

CRITICAL ANALYSIS OF THE PERFORMANCE OF WOMEN'S ARTISTIC GYMNASTICS IN BRAZIL IN THE 2004-2016 OLYMPIC CYCLES

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Abstract

Women's Artistic Gymnastics (WAG) in Brazil has been represented in the Olympic Games since 1980; however, a full team was classified only in 2004. Analyzing the Brazilian team's participation over the last four cycles (2004-2016), we have identified several factors that implied in the WAG results. In this study, we discussed these factors and reflected on their contributions to the development of the gymnastics. The milestone of the 2001-2004 Olympic cycle is marked by the first participation of a full team, when foreign coaches came to lead WAG, the training system was reorganized, and the selected athletes began training in a centralized training system in Curitiba's Training Center. The 2005-2008 Olympic cycle was more successful, as a consequence of the long-term planning. In the 2009-2012 Olympic cycle, the Brazilian WAG went through a period of turbulence, the training was no longer centralized, and the head coach of the Brazilian team returned to his home country. In the 2013-2016 Olympic cycle, with the headquarters of the 2016 Olympic Games in the city of Rio de Janeiro, the Brazilian Olympic Committee devised strategies to boost the country's success, which again drove improvement in the team results. We concluded that the last Olympic cycles represented a major advance in Brazilian WAG. Restructuring since 2000 has been paramount condition for the gymnastics discipline to reach the current level. The improvement in training and competition conditions, the structuring of a Training Center of excellence, and the multidisciplinary team support was essential for the preparation of Brazilian team in the Olympic Games.

Key words: *Olympic Games; Long-term planning; International Acknowledgement.*

INTRODUCTION

Artistic Gymnastics is a traditional sport included in the Olympic Program since the first edition of the modern Olympic Games in 1896 in Athens (Publio, 1998; Kerr, 2003). On this occasion, only men participated, and women began to compete later, in the Amsterdam Olympic Games in 1928 (Publio, 1998; Kerr, 2003).

The International Gymnastics Federation was founded in 1881 and has been organizing and regulating gymnastic sports since then (Publio, 1998; Kerr, 2003).

The code of points, elaborated by the International Gymnastics Federation Technical Committee, regulates competitions in the high level of sport (International Gymnastics Federation [FIG])

(2017). This instrument is updated every Olympic cycle, and changes are constantly being made in order to keep Artistic Gymnastics attractive to the public and media and to stimulate its evolution (FIG, 2017).

In official competitions, the gymnasts are currently evaluated by a panel composed of nine judges (FIG, 2017). The criteria evaluated are: the difficulty of acrobatic and gymnastics elements, technical faults in the execution of the elements, the aesthetics of the movements through observation of the posture and alignment of the body, and amplitude and dynamics of the movements. Furthermore, on the balance beam and floor exercises the judges analyze the artistic component through the choreography, expression, and musicality (FIG, 2017). Thus, the starting value of the gymnasts is determined by the difficulty value of the routines added to the value of execution, which starts from 10 points. We emphasize that there may also be deductions for general faults, which are not related to performance (FIG, 2017).

Artistic Gymnastics arrived in Brazil in 1942, brought by German immigrants living in the state of Rio Grande do Sul, where the first gymnastics federation of the country was founded. The gymnastics discipline spread to the states of São Paulo and Rio de Janeiro and, in 1948, these first three federations joined the Brazilian Sports Confederation. In 1951 the Brazilian Sports Confederation joined the International Gymnastics Federation and the first Artistic Gymnastics championships were organized in the country (Publio, 1998).

In Brazil, Artistic Gymnastics began to develop in 1966, and Marion Faedrich Dullius was the first gymnast to represent the country at the World Gymnastics Championships in Czechoslovakia. In 1978 the Brazilian Gymnastics Confederation was created and, for the first time, Brazil was represented by an women team in the World Championship. The highlight of the team was the gymnast Lilian Carrascozza, who obtained the world-class gymnast recognition from the International

Gymnastics Federation, awarded to gymnasts with a score of 9 points or higher (Publio, 1998; Schiavon, 2009).

Thus, gradually, the Brazilian WAG has increased its participation in the largest international championships and, since the Olympic Games in Moscow in 1980, it has been represented by at least one gymnast.

In 1980, Claudia Magalhães was the first Brazilian gymnast to compete in the Olympic Games. In 1984, Tatiana Figueiredo participated in the Los Angeles Olympic Games. Luiza Parente represented the country in two consecutive Olympic Games in 1988 and 1992, and we highlight her brilliant participation in the 1991 Pan-American Games, in which she won two gold medals. In 1996, Soraya Carvalho qualified for and went to the Olympic Games in Atlanta, but due to a stress fracture of the tibia, discovered four days before the opening of the Games, she was unable to compete. In 2000, in the Olympic Games, in Sydney, Camila Comin and Daniele Hypólito represented the country (Schiavon, 2009).

It was a process of constructing the sport until the athletes became more expressive in the international scenario and reached the technical level to compete with major top class gymnasts, such as the United States, Russia, Romania, and China.

