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Analysis on international field athletic strength situation and inadequacy of China's training in track and field based on the London Olympic Games

Ping Jin, Wenyu Xu
School of Sports, Xihua University, Chengdu Sichuan 610039, (CHINA)

ABSTRACT

The essay analyses the medal belongs in the field and track on the London Olympic Games and other Olympics. It also analyses the international field athletic strength situation and China's field athletic achievements. Based on the international field athletic strength situation and China's present field athletic status, this essay aims to find out China's inadequacy of training and countermeasures.

KEYWORDS

Field and track; International strength situation; Field athletic training; Countermeasures.

INTRODUCTION

The Olympic Games is a modern athletic competition with the highest reputation. The world's top athletes hope to have a good performance in the Olympic Games, which is also a competition on sport strengths among countries. The track and field events have the longest history among all the Olympic events, and have the highest popularity in the world. The track and field is the basis of competitive sports, and its results can reflex every country's sports strength. So we can see the strength of participating countries by the medal ranking[1-2]. Countries like U.S., Russia and Germany have strong sport strength. In the 23rd Olympic Games in 1984, it was the first time for China to formally attend the Olympics as a participating country. From then on, China's Olympic experiences have begun, and it is a historic moment for China's sports.

China's field athletic events have been relatively weak, compared with China's advantage events such as table tennis, badminton, gymnastics and diving. In the 2012 London Olympics track and field events, China only won one gold medal by race walking athlete, Chen Ding, which is a pity for a large country with a population of over a billion.

The London Olympic Games featured 47 medals events, including 24 male events and 23 woman events. These 47 medals were shared by 23 countries. This essay analyses the international field athletic strength according to the medal rankings in the London Olympic Games. It also compares China's results from the 23rd Olympics to the 30th Olympics, to analyze the China's inadequacy on field athletic training and to find out countermeasures.

RESEARCH OBJECT AND METHOD

Research object

The main research object is the awards and results in the track and field events of London Olympic Games, while the secondary object is field athletic results from the 23rd Olympics to the 30th Olympics.

Research objective

The objective is to know more about the international field athletic strength situation by the analysis of medal belongs in the Olympics. The other goal is to analyze the inadequacy of China's field athletic training and to find out countermeasures by China's performance in the track and field events of the Olympics.

Research methods

Method of documentation

Through the China National Knowledge Infrastructure (CNKI), the Wanfang Database, the VIP database, Elsevier Database and some data online, we gathered the competition results, news and reports about the track and field events of the Olympic Games.

Method of mathematical statistics

We used relevant software to do mathematical statistics analysis on the competition results and the medal belongs.

Method of inductive analysis and comparison

According to the analysis of data, we found out the medal distributions pattern to explain the international field athletic strength situation.

RESULTS AND ANALYSIS

Awards of the track and field events in the London Olympic Games

As you can see, the Figure 1 shows the awards of track and field events in the London Olympic Games, which lasted for ten days. In the 2012 Olympic Games, four world records has been broken, and eleven Olympic records has been broken. The games had 143 medals including 47 gold medals. 42 countries won their medals. The track and field event had the most medals. In all previous Olympic Games, the 26th Olympics handed out 46 gold medals shared by 26 countries; the 27th Olympics handed out 46 gold medals shared by 26 countries; 22 countries won gold medals in the 28th Olympic Games and 24 countries won gold medals in the 29th Beijing Olympic Games. The medal distribution in the London Olympic Games extended more events, which means more and more countries have put more attention on the track and field events. As the rapid development of track and field sports, every country is enhancing their field athletic training intensity, which results in the improvement of training and athletes' ability. Therefore, the field athletic competition will become much fiercer and the strength situation will become more unpredictable.

The top eight on the medal rankings is U.S., Russia, Jamaica, Britain, Ethiopia, Kenya, Germany and Australia. All these eight countries won 96 medals, accounting for 65.7% of the total number of medals, which means this event has been monopolized by several countries. For these countries have good track and field athletes in all events, it is hard for countries weak on the field athletic events to win gold medals.

