171 - THE MOTOR PERFORMANCE OF THE PARTICIPANTS OF XXIV SCHOOL GAMES OF SANTA CATARINA

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INTRODUCTION

The School Games of Santa Catarina - JESC - are organized by Catarinense Foundation of Sports - FESPORTE, and intend to integrate students from all the regions of the state, by the sport. The event, that this year happened in the cities of Curitibanos and Ibirama, has like its objectives the participation, the promotion of a sportive, educational and cultural interchange, besides giving continuity to the pedagogical process lived in the schools.

JESC happen in some stages. These stages are distributed in agreement to the government department of Regional Development, that had been created in the last government to decentralize the administration; being each one of these departments, an official agency of development. The goal of this decentralization is to increase the integration between State/City/University/Community, in the planning and execution of the government goals.

For this, the State was divided in 8 mesoregions and 22 administrative microregions.

Therefore, the event happens first inside of each city, where a school is selected to represent the city in a microregion stage. In this stage, the best team of the microregion goes ahead and represents all the cities of this microregion in the regional stage. This year, there were 2 regional stages (coastline stage and plateaus west), and counted with the participation of more than 4000 students of public and private schools of all the state.

However, even not having as objective the performance, It's probable that the students selected in each stage are between the betters of their regions, what indicates that the selection can be done also on the basis of the scholars´ physical aptitude, beyond other factors.

According to Lorenzi et al. (2005), it is presumed that the sportive practical demands at least satisfactory indices of performance in the motor components (force, speed, agility, balance and coordination).

Studies involving the motor performance of children and adolescents have been widely spread out in many countries since the half of the decade of 50. "The interest in getting information about the levels of motor performance of the young population, caused the creation of different types of motor tests, that establish the behavior normality of the motor development, as part of the growth studies, beyond being able to compare the levels of physical aptitude of children and young in different populations". (BORGES, p. 2, 2005)

Guedes (2002), affirms that the concern in studying the indices of motor performance is due to the necessity in determining the probable indications that allow the improvement and identification, how much before, of the attributes related to the motor behavior, in intention to assure them until the maturation process completes all the development potential.

For this, the Ministry of Sports, in partnership with the Net of the National Centers of Sportive Excellence (CENESP), instituted a national program of evaluation of physical aptitude of children and teenagers of all the country, called Sport Brazil Project (PROESP-BR). This project has between its objectives to identify sportive talents and until the present date, more than 12.000 scholars only in the State of Santa Catarina had been evaluated.

Fagundes (2005), in a study with the data of PROESP/BR, with 8.492 scholars of the State Chain of Education of Santa Catarina State, with ages between 7 and 16 years old, identified that, in the physical aptitude related to the performance, 0% to 11% of the sample had motor performance above the percentile 98 in one or more analyzed variables, what is considered athletic aptitude. In relation to the aptitude related to the health, the results had shown preoccupying values in all the studied variable where 30-50% of the scholars had been considered below of the healthful zone of physical aptitude and, when these values had been analyzed by region, the scholars corresponding to the region east had presented inferior values to the other regions (west and central) in the majority of the searched variable.

Lorenzi et al. (2005), in a study carried through with 6.794 children and adolescents of the state of the Rio Grande do Sul, observed that the behaviors of all the motor capacities present, in the boys, increasing results throughout all the period; and that the girls presented increment until the 12 or 14 years old and after this, remained steady, making the variable of physical aptitude related to the motor performance stop developing. Moreover, the boys have superior results comparing to the girls in all the variables, being more obvious after 12 years old. The author assumes that these results are due to the arrival of the puberty.

This way, the objective of this study was to analyze the motor performance of the participants of the 24th School Games of Santa Catarina, from 11 to 14 years old, as well as to classify them in agreement with the established criteria for the battery of tests of PROESP-BR (2002).

METHODOLOGY

This research is characterized as descriptive diagnostic, having the function to describe the characteristics of the motor performance of the investigated population.

The population includes the adolescents that participate of the 24th School Games of Santa Catarina, in the age group among 11 to 14 years old, of both sexes. The sample was composed by 416 scholars being 218 of the masculine sex (52,4%) and 198 of the feminine sex (47,6%). In the constitution of the sample, the scholars were selected by convenience, that means that all the students who wanted to participate and had the consent term signed by your trainers, were evaluated. For the accomplishment of this work, data were collected in the 2 mesoregional stages: Stage plateau west (n=301) and coastal stage (n=115).