We also highlight the importance of this generation of gymnasts for the restructuring and development of WAG in Brazil since 2000 (Brazilian Olympic Committee [COB], 2003); (Schiavon, 2009; Schiavon et al., 2013; Schiavon; Paes, 2012). In addition, we observe the effects of the 2001-2004 Olympic cycle on the evolution of this sport in the international scenario (COB, 2006; Schiavon, 2009; Schiavon et al., 2013; Schiavon; Paes, 2012; Nunomura; Oliveira, 2012).

Many changes occurred during this period and corroborated this evolution, such as the investments never seen before in the history of Artistic Gymnastics in Brazil. Currently, gymnasts have proper conditions to excel in the sport, as access to technology, financial support, and a

multidisciplinary team (Schiavon; Paes, 2012; Schiavon, Paes, Toledo & Deutsch, 2013).

A fact that calls attention to this evolution is the creation of the Excellence Training Center, which ran from 2001 to 2008. This Training Center was inspired by the Russian model of centralized training, in which the selected gymnasts trained intensively in the format of boarding schools in a place with offered proper infrastructure for high performance sport, allowing direct control of the training and other aspects involved in the development of an elite athlete (COB, 2006; Nunomura & Oliveira, 2012).

The Brazilian Gymnastics Confederation began planning the Training Center in 1995 with the support of the Brazilian Olympic Committee (Nunomura & Oliveira, 2012). The construction of this place began in 1997 and in 1999 foreign coaches came to coach the WAG Brazilian team (Nunomura & Oliveira, 2012).

Among the hired coaches there were those who succeeded at international scenario and are very recognized due to their expertise, an important factor for the technical development of WAG in Brazil (Federal Council of Physical Education [CREF], 2004). The combination of these renowned coaches with Brazilian gymnasts has given greater visibility to Brazil in important competitions, since they call attention from the judges, spectators, media and stakeholders (De Bosscher et al., 2009).

The first foreign coach who came to work at the Curitiba Training Center was the Ukrainian Iryna Illyashenko, followed soon after by the choreographer Nadia Ostapenko, and in 2001 the coach Oleg Ostapenko arrived, who produced countless Olympic champions and served as head coach of the Brazilian WAG team.

Oleg's staying was supported by the Olympic Solidarity Program of the International Olympic Committee, which paid the salaries (COB, 2006), and the political influence of the then president of the Brazilian Gymnastics Confederation, Vicélia Florenzano.

The costs of the Training Center included the technical committee and the multidisciplinary team accompanying the athletes, maintenance of the gymnasts, infrastructure of the place and international exchanges. The expenses were funded by the resources of the Agnelo Piva Law and Brazilian Gymnastics Confederation sponsors (Oliveira, 2010).

In 2001 the selected gymnasts began to train in the Training Center in Curitiba, a fact that standardized the team and contributed directly to the evolution of WAG in Brazil (Nunomura & Oliveira, 2012).

It is important to emphasize that the evolution of this sport is reflected both in the world championship medals in 2001 and the classifying in the Olympic Games in 2004. This is a reflection of the high investment and hard work of the gymnasts and coaches (De Bosscher et al., 2009; Nunomura & Oliveira, 2012; Bohme; Bastos, 2016).

Although the evolution is clear, there are signs that reveal problems in the organization of the sport in Brazil (Bohme; Bastos, 2016). Restructuring depends on a high investment, however, despite the Agnelo Piva Law, the Athlete Scholarships Program, having benefited some high performance gymnasts, little attention has been directed to the basic training of the Brazilian WAG and the construction of the adequate places for large-scale practice.

Thus, in the same period when the country achieved significant results on the world stage, the number of gymnasts that competed nationally remained low, principally in the adult category (Schiavon, Paes, Toledo & Deutsch, 2013). It is questionable whether this investment is sustainable or if there is a need to improve the Brazilian sports system in order to continue the development of the sport.

There are several factors that have impacted on the WAG participation in the last four Olympic cycles. Thus, we intend to discuss these implications for the evolution of the sport in the country.

The analysis of these cycles and their consequences is essential to direct the sport towards more consistent and sustainable pathways for the development and the future of the next generations of gymnasts in the country.

METHODS

In this study we choose the qualitative approach. According to Triviños (1992), this approach is centered in describing, analyzing, and interpreting the information collected in the investigation and aiming to understanding them in a contextualized way.

The period of analysis includes the Olympic cycles from 2001-2004 to 2013-2016, because this is a milestone for WAG in Brazil. This period reflects a great national evolution in the sport, since Brazil began to participate in Olympic Games with the complete team. This timeframe coincides with the great investment in the Sport, which began after the Sydney Olympic Games.

To achieve the purpose of the study, we collect the data through the records of Olympic competitions. These records have been accessed online on the International Olympic Committee website

(<https://www.olympic.org/olympic-results>), the Olympic Museum (<http://www.olympic.org/museum>), the International Gymnastics Federation (<http://www.fig-gymnastics.com/site/>) and international Gymnastics websites (eg <http://www.gymnasticsresults.com/>).