TABLE 1 : Awards of track and field events in the London Olympic Games

Ranking	Nation	Gold medal	Silver medal	bronze medal	Total	Ranking	Nation	Gold medal	Silver medal	bronze medal	Total
1	U.S.	9	13	7	29	22	New Zealand	1	0	0	1
2	Russia	8	5	5	18	23	Uganda	1	0	0	1
3	Jamaica	4	4	4	12	24	Ukraine	0	1	2	3
4	Britain	4	1	1	6	25	Cuba	0	1	1	2
5	Ethiopia	3	1	3	7	26	Botswana	0	1	0	1
6	Kenya	2	4	5	11	27	Columbia	0	1	0	1
7	Germany	1	4	3	8	28	Guatemala	0	1	0	1
8	Australia	1	2	0	3	29	Iran	0	1	0	1
9	Dominica	1	1	0	2	30	New Zealand	0	1	0	1
10	France	1	1	0	2	31	South Africa	0	1	0	1
11	Poland	1	1	0	2	32	Slovenia	0	1	0	1
12	Turkey	1	1	0	2	33	Tunisia	0	1	0	1
13	China	1	0	5	6	34	Bahrain	0	0	1	1
14	Trinidad	1	0	3	4	35	Canada	0	0	1	1
15	Czech	1	0	1	2	36	Estonia	0	0	1	1
16	Algeria	1	0	0	1	37	Finland	0	0	1	1
17	Bahama	1	0	0	1	38	Italy	0	0	1	1
18	Croatia	1	0	0	1	39	Japan	0	0	1	1
19	Grenada	1	0	0	1	40	Morocco	0	0	1	1
20	Hungary	1	0	0	1	41	Puerto Rico	0	0	1	1
21	Kazakhstan	1	0	0	1	42	Qatar	0	0	1	1

Top eight on the medal rankings from the 27th Olympics to the 30th Olympics

The TABLE 2 shows the top eights on the medal rankings from the 27th Olympics to the 30th Olympics. The U.S. and Russia kept ranking on the first and second on the rank in all these four Olympics, whose status is unshakeable. Their field athletic strength should not be underestimated. Although U.S. has always been challenged by other countries, it kept the first position on the rank. U.S., Russia, Ethiopia and Britain ranked in the top eights in all these four Olympics, while Kenya, Jamaica and Cuba ranked in the top eights in three Olympics. Jamaica sat in the 25th place in the 27th Olympic Games while it rose in the third place in the 29th and 30th Olympic Games. Jamaica enters the Olympic Games like a dark horse and becomes the most promising country to compete with U.S. and Russia. The rank of Cuba dropped to the 25th place in the 30th Olympic Games, which means Cuba's field athletic strength is decreasing.

TABLE 2 : Top eight on the medal rankings from the 27th Olympics to the 30th Olympics

ranking	27th Olympic Games	28th Olympic Games	29th Olympic Games	30th Olympic Games
1	U.S.	U.S.	U.S.	U.S.
2	Russia	Russia	Russia	Russia
3	Ethiopia	Britain	Jamaica	Jamaica
4	Poland	Sweden	Kenya	Britain
5	Kenya	Ethiopia	Ethiopia	Ethiopia
6	Britain	Greek	Belarus	Kenya
7	Cuba	Jamaica	Cuba	Germany
8	Germany	Cuba	Britain	Australia

Intercontinental medals distribution from the 23rd Olympics to the 30th Olympics

The Olympic rings stand for America, Europe, Africa, Asia and Australia[5]. Due to the longitude and latitude, as well as different geographical conditions, people in different continents share different features. Athletes from America and Europe are granted the exceptional edge in the track and field events. As is shown in the Figure 1, among the 1085 medals with 356 gold ones from the 23rd Olympics to the 30th Olympics, America won 347 medals, taking up of 32% of the total number of medals, including 124 gold ones, accounting for the 34.8% of the total number of gold medals. Europe won 449 medals, which makes up of 46 of the total number, with 159 gold ones accounting for 44.7% of the total number of gold medals. The number of medals of America and Europe account for the 78% of the total number, while gold ones account for the 79.5%. Athletes from America and Europe had good performance in all these Olympics. As we can see, America and Europe won the most part of medals in the track and field events, while Asia and Australia were relatively weak, even could get no gold medal in some Olympics. America and Europe kept dominated in the Olympics, followed by Africa. Asia and Australia were relatively weak, as supporting roles with a poor competition power in the track and field events.

