

Secular trend of sports practice of Brazilian children and young people in the decade of mega-sport events

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ABSTRACT

Introduction: Hosting mega-sport events can be an important political strategy for promoting the sport. Brazil had a decade with different mega-sport events, so we want to highlight how many Brazilian young people have been practicing sports throughout this period. **Methods:** This secular trend was attended by over 37,000 young people during January 2007 and December 2018. This data is part of a project aimed at mapping physical fitness, growth indicators and sports practice of young Brazilians. Data were described using descriptive statistics techniques. **Results:** The girls' sport practice was always smaller than boys, despite the decrease in the practice of the boys in 2012. We note a substantial upsurge in the years before the Olympic Games. Especially in Brazil, the years before Rio's Olympic Games happened the men's soccer world cup and men's confederations cup. In this year's we note a substantial upsurge in sports practice. However, soccer, futsal (boys) and volleyball (girls) are the most practiced sports. **Implications:** From these results, the strategies for promoting sports can be reevaluated. Understanding which sports are the most and least practiced by children is a first step towards directing policies for the promotion and democratization of sports, regardless of the sport.

Keywords: Sport; Olympism; Olympic Games; Public policies; Young.

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INTRODUCTION

Involvement with sport is part of the overall development of children and young people. The benefits of regular sport practice are attached to different contexts: competitive, educational, recreational and health and rehabilitation (Eime, Young, Harvey, Charity, & Payne, 2013; Geidne, Quennerstedt, & Eriksson, 2013; Pedretti, Pedretti, Vasconcellos, & Seabra, 2016; Seabra et al., 2016). Considering the research carried out in different countries, the involvement of children and young people in sport and physical activities are low (Hulteen et al., 2017; Sallis et al., 2016; Tremblay et al., 2014). In Brazil, recent studies show that in some regions only 40% of this population practices sport (Coledam, Ferraiol, Pires Junior, Dos-Santos, & Oliveira, 2014; Souza et al., 2013).

In order to change this situation is needed to develop efficient strategies to encourage sport practice. In this regard, (Weed et al., 2015) stresses that the realization of mega-sport events, such as the Olympics, can stimulate sport practice in a national context. However, several studies point to the inefficiency of ceding Olympic games and changing sports-related behaviour at the national level (Bauman, Ford, & Armstrong, 2001; Tsouros & Efstathiou, 2007; WHO, 2010).

In Brazil, mega-sport events were in evidence until recently. Between 2007 and 2016, several events of such magnitude were held in the country: 2007 Pan American Games and Parapan American Games, 2011 Military World Games, 2013 FIFA Confederations Cup, 2014 FIFA World Cup, and 2016 Olympic and Paralympic Games.

According to (Reppold Filho, Damiani, & Silveira Fontana, 2018) the Brazilian government considered sports mega-events as opportunities for the great changes that it intended for the country. According to authors, the proposals consisted of building and modernizing sports facilities and equipment, supporting the development of high-performance sports, expanding infrastructure and fostering projects for sports and physical activity throughout the country, especially for the populations of low income.

Considering that Brazilian children and young people lived for about a decade with the preparations and the accomplishment of mega-sport events, this should be "*the period of behaviour change*" in relation to the sport practice. In this sense, this study aims to describe the frequency of the sport practice of Brazilian children and young people and the sports most practised by them in the years preceding and following the Rio 2016 Olympics.

METHODS

It is a study of secular trend with descriptive method and quantitative approach (Gaya, 2016; Last, 1986).

Data source

This study realized a secondary analysis from the database of research project Projeto Esporte Brasil (PROESP-Br). This project has information since 1999 and has the voluntary participation of approximately 110,000 children and young people from Brazil, coming from 5,220 public and private schools and sports clubs.

For this study, the sports practice information was collected in a brief questionnaire. The voluntary professors and coaches applied the questionnaire in the children and young people and send the information to a database of PROESP-Br. Written informed consent was obtained from parents or legal guardians. Ethics

approval for this project was originally obtained from the Universidade Federal do Rio Grande do Sul (Brazil, coordinating center, Number: 2.008.010).

Teachers and coaches filled out with the answers of their respective students to these questions (of a questionnaire): "*Frequently practiced sports?*"; "*What is the weekly frequency?*" and "*What sport do you practice frequently?*". The children and young that reported a weekly frequency of two or more days were considered regular sportspeople.

Research subjects

The sample consisted of 37,616 children and adolescents (21,710 boys and 15,906 girls). From January 2007 to December 2018, children and adolescents age 6 to 17 were selected and voluntarily evaluated. This range of time was selected to represent the beginning (2007) of the mega-sports event period in Brazil.

Data treatment

A descriptive analysis was carried out based on absolute and relative frequencies using the statistical package SPSS version 20.0.