Access to the online registers of the Brazilian Gymnastics Confederation (<http://www.cbginastica.com.br/>) and the Brazilian Olympic Committee (<https://www.cob.org.br/en/cob>) was the starting point to understand and contextualize the factors that influenced the WAG in Brazil in the specifics Olympic cycles. From the documents found, we searched for references that scientifically supported the results' discussion.

We stand out that the experience of the first author, who participated in the Athens Olympic (2004) as one of the Brazilian Gymnasts and was a coach in one of the most important WAG Clubs in Brazil (2005-2016) was essential to the data analysis and results discussion.

RESULTS AND DISCUSSION

Olympic Cycle 2001-2004: the first participation of a full team

Table 1

WAG's medalists and Brazilian WAG participation in the 2004 Olympic Games.

TEAM	ALL AROUND	VAULT	UNEVEN BARS	BALANCE BEAM	FLOOR EXERCISE
1° ROU (114.283)	1° USA Patterson, C. (38.387)	1° ROU Rosu, M. (9.656)	1° FRA Lepennec, E. (9.687)	1° ROU Ponor, C. (9.787)	1° ROU Ponor, C. (9.75)
2° USA (113.584)	2° RUS Khorkina, S. (38.211)	2° USA Hatch, A. (9.481)	2° USA Humphrey, T. (9.662)	2° USA Patterson, C. (9.775)	2° ROU Sofronie, N. (9.562)
3° RUS (113.235)	3° CHN Zhang, N. (38.049)	3° RUS Pavlova, A. (9.475)	3° USA Kupets, C. (9.637)	3° ROU Eremia, A. (9.7)	3° ESP Moreno, P. (9.487)
	12° BRA Hypolito, D. (36.961)				5° BRA Santos, D. (9.375)
	16° BRA Comin, C. (36.074)				

In 2004, the gymnasts established the Brazilian WAG as international contenders, by the unprecedented feat of debuting the Brazilian team at the Olympic Games, although they did not qualify for the team final. From that milestone in the history of the sport, the women's team participated

since than in all Olympic Games Editions, including two team finals. The fact is noteworthy for a country that only was represented individually so far.

This was the first cycle in which the establishing of permanent selection took place. The Brazilian gymnasts began to train

in a centralized system in the Center of Excellence in Curitiba and under the command of an experienced technical team from Ukraine with international reputation (COB, 2006; Vieira; Freitas, 2007; Nunomura; Oliveira, 2012). According to De Bosscher et al. (2009), the presence of experienced and internationally renowned coaches contributes to the country's success.

According to the COB (2006), the Training Center provided the athletes and coaches a proper infrastructure, the centralized system promoted the team's integration and a teamwork in pursuit for their objectives.

The achievements and technical evolution of the gymnasts confirmed the Brazilian WAG in the international scenario of the sport, results began to appear gradually, because of the progressive work that was developed and gained more strength and investment (Oliveira, 2010).

With a consolidated work team and adequate and continuous investment, the athletes had the opportunity to participate in international tournaments, events, and internships. All these factors contributed to the performance of the athletes who became well-known to the judges in the international context. De Bosscher et al. (2009) and Bohme & Cunha (2016) stand out that the training infrastructure and the financial support are fundamental aspects for the success in the Sport.

The Olympic team was composed of six athletes: Ana Paula Rodrigues, Camila Comin, Daiane dos Santos, Caroline Molinari, Daniele Hypólito, and Lais Souza. Brazil did not qualify for the team final and finished in 9th place. The difference between Brazil and Australia, which placed 8th, then last in the team final, was 0.074 points. This number corresponds to less than the least penalty/deduction, which 0.10 points.

In the team qualifying competition, five gymnasts competed and the four highest scores were counted. Some faults occurred during the competition and that tiny difference left Brazil out of the team finals.

This was the first cycle in which the final team competition worked in the 6:3:3

system, i.e., the team was composed of six athletes, three of which competed on each apparatus, and all three scores were counted (FIG, 2001).

This change of rules implemented by the International Gymnastics Federation allowed the coach to strategically choose the composition of their team to increase medal chances. This allowed them to invest in the specificity of some athletes.

A specialist gymnast is particularly strong on one or two events, and often competes only on her specific apparatus. It is known that many countries have adopted the strategy of developing specialist gymnasts to boost the results (FloGymnastics, 2016). In addition, this has motivated a greater number of countries and athletes to participate in international events and, therefore, the podium has been shared by different nations.

In the individual all-around competition, Daniele Hypólito and Camila Comin qualified in (12th and 16th place), respectively, and Daiane dos Santos finished in 5th place in the floor exercise final.

When we compare the result of Daniele with that of the Olympic champion, the American Carly Patterson (38,387), there is a difference of 1,426 points. In Artistic Gymnastics, the differences are decimal values, therefore, small values become significant differences. Thus, this difference classified the Brazilian gymnast in 12th place, i.e. there were 10 gymnasts between Hypólito and Patterson.

