

TRAMPOLINE GYMNASTICS: THE BRAZILIAN PARTICIPATION AT INTERNATIONAL CHAMPIONSHIPS – THE OLYMPIC GAMES STILL A DREAM

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Abstract

Since the modern trampoline was built by George Nissen and Larry Griswold around, 1934 in USA, this equipment and its use has suffered drastic changes. Its development was decisive in order to Trampoline Gymnastics to be included at the Olympic Games program in 2000. In Brazil its practice started in the 1980's, and has been only integrated the Brazilian Gymnastics Federation in 1999. The purpose of the study is to analyze the Brazilian participation in the international trampoline gymnastics championships. Data collection was performed by the documental and bibliographic research of main international trampoline gymnastics competitions. The results show that, even though Brazil is the leader in South America with relevant participation in the continental level, the first participation at an Olympic Games had only been possible in 2016, because Brazil was the host country. We conclude that the Brazilian participation in World Championships and in the Olympic Games is not relevant. Finally, the lack of adequate equipment, the bad condition of the training centers, the absence of regular and official coaching education programs and the lack of support for the clubs, shows that this gymnastics discipline is not a current priority for the National Sports authorities, hindering its development internally.

Key words: *Gymnastics; Olympic Games; Competition; Sport development.*

INTRODUCTION

Since Trampoline Gymnastics (TG) was included into the Summer Olympic Games (OG) program in 2000, with the trampoline individual competition (Men and Women), we had noted that this discipline has been attracting more attention from sports authorities, media and also sport science researches (Walker, 2000).

The Brazilian development on TG started in the second half of 1970, after the income of German Professor Dr. Hartmut Riehle in 1974. Some Artistic Gymnastics' (AG) coaches, as Mr. José Martins Oliveira Filho, became really interested in TG, subsequently attending to foreign courses and lecturing courses in Brazil (Brochado & Brochado, 2005).

In 1976, it was organized the first double mini-trampoline championship in Sports Gymnastics Club of Rio de Janeiro, by the initiative of Mr. Sergio Bastos, who was an ex-AG gymnast and one of the main specialists of TG in Brazil (Roveri, Carrara, & Bortoleto, 2017). In 1984, the achievement of Intercity Tournament of São Paulo State was considered a landmark to the consolidation of TG in Brazil, although there were only three teams from three cities present. Two years later, in 1986, the first TG interstate championship happened with competitors from the States of Rio de Janeiro and São Paulo.

The first official organizational and administrative entities of this discipline in Brazil are the *São Paulo* Federation of Acrobatic Trampoline (PFAT), founded officially on May 12, 1990, but active since 1989; and the Brazilian Confederation of Trampoline and Acrobatics Sports (BCTAS), head office in Rio de Janeiro, founded officially on November 1st 1995, but active since 1990. Highlighted as the first president of PFAT and BCTAS, as well as the precursor of this discipline in Brazil, is Mr. José Martins Oliveira Filho (Bernadeli, 1998).

In 1989, it was created the first Trampoline State Federation in São Paulo. The participation of a group of Brazilian coaches and gymnasts from São Paulo and Rio de Janeiro states, leaded by José Martins in a course held in Konstanz (Germany), was fundamental. In the same year, it was founded in Rio de Janeiro, the Federation of Trampoline and Acrobatic Gymnastics, being Mr. Bastos elected its president.

Therefore, trampoline started to be developed as a competitive sport in Brazil. In September of 1990 occurred the first national championship in São Paulo. During the event, it was founded the Brazilian Association of Trampoline (Brochado & Brochado, 2005), that has become affiliated to *Fédération Internationale de Trampoline* (FIT) in the same year, projecting Brazilian TG into an international scenario. The first president elected was Mr. José Martins with

Mr. Christiano Andrade as vice-president (Roveri, Carrara, & Bortoleto, 2017).

Finally, in 1999, after the fusion of FIT to FIG, the BCTAS was incorporated to BGC, changing substantially the institutional and administrative model of this discipline in Brazil

In Brazil, while this discipline development has started in the 1980's, its inclusion in OG was not enough to significantly modify its development, as it has happened in other countries (Roveri, Carrara, & Bortoleto, 2017), even though Brazil is the leader country in this discipline in South America.

Therefore, the purpose of this paper is to analyze the Brazilian gymnasts' participation in the main international TG competitions (Pan-American games, World Games, World championships and OG), information that may be helpful to understand the challenges faced to its development in Brazil and other developing countries. In this sense we also believe the following analysis may bring a panorama of the Brazilian TG development in the international scenario.

