

97 - EVALUATION OF PHYSICAL FITNESS RELATED TO HEALTH IN SCHOOLS OF THE MUNICIPALITY OF ESTRELA DE ALAGOAS/AL

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Introduction

Several studies over the last 20 years have been developed with children and adolescents in different cultural contexts and social environments in order to collect valuable information about levels of physical activity, physical fitness and health¹⁻⁵.

Monitoring the behavior of variables associated with growth, body composition and physical fitness levels is an important tool to evaluate the quality of life and health of a given population. From the diagnosis of these data, linked to the knowledge of the population about the benefits of physical exercises, it can contribute effectively to the maintenance and/or prevention of health⁶.

In this sense, it is necessary to understand that other factors interfere in the quality of life and contribute to the development of chronic-degenerative diseases such as: smoking, hypertension, high blood cholesterol, overweight and obesity.

According to the American College of Sports Medicine⁷, the major component of high health risk is poor physical fitness, which is a consequence of lack of physical activity. The definition that characterizes the health-related physical fitness is that better indexes of cardiorespiratory endurance, muscular strength/endurance and flexibility, and adequate levels of body fat, are directly associated with a lower risk for the development of hypokinetic diseases.

It should be noted that risk factors tend to extend their latency period from infancy to early adulthood. In adulthood it has been established that there has been a clear relationship between low physical fitness and chronic diseases, however, in children and adolescents this association is not established in the same proportionality^{8,9}.

However, a positive association between the effects of physical activity and health levels on the child and adolescent population can be seen in the literature^{10,11}. As well as some studies^{12,13} supported by clinical evaluations has raised the hypothesis that cardiovascular problems and their risk factors start at some point in childhood or adolescence has its incubation period.

Other investigations with children and adolescents of different social classes and cultural aspects have shown that these individuals are less physically fit than their peers from previous decades, or most of them do not meet the desirable criteria for a recommended health-related physical fitness^{14,15}.

For this reason, physical education classes and public policies should aim to encourage the practice of physical activity, sports activities and healthy eating habits; these habits are essential to promote growth, biological maturation and to adequately develop the physical fitness of young people; thus becoming physically active adults with optimal health.

Considering all the evidence presented here, research on the physical fitness of children and adolescents in the State of Alagoas is still scarce.

Given this information and in view of the importance of the subject for public health, the present study aims to evaluate the physical fitness of children and adolescents who are members of a sports program developed in the city of Estrela de Alagoas -AL.

Methodology

Population and Sample

It is a study with a cross-sectional design, where only a measurement is made for a posterior analysis, a research characteristic that evaluates the current state of the sample¹⁶.

The sample consisted of 62 male adolescents aged 11 to 14 years, randomly selected from students enrolled in two schools: Luiz Duarte State School and João Paulo II Municipal School enrolled in a sports program in the municipality of Estrela de Alagoas -AL, in the year 2016.

According to the latest IBGE opinion in 2010¹⁷, the population of Estrela de Alagoas was estimated at 17,251. The city had its emancipation in the year of 1992, this county with 25 years is one of the youngest of the state. It is located in the Mesorregião do Agreste Alagoano, its climate is tropical metamérico, hot during almost every year and subhumid of the dry type.

Based on the structure of the sports project, the students were classified into categories according to the level of development: students in the age group between 11 and 12 participate in CATEGORY A (CA) and students in the age group between 13 and 14 participate in CATEGORY B (CB).

Instruments and procedures

Data collection was performed at the Antônio Garrote Gymnasium located in the city of Estrela de Alagoas-AL, by the Physical Education teachers of the municipal education network, all properly trained and trained to apply the battery of tests.

To describe the aptitude related to health (ApFRS) we used the following tests proposed by the Sport Program Brasil¹⁸: Body composition (BMI and sum of triceps and subscapular skinfolds); Cardiorespiratory fitness (6 min run/walk test); Abdominal Strength/Endurance (number of abs/min) and Flexibility (sit and reach test).

To determine body mass, a BAL-150PA® Techline Balance was used, duly calibrated and calibrated, with a precision of 100 grams and a scale ranging from 0 to 150 kg. Stature evaluation was performed using the Sanny® stadiometer, compact portable model, graduated in cm. The measurements were measured following a protocol proposed by Alvarez and Pavan¹⁹.

From these data the body mass index (BMI) was calculated as the body mass ratio (kg) by the square of the height (m²). Already to classify the BMI according to age and sex, the tables proposed by the Sport Brazil Program were used.

In the evaluation of the triceps and subscapular skinfolds, a portable compass of the Cescorf® brand was used, with a precision of 0.1mm, using the Lohman protocol as a classificatory reference^{20,21}.

To determine flexibility, the sit-and-reach test was applied using the Wells bench of the Sanny® brand, measuring 38 cm.

In the assessment of abdominal strength/resistance, the abdominal test was used with a duration of one minute, in which the evaluated one had to execute the maximum number of repetitions in that time interval. The result was expressed by the number of complete movements performed in 1 minute.