The scoring system of this cycle allowed more gymnasts to reach the 10.00 points starting value. With this proximity of the starting values, the execution had a decisive role in the gymnasts' qualification. Thus, the factor that differentiated the athletes were the execution faults.

At the beginning of this cycle, at the World Championships in 2001, the gymnast Daniele Hypólito was crowned second place in the floor exercise, while in the Pre-Olympic World Championships in 2003, (qualifier for the Olympic Games) the gymnast Daiane dos Santos became

champion in the same event. These medals are unprecedented for the country.

When analyzing the results of the 2004 Olympic Games, we can conclude that the hegemony of the European Countries and the United States reigned in the WAG. The all-around and individual apparatus medals are concentrated in three countries: Romania, the United States, and Russia.

Despite with this scenario of success in the evolution of the Brazilian WAG, it is important to note that the international results are still inexpressive when considering medals at the Olympic Games and the World Championships (Schiavon, 2009). However, the first medals in world championship were very important to spotlight our WAG in the international events.

Medals are the greatest symbol of results and success in the high performance sport, however, in Artistic Gymnastics creating and naming a new element or combination is also particular to this sport.

The gymnasts can baptize new elements if they are the first to perform them in official events and with excellence in the execution (Nunomura, 2008).

In 2001, at the World Championships in Ghent, the gymnast Heine Milani Araújo was the first Brazilian to join the select group of athletes who baptized elements, presenting a forward stretched salto with 2/1 twist dismount on the balance beam.

In 2003, at the Anaheim World Championships, the gymnast Daiane dos Santos performed the double arabian salto piked for the first time and named this element as "Dos Santos". In the 2004 Olympic Games, she presented a stretched variation of Dos Santos and named its second element as Dos Santos II.

Olympic Cycle 2005-2008: the impact of the long-term planning

Table 2

WAG's medalists and Brazilian WAG participation in the 2008 Olympic Games.

TEAM	ALL AROUND	VAULT	UNEVEN BARS	BALANCE BEAM	FLOOR EXERCISE
1° CHN (188.9)	1° RUS Liukin, A. (63.325)	1° PRK Hong, U. (15.65)	1° CHN He, K. (16.725)	1° USA Johnson, S. (16.225)	1° ROU Izbasu, S. (15.65)
2° USA (186.525)	2° USA Johnson, S. (62.725)	2° GER (15.575) Chusovitina, O.	2° RUS Liukin, A. (16.725)	2° RUS Liukin, A. (16.025)	2° USA Johnson, S. (15.5)
3° ROU (181.525)	3° CHN Yang, Y. (62.65)	3° CHN Cheng, F. (15.562)	3° CHN Yang, Y. (16.65)	3° CHN Cheng, F. (15.95)	3° RUS Liukin, A. (15.425)
8° BRA (174.875)	10° BRA Barbosa, J. (59.55) 22° BRA Silva, A. (56.875)	7° BRA Barbosa, J. (14.487)			6° BRA Santos, D. (14.975)

The Centralized Training and the arrival of renowned foreign coaches were the focus of the Brazilian Gymnastics Confederation and Brazilian Olympic Committee. The objective was to command the Brazilian WAG and improve the country's representativeness in the 2008 Olympic Games. In fact, the results proved to be successful compared to past years, despite the changes in the Code of Points.

Between 2001 and 2005 the WAG scoring system was updated. The extinction of the 10.00 value caused great impact in

the training, judging, and public opinion (Kerr; Obel, 2014). Since then, the Artistic Gymnastics is evaluated in an "open code" system, in which there is no longer a limit for the score of the starting value.

In the previous cycle (2001-2004), the maximum score that could be obtained was 10.00, and this score was composed of difficulty value, composition requirements, and additional values that were bonuses for complex combinations and elements with high values of difficulty (FIG, 2001). After reaching the maximum score of 10.00, the

additional elements were no longer counted, but could result in deductions for faults. According to Kerr and Obel (2015) the limit of 10 meant gymnasts who performed greater difficult, and therefore arguably demonstrated a higher level of gymnastics excellence, did not necessarily receive higher scores.

With the "open code" system, scores continued to be composed of difficulty elements, composition requirements, and combination values; however, the maximum score was abolished. According to FIG (2005) this new system provides a more accurate assessment of difficulty and brings more balance to evaluation procedures. As a consequence, the gymnast that presented more difficulty and less deduction, had superior scores.

With this trend, a large number of gymnasts began to present more difficult elements and connected exercises to gain bonuses accordingly (Kerr & Obel, 2015). One of the main contributions of these changes was the improvement of the routines' difficulty level.

Another adjustment in the Code of Points in the period 2001-2005 was the modification of the artistic components value (FIG, 2001). The aim of the International Gymnastics Federation was to foster both perfection in execution and the capacity of artistic expression of the gymnasts. The changes included not only the values for the aesthetical component, but also a new look into the creativity and originality of artistry.

Mastery and excellence in gymnastics are demonstrated by routines with a high level of difficulty and perfection. This new scoring system allowed the champion to be the individual with the highest level of difficulty (performance) and the best technical and artistic execution (Kerr & Obel, 2015).