METHODS

This is an exploratory descriptive study based on bibliography and documentation reviews (Denzin & Lincoln, 1994). The qualitative research was adopted to analyze a particular situation, helping to describe the complexity of an issue and map the interaction among various parts composing it. Individual and team finalists and medalists were searched within competitions results.

Data collection to this research was performed by the documental and bibliographic research (Marconi & Lakatos, 2010). The documental research aims to select documents that did not suffer any scientific treatment (Godoy, 1995). In this case, we have selected documents strictly related to TG, as competitions results, mainly from *Fédération Internationale de Gymnastique* (FIG), *Union Européenne de Gymnastique* (UEG), USA Gymnastics

(USAGYM), Gymnastics Canada (GYMCAN) and also at Brazilian Gymnastics Confederation (BGC) web pages, as well as other documents (newsletters, magazines) (Figure 1 and 2) donated by Mr. Bastos, one of principal TG expert in Brazil, to the Physical Education Faculty of University of Campinas. We have considered the Brazilian results from 1999 to 2017 in all Pan-American Games (PG), Olympic Games (OG), World Championship (WC), World Age Group Competition (WAGC) and World Games (WG) editions.

On the other hand, the bibliographic research had the aim to gather and organize specialized publications (books, master and

PhD dissertation and scientific articles) (Marconi & Lakatos, 2010).

The data found was systematized in different worksheets using Excel (Microsoft Office, 2013) being analyzed from two main categories: competition level (PG; OG; WC; WAGC and WG) and gymnasts' gender (men's and women's). The criterion adopted to finish the data collection was the “saturation” as indicated by (Denzin & Lincoln, 1994; Saunders et al, 2018).

This research was submitted to the Research Ethics Committee of Faculty of Medical Sciences of University of Campinas (UNICAMP), being approved under the decision number: 989,213.



Figure 1. (Left) Newsletter from Brazilian Federation of Trampoline and Acrobatic Sports (BFTAS) – Year 1 – nº 1. Source: Sergio Bastos personal collection.

Figure 2. (Right) Newsletter from BFTAS – Year 2 – nº 3. Source: Sergio Bastos personal collection.

RESULTS AND DISCUSSION

Competitive Results in Pan-American Games

The Pan-American Games (PG) is considered the main continental competition, being held every four years with the participation of gymnasts from

North, Central and South America. Organized by the Pan American Sports Organization (PASO), the PG structurally resemble to Olympic Games, covering sports that take part to this competition and also some other disciplines. The TG debuted in PG in Mexico City in 1955 as a “sub-discipline” of AG. After the edition of

Chicago in 1959, TG was withdrawn from the program (USAGYM, 2017). The return of TG in PG should have occurred in Santo Domingo (Dominican Republic) in 2003;

however, due to the reduced number of gymnasts registered, it was postponed to Rio de Janeiro edition in 2007. The trampoline medal winners of PG were:

Table 1

Medalists in Pan-American Games Edition.

Pan-American Games Edition	Men	Women
2015 Toronto, Canada	1. Keegan Soehn, CAN 2. Steven Gluckstein, USA 3. Angel Hernandez, COL	1. Rosannagh MacLennan, CAN 2. Dafne Navarro Loza, MEX 3. Karen Cockburn, CAN
2011 Guadalajara, Mexico	1. Keegan Soehn, CAN 2. <i>Rafael Andrade, BRA</i> 3. Jose Vargas, MEX	1. Rosannagh MacLennan, CAN 2. Dakota Earnest, USA 3. Alaina Williams, USA
2007 Rio de Janeiro, Brazil	1. Chris Estrada, USA 2. Jason Burnett, CAN 3. Ryan Weston, USA	1. Karen Cockburn, CAN 2. Rosanna MacLennan, CAN 3. <i>Giovanna Matheus, BRA</i>
1959 Chicago, USA	1. Ronald Munn, USA 2. Harold Holmes, USA 3. Abie Grossfeld, USA	-
1955 Mexico City, Mexico	1. Donald Harper, USA 2. William Roy, USA 3. E. Fereda, VEN	-

Legend: BRA=Brazil, CAN=Canada, COL=Colombia, MEX=Mexico, USA=United States of America, VEN=Venezuela. Source: Adapted from USAGYM (2017) and WikiVisually (2017).

It is possible to note that Brazil has won two medals in PG competition, one bronze by Giovanna Matheus in 2007 (Figure 3) and one silver by Rafael Andrade in 2011 (Figure 4). Brazil places 3rd in general qualification over all PG editions, tied with

Mexico (2 medals) and behind the continental powers Canada (8 medals) and USA (10 medals). Although it is more highlighted than other South American countries, Brazilian participation is still less successful than North American countries.



