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## SCHOOL VOLLEYBALL: CHARACTERIZATION OF THE SCHOOLS/MUNICIPALITIES PARTICIPATING IN THE SANTA CATARINA SCHOOL GAMES

### VOLEIBOL ESCOLAR: CARACTERIZAÇÃO DAS ESCOLAS/MUNICÍPIOS PARTICIPANTES DOS JOGOS ESCOLARES DE SANTA CATARINA

Anderson Marcelino<sup>1</sup>, Carine Collet<sup>2</sup>, Allana Alexandre Cardoso<sup>1</sup>, Alexandre Vinicius Bobato Tozetto<sup>1</sup>, Ana Flávia Backes<sup>1</sup>, and Juarez Vieira do Nascimento<sup>1</sup>

<sup>1</sup>Federal University of Santa Catarina, Florianópolis - SC, Brazil.

<sup>2</sup>Federal University of Rio Grande do Sul, Porto Alegre - SC, Brazil.

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#### RESUMO

O ambiente escolar tem contribuído no processo de desenvolvimento esportivo, especialmente pela oferta diversificada de atividades nas aulas de Educação Física e em projetos extracurriculares voltados às modalidades esportivas. O trabalho realizado com as equipes escolares de voleibol no estado de Santa Catarina tem sido altamente reconhecido ao longo dos anos, porém há poucas evidências sobre as escolas que têm contribuído na formação de jogadores de voleibol no cenário catarinense. Assim, o objetivo do estudo foi caracterizar as escolas participantes dos Jogos Escolares de Santa Catarina (JESC) de voleibol. Realizou-se a análise documental dos boletins dos JESC disponibilizados pela Fundação Catarinense de Esporte (FESPORTE). As evidências revelaram que os estabelecimentos de ensino com maiores participações e conquistas, em ambas as categorias investigadas, são escolas de educação básica da rede estadual, seguidas pelas instituições de ensino da rede privada e, em menor número, por escolas municipais. Enquanto na categoria feminina as escolas estão localizadas em sua grande maioria nas regiões Leste-Norte e Sul, na categoria masculina concentram-se na região Centro-oeste, especialmente em cidades de pequeno e médio porte, com elevado Índice de Desenvolvimento Humano (IDH).

**Palavras-chave:** Eventos esportivos. Desempenho esportivo. Esportes coletivos. Esportes de rede.

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#### ABSTRACT

The school environment has contributed to the sports development process, especially due to the diversified offer of activities in Physical Education classes and extracurricular projects focused on sports. The work done with school volleyball teams in the state of Santa Catarina has been highly recognized over the years, but there is little evidence about schools that have contributed to the training of volleyball players in the Santa Catarina scenario. Thus, this study aimed to characterize the schools participating in the Jogos Escolares de Santa Catarina (JESC, Santa Catarina School Games) of volleyball. The documentary analysis of the JESC bulletins provided by the Fundação Catarinense de Esporte (FESPORTE, Santa Catarina Sports Foundation) was carried out. The evidence revealed that the educational establishments with the highest participation and achievements in both categories investigated were basic education schools of the state school system, followed by private educational institutions and, to a lesser extent, municipal schools. While in the women's group, the schools were mostly located in the East-North and South regions, in the men's group, they were concentrated in the Midwest region, especially in small and medium-sized cities with high Human Development Indices (HDIs).

**Keywords:** Sports event. Sport performance. Team sports. Net sports.

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#### Introduction

Sports are one of the main cultural phenomena of contemporary society, disseminating values, modes of conduct, and political power, adding market greatness, and bringing together people with different values and intentions in the most diverse places<sup>1</sup>. Given its complexity and the possibilities of continuous transformations and interpretations of the contexts in which they are present, sports have assumed new meanings over the years and are considered an integrating phenomenon in the social sphere of high global reach<sup>1, 2</sup>. Thus, the mobilizing power of sports involves participants and spectators of different ages, especially when manifested in public events<sup>3</sup>.

Among the several possible contexts of practice, the school environment has been important for the experience of this sports phenomenon, both regarding Physical Education



classes and extracurricular training teams<sup>1</sup>. However, little has been studied about the characteristics of schools that stand out in promoting school sports, which becomes important as it is a relevant context of sports development.

The first contacts more directed to sports modalities often occur in the school environment. It has considerable representativeness, with competition being one of the contents developed since both are part of a sociocultural phenomenon in which one without the other would lose the essence that characterizes them<sup>4</sup>. However, the way of teaching sports needs to consider their educational, social, cultural, and human dimension, with the teacher's mediation being decisive so that the values of performance sports do not stand out from educational values<sup>5</sup>. In this regard, the process of teaching sports should consider their multidimensional nature and occur in a rewarding manner, respecting the interest and individuality of each student<sup>6</sup>.