The balance between the technical difficulty and artistic presentation had always been a challenge in the elaboration of routines, and with the valuing and obligatoriness of the dance elements, jumps and turns became more widely explored by

the athletes (Paul, 2010; Cervin, 2015). The International Gymnastics Federation asserts that the new Code of Points provides freedom for the coach and the athlete to elaborate routines, and can invest in both acrobatic and dance elements (FIG, 2017). This freedom expands the possibilities for the various styles and profiles of gymnasts and instigates creativity.

In the 2008 Olympic Games, the effects of the Brazilian team's planning and training under proper conditions became evident. The results obtained were the consequence of a long term perspective, as part and continuity of the work that begun in the previous cycle.

After eight years of the WAG being led by the Ukrainians, Brazilian gymnasts started to present a new technical look, as foreign knowledge was disseminated informally around the country, even though indirectly and informally.

The new gymnasts who arrived at the Training Center in Curitiba benefited from the long-term planning. These athletes received differentiated training from the beginning; the basic elements were perfected to exhaustion, which favored to reach the high performance.

This new generation team benefited from the starting point of the 2004 Brazilian team, with training following the same format line, the centralized system, quality technical and physical infrastructure, and multidisciplinary team, everything to improve the technical and difficulty level of the athletes (Nunomura; Oliveira, 2012).

The Brazilian team, in its second participation, was composed of the veteran gymnasts: Daiane dos Santos, Daniele Hypólito, Laís Souza, and the debut ones: Jade Barbosa, Ana Cláudia Silva, and Ethiene Franco. Brazil got to the final as team, individual all-around, and in the vault and floor events.

The Brazilian team finished in 8th place, below countries with a tradition in Artistic Gymnastics, such as China, the United States, Romania, Russia, Japan, Australia, and France.

The Brazilian WAG presents a small replacement of athletes in the adult category in the international competitions, compared to other countries where the teams are almost completely renewed every Olympic cycle.

The lack of renewal in the Brazilian WAG can be explained in different ways. One of the reasons is that there are only a few places with proper infrastructure and qualified professionals to develop athletes for high performance. Although there are many participants involved in this sport, most children have a small interest and a lack of opportunities to specialize in it (Schiavon et al. 2013).

Without the massification and democratization of the access to the gymnastics discipline, having representativeness in high performance competitions becomes a difficult task. The low number of athletes who achieve high level does not generate competition among the participants of the same group. In addition, the lack of practitioners in Artistic Gymnastics also affects the discovery of new talents.

In more developed countries, like the United States, there are many gyms spread distributed throughout the country and the number of children practicing the sport is much higher than in Brazil (Ryan, 2000; Lima, 2016; USAGYM, 2018). Massification, coupled with excellence training, is an indication of success in the high performance sport (DeBosscher et al. 2009; Bohme; Bastos, 2016).

Brazil still lacks of an overall infrastructure, the competition system with a reduced number of gymnasts seemed to add to this conjuncture. Since the number of gymnasts who reach the highest performance level is very low, and a smaller team means all of them are in the same and highest level as possible, this team became more competitive to compete with other sports powers.

In this cycle, Jade Barbosa was the first Brazilian to win a medal in the individual all-around, and was third in the World Championship in 2007. In the Olympic

Games, Jade Barbosa finished in 10th place. The gymnast had two falls, one on the floor and another on the vault, which took her out of the medal race. Jade performed a vault with a high difficulty level, the Amanar, in the expectation of regaining the score, but ended up committing one more fault. In an interview, the gymnast stated that she risked everything in the vault event to try to get a better position on the all around ranking. "A fall is always complicated - I took a risk doing that vault because I had nothing else to lose" (ClicRBS, 2008).

In the vault final, the gymnast didn't perform the Amanar, and opted for a simpler element. However, she had many execution faults, didn't perform a good landing, and finished in seventh position.

Still in these Olympic Games, Daiane dos Santos, finalist on the floor, obtained sixth position. The gymnast disputed the medal, but stepped twice outside the boundary on her floor routine, she was penalized and did not make the podium.

During these eight years with coach Ostapenko in charge, the Brazilian WAG team had its best period; it managed to enter the international scenario of the sport and introduced Brazil into the elite sporting group.

Olympic Cycle 2009-2012: a period of transitions

With the closing of a cycle of success and significant results for the Artistic Gymnastics in Brazil, the cycle of 2009-2012 began with many organizational changes.

After 18 years in the command of the Brazilian Gymnastics Confederation, the then president, Vicélia Florenzano, handed over her position to her deputy, Luciene Resende, for the next years, and Brazilian Gymnastics Confederation's headquarters moved from Curitiba to Aracaju (Folha de Londrina, 2009).

The coach Oleg Ostapenko's contract ended, he returned to Ukraine and took over the local Artistic Gymnastics team. Thus, coach Iryna Ilyashenko, who until then had

assisted Oleg, assumed the position of head coach (Globoesporte, 2009).

Table 3

WAG's medalists and Brazilian WAG participation in the 2012 Olympic Games.