Figure 3. (Left) Giovanna Matheus in Rio-BRA/2007. Credits: EFE.

Figure 4. (Right) Rafael Andrade in Guadalajara-MEX/2011. Credits: Photo&Grafia.

Table 2
World Championships in FIT era (1964 – 1998).

Year	City, Country	Number of National Federations	Event
1964	London, GBR	12	1 st WC
1965	London, GBR	12	2 nd WC
1966	Lafayette, USA	8	3 rd WC
1967	London, GBR	9	4 th WC
1968	Amersfoort, NED	9	5 th WC
1970	Bern, SUI	11	6 th WC
1972	Stuttgart, GER	11	7 th WC
1974	Johannesburg, RSA	11	8 th WC
1976	Tulsa, USA	11	9 th WC
1978	Newcastle, GBR	10	10 th WC
1980	Brig, SUI	15 + 2	11 th WC
1982	Bozeman, USA	14	12 th WC
1984	Osaka, JPN	18	13 th WC
1986	Paris, FRA	20	14 th WC
1988	Birmingham, USA	22	15 th WC
1990	Essen, GER	23	16 th WC
1992	Auckland, NZL	25	17 th WC
1994	Porto, POR	26	18 th WC
1996	Vancouver, CAN	30	19 th WC
1998	Sydney, AUS	29	20 th WC

Legend: World Championship = WC. Source: Adapted from FIG (2017b).

Participation in World Championships

Considered the most important TG competition in international context, the World Championship (WC) is competed in four events: Individual Trampoline (TRI), Synchronized Trampoline (TRS), Double-Mini-Trampoline (DMT) and Tumbling (TUM) (FIG, 2017a). Between 1964 and 1998 the WC was carried out under FIT

responsibility, on the following cities (table 2).

From 1999 on, the WC of TG were directed by FIG (FIG, 2017d). The WC are depicted below according to year, local, number of participant federations, event edition and results of Brazilian gymnasts, that were qualified to the finals; and highlighting Rafael Andrade, who was qualified to 2016 OG in Rio de Janeiro.

Table 3
World Championships in FIG era (1999 – 2017).

Year	City, Country	N.F.	Event	Brazilian's Results
1999	Sun City, RSA	35	21 st WC	3 rd Rodolfo Rangel, DMT M
2001	Odense DEN	35	22 nd WC	3 rd Rodolfo Rangel, DMT M
2003	Hannover, GER	41	23 rd WC	5 th Gabriel Miranda, DMT M
2005	Eindhoven, NED	37	24 th WC	47 th <i>Rafael Andrade</i> , TRI M
2007	Quebec, CAN	31	25 th WC	8 th Samantha Oliveira, DMT W 47 th <i>Rafael Andrade</i> , TRI M
2009	St. Petersburg, RUS	31	26 th WC	4 th Bruno Martini, DMT M 4 th Team: Barbara Silva, Renata Teles, Virginia Lins, Samantha Oliveira, DMT W 68 th <i>Rafael Andrade</i> , TRI M
2010	Metz, FRA	32	27 th WC	62 nd <i>Rafael Andrade</i> , TRI M
2011	Birmingham, GBR	35	28 th WC	1 st Bruno Martini, DMT M 2 nd Team: Arthur Iotte, Bruno Martini, Edmon de Abreu, Rodrigo Bachur, DMT M 58 th <i>Rafael Andrade</i> , TRI M
2013	Sofia, BUL	39	29 th WC	8 th Mariana Aquino, DMT W 8 th Bruno Martini, DMT M 38 th <i>Rafael Andrade</i> , TRI M
2014	Daytona Beach, USA	41	30 th WC	88 th <i>Rafael Andrade</i> , TRI M
2015	Odense, DEN	40	31 st WC	36 th <i>Rafael Andrade</i> , TRI M
2017	Sofia, BUL	34	32 nd WC	55 th <i>Rafael Andrade</i> , TRI M

Legend: N.F. =National Federation; TRI= Trampoline individual; TRS= Trampoline Synchronized; DMT= Double-mini Trampoline; TUM= Tumbling; W= Women; M= Men. Source: FIG (2017b), GYM CAN (2017), and UEG (2017).