Considered a sports modality of dividing net or rebound wall, volleyball differs from most team sports by the impossibility of retaining the ball, i.e., it may only be played by hitting<sup>7</sup>. The conditionality of the actions highlights the importance of technical-tactical actions in the context of the game, mainly determined by the dependence between collective contacts for winning the point. Except for the serve, the following actions are sequential and depend on the previous ones, requiring the cooperation and collaboration of teammates<sup>8</sup>. To improve these technical-tactical actions, school volleyball is one of the possibilities of systematized sports practice with the purpose of enhancing sports competencies and, consequently, promoting participation in school competitions.

The analysis of the Brazilian scientific production about sports competitions from the perspective of educational sports reveals an incipient number of investigations on the topic<sup>5</sup> that been increasing in recent years. Regarding school games, some studies have been developed in the states of Bahia<sup>9</sup>, with the aim of investigating the inclusion of innovative modalities, Paraná<sup>10</sup>, to analyze student participation in school games and discuss its effectiveness as a public policy, Mato Grosso<sup>11</sup>, to verify the effects of participation in extracurricular sports on the perception of self-efficacy of youths, Mato Grosso do Sul<sup>12</sup>, to identify the pedagogical aspects addressed during school games and their relationship with school sports, and Rio Grande do Sul<sup>13</sup>, to investigate the relationship of school games with school Physical Education. However, in the state of Santa Catarina, school sports still lack greater understanding. Thus, there is a need to expand studies in an attempt to enable new perspectives on the relationship of sports competitions with Sports Pedagogy, as well as to encourage sports competitions held within schools to contemplate the fundamental elements of pedagogical competition, collaboration, and social values<sup>14</sup> and contain individual, cooperative, and competitive tasks<sup>4</sup>.

In the search for increased visibility of school sports, the Brazilian Student Games were created by the Ministry of Education in the late 1960s, stimulating integration among school-age youths and the search for new talent<sup>15</sup>. Specifically in Santa Catarina, the school games were created in 1973 by the State Department of Education and Sports to put into practice the actions developed in Physical Education classes<sup>16</sup>. Currently, the Jogos Escolares de Santa Catarina (JESC, Santa Catarina School Games) annually mobilize more than 250 thousand students from Santa Catarina, with the main objectives of fostering sports practice in educational institutions, promoting sports exchange, giving continuity to the pedagogical process experienced in schools and Physical Education classes, as well as situating schools as leisure centers for sports and culture, co-responsible for the complete training of citizens and society<sup>17</sup>. The JESC are organized into two categories (12 to 14 years old and 15 to 17 years old) and developed in five rounds (school, municipal, micro-regional, regional, and state), and the champion schools of the state round are accredited to represent Santa Catarina in the Brazilian School Games and the Youth Games.

The state of Santa Catarina has achieved significant results over the years in national and international school volleyball competitions. In the men's group, the achievements of the Erwin Prade Municipal School in the Brazilian School Championship (2009, 2010, 2011, 2017, and 2018) and the South American School Games (2010, 2011, 2019) stand out, as well as those of the Barão do Rio Branco School in the 2019 Youth School Games. In the women's group, the Francisco Mazolla Basic Education School won the bronze medal at the 2010 World School Championship and was the champion of the 2014 Youth School Games, the Rodrigues Alves Basic Education School was the champion of the Youth School Games in 2012 and 2017, the Sara Castelhana Kleinkauf Basic Education School won in the 2014 and 2016 editions<sup>6</sup>, and, more recently, the Colégio Evangélico Jaraguá won the 2019 edition. It should also be noted the frequent calls of athletes from Santa Catarina to the base Brazilian national teams, where of the 102 athletes called up for the 2016 volleyball teams, 11 were from Santa Catarina<sup>18</sup>.

Given the relevant role of schools in the training of players and the absence of evidence on schools that have contributed to the training of volleyball players in the Santa Catarina scenario, this study aimed to characterize the schools participating in the volleyball Santa Catarina School Games (JESC).

## Methods

The investigation is characterized as a quantitative study of an exploratory and descriptive nature, carried out from the analysis of documents, whether contemporary or retrospective, seeking to describe and/or compare social facts, establishing their characteristics and trends<sup>19, 20</sup>. The documents analyzed included the public access JESC bulletins available on the website of the Fundação Catarinense de Esporte (FESPORTE, Santa Catarina Sports Foundation)<sup>21</sup>, supplemented by data from the Brazilian Census<sup>22</sup> made available by the Instituto Brasileiro de Geografia e Estatística (IBGE, Brazilian Institute of Geography and Statistics) and the Santa Catarina School Census<sup>23</sup> made available by the State Department of Education.