TEAM	ALL AROUND	VAULT	UNEVEN BARS	BALANCE BEAM	FLOOR EXERCISE
1° USA (183.956)	1° RUS Komova, V. (60.632)	1° ROU Izbasu, S. (15.191)	1° RUS Mustafina, A. (16.133)	1° CHN Deng, L. (15.6)	1° USA Raisman, A. (15.6)
2° RUS (178.53)	2° USA Raisman, A. (60.391)	2° USA Maroney, M. (15.083)	2° CHN He, K. (15.933)	2° CHN Sui, L. (15.5)	2° ROU Ponor, C. (15.2)
3° ROU (176.414)	3° USA Douglas, G. (60.265) 36° BRA Leal, B. (52.765) 37° BRA Hypolito, D. (52.732)	3° RUS Paseka, M. (15.05)	3° GBR Tweddle, E. (15.916)	3° USA Raisman, A. (15.066)	3° RUS Mustafina, A. (14.9)

The Training Center in Curitiba was maintained, but not the centralized training regime. Criticism from clubs and coaches abound; medical scandals and the high costs for the maintenance of the gymnasts in this centralized system pushed the changes to be implemented.

In this way, each gymnast from the national team began to train in their respective clubs. The centralized training began to take place sporadically, mainly in periods prior to competitions, as a short-term centralized system (IG, 2011).

Currently, some countries continue to invest in the intensive centralized system, while others opt for centralized preparation in short periods, as is the case in Brazil and the United States.

Studies show that the centralized preparation system in Brazil brought visibility to the sport and more expressive results in the international scenario. Nunomura and Oliveira (2012) state that "during this period the best results in the history of Brazilian WAG were achieved".

However, centralization contained unfavorable aspects, as benefitting a minority group, and destabilizing the home clubs of the gymnasts, as their best athletes spent more time in the training center than in their own clubs (Nunomura & Oliveira, 2012).

During this long period, the centralized training system weakened the support in clubs. Nunomura and Oliveira (2012) interviewed coaches who stated that "this

fact discouraged several gymnasts who were not selected, a fact that contributed to the decreasing number of gymnasts training in the country in that period".

With these effects stemming from the long period of centralized training, the number of gymnasts with the age and technical level to join the preparatory team for the 2012 Olympic Games was very low. Thus, Brazil was represented in the Olympic Games by 3 experienced gymnasts and two new team members.

The decentralization of training did not allow all athletes to remain focused and with common objectives. The clubs did not have the same infrastructure and thus, the decreasing in the athletes' performance was clear.

In addition, the Brazilian team had several problems in the selection of athletes before the Olympic Games. Gymnast Jade Barbosa had contractual problems with the Brazilian Gymnastics Confederation and was not selected to join the team. Laís Souza and Adrian Gomes were injured and cut off the team. Furthermore, the uncertainty surrounding the participation of Daiane dos Santos, who in 2010 was suspended for 5 months by the International Gymnastics Federation, for being caught in the anti-doping exam, widened the problem.

Thus, Ethiene Franco and Harumy Freitas were selected to join the Brazilian team along with Daniele Hypólito, Daiane dos Santos, and Bruna Leal.

In that year, Brazil did not qualify for any finals; its participation was the least significant since the country began to compete with a full team in the Olympic Games.

This team had its peak in the Test Event in January 2012, when they were guaranteed the team place in the Olympic Games only in the repechage. During participation in these Olympic Games, the Brazilian WAG did not perform well, as they presented several technical faults.

Despite the decreasing in performance in this edition of the Olympic Games, the

Brazilian WAG was again represented by a full team, while countries with a tradition in the sport such as Spain and Ukraine, were represented only by individual gymnasts.

This cycle ended with the hope that a new generation of gymnasts was being prepared to represent the country in the following international events.

Olympic Cycle 2013-2016: competition at "home"

Table 4

WAG's medalists and Brazilian WAG participation in the 2016 Olympic Games.

TEAM	ALL AROUND	VAULT	UNEVEN BARS	BALANCE BEAM	FLOOR EXERCISE
1° USA (184.897)	1° USA Biles, S. (62.198)	1° USA Biles, S. (15.966)	1° RUS Mustafina, A. (15.9)	1° NED Wevers, S. (15.466)	1° USA Biles, S. (15.966)
2° RUS (176.688)	2° USA Raisman, A. (60.098)	2° RUS Paseka, M. (15.253)	2° USA Kocian, M. (15.833)	2° USA Hernandez, L. (15.333)	2° USA Raisman, A. (15.5)
3° CHN (176.003)	3° RUS Mustafina, A. (58.665)	3° SUI (15.216) Steingruber, G.	3° GER Scheder, S. (15.566)	3° USA Biles, S. (14.733)	3° GBR Tinkler, A. (14.933)
8° BRA (172.087)	11° BRA Andrade, R. (56.965) 24° BRA Barbosa, J. (NO SCORE)			5° BRA Saraiva, F. (14.533)	

Rio de Janeiro was chosen to host the 2016 Olympic Games, a fact that encouraged the Brazilian Olympic Committee and Ministry of Sport to invest great amount of money to maximize the country's success.