Firstly, it is worth to indicate that it was in 1990 the first Brazilian participation in WC, by the gymnast Christiano Andrade and his coach José Martins, and since then present in all events of FIT era, WC and WAGC (Bernadeli, 1998), as well as in FIG era. Over all history of WC, we were not able to see a Brazilian gymnast achieving qualification to finals of TRI, TRS or TUM. The best Brazilian result in FIG era was in 2005, as the 20th place of Anna Paula Milazzo on TRI; 10th place of Anna Paula Milazzo and Anna Carolina Milazzo on

TRS. Giovanna Venetiglio Matheus, on the 26th place of WC Birmingham/2011, was classified to the Test Event, held in January of 2012 in the host city of the Olympic Games in London, reaching the 13th place (1st reserve) (FIG, 2017d). The four medals achieved in a WC in FIG era were all on DMT, in men scenario we can see in Birmingham/2011 Bruno Martini individual champion and team vice-champion; Rodolfo Rangel, 3rd place in 1999 and 2001 (Figure 5).

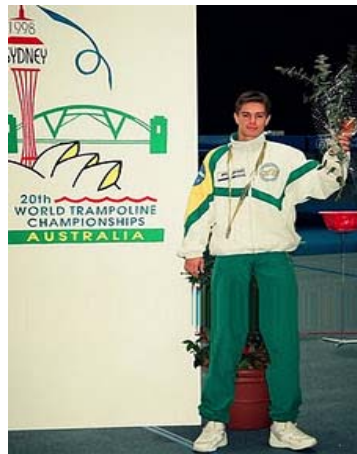


Figure 5. Rodolfo Rangel, DMT World Champion in Australia/1998. Source: TrampBrasil (2011).

On the other hand, we point out that no edition was held in Brazil neither in other South America countries, a fact that disclosed low representativeness of these countries in this discipline. The expenses are too high and the countries cannot afford international events (Arantes, 2015).

Consequently, Brazilian delegations participating traditionally in WC had financial difficulties to afford high cost, typical of intercontinental trips, a condition that has been only improved recently but only to a few gymnasts of senior national teams of TRI, after it has been included in OG program, so then started to receive

financial support from Brazilian Olympic Committee and from BGC sponsors (Roveri, Carrara, & Bortoleto, 2017).

We also point out that since the decade of 1980, the number of national federations presenting at WC has risen significantly, reaching the number of 40 in the last edition. Probably this increases the competitiveness and consequently has impact at the Brazilian participation in order to achieve good results. The DMT Brazilian team, 2nd place in WC 2011, is until this moment the only national team, of all gymnastics disciplines represented by BGC, to reach a medal in WC (Figure 6).



Figure 6. Brazilian Team Vice-World champion on DMT in Birmingham, 2011. Highlight to Bruno Martini (left side of photo) Individual World Champion in DMT in the same competition. Source: FIG (2017b).

Brazilian participation in the World Age Group Competitions

The World Age Group Competition (WAGC) 1st edition occurred in 1973 in London; in 2017 this event reached its 25th edition (FIG, 2017b). It is held in the same place as the WC, generally on the week after, its goal is to promote the events that exists in the discipline, aiming to raise the number of participants at World level and stimulate young gymnasts to reach the elite level. Notwithstanding, in the Brazilian case the expenses related to competition participation is a participant responsibility, a fact that unable the participation of many gymnasts, not to say the majority.

The participation of Brazilian gymnasts in WAGC is defined by the results obtained

on Brazilian Age Group Competition (BAGC), with a similar competition format, specifically, in categories of 11-12 years, 13-14 years, 15-16 years and 17-21 years (FIG, 2017a). In BAGC there are also categories of 9-10 years and senior category over 21 years (CBG, 2017).

Analyzing the WAGC organized by FIG, since 1999, we can verify that some Brazilian gymnasts achieved medals (table 4 and table 5), showing that in some events the youngest gymnasts have developed an international level. In the referred tables it was included only finalists in the respective events and competitive categories in WAGC.

Table 4

Results on World Age Group Competition in FIG era 1999 – 2009.