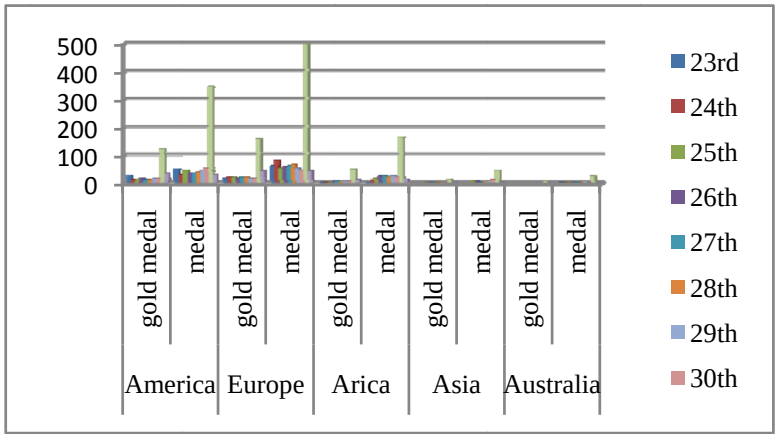

Figure 1 : Intercontinental medals distribution from the 23rd Olympics to the 30th Olympics

Field athletic strength situation in the Olympic Games

The track and field sports have three types, including strength type sport, speed type sport and endurance type sport. The strength type includes throwing and jumping; the speed type includes sprint; the endurance type includes long-distance race and long walk.[6]

Intercontinental medals distribution of the strength type sports

As is shown in the Figure 2, athletes from Europe performed well in all strength type sports, especially in the throwing, in which Europe's gold medals of men's throwing account for 87.5% of the total number; while gold ones of woman's account for 78.6%. Compared with Europe, America was relatively weak in the throwing, but had the similar performance on jumping with Europe. As for the strength type sports, Europe has a unmatched strength.

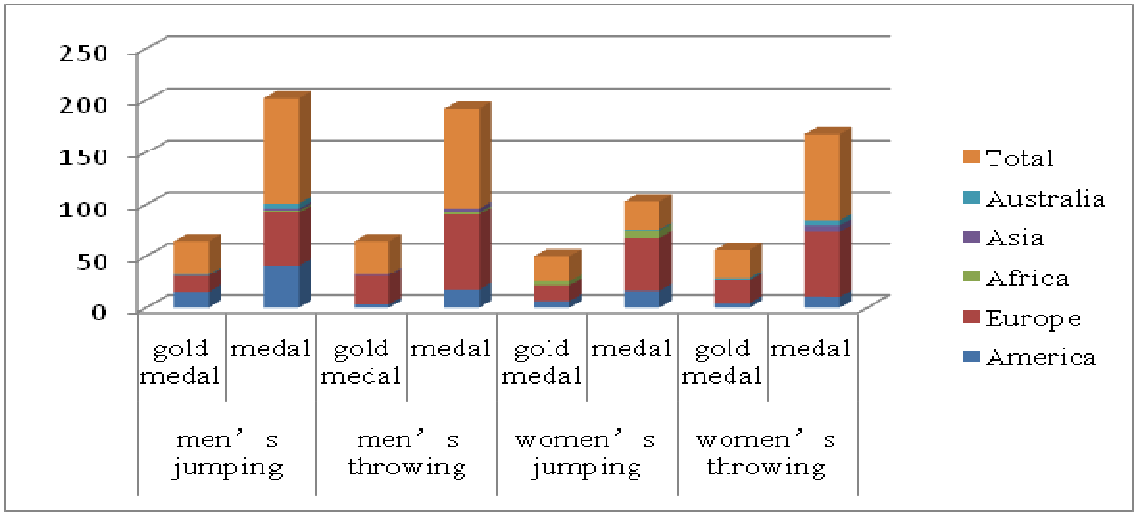

Figure 2 : Intercontinental medals distribution of the strength type sports from the 23rd Olympics to the 30th Olympics