The battery of tests used was developed by Sport Brazil Project (PROESP-BR). That project is an initiative of the Ministry of the Sports and has as objective to delineate the somatomotor profile, the life habits and the factors of motor performance in children and adolescents between 07 and 17 years old. So, the developed protocol allows to supply an appropriate diagnosis of the conditions of the motor capacities and of the physical aptitude related to the health and to the sporting performance (GAYA, 2005). The morphologic qualities and the corporal composition ones refer to the anthropometric variables stature, weight and span. The motor tests related to the sporting performance were the test of the square or four corners to evaluate the agility, the test of 20 meters to evaluate the speed, the test of horizontal jump to evaluate the force potency of inferior members and the test of throw of the medicine ball of 2 kg, to evaluate the force potency of superior members.

PROESP-BR, following the procedures suggested by FITNESSGRAM (Cooper Institute for Aerobics Research), created normative tables to classify the physical aptitude of motor performance (ApFDM) of children and adolescents in agreement with the age and the sex in: very weak, weak, reasonable, good and very good.

The analysis of the data was accomplished through the descriptive statistics (average, standard deviation and frequency) and test "t" of student for independent samples, with level of significance of 5%.

RESULTS AND DISCUSSIONS

The study counted with the participation of scholars from 24 municipal districts of Santa Catarina, including all the regions of the state. The state was divided in 2 mesoregions for this work, same division used by FESPORTE in the accomplishment of the games.

The results of the motor performance will be presented and discussed considering the area that represents each scholar.

The scholars competed in the modalities of volleyball (n=146, being 79 boys and 67 girls), basketball (n=111, being 69 boys and 42 girls), handball (n=96, being 31 boys and 65 girls) and indoor football (n=63, being 39 boys and 24 girls). The ages were 13,22 ± 0,88 years old and 13,10 ± 0,88 years old; the weight was 52,74 ± 10,5kg and 50,94 ± 8,9kg; the stature was respectively 164,46 ± 10,2cm and 161,44 ± 7,4cm and the span 168,70 ± 11,8cm and 163,17 ± 13,4cm for the boys and the girls, respectively.

In the Tables 1, 2, 3 and 4, we can verify the distribution of the averages and the standard deviation of the variables of motor performance for region, age and sex, and the differences between the sexes and the regions.

Table 1. Distribution of the variable explosive power of superior members (FMS)

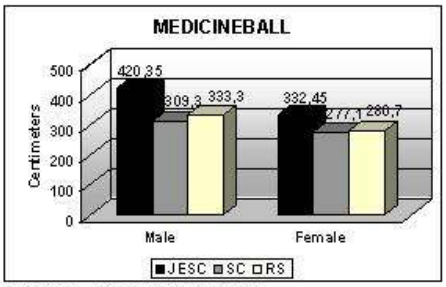
Age	Plateaus West				Coastline			
	Male		Female		Male		Female	
	Average	SD	Average	SD	Average	SD	Average	SD
11	278,2	56,8	300,8	33,8	388,3	97,0	370,0	0,0
12	323,0	64,8	309,6	52,5	425,0	169,8	322,3	53,8
13	396,0	72,9	332,3	48,9	412,3	80,7	320,7	31,4
14	430,4	71,0	342,3	53,6	472,1	86,2	350,9	44,0
TOTAL	392,2[a*]	83,3	329,5	52,4	448,5[b*]	94,9	335,4	45,0

* in the comparison among the sexes (p <0,05)
Different letters in the comparison among the regions (p <0,05)

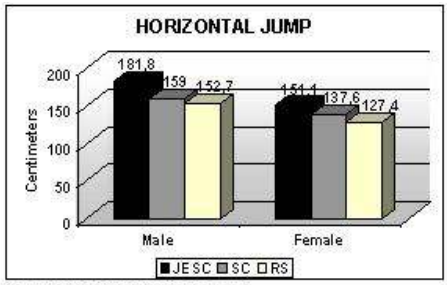
It was noticed (Table 1) that the development of FMS increased in the course of time in both sexes in the two regions, except in the female with 11 years old in the coastal area, however in this age it was just evaluated one girl (DP=0,00). The same was observed in the studies in SC (FAGUNDES, 2005) and in RS (LORENZI et al., 2005).

Statistically significant differences (p=0,00) occurred in the comparison among the sexes in the two areas favoring the boys. Among the regions, occurred differences just with the boys (p=0,00) in favor of the coastal area, opposite to the data found by Fagundes (2005) in SC, where the scholars of the east area (coastal) presented inferior performance most of the time when compared to the other two areas (west and central).