Year	City, Country Event	Brazilian's Results
1999	Sun City, RSA 14 th WAG	6 th Anna Paula Milazzo, TRI 11/12 W 3 rd Bruno Martini, DMT 11/12 M 2 nd Anna Paula Milazzo, DMT 11/12 W 5 th Carlos Ramirez Pala, DMT 13/14 M 3 rd Mariane Ferreira, DMT 15/16 W 4 th Anna Carolina Milazzo, DMT 15/16 W 1 st Bruno Martini, TUM 11/12 M
2001	Odense, DEN 15 th WAG	3 rd Anna Paula Milazzo TRI 13/14 W 6 th Carlos Ramirez Pala, TRI 15/16 M 1 st Anna Paula Milazzo DMT 13/14 W 4 th Thiago Cardoso, DMT 13/14 M 5 th Bruno Martini, DMT 13/14 M 3 rd Gabriel Miranda, DMT 17+ M
2003	Hannover, GER 16 th WAG	3 rd Ana Paula Teixeira/Rebeca Cruz, TRS 17+ W 2 nd Ingrid Alves, DMT 11/12 W 3 rd Renata Teles, DMT 13/14 W 4 th Bárbara Silva, DMT 13/14 W 1 st Anna Paula Milazzo, DMT 15/16 W 2 nd Bruno Martini, DMT 15/16 M 6 th Claudio Silva, DMT 15/16 M 6 th Deborah Costa, DMT 17+ W 3 rd Rafael Andrade, DMT 17+ M 4 th Bruno Martini, TUM 15/16 M

2005	Eindhoven, NED 17 th WAG	6 th Clara Porreca / Daienne Lima, TRS 11/12 W 1 st Bruna Carambone / Giovanna Bastos, TRS 15/16 W 1 st Samantha Oliveira, DMT 17/18 W
2007	Quebec, CAN 18 th WAG	6 th Vanessa dos Santos / Joana Perez, TRS 17/18 W
2009	St. Petersburg, RUS 19 th WAG	6 th Daienne Lima, TRI 15/16 W 2 nd Rodrigo Pacheco, TRI 17/18 M 7 th Larissa Aladim, DMT 11/12 W 1 st Clara Porreca / Daienne Lima, TRS 15/16 W 8 th Daniela Petti / Fernanda Amaral, TRS 17/18 W

(Legend: TRI= Trampoline individual; TRS= Trampoline Synchronized; DMT= Double Mini Trampoline; TUM= Tumbling; W= Women; M= Men). Source: Adapted from FIG (2017d), GYM CAN (2017) and USAGYM (2017).

Table 5

Results on World Age Group Competition in FIG era 2010 – 2017.

Year	City, Country Event	Brazilian's Results
2010	Metz, FRA 20 th WAG	3 rd Alice Gomes, DMT 11/12 W 6 th Leonardo Chaves Vieira, DMT 11/12 M 5 th Mariana Aquino, DMT 17/18 W
2011	Birmingham, GBR 21 st WAG	5 th Carolina Aladim, TRI 17/18 W 7 th Camilla Gomes / Marcela Martins, TRS 17/18 W 5 th Alice Gomes, DMT 11/12 W 6 th Leonardo Chaves Vieira, DMT 11/12 M 1 st Alexandre Lucas Silva, DMT 13/14 M 2 nd Breno de Paula Souza, DMT 13/14 M 2 nd Carolina Aladim, DMT 17/18 W 6 th Andressa Ferreira Sandes, DMT 17/18 W
2013	Sofia, BUL 22 nd WAG	8 th João Dorim / Vitor Ferreira Camargo TRS 11/12 M 4 th Vitor Ferreira Camargo DMT 11/12 M 6 th Lorrane Souza Sampaio DMT 13/14 W
2014	Daytona Beach, USA 23 rd WAG	8 th Rayan Dutra, TRI 11/12 M 4 th Iago Gomes / Davi De Souza TRS 11/12 M 8 th Lorrane Sampaio / Maria Rodrigues, TRS 13/14 W 6 th Pedro Moura / Rayan Dutra, TRS 13/14 M 7 th Milena Soares Matias, DMT 13/14 W 8 th Rafael Dias da Cunha, DMT 13/14 M 3 rd Lucas Henrique Sotero, TUM 15/16 M

2015	Odense, DEN 24 WAG	4 th Davi Souza / Pedro Moura, TRS 13/14 M 8 th Iago Gomes / João Dorim, TRS 13/14 M 7 th Maria Rodrigues / Luara Rezende, TRS 15/16 W 7 th Alice Gomes / Larissa Aladim, TRS 17/18 W 3 rd Lorrane Souza Sampaio, DMT 15/16 W
2017	Sofia, BUL 25 th WAG	1 st Lucas Tobias, DMT 17/21 M

Legend: N.F. = National Federation; TRI= Trampoline individual; TRS= Trampoline Synchronized; DMT= Double Mini Trampoline; TUM= Tumbling; W= Women; M= Men Source: Adapted from FIG (2017d) and USAGYM (2017).