Intercontinental medals distribution of the speed type sports

As we can see from the Figure 3, America had an absolute dominion on speed type sports. Its gold medals on men's sprint take up of 91.7% of the total; gold medals on men's 110m hurdle race account for 93.7%; gold medals on women's sprint account for 70.8%;gold medals on women's 100m hurdle race account for 31.3%; gold medals on men's and women's relay race take up of 87.5% of the total. It can be seen that America has a strong strength on speed type sports, and only has a relatively weak performance on women's 100m hurdle race. Europe may be its only competitor for now and America is absolutely competitive.

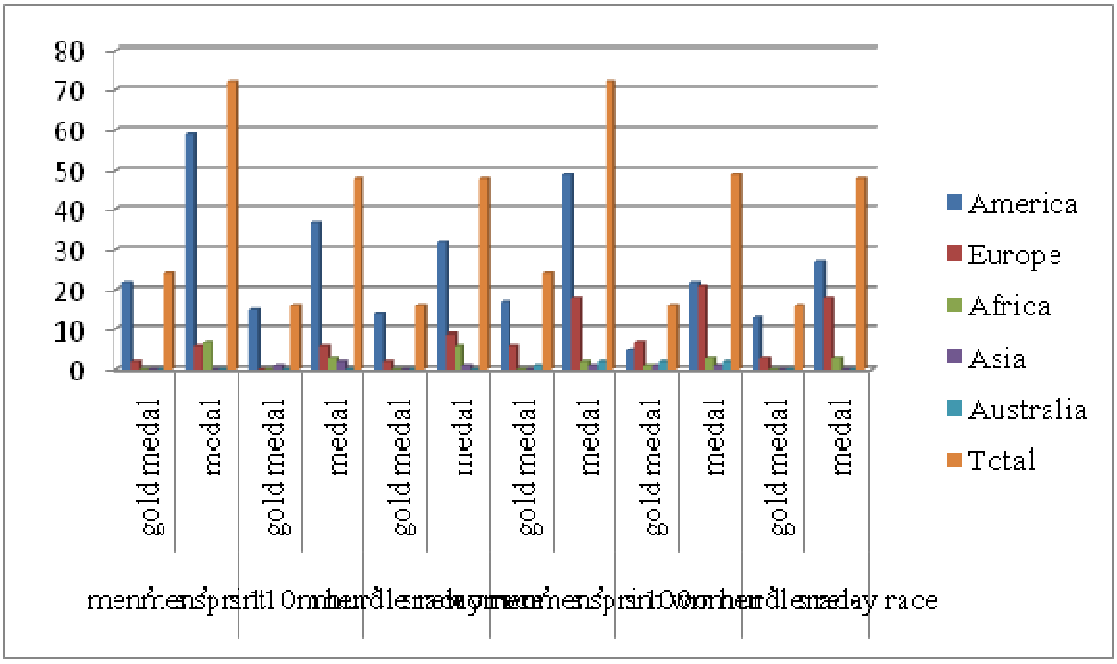

Figure 3 : Intercontinental medals distribution of the speed type sports from the 23rd Olympics to the 30th Olympics

Intercontinental medals distribution of the endurance type sports

As it shown in the Figure 4, athletes from Arica and Europe performed well and won most medals in endurance type sports, including mid-distance race and 400m hurdle race. From the medal table, Africa showed the highest strength in the mid-distance race and 400m hurdle race, but could win no medals in walking race, which might be its weakness in the endurance type sports. Asia had a good performance on walking race, and is fairly competitive.