In the graphs 1, 2, 3 and 4 is possible to observe the comparison among the present study, nominated as JESC, and the studies accomplished in SC and RS, with both sexes.



Graph 1. Comparison FMS



Graph 2. Comparison FMI

Table 2. Distribution of the variable explosive power of inferior members (FMI)

Age	Plateaus West				Coastline			
	Male		Female		Male		Female	
	Average	SD	Average	SD	Average	SD	Average	SD
11	164,2	22,0	125,3	29,7	171,0	11,0	108,0	0,0
12	156,2	18,9	143,0	15,2	185,2	56,8	156,0	20,8
13	178,2	19,1	145,9	17,8	184,6	31,8	154,2	15,3
14	189,5	22,7	151,2	19,9	186,8	25,0	158,5	26,5
TOTAL	178,4*	23,9	146,4[a]	19,3	185,2*	28,7	155,8[b]	22,8

* in the comparison among the sexes (p <0,05)
Different letters in the comparison among the regions (p <0,05)

As well as the variable FMS, that also has the objective of evaluating the explosive force, the scholars presented in the FMI growing results along the time, except to the 12 years old in the masculine sex in the area of the plateau west. Differences (p = 0,000) among the sexes were found in the two areas, corroborating with Fagundes' studies, 2005, Lorenzi and cols. 2005 and Romansini and cols. 2006. However when just compared to the regions, just in the feminine sex happened differences (p = 0,003).

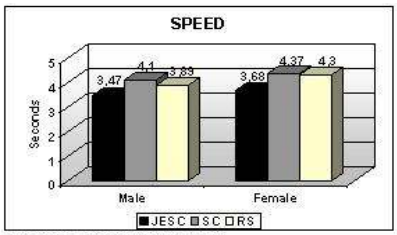
Table 3. Distribution of the variable speed (VEL)

Age	Plateaus West				Coastline			
	Male		Female		Male		Female	
	Average	SD	Average	SD	Average	SD	Average	SD
11	3,58	0,40	3,68	0,36	3,77	0,22	4,30	0,00
12	3,73	0,43	3,70	0,28	3,68	0,24	3,70	0,29
13	3,51	0,33	3,63	0,40	3,52	0,35	3,81	0,42
14	3,33	0,34	3,64	0,54	3,39	0,23	3,62	0,24
TOTAL	3,49*	0,38	3,65	0,44	3,46*	0,28	3,71	0,33

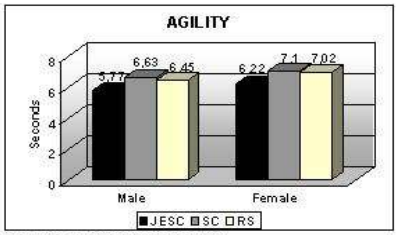
* in the comparison among the sexes (p <0,05)
Different letters in the comparison among the regions (p <0,05)

In the variable of displacement speed we can observe (Table 3) some oscillations in the results, however with an improvement tendency in the performance in the course of time, mainly in the boys. To example of what happened with the previous variables, we also found significant differences (p=0,001) among the sexes in VEL with better times in favor of the boys in the two areas. The studies of SC and RS found a constant increase of the speed in the course of the time also in favor of the boys.

However, when we compare the regions we don't find differences. Fagundes (2006), in most of the ages and in both sexes found significant differences of the speed in favor of the west region in relation to the east (coastal).



Graph 3. Comparison VEL



Graph 4. Comparison AG

We compare the studies, we observe the same behavior of the variables of FMS and FSI, better performances for the scholars of JESC, mainly in the boys.

Table 4. Distribution of the variable agility (AG)

Age	Plateaus West				Coastline			
	Male		Female		Male		Female	
	Average	SD	Average	SD	Average	SD	Average	SD
11	5,80	0,24	6,49	0,84	6,15	0,22	6,77	0,00
12	5,92	0,38	6,29	0,58	6,09	0,15	6,12	0,36
13	5,71	0,34	6,55	0,90	5,85	0,38	5,96	0,23
14	5,60	0,41	6,26	0,61	5,78	0,40	6,06	0,49
TOTAL	**5,71^{a*}**	**0,38**	**6,38^{a}**	**0,73**	**5,84^{b*}**	**0,39**	**6,06^{b}**	**0,40**

* in the comparison among the sexes (p <0,05)
Different letters in the comparison among the regions (p <0,05)

The variable agility seems to follow the same behavior of the others, with improvements in the performance with the passing of the time, but with some oscillations: to the 12 years old in the boys and to the 13 years old in the girls from plateau west, to the 14 years old in the girls from the coastal area. We found significant differences (p=0,000) among the sexes being the boys more agile. The same happened in RS, where it was the only variable that didn't have a constant increase in the course of time (LORENZI, et al., 2005).

