94 - EVALUATION OF THE LEVELS OF FITNESS INDICATORS RELATED TO HEALTH OF STUDENTS FROM 10 TO 14 YEAR OF THE DISTRICT OF DUQUE DE CAXIAS-RJ-BRAZIL

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INTRODUCTION

Low levels in physical activiy at school can be considered a major factor in the onset of health problems ever earlier (DUMITH, 2008).

The modernization of our society resulting from scientific and technological advances have occurred in the twentieth century contributed significantly to this scenario, culminating with the progressive reduction of daily physical effort of the population. Children and young people have less and less free space to pratices physical activities and had incorporated sedentary forms of recreation, such as the use of computers and television (TARDIDO & FALCÃO, 2006).

Physical inactivity is one of the major consequences of modernization with adverse health effects. The scientific evidence indicates that some habits built in adolescence tend to persist into adulthood, increasing the likelihood of formation of physically inactive individuals with a greater propensity to overweight and obesity (YANG, 2006).

Factors that reduce energy expenditure and decrased duration of physical education classes in schools, can play a critical role in the prevalence of overweight among children, especially the strategic role of this practice in promoting a more active lifestyle. Some studies show decreased levels of physical fitness in childhood and adolescence as a result of lifestyle and dietary practices adopted (DOREA, 2004; FERREIRA, 2003; GUIMARÃES, 2012). Seeking to check the health of children, adolescents, adults and the elderly in recent years, physical education professionals have resorted to the evaluation of Health Related Fitness (HRF) as an indirect way to analyze this condition (WERK et al., 2009).

The HRF, defined as the ability to perform physical activities, depends on innate and/or acquired by an individual (GLANER, 2003).

The present study aimed to compare indicators of HRF between boys and girls, students of Duque de Caxias, Rio de Janeiro.

MATERIALS AND METHODS

This is a convenience sample where students from the municipal schools of Duque de Caxias area participated in the study, aged between 10 and 14 years attending classes regularly Physical Education curriculum. For the selection process of the students, it was used as sampling units municipal schools suggested by the county office of education. 10 schools from Duque de Caxias area were selected for the 1st and 4th district (5 schools in each district). Of the total of 840 students randomly selected from each school, were assessed 90.0% (n = 756) and 338 girls and 418 boys. The 10% not evaluated composes the group of dropouts project, missing classes and those whose parents or legal guardians not signed the consent form.

This study was approved by the Research Ethics Commission CMM / HUAP the Faculty of Medicine of UFF (Fluminense Federal University) in case number 201/11, CAAE: 0210.0.258.000-11.

For evaluation and classification of the indicators of the Health Related to Physical Aptitude (HRPA); parameters used were proposed by PROESP-BR (2007). The classification was made in 6 levels: Very Poor, Poor, Fair, Good, Very Good and Excellence. Were evaluated: Cardiorespiratory fitness (test 9 minutes walking and running), Strength / Muscular Endurance Abdominal (maximum repetitions test in 1 minute), Flexibility (Sit and Reach with Well's Banch). For anthropometric measurements were used to measure weight and height, to obtain the body mass index using the formula: BMI = weight / height ². The techniques for obtaining measures followed the protocol SISVAN (2008).

The cutoff points adopted for the classification of BMI / age for this age group met the standards of WHO (1989). The tests were applied in physical space used for physical education classes. The physical tests were made in the order recommended by PROESP. The test application was made by the same team of teachers of physical education in all schools and all were trained to administer the tests.

In the data analysis we used the statistical package SPSS (v. 18.0). Descriptive analysis was done, t test for independent samples when comparing the averages of physical fitness tests and chi-square comparison of the frequencies of the tests as categorical variables according to sex, adopting a significance level of 95%.

RESULTS

The sample consisted of 756 students from 1st and 4th district of Duque de Caxias, being 418 boys (55.3%) and 338 girls (44.7%). In total were enrolled in the study, 363 students from 1st district and 393 students from the 4th District, which correspond to 48.1% and 51.9% respectively.

The test of cardiorespiratory fitness and abdominal strength averages showed significantly higher in boys (BG), compared with the results of the group of girls (GG) ($p < 0.05$). Regarding the flexibility test, the differences were not significant ($p > 0.05$) (Table 1).