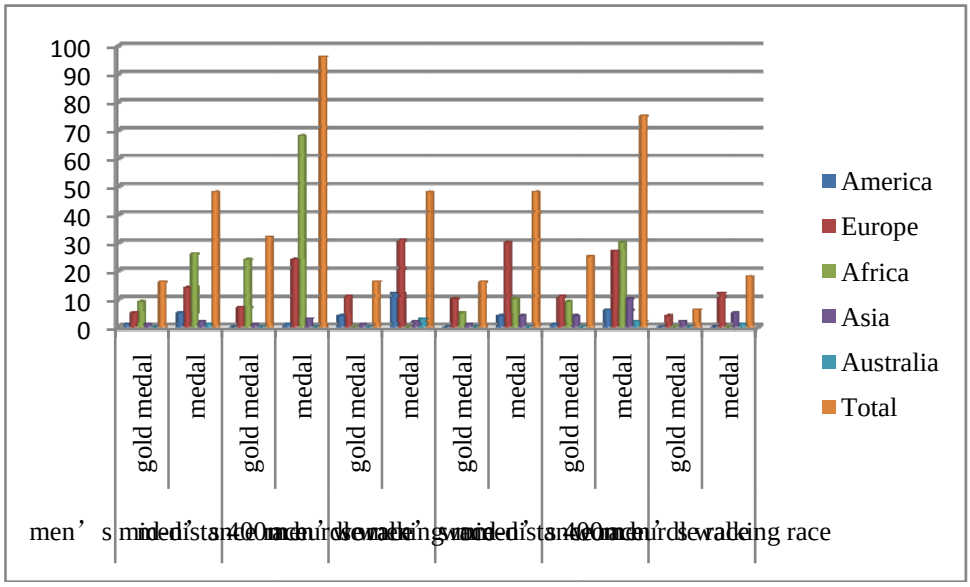

Figure 4 : Intercontinental medals distribution of the endurance type sports from the 23rd Olympics to the 30th Olympics

Analysis on Chinese athletes' field athletic performance in the Olympic Games

Analysis on Chinese athletes' field athletic performance in the London Olympic Games

As is shown in the TABLE 3, China won one gold medal and five bronze medals, as well as four fourth rankings, one fifth ranking, three sixth rankings and one seventh ranking. Chinese athlete Chen Ding broke the Olympic record of the 20,000m walking race and won China's only gold medal in track and field, as well as China's first gold medal on walking race. Chinese athletes had good performance on walking race and won one gold medal and three bronze ones. Besides, two Chinese athletes ranked the fourth place. Chinese athletes showed a strong strength on women's throwing: Gong Lijiao won bronze medal of shot put and two other athlete entered the top eight. Li Fengyan won the bronze medal of women's discus throw; Chinese athletes also entered the top eight of women's weight throw and javelin throw. According to the analysis above, Chinese athletes have a good performance on walking race and women's throwing, which is fairly competitive.

TABLE 3 : Chinese athletes' field athletic rankings in the London Olympic Games

Name	Event	Ranking
Ding CHEN	men's 20,000m walking race	1
Zhen WANG	men's 20,000m walking race	3
Tianfeng SI	men's 50,000m walking race	3
Shijie QIEYANG	women's 20,000m walking race	3
Yanfeng LI	women's discus throwing	3
Lijiao GONG	women's shot put	3
Zelin CAI	men's 20,000m walking race	4
Hong LIU	women's 20,000m walking race	4
Wenxiu ZHANG	women's weight throwing	4
Ling LI	women's shot put	4
Huihui LV	women's javelin throwing	5
Xiuzhi LV	women's 20,000m walking race	6
Xiaolin ZHU	women's marathon	6
Xiangrong LIU	women's shot put	6
Jianbo LI	men's 50,000m walking race	7

Chinese athletes' field athletic awards and rankings in previous Olympic Games

It is clear from the TABLE 4 China won the most medals in the London Olympic Games compared with all previous Olympics, and had the highest scores in the Asian rankings. China ranked the 13th place on the medal table. Although there is still a gap with U.S and Russia, Chinese athletes are quite competitive in some events, and are potential in track and field.