Among the areas were found differences among the boys (p=0,031) and bigger among the girls (p=0,003), where in the girls the coastal area obtained better performance while the boys of the plateau west seem to be more agile.

Those results seem to reflect the resulting differences of the maturational process in the adolescence (MALINA and BOUCHARD, 2002), once both groups were constituted of adolescents apprentices of similar physical activities.

CONCLUSIONS

The sample of the present study possesses a profile of motor performance different from the scholars' average of your state and of the state of Rio Grande do Sul, in function possibly of the extra-class sportive practice. The fact of they participate of the sporting trainings in your school teams can characterize the members of those teams as active adolescents, not sedentary and more capable physically that your pairs.

It is suggested a new study to compare the scholars in function of the practiced modality (specificity of the practice), that in this research was not possible for the small number of scholars in each modality group.

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PROFILE OF THE MOTOR PERFORMANCE OF THE PARTIPANTS OF XXIV SCHOOL GAMES OF SANTA CATARINA.

ABSTRACT

The objective of this study was to analyze the motor performance of the participants of 24th School Games of Santa Catarina, from 11 to 14 years old, as well as to compare them with studies accomplished in the state of Santa Catarina - SC (FAGUNDES, 2005) and in Rio Grande do Sul - RS (LORENZI et al., 2005). The sample was composed by 416 scholars being 218 male (52,4%) and 198 female (47,6%), competing in the modalities of volleyball (n=146, being 79 boys and 67 girls), basketball (n=111, being 69 boys and 42 girls), handball (n=96, being 31 boys and 65 girls) and football indoor (n=63, being 39 boys and 24 girls). The battery of tests used was developed by Sport Brazil Project (PROESP-BR). The analysis of the data was accomplished through the descriptive statistics (average, standard deviation and frequency) and the test student "t" for independent samples. The ages were 13,22±0,88 years old and 13,10±0,88 years old; the weight was 52,74±10,5kg and 50,94±8,9kg; the stature was respectively 164,46±10,2cm and 161,44±7,4cm and the span 168,70±11,8cm and 163,17±13,4cm for the boys and the girls. In relation to the motor performance an increment was observed in all the variables with the passing of the years in both sexes, it was notable the obtaining of superior results by the boys in all the variables ($p < 0,05$) and the coastal area possesses the best performances. When compared to the studies accomplished in SC and RS, the scholars of this study obtained better results. It's possible to suggest that those differences might have happened in function of the extra-class sportive practice.

Key-word: adolescents; sport; motor performance.

PROFIL DE LA PERFORMANCE MOTEUR DES PARTIPANTS DES XXIV JEUX SCOLAIRES DE SANTA CATARINA.

RÉSUMÉ

L'objectif de cet étude était analyser la performance moteur des participants des 24éme Jeux Scolaires de Santa Catarina, entre l'âges de 11 a 14 ans, et aussi lui comparer avec l'études realisés aux états de Santa Catarina - SC (FAGUNDES, 2005) et Rio Grande do Sul - RS (LORENZI et al., 2005). L'échantillon était constituée par 416 écoliers, 218 du sexe masculin (52,4%) et 198 du sexe féminin (47,6%), qui ont participé de jeux de volleyball (n=146 - 79 gamins et 67 gamines), basket (n=111 - 69 gamins et 42 gamines), handball (n=96 - 31 gamins et 65 gamines) et futsal (n=63 - 39 gamins et 24 gamines). La baterie de tests employée a eté dévelopeer par le Project Sport Brésil, (PROESP-BR). L'analyse des résultats a eté realisée par le statistique descriptive (moyenne, déviation standard et frequence) e le test t de *student* pour l'échantillons indépendents. Les âges étaient de 13,22±0,88 ans et 13,10±0,88 anos; le poid était de 52,74±10,5kg et 50,94±8,9kg; le stature était de 164,46±10,2cm et 161,44±7,4cm e le largeur 168,70±11,8cm et 163,17±13,4cm respectivement pour les gamins et las gamines. Dans la performance moteur a succédu un augmentation en tous les variables avec le passer des ans pour les deux sexes. L'obtention des résultats superieurs était formidable avec les gamins dans tous l'âges ($p<0,05$) et la région littorane a eu les meilleures performances. Quand comparés aux études realisées en SC et RS, les écoliers de cet étude ont eu meilleurs résultats. Nous pouvons conclure que ces différences peuvent avoir succédu en virtue de la practice sportive extra-école.