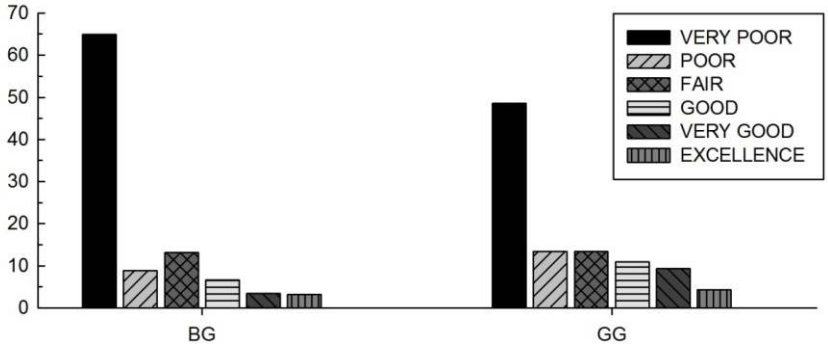
Table 1: Distribution of means and standard deviations of the variables of physical fitness tests related to health among boys and girls aged 10 to 14 years of Duque de Caxias, RJ, 2012.

	CARDIORESPIRATORY APTITUDE	FLEXITEST	ABDOMINAL STRENGTH
BG	1145,7±297,8*	20.7±6.5	27.5± 9,3*
GG	1056,6±292,7*	20.4±6,3	21.6±10,4*

BG= Boys Group; GG= Girls Group

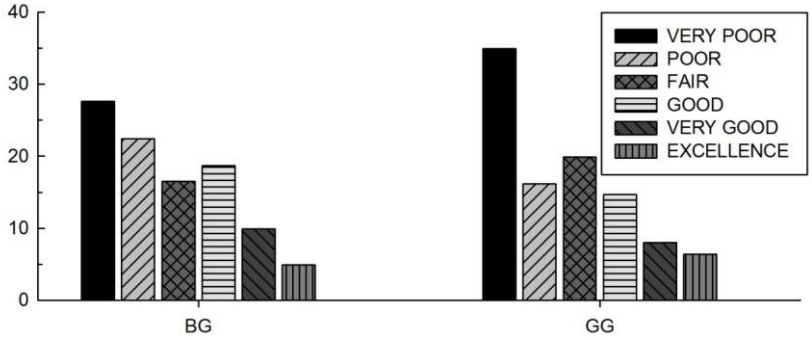
Regarding the ratings of the test of cardiorespiratory aptitude as a categorical variable in BG and GG groups, was observed more unsatisfactory results in BG group, since 64.9% performed "very weak", compared to 48.6% of girls . Regarding the level of excellence in this test results were similar in both groups (Chart 1).

Chart 1: Classification of Cardiorespiratory Aptitude test between boys and girls 10 to 14 years, Duque de Caxias, RJ, 2012. BG = Group of Boys, Girls = Group GG.



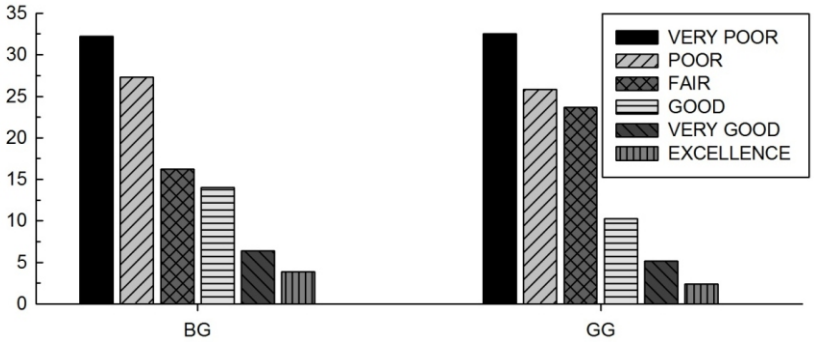
Regarding the performance of the test abdominal strength, it was observed that females had less favorable results, where 34.9% were classified as "very weak" compared to 27.6% of boys in this classification. These differences however, there were significant (p> 0.05) (Chart 2).

Chart 2: Classification of test results of abdominal strength between boys and girls 10 to 14 years of Duque de Caxias, RJ, 2012. BG = Group of Boys, Girls = Group GG.