In order to determine the cardiopulmonary capacity/general resistance, we chose to use the running/walking test in 6 minutes, according to what determines the Brazilian Sport Program.

In the classification of the percentage of fat of the boys according to Lohman^{20,21}, it was established that those who were in the levels of "Great to Moderately High" would be in the healthy zone (ZS). Meanwhile, those students classified as "Low, High and Very High" were considered in the health risk zone (ZR).

For the ApFS classification of schoolchildren, the reference criteria of PROESP-BR18 were used. From the establishment of cut-off points stratified by age and sex, the physical education teacher can evaluate children and adolescents in a categorical scale of two degrees: Health Risk Zone (ZR) or Healthy Zone (ZS).

Statistical treatment

In order to characterize the study sample, the central tendency statistic and dispersion values (mean and standard deviation) were used.

Results and discussion

For the analysis of the body composition of the students will be presented the results referring to the evaluation of the body mass index (BMI) and also the sum of tri-cipital and subscapular skinfolds (SDC).

Table 1. Classification of the absolute and relative frequency of BMI and SDC of male students of categories CA and CB in ZS or ZR.

	(CA)		(CB)	
	ZS	ZR	ZS	ZR
IMC	26	04	24	08
(peso/est²)	(86,67%)	(13,33%)	(75,00%)	(25,00%)
ΣDC	23	07	22	10
(tri+sub)	(76,67%)	(23,33%)	(68,75%)	(31,25%)

(Legend: AC - cardiorespiratory fitness, FLEX - flexibility, ABD - abdominal resistance).

Source: Data from the research itself, 2016.

Analyzing the results of cardiorespiratory fitness (CA) contained in Table 2, it can be observed that 56.67% of the students of category A and 68.75% of category B were classified within the zone of health risk.

Similar evidence of cardiorespiratory fitness was obtained in a cross-sectional study carried out by Alagoas researchers⁵, in the city of Arapiraca with adolescents who are members of the Athlete of the Future (PAF) Program. It was observed in this research that 60% of the boys were classified in the zone of health risk in the age group between 13 and 14 years.

It is important to say that low levels of cardiorespiratory fitness are directly related to high risk of premature death due to any cause, especially heart disease.

With regard to muscular fitness, there are very high percentages of schoolchildren in both categories, classified in the health risk zone. This high percentage of male schoolchildren below the recommended cut-off levels was also observed in a cross-sectional study by Junior et al.⁴, when evaluating health-related physical fitness in low-socioeconomic schoolchildren in the metropolitan region of Londrina.

These results are similar to those published in 2005⁹ by researchers in the state of Rio Grande do Sul. The data observed were: for cardiorespiratory fitness, 48% of the boys were classified within the ZR, while for muscular fitness (FLEX and ABD), 53 % of schoolchildren were below SZ.

It is emphasized that inadequate levels of resistance and muscular strength develop postural, joint and musculoskeletal injuries. Weaknesses in these components indicate future risks of localized lumbago and fatigue.

Because of the new technologies, children and adolescents have been adopting an inactive lifestyle; humans less and less use their physical capacities to survive, reducing intense and regular physical activities from their daily lives^{29,30}. As a consequence of this behavior, schoolchildren are becoming obese, fact verified by several scholars in different regions of the country^{22, 24, 26, 28}.

Conclusion

The presented results of physical fitness for health are alarming, since the percentages of students below the healthy zones were elevated for the majority of the evaluated components. The reduction of habitual physical activity levels favors the gradual development of numerous chronic-degenerative diseases, such as obesity, dyslipidemias, diabetes, cardiovascular diseases, hypertension, among many others, at an earlier age.

These data will serve as the basis for actions to promote and prevent health, such as the practice of systematized sports and the creation of healthy eating habits.

Therefore, it is expected that this sports program with organized and supervised activities in the psychomotor development of children and adolescents, may contribute to improve the components of physical fitness related to health such as strength, muscular endurance, flexibility, cardiorespiratory endurance and body composition.

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AVALIAÇÃO DA APTIDÃO FÍSICA RELACIONADA À SAÚDE EM ESCOLARES DO MUNICÍPIO DE ESTRELA DE ALAGOAS/AL.

O presente estudo teve como objetivo avaliar os níveis de aptidão física relacionados à saúde em escolares integrantes de um programa esportivo desenvolvido no município de Estrela de Alagoas/AL. A amostra foi constituída por 62 meninos na faixa etária entre 11 e 15 anos de idade residentes na zona urbana. As variáveis analisadas foram: índice de massa corporal (IMC); dobras cutâneas de tríceps e subescapular (DCT+DCS); resistência geral (medida pelo teste de corrida/caminhada de 6 min); força/resistência abdominais (medida pelo teste de abdominais em 1 min); e flexibilidade (medida

pelo sentar e alcançar). Os resultados foram obtidos através das tabelas normativas propostas por Lohman e pelos critérios de referência (ZS e ZR) adotados para as avaliações da ApFRS correspondem aos utilizados pelo Projeto Esporte Brasil. Para o tratamento dos dados foi utilizada a estatística de tendência central e valores de dispersão (média e desvio padrão). Os resultados demonstram com relação à distribuição dos meninos na ZS e ZR, os dados obtidos indicam que para aptidão cardiorrespiratória e resistência abdominal, 62,90% e 70,97%, respectivamente, dos escolares avaliados estão na zona de risco para a saúde, enquanto no IMC, 80,65% estão situados na zona saudável.