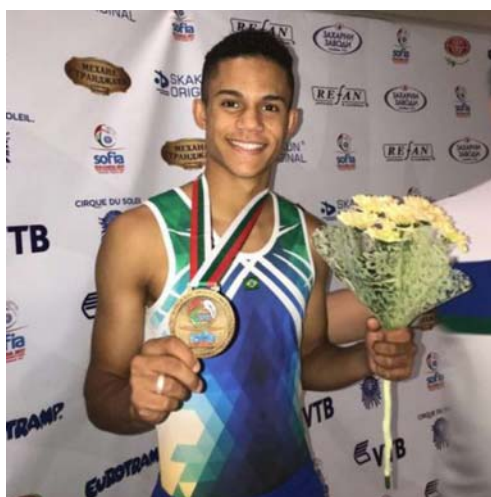


Figure 7. Lucas Tobias, DMT Gold medalist at WAGC/2017. Source: Lance! (2017).

The WAGC is the event with the highest participation of Brazilian gymnasts, because of the number of age ranges. In 2017, there were 19 gymnasts in WAGC and 6 in WC (FIG, 2017d). The positive results in WAGC were obtained in different events of TG, with predominance of medals in DMT (17) (Figure 7), over TRS (3), TUM (2) and TRI (2).

However in 2017, even after the OG year in Brazil, there were a lower number of Brazilian gymnasts finalists in the WAGC, considering all events and age ranges, as shown in the table 5. This number is comparable only to 2007, when only one pair in TRS became finalist. Even though the International Olympic Committee (IOC) encourages the sports development, when offering accommodation to host countries in the OG, unfortunately the Brazilian international results in TG after 2016, has

showed that the legacy was not the expected.

Brazilian participation in World Games

Considered one of the greatest multi-sport events, the World Games (WG) is held every four years by the *International World Games Association (IWGA)* with the support of COI. It is basically composed by sport disciplines that are not in OG program and the WG includes some events of TG.

The first edition of WG occurred in 1981, in Santa Clara (USA), where the TRI event was present, but and its last show in this competition took place in Finland/1997, before being included in OG program in 2000. The TRS, DMT and TUM events debuted in 1981 and are still being contested nowadays.

In 2013 edition of WG in Cali (COL), Brazil got the highest place of podium by the first time with an achievement of

gymnast Bruno Martini in the DMT event (Figure 8). In 2017 edition, in Wroclaw (POL), only one gymnast represented

Brazil, Mariana Aquino in DMT event, finishing in 7th place (USAGYM, 2017).



Figure 8. Bruno Martini, DMT Gold medalist on WG/2013. Credits: Ivan Ferreira.

Brazilian participation in Olympic Games

Although, TG popularity rose between 1950 and 1980, it also occurred the rising of catastrophic accidents over recreational trampolines, due to the lack of observation of recommendations and need of safety countermeasures (Chalmers et al., 1994). Those cases seem to have disturbed the discipline recognition process with IOC and consequently its inclusion in OG program.

Two decades later, after the incorporation of FIT to FIG, TG finally became one Olympic discipline, with TRI competitions in OG in Sydney/2000, with the participation of 24 gymnasts divided in men and women categories. After OG in Athens/2004, this number raised to 32 gymnasts, number remained until today.

In the OG in Rio de Janeiro/2016, Brazil was represented on TG by the first time in OG, by being the host country and so having the participation right. By the rules, the place should be attributed to the

best gymnast qualified in the previous WC, held in Denmark/2015. In this event, the gymnast Rafael Andrade, has overcome the favorites to the position, Carlos Ramirez Pala and Camilla Gomes, having the privilege to represent Brazil in OG for the first time. Rafael had summed 102.325 points in his two qualifying routines and placed on the 36th position. Camilla Gomes, the best Brazilian in PG in Toronto/2015, had a better position than the gymnast from Goiás (GO) State, but was overtaken by many opponents in the 2nd (free) routine and finished in the 43rd position, with 94.400 points. Carlos Ramirez Pala was better than Rafael in the 1st (“compulsory”) routine, but made a mistake and interrupted his 2nd routine on 4th element, finishing on 107th position (64.880 points). Luiz Arruda was 72nd (93.920 points), Ingrid Maior was 48th (92.400 points), and Daienne Lima was 76th (51.510 points) (FIG, 2017d).



Figure 9. Rafael Andrade in OG/2016. SOURCE: CBG (2016).

In the OG Rio/2016 Rafael Andrade finished in the 15th position in the Qualifying Round with 76.145 points (Figure 9). The first place in the qualifying, the Chinese Lei Gao summed 112.535 points. In fact, the competitive performance of Rafael, and by the most of other senior

Brazilian gymnasts, can be considered lower than the level of other gymnasts of OG, mainly the medalists depicted on Table 5, a fact that did not take out their worthiness, considering that the training conditions are still inferior to the existent in the TG reference countries (Arantes, 2015).