TABLE 4 : Chinese athletes' field athletic awards and rankings in previous Olympic Games

Olympic Games	Gold medal	Medal	Number of top eight	Ranking	Score
23rd	0	1	7	15	24
24th	0	1	5	-	14
25th	1	4	11	7	54
26th	1	4	7	11	41
27th	1	1	3	32	11
28th	2	2	8	26	31
29th	0	2	9	13	39
30th	1	6	13	13	65

Inadequacy of China's field athletic training and countermeasures

Sports in track and field require athletes' speed, physical strength and endurance. Despite our relatively weak strength in track and field, Chinese athletes are quite competitive on events like walking race and throwing. Chinese athletes

may achieve better results in domestic competitions than those in international competitions. Their results in domestic competitions are quite good scores in the international competitions, but Chinese athletes cannot show their real ability when they compete abroad, which is associated with the training skills of Chinese athletes. How to make Chinese athlete perform well is a question.

Here are problems in China's field athletic training:

(1)There is no breakthrough of the advantaged sports. After more than 20 years of training and improvement, China has formed its advantaged sports, like walking race and throwing. Because of these sports, China entered the medal tables in previous Olympic Games. However, the development of our advantaged sports is slow and has no breakthrough.

(2)There is a lowering trend of athletes' age, and their sporting lives tend to be shorter. According to the ages of international good athletes in track and field, athletes'' optimal age for competition is rising and their exercise time is increasing as well. In track and field, the average age of international athletes is approximately 27 years old, and their optimal age for competition is between 20 and 30 years old. However, the average age of Chinese athletes in track and field is around 21 years old, 6 years younger. Therefore, Chinese athletes are younger, retire earlier and have less time to give play to the best level.

(3)Chinese athletes' competition ability is weak and their psychological quality is not qualified. It is general for Chinese athletes to make mistakes in competitions. They can show a good performance in training, but always fail in the competition. It means Chinese athletes in track and field do not have good competition ability and a good psychological quality. Meanwhile, trainings arranged by instructors are unscientific and athletes are short of contest participation experience.

Here are countermeasures for the inadequacy of China's field athletic trainings.

(1)The input of scientific trainings should be increased to help athletes make breakthroughs in advantaged sports.

(2)Athletic trainings should be organized scientifically. The high intensity trainings should not be adopted too early, which may cause physical damages for athletes and shorten their sporting lives.

(3)Athletes' contest participation experience should be increased. Their competition ability should be improved, replacing trainings by contests.

(4)Athletes' psychological quality should be improved. Failures in major contests are mainly contributed to poor psychological quality so relevant trainings should be focused.

(5)Instructors' training level should be improved and we can hire foreign instructor from countries with good performance in track and field to give effective and scientific trainings for Chinese athletes. In the meantime, it is also a good time for Chinese instructors to learn some advanced training skills. Efforts to train good instructors should be intensified too.

CONCLUSION

On the basis of the medal rankings in the London Olympic Games and the medal belongings in other Olympics, the essay analyzes the international field athletic strength situation. According to statistics, U.S. and Russia held a strong strength in track and field, which were unmatched by other countries. Europe showed high level performance in every track and field events. America had advantages on speed type sports and endurance type sports, while Africa played well in endurance type sports, especially mid-distance race and 400m hurdle race. China had good performance on walking race and throwing in London Olympic Games, with one gold medal and five gold medals achieved. However, there are several problems too: including the lowering trend of athletes' age, less exercise time, earlier retirement, no breakthrough on advantaged sports and high rate of mistakes in contests. To deal with these problems facing China', scientific trainings should be adopted. Athletes' contest participation experience should be increased and their psychological quality should be improved. Efforts to train good instructors should be intensified.

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