Palavras-chaves: Aptidão física; Saúde; Escolares.

EVALUATION OF PHYSICAL FITNESS RELATED TO HEALTH IN SCHOOLS OF THE MUNICIPALITY OF ESTRELADEALAGOAS/AL.

The present study had as objective to evaluate the levels of physical fitness related to health in schoolchildren belonging to a sports program developed in the city of Estrela de Alagoas/AL. The sample consisted of 62 boys aged between 11 and 15 years old living in the urban area. The analyzed variables were: body mass index (BMI); folds of triceps and subscapular (DCT + DCS); general resistance (measured by the 6 min run/walk test); abdominal strength/ resistance (mean by abdominal test in 1 min); and flexibility (measured by sitting and reaching). The results were obtained through the normative tables proposed by Lohman and the reference criteria (ZS and ZR) adopted for evaluations of ApFRS correspond to those used by the Projeto Esporte Brasil. For the data treatment, the central tendency statistic and dispersion values (mean and standard deviation) were used. The results show that, in relation to the distribution of boys in the ZS and ZR, the data obtained indicate that for cardiorespiratory fitness and abdominal resistance, 62.90% and 70.97%, respectively, of the students evaluated are in the health risk zone, while in IMC, 80.65% are located in the healthy zone.

Keywords: Physical fitness; Cheers; Schoolchildren.

EVALUACIÓN DE LA APTITUD FÍSICA RELACIONADA DE LA SALUD EN ESCOLARES DEL MUNICIPIO DE ESTRELLADEALAGOAS/AL.

El presente estudio tuvo como objetivo evaluar los niveles de aptitud física relacionados a la salud en escolares integrantes de un programa deportivo desarrollado en el municipio de Estrela de Alagoas/AL. La muestra fue constituida por 62 varones en el grupo de edad entre 11 y 15 años de edad residentes en la zona urbana. Las variables analizadas fueron: índice de masa corporal (IMC); pliegues cutáneos de tríceps y subescapular (DCT + DCS); resistencia general (medida por la prueba de carrera/camioneta de 6 min); fuerza/resistencia abdominales (media por la prueba de abdominales en 1 min); y flexibilidad (medida por el sentarse y alcanzar). Los resultados fueron obtenidos a través de las tablas normativas propuestas por Lohman y por los criterios de referencia (ZS y ZR) adoptados para las evaluaciones de la ApFRS corresponden a los utilizados por el Proyecto Deporte Brasil. Para el tratamiento de los datos se utilizó la estadística de tendencia central y valores de dispersión (media y desviación estándar). Los resultados demuestran con relación a la distribución de los niños en la ZS y ZR, los datos obtenidos indican que para aptitud cardiorrespiratoria y resistencia abdominal, 62,90% y 70,97%, respectivamente, de los escolares evaluados están en la zona de riesgo para la salud, mientras que en el IMC, el 80,65% está situado en la zona sana.

Palabras claves: Aptitud física; Salud; Escuelas.

ÉVALUATION DE L'APTITUDE PHYSIQUE RELATIVE À LA SANTÉ DANS LES ÉCOLES DE LA MUNICIPALITÉ D'ESTRELADEALAGOAS /AL.

La présente étude avait pour objectif d'évaluer les niveaux de condition physique liés à la santé chez les écoliers appartenant à un programme sportif développé dans la ville d'Estrela de Alagoas/AL. L'échantillon comprenait 62 garçons âgés de 11 à 15 ans vivant dans la zone urbaine. Les variables analysées étaient les suivantes: indice de masse corporelle (IMC); plis du triceps et du sous-scapulaire (DCT + DCS); résistance générale (mesurée par le test marche / marche de 6 min); résistance / résistance abdominale (moyenne par test abdominal en 1 min); et la flexibilité (mesurée en s'asseyant et en atteignant). Les résultats ont été obtenus à travers les tables normatives proposées par Lohman et les critères de référence (ZS et ZR) adoptés pour les évaluations de ApFRS correspondent à ceux utilisés par le Projeto Esporte Brasil. Pour le traitement des données, la statistique de tendance centrale et les valeurs de dispersion (moyenne et écart-type) ont été utilisées. Les résultats montrent que, par rapport à la répartition des garçons dans le ZS et le ZR, les données obtenues indiquent que pour la condition cardiorespiratoire et la résistance abdominale, respectivement 62,90% et 70,97% des élèves évalués se trouvent dans la zone à risque, tandis qu'en IMC, 80,65% sont situés dans la zone saine.

Mots-clés: Condition physique; Santé Écoliers.

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