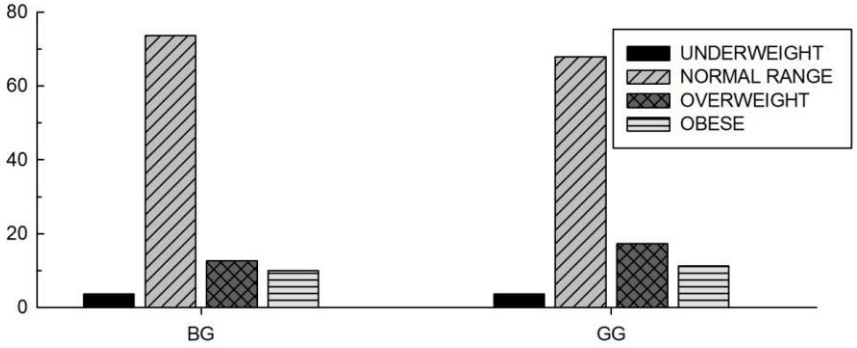
Regarding the results of the test of flexibility is observed similar results between boys and girls, where 32.2% of BG were classified as very weak and that 3.9% were classified with excellence. In GG 32.5% were classified as very weak and that only 2.4% of the group were classified as excellent (Chart 3).

Chart 3: Classification of test results between Flexibility Boys and girls 10 to 14 years of Duque de Caxias, RJ, 2012. BG = Group of Boys, Girls = Group GG.



Regarding nutritional status, according to BMI for age the prevalence of underweight, normal weight, overweight and obesity, showed similar results between boys and girls (Chart 4).

Chart 4: Classification of BMI among boys and girls aged 10 to 14 years of Duque de Caxias, 2012. GM = Group of Boys, Girls = Group GMA



DISCUSSION

The test of "sit and reach" involves multiple joints is considered simple to use and minimum level of difficulty. In this sense, in relation to variable Flexibility is noteworthy that over 50% of the evaluated performance showed "very poor" and "weak", with similar performance between boys and girls. The answers from this study corroborate other national and international studies have shown that the poor performance of students in this age group (SILVA ET AL., 2006;; DUMITH, ET. AL., 2008; FARIAS ET AL., 2010).

The levels of abdominal strength may be related to the onset of low back pain, musculoskeletal injuries (KATMARZYRK, CRAIG, 2002). The results found in this study, where levels of abdominal strength in boys were higher than girls are in line with other studies on the subject (ORSANO et al., 2010; GUEDES et al., 2012). This can be partly explained by the greater amount of lean body mass in favor of boys, which expands from 12 years of age due to the onset of puberty (ARAUJO, OLIVEIRA, 2008).

A good cardiorespiratory aptitude is associated with decreased risk factors that predispose to chronic noncommunicable diseases (MOREIRA et al., 2011). In this study, the performance of boys in tests for cardiorespiratory aptitude was higher than girls. These findings corroborate the study by Guedes et al. (2012), it is noteworthy that the protocol used in the study cited was different. Furthermore, there is a difficulty of setting breakpoints for the health zone compared with other evaluation parameters.

The prevalence of overweight and obesity has increased substantially in recent decades among Brazilian adolescents. Although differences have not been shown to be significant, girls had higher levels of overweight and obesity more than boys. These findings are similar to other studies in our country (ROMERO, 2010; GARLIPP et al., 2005) and with others outside the country (NAKASH, 2008; SILVA, 2008). This fact can be justified by the hormonal changes that occur in this age group. Besides having different levels of energy expenditure (ANDERSEN, VAN MECHELEN, 2005).

Moreover, according to the POF 2008, excess weight among boys and adolescents 10 to 19 years old are overweight increased from 3.7% (1974-75) to 21.7% (2008-09), already among girls and young women the growth of overweight was 7.6% to 19.4%. These differences between gender identified might represent differences in income levels among the general population of POF and this study, since the study sample included students from public schools in lower income levels. Moreover, it is worth noting that the results presented here are for students sampled in two of the four districts of the municipality.

CONCLUSION

According to results we can say that the Cardiorespiratory aptitude is the component of the HRPA with a higher prevalence of inadequacy, followed by lack of Abdominal Strength, Flexibility and lack of nutritional risk. The classes of Physical Education curriculum can be used as a tool to improve physical aptitude in this population. Moreover, campaigns and public policies that promote health through diet and physical activity can also help reverse the state.

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ASSESSMENT OF INDICATORS OF FITNESS LEVELS OF SCHOOL HEALTH RELATED 10 TO 14 YEARS OF THE DISTRICT OF DUQUE DE CAXIAS / RJ - BRAZIL