Table 6
Olympic Games Medalists.

Olympic Games Edition	Men	Women
2000 Sydney, Australia	1. Alexandre Moskalenko (RUS) 2. Ji Wallace (AUS) 3. Mathieu Turgeon (CAN)	1. Irina Karavaeva (RUS) 2. Oxana Tsyhuleva (UCR) 3. Karen Cockburn (CAN)
2004 Athens, Greece	1. Yuri Nikitin (UCR) 2. Alexander Moskalenko (RUS) 3. Henrik Stehlik (GER)	1. Anna Dogonadze (GER) 2. Karen Cockburn (CAN) 3. Huang Shanshan (CHN)
2008 Beijing, China	1. Lu Chunlong (CHN) 2. Jason Burnett (CAN) 3. Dong Dong (CHN)	1. He Wenna (CHN) 2. Karen Cockburn (CAN) 3. Ekaterina Khilko (UZB)
2012 London, England	1. Dong Dong (CHN) 2. Dmitry Ushakov (RUS) 3. Lu Chunlong (CHN)	1. Rosannagh MacLennan (CAN) 2. Huang Shanshan (CHN) 3. He Wenna (CHN)
2016 Rio de Janeiro, Brazil	1. Uladzislau Hancharou (BLR) 2. Dong Dong (CHN) 3. Gao Lei (CHN)	1. Rosannagh MacLennan (CAN) 2. Bryony Page (GBR) 3. Li Dan (CHN)

Legend: AUS = Australia, BLR = Belarus, CAN = Canada, CHN = China, GER = Germany, GBR = Great Britain, RUS = Russia, UCR = Ukraine, UZB = Uzbekistan. SOURCE: Adapted from USAGYM (2017).

In summary, after the five OG editions, only nine countries won medals in TG competitions in OG, highlighting China (11 medals), Canada (7 medals) and Russia (4 medals). It is possible to observe that the Brazilian participation is far from these reference countries, differently of what is seen in Artistic Gymnastics (men and women), for example, that by the year 2000 started to bring to light various Brazilian gymnasts among the Olympic finalists (Oliveira & Bortoleto, 2009), even accomplishing four Olympic medals between 2012 and 2016 OG editions.

It is important to consider that in 2005 BGC constituted the permanent TG National Team, composed by 8 best national gymnasts, four men and four women. This team trained for 3 years in Curitiba/Paraná (together with the former BGC headquarters in Paraná state) with all expenses paid, a new reality for in the history of this sport in Brazil. Although the technical level of these gymnasts has improved significantly, when the team project was finished, many of these gymnasts did not received any kind of support and consequently quitted sport, causing a definite defalcation to their original clubs. Similar problems were noted on Men's Artistic Gymnastics (Oliveira & Bortoleto, 2012), Women's Artistic Gymnastics (Schiavon & Paes, 2011) and Rhythmic Gymnastics (Antualpa & Paes, 2013), suggesting that "permanent national team" do not achieve the expected results.

Nowadays, some gymnasts of the national team, as Camilla and Rafael, are training abroad, a fact that happens mainly on the need to search for better training conditions. The absence of the best gymnasts in the national daily routine is seen as a problem to many Brazilian specialists, since these elite references stay away from the younger gymnasts (Roveri, Carrara, & Bortoleto, 2017).

It is also important to say that the gymnast Bruno Martini, DMT World champion (2011), had also contributed notably to the increase of the technical level of TUM event in a national scope, although the international results were not as

impressive as it were in DMT. Another reason for increasing TUM technical level was by improving the "tumbling tracks" made in Brazil, since importing is too expensive. In fact, Brazil still lack of national quality equipment, and needs to import apparatuses and, consequently, has a higher cost for this sport. It should be remembered that the first TUM official track (FIG approved) was acquired by Mr. Bastos in 1998, after Sydney WC, but since that the national tracks became reference to Brazilian gymnasts, hindering the technical evolution of the TG.

Upon national events, it is worth to enhance that BGC hold only 2 TG competitions a year, the BAGC and the Elite/Junior Championship. Consequently, only gymnasts from national teams, mostly of senior category, attend international competitions as South American Championships, PG, world cups and also WC.