The Census of Basic Education of Santa Catarina<sup>23</sup> revealed that the state had 2,035 educational establishments that include the final years of elementary school, with 903 being state schools, 827 municipal schools, 304 private schools, and 1 federal Institute. There were 392,182 students enrolled in the final years of elementary school, namely 179,478 students (45.76%) in the state school system, 165,813 (42.28%) in the municipal school system, 46,563 (11.87%) in the private school system, and only 328 (0.08%) at the federal level. In high school, there were 994 educational establishments, specifically 728 state schools, 234 private schools, and 32 federal institutes. Of the 242,876 students enrolled, 199,920 students (82.31%) were from the state school system, 30,460 (12.54%) from the private school system, and 12,031 (4.95%) from the federal sphere. Although the state of Santa Catarina has the sixth most significant number of municipalities ( $n = 295$ ) among the federative units, the cities are small, with 268 municipalities (88.1%) having up to 50,000 inhabitants, 15 (5.1%) having 50,001 to 100,000 inhabitants, 11 (3.7%) having 100,001 to 500,000 inhabitants, and only one (0.3%) municipality with over 500,001 inhabitants<sup>22</sup>.

The investigative context comprised only the schools participating in the state rounds of the JESC in volleyball.

Up to 2016, the state rounds comprised five teams, namely the champion teams of each regional round and the representative of the host municipality. As of 2017, the state rounds started to comprise sixteen teams. In addition to the first, second, and third places of the edition held the previous year, the representative of the host municipality and the first

three places in each regional round participate in the state round. The champion school of the state round is accredited to represent Santa Catarina in the Brazilian School Games (12 to 14 years old category) and the Youth Games (15 to 17 years old category). In addition, both national competitions accredit the champion schools to compete in the South American School Games and the World School Games.

Data collection was carried out after the bulletins were made available by FESPORTE, comprising the periods of 2008 to 2019 for the 12 to 14 years old category and 2011 to 2019 for the 15 to 17 years old category. The JESC were not held in 2020 and 2021 due to restrictions caused by the COVID-19 pandemic. The data collection and tabulation were carried out from March to July 2022 independently by two researchers to ensure the reliability and accuracy of the data.

In the characterization of the schools participating in the state rounds of the JESC from 2008 to 2019, the following variables were considered: year of the JESC editions (2008 to 2019); group (women's and men's); categories (12 to 14 years old and 15 to 17 years old); the number of participations and medals (1–2; 3–4; 5–6; 7–8; 9 or more); administrative nature (state public, municipal public, federal public, and private); geographical region (West, Midwest, South, and East-North); municipalities; schools; Human Development Index (HDI). The extracted information was entered into a Microsoft Excel spreadsheet and analyzed using descriptive statistics (absolute frequency).

## Results

In the last edition of the JESC held in 2019, 145,864 students in the 12 to 14 years old category from 1,281 elementary schools and 113,013 students in the 15 to 17 years old category belonging to 1,213 high schools participated. The year 2019 was identified as the one with the highest number of students registered in the JESC (258,887 students), comprising the participation of 37.2% of students enrolled in elementary school and 46.5% of students enrolled in high school in the state of Santa Catarina.

In the JESC editions of 2008 to 2019 (Char 1), the highest participation of schools in the state system in the state rounds of volleyball was observed in the 12 to 14 years old and 15 to 17 years old categories. From 2017, the number of schools that competed in the state rounds increased from five to 32, with the outstanding participation of schools in the state school system in both categories.

Chart 1. Number of schools participating in the state stages of the volleyball modality in the period 2008-2019