RESULTS

The information that characterizes the sample is presented in Table 1. The Southeast and South regions comprise the majority of the sample, and the ages of 6 and 17 are the ones with the lowest number of subjects. Regarding to sport practice, we can see a drop in the percentage of children and young people that practiced sport regularly, although there was an increase in this percentage after 2014, year that happened to the men's soccer world cup.

Figure 1 shows the percentage of regular sport practise between 2007 to 2018. The girls' sport practise was always smaller than boys, despite the decrease in the practice of the boys in 2012. The boys show an inferior decline compared to the girls, who made them remain as the gender that practices sport the most, bar in 2012.

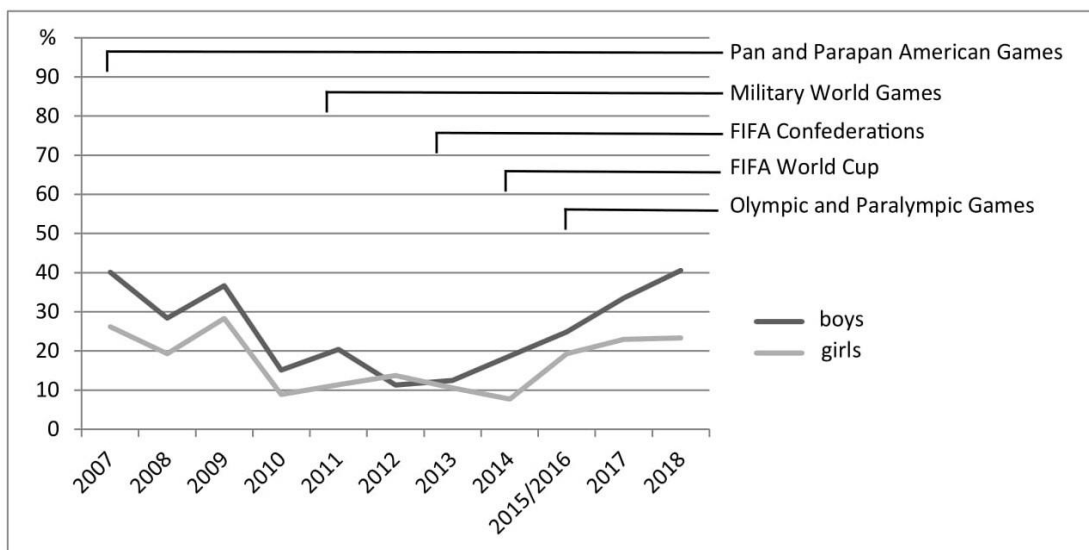


Figure 1. Percentage of regular sport practice of Brazilian children and young people over the period of 2007 – 2018.

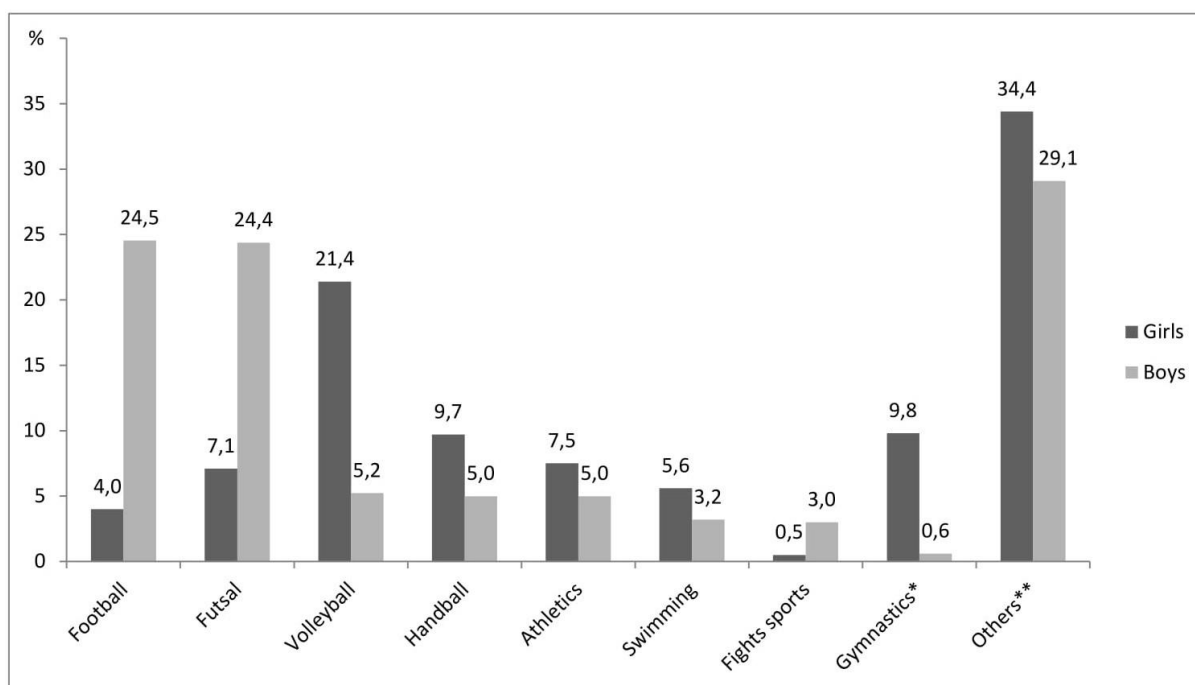
Table 1. Characteristics of Brazilian children and young people in relation to gender, age, geopolitical distribution and sport practice (n= 14,098).