ABSTRACT

Introduction: Physical inactivity is one of the major consequences of modernization with adverse health effects. Factors that reduce energy expenditure and decreased duration of physical education classes in schools, can play a critical role in the prevalence of overweight among children. Seeking to check the health of children, adolescentes, adults and the elderly in recent years, physical education professionals have resorted to the evaluation of Health Related to Physical Aptitude (HRPA) as an indirect way to analyse this condition. Some studies show decreased levels of physical aptitudes in childhood and adolescence. Goal: This study aimed to compare indicators of HRPA between boy and girls, students in the city of Duque de Caxias, Rio de Janeiro- Brazil. Methods: Participants were students of municipal schools in Duque de Caxias, aged between 10 and 14 years old attending classes regularly Physical Education curriculum. 10 schools were selected for the 1st and 4th district (5 schools in each district). Of the total of 840 students sampled were evaluated 90.0% (n = 756) and 338 girls and 418 boys. For evaluation of HRPA was used protocol PROESP (2009). Results: The test of cardiorespiratory aptitude (BG = 1145.7 ± 297.8 versus GG * = 1056.6 ± 292.7 *) and abdominal strength (BG = 27.5 ± 9.3 versus GG * = 21.6 ± 10.4 *) showed larger in boys compared with the results of the group of girls. The opposite was observed in the flexibility test (BG = 20.7 ± 6.5 versus GG * = 21.4 ± 6.3 *). In all tests, the differences were statistically significant. Conclusion: According to results we can say that the Cardiopulmonary Fitness is the component of the HRPA with a higher prevalence of inadequacy, followed by lack of Abdominal Strength, Flexibility and lack of nutritional risk. Classes Physical Education curriculum can be used as a tool to improve physical fitness in this population.

KEYWORDS: fitness level, school, children

EVALUATION DE L'INDICE DU NIVEAUX D'APTITUDE PHYSIQUE EN RELATION AVEC LA SANTÉ DES ÉTUDIANTS DE 10 À 14 ANS DANS LA MUNICIPALITÉ DE DUQUE DE CAXIAS/ RIO DE JANEIRO

RÉSUMÉ

Introduction: La sédentarité est un des reflèxes de la modernisation et a des effets déléctères pour la santé, des facteurs réduisent la dépense énergetique comme la diminuition du temps des cours d'éducation physique dans les écoles pourtant elle a comme rôle fondamental dans la prévalence de l'excés de poids entre les enfants. En cherchant a vérifier l'état de santé des enfants, adolescents, adultes et personnes âgées dans les dernières années, proffessionnels de l'éducation physiqye ont reconnu la relation entre l'aptitude physique et la santé (AFRS) comme forme indirecte d'analyse de ces conditions. Certaines études démontrent une baisse dans le niveau d'aptitude physique pendant l'enfance et adolescence. L'obejctif: La présente étude a eût comme objectif de comparer les indicatifs de l'AFRS, entre garçons et filles étudiants de la municipalité de Duque de Caxias- Rio de Janeiro. Méthodologie: Des étudiants âgés de 10 à 14 ans ont fréquenté régulièrement les cours d'écucation physique du programme. Dix écoles du 1° et 4ème quartier). Pour un total de 840 élèves observés 90,0 % (n°= 756) ont été évalués, soit 33,8 filles et 418 garçons. Pour l'évaluation l'AFRS a utilisé le protocole du PROESP (2009). Le résultat: Le résultat de ce test d'aptitude cardiorespiratoire (GM= 27,5 + 9,3* versus GMA= 1056,6 +_ 292,7*) et de force abdominale (GM= 27,5 +_ 9,3* versus GMA= 21,6 +_ 10,4*) démontrent des mésures plus élévées chez les garçons en comparant les résultats des filles, le contraire a été observé dans le test de flexibilité (GM= 20,7+_ 6,5* versus GMA= 21,4+_ 6,3*). Dans tous les tests la difference a été significament élastique. Conclusion: Selon les résultats rencontrés, nous pouvons affirmer que l'aptitude cardiorespiratoire est le composant de l'AFRS avec une plus grande prévalence de l'insuffisance, suivi par la déficence de force abdominale, manque de fléxibilité et de risque nutricionnel. Les cours d'éducation physique du programme peuvent être utilisées comme instruments afin d'améliorer l'aptitude physique de la population en question.