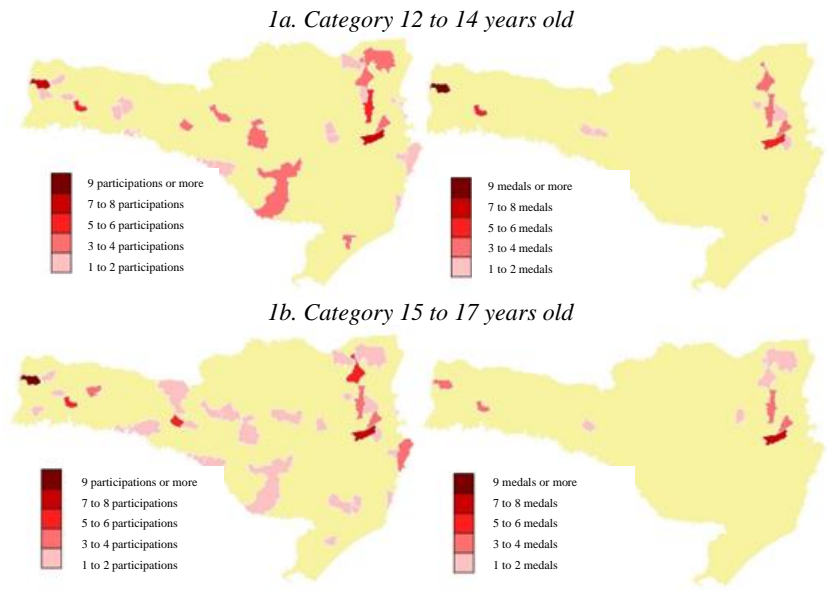
Schools	Categories	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
State schools		7	4	5	4	5	2	5	3	3	19	14	17
Private schools	12 to 14 years old	-	2	1	3	2	3	2	4	6	11	12	10
Municipal schools		1	2	2	1	1	3	2	1	1	2	4	5
State schools		*	*	*	7	3	6	2	6	7	22	24	23
Private schools	15 to 17 years old	*	*	*	1	5	2	3	2	3	8	7	9
Federal Institute of SC		*	*	*	-	-	-	-	-	-	-	1	-

Note: \*Data not available on the FESPORTE website

Source: authors

The geographical location of the schools with the highest participation and medal achievements in the women's 12 to 14 years old category (Figure 1a) shows a certain balance in the participation among the regions, but the highest concentration of medals in the East-

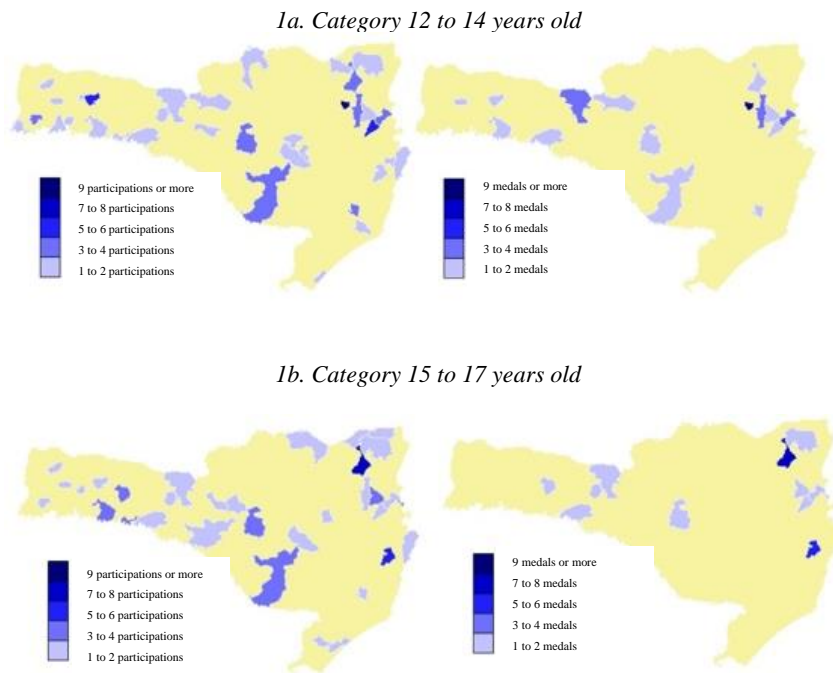
North and South regions. A similar distribution of participation and medals was observed in the 15 to 17 years old category (Figure 1b), with the highest concentration of medals in the East-North region.



**Figure 1.** Geographical location of schools with greater participation and medals in women's volleyball

Source: authors

The municipalities of the Midwest region had the highest concentration of medalist schools in the men's 12 to 14 years old category, although the distribution of regional participation in the state round was more balanced (Figure 2a). In the men's 15 to 17 years old category (Figure 2b), participation was also balanced, but the highest concentration of medalist municipalities was found in the Midwest and South regions.



**Figure 2.** Geographical location of schools with greater participation and medals in men's volleyball

**Source:** authors

Among the 47 schools in the municipalities that won at least one medal in both categories (Charts 2 and 3), 19 schools (40.4%) are located in small cities (up to 50,000 inhabitants), 26 (55.3%) in medium-sized cities (50,001 to 500,000 inhabitants), and one in a large city (over 500,001 inhabitants). When considering the HDIs of the municipalities, according to the criteria of the United Nations Development Program<sup>24</sup>, it was observed that 29 schools (61.7%) are from municipalities with high HDIs (0.700 to 0.799) and 17 (36.2%) from cities with very high HDIs (0.800 to 1.000).