Among the initiatives of the Ministry of Sport we quote the Brazil medal plan. The objective of the one billion reais investment was to place Brazil among the top 10 in the general ranking of the Olympic Games.

The distribution of the investment considered the higher chances of the sport winning medals. Thus, among 21 Olympic sports, Artistic Gymnastics was identified as one of them.

This initiative provided support to athletes, such as the podium scholarship (new category of athletic scholarship), in addition to funding for multidisciplinary teams, acquisition of training equipment, and costs regarding training and competitions inside and outside Brazil.

In the WAG, the Russian Alexander Alexandrov was hired as the new head coach of the Brazilian team and a Training Center was built in Rio de Janeiro. Alexandrov commanded the Russian artistic gymnastic for many years and in his last achievement as the coach of the Russian team, he won five medals in the Olympic Games 2012 (ESTADÃO, 2015).

With the arrival of Alexandrov, investment in the sport was on the rise and Brazil was able to once again leverage WAG results.

The first initiative to structure this cycle was the organization of a training camp, held in Três Rios, which brought together 23 gymnasts, 8 Brazilian and 5 foreign coaches, and 8 judges.

According to the gymnastics squad coordinator, Georgete Vidor, the initial objective was to join all the athletes of the country, who were of age to compose the Brazilian national team and compete in the

Olympic Games. Subsequent to this camp, the coach Alexandrov traveled to Brazil and accompanied the development of the athletes. This entire process was aimed at evaluating the performance of the gymnasts and selecting those who would compose the Brazilian team and prepare for the Olympic Games in Rio de Janeiro.

With the team already established, a Training Center was built in Rio de Janeiro that offered all the infrastructure, multidisciplinary team for the development of the athletes.

The Brazilian team training remained in the centralized format in short periods; the training meetings were frequent and took place in both the Training Center in Rio de Janeiro and in Curitiba. In addition, many training competitions abroad were planned to assist in preparing athletes and maintaining the team integrated.

The majority of the athletes from the group in this cycle were from the states of Rio de Janeiro and Paraná. Thus, the athletes who already lived in Rio de Janeiro, started to train in the Training Center in Rio, and the athletes from Paraná continued training in their club, i.e., in the Training Center in Curitiba, which had already been established in the previous cycles. The team that represented Brazil in this edition of the Olympic Games was composed of two veterans, Daniele Hypólito and Jade Barbosa, and three debuts, Lorrane Oliveira, Flávia Saraiva, and Rebeca Andrade.

This composition mixed the experience of the older athletes with the liveliness of the new members of the team and it was successful, as the Brazilian team returned to qualify for the team final, equaling the success in Beijing and finishing the competition in 8th place (Brazilian Gymnastics Federation [CBG], 2017).

Furthermore, we should point out that the gymnast Rebeca Andrade finished the all-around individual competition in 11th place, totaling 56.965. There was an expectation of a higher position, as the gymnast ranked 4th and totaling 58.732, behind three American gymnasts, Biles

(62.366), Raisman (60.607), and Douglas (60.131), an unheard fact in Brazil.

It was the first time that Brazil had qualified for an Olympic final among the top positions. On previous Olympic Games the best result was achieved by Jade in 2008, when she qualified to the final in the 12th position. The expectation of an Olympic medal over Rebeca was quite huge.

As the rule for the all-around individual and team final participation allows only two gymnasts per country, Rebeca automatically moved up to 3rd place. In the individual all-around final, the gymnast had some faults on the balance beam, which generated a sum of points lower than the qualifying competition.

The gold in the individual all-around went to the American Simone Biles with 62.198, the silver also to an American, Alexandra Raisman with 60.098, and the bronze to the Russian Alyia Mustafina who scored 58.665.

Flávia Saraiva also scored the unbeaten record of qualifying for the final on the balance beam in 3rd place with 15.133. Thus, the chances of a medal were real, as Flávia had a starting value high enough to dispute the podium. However, in the final she had some faults that lowered her score to 14.533, or 0.600 lower than the qualifying phase and she finished the competition in 5th place.

The gold went to the Dutch gymnast Sanne Wevers (15.466) and the silver and bronze to the American gymnasts, Laurie Hernandez (15.333), and Simone Biles (14.733), respectively.

Although the athletes had gone through a long period of technical and psychological preparation, the pressure for results added to their immaturity and inexperience in large competitions could have contributed to these technical faults in the finals.

We emphasize that the most expressive results obtained in this cycle were won by young athletes, still young and qualified, and although the Olympic medal did not come true, there is still the potential in the future results of the Brazilian WAG.

CONCLUSION

It is a challenging task to analyze the performance of the Brazilian WAG in the last four Olympic cycles, as multiple factors influenced the results and it is necessary to reflect on the contribution and consequences for this sport.

In this way, we believe that the main contribution of our study is the compilation of the experience obtained with this unique period for the WAG and how it could be used for the development of the future generations of gymnasts.