Considering the coach education, we should highlight that over TG history in Brazil, mainly before the BGC management control, it was developed several international courses, the majority by the initiative of national clubs, allowing the exchange with coaches of diverse countries (e.g. Belarus, Canada, France, Germany, Portugal, and Russia). During this period, the technical level improved considerably. After 2000, the educational actions diminished significantly, not being possible to find any document showing courses offered by BGC. It's interesting to note that since 2007 FIG offers TG courses in the FIG Academy Program. In total 43 courses were done until 2017, being 11 in South America, but any in Brazil (FIG, 2018), whilst is a reference country in the continent, as mentioned before. While a total of 16 Brazilian coaches have participated in TG FIG courses, there was no adherence of BGC to this program, which is securely nowadays the best option to countries without gymnastics coach education programs, as is the case of Brazil. Curiously, Brazil has several "experts" collaborating with the FIG Academy

program (Andréa João, Newton S. V. Júnior, Marco A Bortoleto), including Mr. Rodolfo Rangel, the only TG expert (FIG, 2017c). It seems reasonable that these experts could be invited by the Brazilians authorities to conduct courses in the national context.

In fact, few state federations really have good regional development. From 22 state federations affiliated to BGC, only 5 (*Minas Gerais, Goiás, Rio de Janeiro, Rio Grande do Sul* and *São Paulo*) had attended regularly national Championships, showing restrict TG development. It seems that one long-term policy, with accessible federation taxes and investment in regularity of regional competitions, as obtained by *Minas Gerais* state federation, should be a good approach to develop TG in Brazil, considering the raise in gymnasts number as well as the results achieved, standing out as the most important TG state federation currently. Our findings shows that TG raising in this state is related to regularly incentives from state government (Silva, 2015) as well from municipalities (Junior, 2012) increasing the training conditions, what include scholarship to the best regional gymnasts. In fact, the governmental support, specially provide by Sport Ministry trough the "Bolsa Atleta" program, still represent the major mechanism for Brazilian sport development, specially in "amateur" disciplines as TG (Oliveira, Bortoleto, 2012; Cortez, 2016; Felizola, 2017; Reis et al, 2015). Nevertheless, although the "Bolsa Atleta" program awarded dozens of scholarships for TG athletes in the last 10 years, it was not possible to achieve good results in the most relevant competitions (WG, OG) (Teixeira et al, 2017; Guimarães, 2009).

As a consequence of these indicated problems, the 2017 BAGC had only 137 gymnasts participating, distributed among all events and ages, being only 35 in senior group, what clearly shows the difficulty TG are facing nowadays in Brazil. In this way, the international competitions results trend to remain similar to those achieved until

now, with no perspective to improve them in a short term.

CONCLUSIONS

After the FIG era, Brazil participated in all TG, WC and WAGC editions. However, the country was not able to convert the regularity of participations in a higher technical level in the different events of GT, restricting the medal results on DMT.

Notwithstanding, it is necessary to mention that the results of some gymnasts in international competitions depicted, shows that Brazil has conditions to obtain better results in main events, such as WC and OG. Gymnasts as Rodrigo Rodrigues, Rodolfo Rangel, Bruno Martini and Anna Paula Milazzo, one of the best Brazilian gymnasts of FIT era, who had to abandon sport after suffering an accident, are good examples.

On the other hand, we have the prolonged permanence of veteran gymnasts like Rafael Andrade and Giovanna Venetiglio as members of the TG's national team. According to this, it is also important to point out the gymnast Carlos Ramirez Pala, 15 times Brazilian champion (age group and senior) and qualified reserve for Beijing/2008 OG. Ramirez is a member of the national team since 2002 and is considered a reference gymnast of the TG Brazilian history. Young promises as Daienne Cardoso and Camilla Lopes are still rare.

The taxes charged to take part in national competitions and the trip costs – many times of long distance inside national territory– and the scarce support from clubs and state federations contribute for diminishing the number of gymnasts participating, as well as over TG quality (Roveri, Carrara, & Bortoleto, 2017). Thus, it seems that the lowering of the values of the state federation taxes and even from BGC (annual subscription and affiliation), are underlined as an aspect to be reviewed by Brazilian authorities. The increase of resources provided by sponsors and governmental support (BOC, Municipal and Sport ministry) to acquire equipment and

continued coach education in distinct regions of Brazil is also required, and actions as performed in 2015 by BGC distributing dozens of TG equipment's to some clubs and training centers (BGC, 2015), should be more frequent. Finally, to perform trainings with gymnasts and coaches from national team and clubs (training camps), as well as regular support to clubs and municipalities with minor representatively could facilitate the development of new gymnasts and consequently, an improvement in the technical level of Brazilian TG.

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