	2007		2008		2009		2010		2011		2012		2013		2014		2015/16		2017		2018		
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Gender																							
Boys	4902	53.2	3596	59.5	1082	56.9	1141	50.6	1520	58.1	3182	61.1	1325	57.3	282	56.2	864	56.6	2904	66.6	912	54.8	
Girls	4317	46.8	2445	40.5	821	43.1	1115	49.4	1098	41.9	2029	38.9	995	42.7	220	43.8	660	43.4	1454	33.4	752	45.2	
	Age in years																						
6	195	2.2	59	1	15	0.8	113	5	36	1.4	91	1.7	48	2.1	34	6.8	23	1.50	81	1.9	5	0.3	
7	759	8.2	267	4.4	99	5.2	172	7.6	77	2.9	311	6	81	3.5	66	13.1	63	4.13	195	4.5	26	1.6	
8	857	9.3	428	7.1	119	6.3	220	9.7	235	9	456	8.8	140	6	59	11.7	65	4.26	178	4.1	89	5.3	
9	859	9.4	513	8.5	163	8.6	269	11.9	254	9.7	527	10.1	177	7.6	51	10.2	79	5.18	298	6.8	128	7.7	
10	1007	10.9	629	10.4	185	9.7	277	12.3	287	11	626	12	187	8.1	45	9	94	6.16	410	9.4	126	7.6	
11	1311	14.2	737	12.2	192	10.1	130	5.8	222	8.5	643	12.3	270	11.6	55	11	155	10.17	620	14.2	122	7.4	
12	1379	15.3	848	14	175	9.2	146	6.5	291	11.1	617	11.8	288	12.4	27	5.3	181	11.87	681	15.6	247	14.8	
13	1299	14.1	966	16	147	7.7	205	9.1	273	10.4	547	10.5	345	14.9	34	6.8	189	12.40	552	12.6	247	14.8	
14	970	10.5	783	13	219	11.4	209	9.3	366	14	497	9.5	354	15.3	19	3.8	142	9.31	470	10.8	243	14.6	
15	548	5.9	525	8.7	267	14	284	12.6	269	10.3	385	7.4	214	9.2	15	3	164	10.76	447	10.3	212	12.7	
16	35	5.1	277	4.6	220	11.6	174	7.7	195	7.4	330	6.4	140	6	54	10.7	201	13.18	331	7.6	159	9.6	
17	-	5.11	9	0.1	102	5.4	57	2.5	113	4.3	181	3.5	76	3.3	43	8.6	168	11.02	95	2.2	60	3.6	
	Sport Practice*																						
Yes	3099	33.6	1493	24.7	629	33.1	271	12	435	16.6	637	12.2	270	11.6	69	13.7	351	23	1307	30	545	32.8	
No	6120	66.4	4548	75.3	1274	66.9	1985	88	2183	83.4	4574	87.8	2050	88.4	433	86.3	1173	77	3051	70	1119	67.2	
Total	9219		6041		1903		2256		2618		5211		2320		502		1524		4358		1664		

*: Sport practice with a frequency of at least two days a week.

We note a substantial upsurge in the years before the Olympic Games in both 2012 and 2016. Especially in Brazil, the years before Rio's Olympic Games happened the men's soccer world cup and men's confederations cup. In this year's we note a substantial upsurge in sports practice.

During the analysed period, some sports were highlighted. The similarity of the percentages throughout the years allowed us to use a single graph to show the sports that is most practiced by Brazilian children and young people. For boys, soccer and futsal are the most practiced sports followed evenly by other conventional team sports and athletics. Concerning girls, volleyball is the most prominent sport, followed by handball, gymnastics and athletics. Other sports, together, obtained a high sum in the percentage. Nevertheless, none represented more than 2.5%.



*: Olympic Gymnastic, Rhythmic Gymnastics; **: Basketball, Rugby, Tennis, Skating, skateboard, equestrianism, hockey and Canoeing.

Figure 2. Sports more practiced by Brazilian children and young people, 2007-2016 (n= 7,254).