REG.	MUN.	POP.	HDIs	NETWORK	SCHOOL	12 TO 14 YEARS OLD			15 TO 17 YEARS OLD			TOTAL
						1º	2º	3º	1º	2º	3º	
West	Guaraciaba	10.498	0.750	State	EEB. Sara Castelhana Kleinkauf	6	3	-	-	2	1	12
South	Nova Trento	13.135	0.748	State	EEB. Francisco Mazzolla	3	2	-	3	1	3	12
West	Saudades	10.492	0.751	State	EEB. Rodrigues Alves	2	2	2	-	3	1	10
East-North	Blumenau	309.011	0.806	State	EEB. Anita Garibaldi	-	1	1	-	-	-	7
				Municipal	EBM. Whilhem Schurmann	-	-	1	-	-	-	
				Private	Escola Técnica do Vale do Itajaí				1	1	2	
South	Brusque	99.917	0.795	Private	Colégio São Luiz	-	-	1	-	-	-	6
				Private	Colégio Cultura	1	1	-	-	-	-	
				Private	Colégio Amplo				2	-	1	
East-North	Jaraguá do sul	143.123	0.803	Private	Colégio Evangélico Jaraguá	-	-	2	1	-	-	5
				Municipal	EMEF. Gertrudes Steilein Milbratz	-	-	1	-	-	-	
				Private	Senai	-	-	-	1	-	-	
Midwest	Joaçaba	27.020	0.827	Private	Colégio Conexão Joaçaba	-	-	2	1	1	-	4
Midwest	Herval d'Oeste	21.239	0.758	State	EEB. São José	-	1	-	-	-	-	1
South	São João Batista	26.260	0.819	State	EEB. Alice Silva Gomes	-	1	-	-	-	-	1
South	São Ludgero	10.993	0.755	Private	Colégio Evolução	-	1	-	-	-	-	1
East-North	Timbó	36.774	0.784	Municipal	EM. Erwin Prade	-	-	1	-	-	-	1
East-North	Gaspar	57.981	0.765	State	EEB. Ivo de Aquino	-	-	1	-	-	-	1
East-North	Ibirama	17.330	0.737	State	EEB. José Clemente Pereira	-	-	-	-	1	-	1
East-North	Joinville	515.288	0.809	State	EEM. Gov. Celso Ramos	-	-	-	-	-	1	1

**Chart 2.** Regions, municipalities, and schools of the medalist women's teams in state rounds of volleyball in the JESC from 2008 to 2019 of the 12 to 14 years old and 15 to 17 years old categories

**Note:** REG – Regional; MUN – Municipalities; POP – Population; HDIs - Human Development Indices; EEB – State Elementary School; EEM – High School; EM – Municipal School

