Figure 2. Histogram of the content of special strength training.

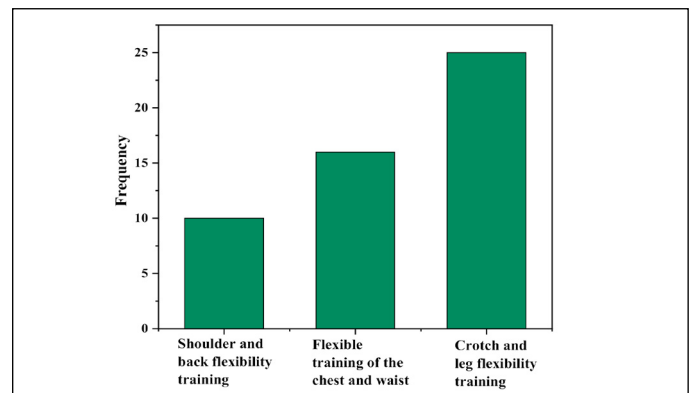


Figure 3. Histogram of the content of special flexibility training.

shoulders and back; The flexibility training of the chest and waist, and the flexibility training of the crotch and the legs, among which the crotch and the legs are the key parts of training flexibility.

The methods that can be used for special flexibility training: ① Shoulder and back flexibility training: Mainly use methods such as pressing, pulling, and opening. ② Chest and waist flexibility training: Methods such as swinging the waist, lying on the back to form a bridge, and lowering the waist to form a bridge can be used. ③ Hip and leg flexibility training: For open span, you can use right-angle split-leg sitting and forward flexion, large-span jump, etc.; Legs can be practiced with static leg presses, leg control, splits, continuous and repeated kicks and other methods.

## DISCUSSION

The content of special physical fitness training for sports dance students in physical education colleges is mainly reflected in the aspects of body shape training and special strength training, in addition, the special flexibility also arranges the training content accordingly. Through the analysis of these training contents, it shows that the current sports academy sports dance special physical training content is relatively rich, which can basically meet the needs of special student training.

## CONCLUSION

Although the performance of sports dance competitions in my country has improved significantly compared with previous years, many players tend to ignore the importance of physical fitness in training, in addition, there is no systematic training system in China, which is relatively fragmented and has too many branches, therefore, Chinese sports dance is still in a state of development, and there is a lot of room for improvement. Both coaches and players need to constantly enrich their professional qualities and conduct scientific and reasonable

training. Coaches also need to understand the cooperation between each contestant and each dance partner, and prescribe the right medicine. In the process of training, coaches should grasp the relationship between training intensity and training volume, not only to achieve a certain training effect, but also not to make the players too tired, it is

necessary to combine theory with practice, and formulate training plans and training cycles related to sports dance specialties.

---

All authors declare no potential conflict of interest related to this article

---

---

**AUTHORS' CONTRIBUTIONS:** Each author made significant individual contributions to this manuscript. Honggang Shan: writing; Yu Liu: data analysis and article review; Jianfeng Gong: intellectual concept of the article.

---

## REFERENCES

1. Yuan Y. Rapid rehabilitation of microscopic ligation of varicose veins for sports dance athletes. *Acta Microsc.* 2020;29(2):1095-103.
2. Park Ji. The Study on The Participation Motivation of Dance Sports Activation in Dance Sports Club Members. *Journal of the Korea Entertainment Industry Association.* 2020;14(2):97-107.
3. Park JW, Yoo HS, Kim DH. Policy Implications through Perception Survey on Dance Sports Referee Decisions. *Journal of the Korean Society for Wellness.* 2020;15(3):183-98.
4. Song HR, Yang YK, Park JS. The effect of exercising Dance sports (TANGO VARIATIONS ROUTINE) on the balance and muscle function of elderly people over 65 years. *Korean J Sport Sci.* 2020;29(5):1015-23.
5. Gong L, Wang L. Introduction to the Research on the Special Marketing Ability of Higher Vocational Automobile Industry under the Background of the Integration of Production and Education. *Open Access Libr J.* 2021;8(3):1-6.
6. Lieberman LD, Kaplan A, Scholey L, Kohomban J, Lausell-Bryant L. Strategic Partners: Enhancing the Ability of Foster Care Agencies to Serve the Special Needs of Young Mothers. *Child Youth Serv Rev.* 2020;110(2):104808.
7. Salamh P, Lewis J. It Is Time to Put 'Special Tests' for Rotator Cuff Related Shoulder Pain Out to Pasture. *J Orthop Sports Phys Ther.* 2020;50(5):222-5.
8. Pan S, Hu R, Fung SF, Long G, Jiang J, Zhang C. Learning Graph Embedding with Adversarial Training Methods. *IEEE Trans Cybern.* 2020;50(6):2475-87.
9. Hogan C, Binnie MJ, Doyle MM, Lester L, Peeling P. Comparison of Training Monitoring and Prescription Methods in Sprint Kayaking. *Int J Sports Physiol Perform.* 2020;15(5):654-62.
10. Lyons O, Forbat L, Menson E, Chisholm JC, Pryde K, Conlin S, et al. Transforming training into practice with the conflict management framework: a mixed methods study. *BMJ Paediatr Open.* 2021;5(1):1490-505.