Thus, we highlight that the development of Brazil in the Olympic Games is not restricted only to the last four cycles analyzed in the present study. Previous generations were essential for the development of the current WAG, since they started this process, although they did not have similar training conditions and investment.

Claudia Magalhães, Tatiana Figueiredo, and Luisa Parente were the first gymnasts to represent the country in the Olympic Games and demarcate our history, since they were the first to take the name of the Brazilian WAG to the Olympic level. Schiavon (2009) denominated them "pioneer gymnasts", as in their time the sport did not present the current organization or investment.

Soraya Carvalho, Daniele Hypólito, and Camila Comin also competed individually represented the country in Olympic Games. According to Schiavon (2009), "these gymnasts faced similar difficulties as their predecessors. On the other hand, they also took part in an important transitional period, when structural conditions began to improve and came to the 1st participation of the WAG team in the Olympic Games.

We identified that the restructuring of the Brazilian WAG since 2000 was decisive for it to reach the current level. The improvement of the training and competition conditions, the structuring of a Training Center of excellence, the support

of the multidisciplinary team, and the guidance of the renowned foreign coaches was essential for the preparation of the gymnasts that composed the Brazilian teams in the Olympic Games.

The "long-term" philosophy of the coaching reflected in the qualifying of the Brazilian team for the team final in the Olympic Games in 2008. For the Brazilian WAG, which in that year participated only for the eighth time in the Olympic Games and for the second time qualified with a full team, the fact of being among the top eight ranking is a result that deserves much celebration.

In the following cycle, i.e., 2009-2012, we identified some problems; the end of the Training Center coincided with a series of organizational changes. The Brazilian team obtained the classification for the Olympic Games only in the second chance, and its performance was not compatible with previous expectations.

In 2016, with the Rio de Janeiro Olympic Games, investment in Artistic Gymnastics returned. In spite of the uncertainty generated by the non-classification for the Olympic Games in the pre-Olympic world championship, in the event test the gymnasts won the right to compete. In the Olympic Games, they qualified for the team final again, in addition to the beam final with Flávia Saraiva and the 11th place for Rebeca Andrade in the individual all-around.

We realize that Brazilian WAG has stabilized its representation with a full team in the Olympic Games. From the 2004 Olympic Games to the latest edition, the country has retained the team's classification. Even though WAG has gone through phases of instability, the work has been maintained and the results are in progress.

Back to the 16 years of our WAG history we can say that the considerable investment was essential for the evolution of the WAG. However, we question whether there is a legacy of this Training Center existing period and whether this investment would be sustainable.

Supporting financially the lives of gymnasts, maintaining a well-equipped gymnasium, and paying the salaries of a multidisciplinary technical team is costly, and when we look at the Training Center legacy we note that despite positive results in 2004 and 2008, there was little renewal in the group and the number of international-level gymnasts competing in the country remained low.

The objectives until 2008 were achieved, the WAG was raised to an international level and received greater recognition. Wonder the value of directing the investments to a small and non-renewed group, instead of promoting the practice of Artistic Gymnastics on a wider scale.

Furthermore, when analyzing the table of results and the discussions presented, we can see that there is no definition of a Gymnastics school in our country. And, with the arrival of foreigners, the training school model established was Russian and Ukrainian, with some adaptations necessary for our reality. As we do not have this school defined, nor a high number of athletes who achieve the high performance, coaches invest and take advantage of the qualities and natural gifts of each gymnast, so they seek the best potential that each athlete has.

Countries with greater tradition in this sport that have an established Artistic Gymnastics school can be observed. China, for example, is characterized by lightweight, graceful, high technical level on the beam and uneven bars apparatus and risky acrobatics approach. On the other hand, the American school presents a high number of athletes and homogeneity in the technical level of the team, and invests in physical strength and power.

Brazil has always been a great competitor in the apparatuses that demand strength and power, the results presented reveal the expressiveness in the floor and vault. The Brazilian women were Olympic finalists on the floor in 2004 and 2008 and in the vault in 2008.

On the other hand, Brazil has never qualified for the uneven bars or balance

beam. The first has always been considered a weak point of the country, although the technical level and performance of the Brazilian WAG increased significantly on this apparatus along the cycles analyzed. The gymnasts became finalists in World Cups and other international events, including the team final of the 2016 Olympic Games, when the team score on the uneven bars was the second highest among the four apparatus exercises.

The unprecedented balance beam final of the gymnast Flávia Saraiva, in the 2016 Olympic Games, added to this picture, and justified the technical investment in the specialty of each athlete and the improvement in the technical level on apparatus that were not previously disputed by Brazilian WAG.

In fact, the evolution of the Brazilian WAG is notorious, particularly in the last four Olympic cycles. However, facing the organizational gaps in the Brazilian sports system and the sport in question, we believe that long-term athlete development system and investment seem to follow the immediacy logic of high performance sport in the country.

We believe that a long-term athlete development, with particular emphasis on the formative stages, could improve the future perspectives of our WAG. In turn, this could enhance the number of potential gymnasts entering the higher levels of the sport.

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