**Source:** IBGE Cidades<sup>25</sup>; Fesporte<sup>21</sup>

REG.	MUN.	POP.	HDIs	NETWORK	SCHOOL	12 TO 14 YEARS OLD			15 TO 17 YEARS OLD			TOTAL
						1°	2°	3°	1°	2°	3°	
East-Notth	Timbó	36.774	0.784	Municipal	EM. Ervin Prade	9	1	1	-	-	-	11
East-Notth	Jaraguá do Sul	143.123	0.803	State	EEB. Giardini Luiz Lenzi	-	1	-	-	-	-	8
				State	EEB. Valdete Ines Piazeria Zindars	-	-	-	2	3	1	
				Private	IE. Jangada	-	-	-	-	1	-	
South	Itajaí	183.373	0.795	Private	Colégio Pedro Antônio Fayal	-	1	2	-	-	-	5
				Private	Colégio Salesiano	-	-	1	-	-	-	
				Private	Colégio Unificado	-	-	-	1	-	-	
South	Santo Amaro da Imperatriz	19.823	0.781	State	EEB. Anisio Vicente de Freitas	-	-	-	2	2	1	5
Midwest	Água Doce	6.961	0.698	State	EEB. Ruth Lebarbechon	-	2	1	-	-	1	4
South	Brusque	99.917	0.795	Private	Colégio Cultura	1	1	-	-	-	-	4
				Private	Colégio Amplo	-	-	-	1	-	1	
East-Notth	Blumenau	309.011	0.806	Private	E. Barão do Rio Branco	1	1	1	-	-	-	3
East-Notth	Gaspar	57.981	0.765	State	EEB. Frei Godofredo	-	-	2	-	-	1	3
South	Braço do norte	29.018	0.778	Private	CE. Alpha Ideal	-	2	-	-	-	-	2
Midwest	Concórdia	68.621	0.800	Private	Colégio. Dr. Julio C. R. Neves	-	1	-	-	1	-	2
Midwest	Lages	156.727	0.770	State	EEB. Vidal Ramos Junior	-	-	2	-	-	-	2
Midwest	Curitiba	37.748	0.721	State	EEB. Santa Teresinha	-	-	1	-	-	-	
				Private	Colégio Maria Imaculada	-	-	-	-	-	1	-
South	Balneário Camboriú	108.089	0.845	State	EEB. Presidente João Goulart	-	-	-	1	-	-	2
				Private	Colégio Unificado	-	-	-	-	1	-	
Midwest	Caçador	70.762	0.735	State	EEB. Dante Mosconi	1	-	-	-	-	-	1
West	Chapecó	183.530	0.790	State	EEB. Druziana Sartori	-	1	-	-	-	-	1
West	Maravilha	22.101	0.781	State	EEB N. Sra. Da Salette	-	1	-	-	-	-	1
West	Quilombo	10.248	0.730	State	EEB Jurema Savi Milanez	-	-	1	-	-	-	1
East-Notth	Joinville	515.288	0.809	State	EEM. Governador Celso Ramos	-	-	-	1	-	-	1
Midwest	Vargem Bonita	4.793	0.718	State	EEB. Vitorio Roman	-	-	-	-	1	-	1
West	Xanxerê	44.128	0.775	Private	Colégio La Salle	-	-	-	-	-	1	1

**Chart 3.** Regions, municipalities, and schools of the medalist men's teams in state rounds of volleyball in the JESC from 2008 to 2019 of the 12 to 14 years old and 15 to 17 years old categories

**Note:** REG – Regional; MUN – Municipalities; POP – Population; HDIs - Human Development Indices; EEB – State Elementary School; EEM – High School; EM – Municipal School.

**Source:** IBGE Cidades<sup>25</sup>; Fesporte<sup>21</sup>.

From 2008 to 2019, 31 schools won at least one medal in state rounds in the 12 to 14 years old category (men's and women's), with 16 (51.6%) being in the state school system, 11 (35.5%) in the private school system, and four (12.9%) in the municipal school system. However, when considering the total number of medals distributed in the period, it was observed that 38 medals (52.8%) went to state schools, 20 (27.8%) to private schools, and 11 (19.4%) to municipal schools. While the state schools Sara Castellano Kleinkauf in Guaraciaba, Francisco Mazzola in Nova Trento, and Rodrigues Alves in Saudades stand out in this category in the women's group for concentrating 20 (66.7%) medals of the 36 disputed,



the Erwin Prade Municipal School made the difference in the men's group with 11 medals, including nine (75.0%) of the 12 gold medals disputed.

In the 15 to 17 years old category, 24 schools won at least one medal in state rounds in the men's and women's groups, with 12 (50.0%) state schools and 12 (50.0%) private schools. Of the 51 medals distributed from 2011 to 2019, 32 (62.7%) went to state schools and 19 (37.3%) to private schools. The highest concentration of medals was observed in the men's group among the state basic education schools Valdete Inês Piazeria Zindars in Jaraguá do Sul and Anísio Vicente de Freitas in Santo Amaro da Imperatriz, and in the women's group, in the Francisco Mazzola State Basic Education School in Nova Trento and the Itajaí Valley Technical School in Blumenau.

An aspect to highlight in the women's group is that schools belonging to the municipalities of Guaraciaba, Saudades, Joaçaba, Jaraguá do Sul, and Nova Trento have participated in editions of the JESC and won medals in both categories with the same educational establishments. In addition, different schools in the municipalities of Blumenau and Brusque also won medals in the 12 to 14 years old and 15 to 17 years old categories.

## **Discussion**

Considering the aim of the study of characterizing schools participating in the volleyball JESC, the results demonstrated that the participating educational establishments were mostly basic education schools in the state school system located in the East-North and South regions in the women's group and Midwest region in the men's group. These data provide important information about the participation of schools and municipalities in the state of Santa Catarina in the sense of promoting and developing school volleyball, focusing on specific regions depending on the group.