DISCUSSION

There were expectative that organizing committee of the 2016 Rio Olympic Games could engage sooner in the complexities of devising an action plan to growth in physical activity in general and in specifically sport practice. The preview according to Bauman et al. was that efforts would require top-level government leadership and financial support, strong cross-sectoral partnerships across multiple agencies, and years of systematic planning and development (Bauman, Murphy, & Matsudo, 2013), in case of Brazil, 10 years approximately.

According to Bellew et al. (Bellew, Bauman, Martin, Bull, & Matsudo, 2011) to be successful in the promotion policies the practice of physical activities, in general, would need actions in four main pillars: 1) influencing social norms toward increasing lifestyle activity; 2) improving the built environment in order to create more opportunities to be active throughout the day; 3) building national active transport networks; and 4) increasing

health literacy and messaging among medical and other health professions regarding the importance of regular physical activity to non-communicable disease prevention.

In this sense, the Olympic Education programs carried out in Brazil during the mega sports events period have helped the overall development of the moral aspects of young people. In addition, during the Olympic period, the strategies for promoting the sports practice were not in evidence. Between 2007 and 2016, regarding state politics, 12 normative acts were published, most of them related to financial and tax issues involving the FIFA Confederations Cup, the FIFA World Cup, and the Summer Olympic and Paralympic games (Brazil, 2010, 2013). During that period, there were no normative acts that aimed towards stimulating or developing sports practice among children and adolescents.

With the decrease in general levels of physical activity (Barbosa Filho et al., 2018; Sallis et al., 2016), sports activities have become even more important in the lives of children and young people. Due to its characteristics of polymorphism and polysemy (Bento & Constantino, 2007), sport plays an important and indispensable role in the training of young people, which is therefore considered a human right (IOC, 2017). Moreover, the more children and young people practice any sport, higher are the chances of detecting those with high skills and real chances of becoming elite athletes (Pinder, Renshaw, & Davids, 2013; Vaeyens, Güllich, Warr, & Philippaerts, 2009).

In this sense (Hogan & Norton, 2000) reported a linear trend between the amount of money invested in sport policies in Australia and the total of medals won in the Olympic Games. The authors indicate that for the Australian government an Olympic medal corresponds to an investment of approximately US\$ 37 million in the case of a gold medal and US\$ 8 million per medal in general. Therefore, a large amount of sportspeople (an effect of sports incentive policies) seems to be decisive for the number of elite athletes in a country.

If we consider that the main researchers of high skills (Burgess & Naughton, 2010; Gulbin, Weissensteiner, Oldenzel, & Gagné, 2013; Williams & Reilly, 2000) affirm unanimously that within any human population there is an occurrence of 2 to 5% of high performance individuals, we believe that are between 540,000 and 1.350.000 Brazilian children and adolescents with high motor skills that could be training in sport clubs. However, our results show that we are not sufficiently contemplating our children and young people in Brazil.

The low accession to sport may be worrying when it comes to their development, especially as we notice that the sports exercised vary poorly. As well as in other countries (Hulteen et al., 2017), we notice that the sports that are the most practiced by the young population are, usually, the most watched and loved by the general population. This way, there is a necessity of evaluation and result tracking programs to be implemented in lower level education institutions and sport clubs, aiming towards guiding children and young people to practice the sports that mostly fit to their physical specialties. To provide opportunities to the younger population to have sport experiences will contribute to their motor and social affective skills, as well as raise the chances of finding future sport talents.

CONCLUSION

Throughout the years before Rio 2016 Olympics, the percentage of children and young people that practice sport regularly in Brazil was between 10 and 25% with a tendency for decrease. The boys showed a slight upsurge of sport practice in the years prior to the Olympic Games. For the girls, this increase seems to occur in the year of the Summer Olympic Games. After games, the tendency is for the increase, and the percent is approximately 30-40%. For the boys, soccer and futsal were the most practiced sports, followed in equal

percentages by other conventional team sports and athletics. For the girls, volleyball is the main sport, followed by handball, gymnastics and athletics. Other sports, combined, had a high percentage sum, but none expressed over 2.5% individually.

AUTHOR CONTRIBUTIONS

Mello J. collaborated with the design of the research project, data collection, analysis, interpretation and discussion of the results, writing of the text and approval of the final version. Pedretti A. Collaborated with the data interpretation and discussion of the results, writing of the text and approval of the final version. Caporal G. collaborated with the design of the research project and writing of the text. Ferreira A. Collaborated with data interpretation and discussion of the results, writing of the text. Mahique J. Collaborated with data interpretation and discussion of the results and approval of the final version. Reppold-Filho A. Collaborated with the design of the research project, data interpretation and discussion of the results, supervision of the writing of the text and approval of the final version. Gaya A. Collaborated with the design of the research project, data interpretation and discussion of the results, supervision of the writing of the text and approval of the final version.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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