Les mots-clé: adolescents; sport; performance moteur.

PERFIL DE DESARROLLO MOTOR DE LOS PARTICIPANTS DEL XXIV JUEGOS DE ESCUELAS DE SANTA CATARINA.

RESUMEN

El objetivo de este estudio fue analizar el desarrollo motor de los participantes del 24º Juegos de Escuelas de Santa Catarina, de 11 a 14 años de edad, así como compararlos con los estudios hechos en el estado de Santa Catarina - SC (FAGUNDES, 2005) y en Rio Grande do Sul - RS (el LORENZI et al., 2005). La muestra fue compuesta por 416 estudiantes siendo 218 del sexo masculino (52,4%) y 198 del sexo femenino (47,6%), compitiendo en las modalidades de voleibol (el n=146, siendo 79 chicos y 67 chicas), baloncesto (el n=111, siendo 69 chicos y 42 chicas), balonmano (el n=96, siendo 31 chicos y 65 chicas) y fútbol de salón (el n=63, siendo 39 chicos y 24 chicas). La batería de testes usada fue desarrollada por el Proyecto de Brasil Deportivo (PROESP-BR). El análisis de los datos fue cumplido por medio de las estadísticas descriptivas (la media, normal desviación y frecuencia) y el teste "t" de *student* para las muestras independientes. Las edades eran 13,22±0,88 años y 13,10±0,88 años; el peso era 52,74±10,5kg y 50,94±8,9kg; la estatura era respectivamente 164,46±10,2cm y 161,44±7,4cm y el palmo 168,70±11,8cm y 163,17±13,4cm para los muchachos y las muchachas. Con respecto al desarrollo motor ocurrió un incremento en todas las variables con el paso de los años en ambos los sexos, fue notable la obtención de resultados superiores por los niños en todas las variables ($p < 0,05$) y la región costera posee las performances más buenas. Cuando comparados a los estudios logrados en SC y RS, los estudiantes de este trabajo obtuvieron los mejores resultados. Concluyese que esas diferencias pudieran haber pasado en función de la práctica deportiva extra-clase.

Palabras-clave: adolescentes; deporte; desarrollo motor

PERFIL DO DESEMPENHO MOTOR DOS PARTIPANTES DOS XXIV JOGOS ESCOLARES DE SANTA CATARINA.

RESUMO

O objetivo deste estudo foi analisar o desempenho motor dos participantes do 24º Jogos Escolares de Santa Catarina, de 11 a 14 anos de idade, bem como compará-los com estudos realizados no estado de Santa Catarina - SC (FAGUNDES, 2005) e no Rio Grande do Sul - RS (LORENZI et al., 2005). A amostra foi composta por 416 escolares sendo 218 do sexo masculino (52,4%) e 198 do sexo feminino (47,6%), competindo nas modalidades de voleibol (n=146, sendo 79 meninos e 67 meninas), basquetebol (n=111, sendo 69 meninos e 42 meninas), handebol (n=96, sendo 31 meninos e 65 meninas) e futsal (n=63, sendo 39 meninos e 24 meninas). A bateria de testes utilizada foi desenvolvida pelo Projeto Esporte Brasil (PROESP-BR). A análise dos dados foi realizada por meio da estatística descritiva (média, desvio padrão e freqüência) e o teste t de *student* para amostras independentes. As idades foram de 13,22±0,88 anos e 13,10±0,88 anos; o peso foi de 52,74±10,5kg e 50,94±8,9kg; a estatura foi de 164,46±10,2cm e 161,44±7,4cm e a envergadura 168,70±11,8 cm e 163,17±13,4cm respectivamente para os meninos e as meninas. Em relação ao desempenho motor ocorreu incremento em todas as variáveis com o passar dos anos em ambos os sexos, foi notável a obtenção de resultados superiores por parte dos meninos em todas as variáveis ($p<0,05$) e a região litorânea possui os melhores desempenhos. Quando comparados aos estudos realizados em SC e RS, os escolares deste estudo obtiveram melhores resultados. Conclui-se que essas diferenças possam ter ocorrido em função da prática esportiva extra-classe.

Palavras-chave: adolescentes; esporte; desempenho motor.