Among the educational establishments that won at least one medal in the state rounds of the 12 to 14 years old category, the basic education schools of the state system presented a higher percentage, followed by the educational institutions of the private system and the municipal schools. In turn, in the 15 to 17 years old category, these figures show equal percentages, where 50% of the educational establishments were basic education schools in the state system and 50% were educational institutions in the private system. The data revealed that some private educational establishments won many medals when qualifying their teams for state rounds. It should be noted that the teaching conditions between private and public schools are different, taking into account the structure and financial situation of both realities. In addition, the physical and social particularities of the places where sports practice takes place interfere with the created connections, being seen as potential environments for sports training<sup>26</sup>.

When investigating the conditions of school sports practices in the state, private, and municipal school systems of the municipality of Santos, Carlos et al.<sup>27</sup> identified that the conditions of use and maintenance of public schools are worse than those described in private schools, and private schools presented some specific characteristics, such as coach teachers who were former athletes of the sport. In the study on the champion schools of the Paraná School Games, Costa et al.<sup>10</sup> concluded that private sector schools were the vast majority, and they are renowned in the state and located in the central region, pointing out the preponderant financial factor for achieving good results.

In the reality of Santa Catarina, the distribution of medals in the volleyball JESC contrasts with the data from other states when indicating the highest concentrations of medals in state basic education institutions, except one educational establishment of the municipal school system in the 12 to 14 years old category. In some educational establishments, sports

practice may take place as curricular content during Physical Education classes and may be associated with sports initiation, which is the case of school teams, in which case the students enter the training activities of their own choice.

Investigations on the sports trajectory and practice contexts of Brazilian volleyball athletes<sup>25, 28, 29</sup> have revealed that the athletes initially experienced a period of diversification with varied sporting experiences. In the pursuit of sports specialization, there is a decrease in the diversification of activities and an increase in the specific activities of a sport at the subsequent stages of specialization and investment, focusing on the training of this sport. In this context, schools represent the possibility of insertion in volleyball in these two moments, providing a diverse experience in physical and sports activities in Physical Education classes and the possibility of improvement in extracurricular activities and training.

Carbinato et al.<sup>30</sup> pointed out an increase in extracurricular activities in schools, emphasizing the importance of children and youths being inserted as long as possible in an environment that favors educational and citizenship values. When analyzing the sports practice contexts of elite athletes of Brazilian volleyball, Collet et al.<sup>25</sup> highlighted schools as important places of practice in the years of sports diversification, especially for offering activities during school after-hours aiming at sports improvement and the possibility of participation in school competitions. However, the authors revealed that the practice in sports clubs predominates, especially among female athletes, justified by the characteristics of the sport related to a specific structure for its development.

One aspect to highlight is the participation in the JESC of athletes from sports clubs linked to the municipalities, especially in schools that have won a large number of medals over the years investigated. According to the Santa Catarina Volleyball Federation<sup>31</sup>, the state of Santa Catarina has 46 active clubs, and 27 of the 34 JESC medalist municipalities have volleyball sports clubs. The binomial school-municipality or school-club has an important contribution to the training process of Brazilian athletes, with the Physical Education teacher being one of the main co-authors in this transition from the initial stage to the improvement stage<sup>32</sup>. In investigating the purposes of a basketball sports club in Santa Catarina, Folle, Nascimento, and Souza<sup>33</sup> identified the importance of public agencies in small cities that enable the systematic practice of different sports modalities, especially sports initiation.

The data analyzed in the context of the JESC revealed the increase in the number of participating schools throughout the analyzed period, with the highest peak of participation in the JESC being observed in 2019<sup>17</sup>. The changes made by FESPORTE in the JESC from 2017 onwards, namely the expansion of the number of schools classified for the state round, made it possible to expand the offer of spots to compete in said round as well as increase the number of matches played by the schools. Turpin<sup>14</sup> highlighted the importance of school competitions using pedagogical criteria such as increasing the number of matches to allow participants moments of victories and non-victories.

Team sports are considered late specialization sports because of the developmental characteristics of children and youths<sup>34</sup>, which justifies the beginning of sports competitions from 12 to 14 years of age, a period in which youths are better prepared to deal with the physical and emotional loads that the competition environment involves<sup>35</sup>. In this direction, structural changes related to the game of volleyball in the JESC, such as the height of the net and the number of sets played, corroborate the assumptions of sports competition in the logic of Sports Pedagogy, although a more thorough investigation is necessary relative to the format of the competition. In the school games of Mato Grosso do Sul<sup>12</sup>, there is a concern to aggregate as many participants as possible and carry out rule adaptations to provide greater accessibility to students not yet included in these competitions. When analyzing the organization of competitions in sports federations of different sports in Paraná, Milistetd et al.<sup>34</sup> found that volleyball was one of the sports that presented the most significant number

of structural and functional changes relative to the dimensions of the court, ball, and net height.