MOTS-CLÉ: niveaux d'aptitude , école, étudiants

EVALUACIÓN DE LOS INDICADORES DE APTITUD FÍSICA, RELACIONADOS COM LA SALUD, DE ESTUDIANTES DE 10 A 14 AÑOS DE LA CIUDAD DE DUQUE DE CAXIAS/RJ

RESUMEN

Introducción: La inactividad física es uno de los reflejos de la modernización con grandes efectos nocivos para la salud. Los factores que reducen el gasto de energía y la disminución de la duración de las clases de educación física en las escuelas, pueden desempeñar un papel crítico en la prevalencia de sobrepeso entre los niños. Tratando de controlar la salud de los niños, adolescentes, adultos y personas de edad en los últimos años, los profesionales de educación física han recurrido a la evaluación de la condición física relacionada con la salud (HRF), como una forma indirecta de analizar esta condición. Algunos estudios muestran disminución de los niveles de aptitud física en la infancia y la adolescência.Objetivo:Este estudio tuvo como objetivo comparar los indicadores de HRF, entre niños y ninãs, estudiantes de la ciudad de Duque de Caxias-RJ.Metodología:Los participantes en este estudio fueron alumnos de escuelas municipales de Duque de Caxias, con edades comprendidas entre 10 y 14 años y que asisten regularmente a clases de Educación Física. Fueron seleccionadas diez escuelas de dos distritos (cinco escuelas en el primero distrito y cinco en el cuarto distrito). Del total de 840 estudiantes en la muestra, 90,0% fueron evaluados (n=756) con 338 chicas y e 418 chicos. Fue utilizado el protocolo del PROESP (2009), para evaluación de la HRF. Resultados:Los resultados de la prueba de aptitud cardiorrespiratoria (GM = 1145,7 ± 297,8* frente a GMA = 1056,6 ± 292,7*) y de la fuerza abdominal (GM = 27,5 ± 9,3* frente a GMA = 21,6 ± 10,4 *) mostraran promedios mayores en los niños en comparación con los resultados del grupo de las chicas. El contrario se observó en el ensayo de flexibilidad (GM=20,7±6,5* frente a GMA=21,4±6,3*). En todas las pruebas las diferencias fueron estadísticamente significantes.Conclusión: De acuerdo a los resultados, podemos decir que la aptitud cardiorrespiratoria es el componente de la HRF, con una mayor prevalencia de insuficiencia, seguido de la falta de fuerza abdominal, de la falta de flexibilidad y el riesgo nutricional. Las clases de educación física en el currículo de las escuelas pueden ser utilizadas como una herramienta para mejorar la forma física en esta población.

PALABRAS CLAVE: aptitud física, escuela, estudiantes

AVALIAÇÃO DOS INDICADORES DOS NÍVEIS DE APTIDÃO FÍSICA RELACIONADA A SAÚDE DE ESCOLARES DE 10 A 14 ANOS DO MUNICÍPIO DE DUQUE DE CAXIAS/RJ

RESUMO

Introdução: O sedentarismo é um dos reflexos da modernização com grandes efeitos deletérios à saúde. Fatores que reduzem o gasto de energia como a diminuição do tempo das aulas de Educação Física nas escolas, podem ter papel fundamental na prevalência de excesso de peso entre crianças. Buscando verificar o estado de saúde de crianças, adolescentes, adultos e idosos nos últimos anos, profissionais de Educação Física têm recorrido à avaliação da Aptidão Física Relacionada à Saúde (AFRS) como forma indireta de análise dessa condição. Alguns estudos mostram a diminuição dos níveis

de aptidão física na infância e adolescência. Objetivo: O presente estudo teve como objetivo comparar os indicadores de AFRS, entre meninos e meninas, escolares do Município de Duque de Caxias-RJ . Metodologia: Participaram do estudo estudantes, da rede municipal de ensino de Duque de Caxias, na faixa etária entre 10 e 14 anos que frequentavam regularmente as aulas de Educação Física curricular. Foram selecionadas 10 escolas do 1º e 4º distrito (5 escolas de cada distrito). Do total de 840 alunos amostrados, foram avaliados 90,0% (n=756) sendo 338 meninas e 418 meninos. Para avaliação da AFRS utilizou-se o protocolo do PROESP (2009). Resultados: O resultado do teste de aptidão cardiorrespiratória (GM=1145,7±297,8* versus GMA=1056,6±292,7*) e de força abdominal (GM=27,5±9,3* versus GMA=21,6±10,4*) mostraram médias maiores nos meninos, comparado com os resultados do grupo de meninas. O contrário foi observado no teste de flexibilidade (GM=20,7±6,5* versus GMA=21,4±6,3*). Em todos os testes as diferenças foram estatisticamente significativas. Conclusão: De acordo com resultados encontrados podemos afirmar que a Aptidão Cardiorrespiratória é o componente da AFRS com maior prevalência de inadequação, seguido pela deficiência de Força Abdominal, falta de Flexibilidade e risco nutricional. As aulas de Educação Física curricular podem ser utilizadas como ferramenta para melhorar a aptidão física dessa população.

PALAVRAS CHAVE: aptidão física, escola, crianças.