When considering the geographical location, while the East-North and South regions have the most significant number of municipalities that have won some medal in the women's group, in the men's group, the municipalities are concentrated in the Midwest region, the different educational establishments of which are located mostly in medium-sized cities, followed by small cities. According to Maté, Michelete, and Santiago<sup>36</sup>, the current classification of cities in Brazil creates an urban framework where the vast majority of Brazilian municipalities are considered small since 69.15% have a population of fewer than 20,000 inhabitants, an index that reaches 88.55% when municipalities with less than 50,000 inhabitants are included. Cities with less than 15,000 inhabitants accumulate many medals in the volleyball modality of the JESC, especially the basic education schools of the state system, with expressive results in both categories in the women's group.

The evidence on geographical location seems to follow the development and occupation of the different regions and municipalities in Santa Catarina. In the specific case of the municipality of Brusque, the institutionalization of sports was especially affected by the colonization of German immigrants<sup>37</sup>, who brought the culture of organizing sports practice in clubs/societies and who helped in the creation of sporting events, as is the case of the Jogos Abertos de Santa Catarina (JASC, Santa Catarina Open Games) in 1960. Most of the municipalities with educational establishments standing out concerning medal achievements have high and very high HDIs, revealing a high standard of living in the respective municipalities, especially life expectancy at birth, education level, and purchasing power parity<sup>24</sup>. When investigating the matter, Costa, Cardoso, and Garganta<sup>38</sup> concluded that most professional football players born in cities with up to 200,000 inhabitants and HDIs above 0.73 presented more favorable conditions for ascension to the top level.

Another important aspect is that the size of the city where athletes obtain their formative experiences may affect how they will be exposed to the sport<sup>39</sup>, given that children living in small towns have access to facilities that introduce them to sports differently from children coming from medium and large cities. Although they portrayed the Canadian reality, the authors clarified that children living in cities with higher demographic density have more significant potential in terms of resources, being able to practice their sport in a structured environment and participate in local leagues, also expanding opportunities for participation in sports with children of the same age group, size, and skill level.

Small cities can provide a safer natural environment for children and youths to move more freely without adult supervision, providing a large number of hours of practice and a greater possibility of staying in the city teams<sup>40</sup>. Thus, cities in Santa Catarina considered small and with high HDIs have been standing out in the scenario of school volleyball, especially in those that seem to have a more considerable sports culture in the sport.

## **Conclusion**

Sports developed in the school environment have assumed different senses and meanings, providing the opportunity to participate in sports competitions among classrooms in the school environment, the same municipality, neighboring cities, and different regions of the state and country.

The evidence found in the study allowed us to conclude that the educational establishments participating in the volleyball JESC are mostly basic education schools in the state school system, followed by private educational institutions and, to a lesser extent, by establishments in the municipal public system. The schools that appear with the highest

number of medals are those belonging to the state public school system, located in small municipalities in the East-North, South, and Midwest regions with high HDIs.

Regarding the number of medals, the high concentration of medals of a select group of basic education schools in the women's group and a municipal educational establishment in the men's group stand out. These educational establishments are located in small cities with high and very high HDIs and the presence of sports clubs/associations in the municipalities. Thus, it would be important to investigate the existence and nature of incentives and partnerships between schools and sports clubs/associations, as well as to characterize the local culture of educational establishments and their municipalities that seem to invest only in a particular group. The low number of educational establishments in the municipal network that achieve classification for the state rounds stands out, highlighting the need for a more attentive look and greater incentive of the city halls to school sports.

Future investigations also need to deepen the pedagogical assumptions that guide the sports competitions of the JESC to highlight the contributions to the sports development of children and youths. In addition to analyzing the perception of coach teachers about the JESC, it is recommended to investigate the knowledge necessary to work in school volleyball teams in the different educational systems and the most valued professional learning contexts.

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#### ORCID

Anderson Marcelino: <https://orcid.org/0000-0002-6659-0301>

Carine Collet: <https://orcid.org/0000-0003-3742-4037>

Allana Alexandre Cardoso: <https://orcid.org/0000-0002-0280-7567>

Alexandre Vinicius Bobato Tozetto: <https://orcid.org/0000-0002-6822-7709>

Ana Flávia Backes: <https://orcid.org/0000-0002-9456-4821>

Juarez Vieira do Nascimento: <http://orcid.org/0000-0003-0989-949X>

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**Correspondence address:** Anderson Marcelino - Rua 1º de maio, 890 - 89108-000 Massaranduba - Santa Catarina – Brazil  
- eu\_andersonm@yahoo.com.br