33 - COMPARISON OF MOTOR PROFILE OF CHILDREN INSIDE AND OUTSIDE OF APPROPRIATE BODY MASS INDEX (BMI) IN A BASKETBALL PROJECT.

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INTRODUCTION

It is understood that the motor development encompasses the field of scientific research studying motor behavior, and this covers the skills, patterns and generalizations motor and physical abilities, that in normal populations or not, and at different ages.

Motor development is set in the area of knowledge that studies the theories that underlie human movement within the process of development and learning, so as to its meaning and significance, establishing basic principles to support the pedagogical action.

With regard to human movement, it is known that excess weight hinders the movements, i.e. the motor, especially during childhood, which is decisive period in human development. One aspect that has attracted the attention of researchers in this area is the evaluation of motor development, and it is understood that this is the object of study Physical Education, and the human body some answers to certain problems, considering the knowledge and expertise coming of human movement.

The child population is the psychological point of view, socioeconomic and cultural, dependent on the environment where they live, and which mostly consists of family, and their attitudes are often reflected this environment (OLIVEIRA et AL. 2003). And when the environment is unfavorable conditions can occur conditions that lead to eating disorders that, once installed, can remain into adulthood.

It is understood that among the disorders, and important relevance, is obesity, and is now the subject of increasing concern due to its high prevalence and association with various morbid conditions.

Studies show alarming increase in the prevalence of overweight and obesity in different age groups, including the child population (POETA et AL. 2012). The problem lies in the persistence of these disorders into adulthood. Actually, obesity is a major public health problem in the world. The same is associated with chronic metabolic diseases such as diabetes, hypertension, hypercholesterolemia, as well as heart attack, stroke, sleep apnea and joint diseases.

Given this, it is observed that this issue should be of concern not only to defend the practice of healthy habits in childhood, but rather concern for a problem that is becoming serious and may remain until adulthood, leading to other worse problems.

The prevalence of childhood overweight or obesity, is directly related to lifestyle, which includes inappropriate eating habits and sedentary behaviors, in addition of the social and economic factors normally associated negatively to events in health and nutrition (POETA et AL. 2012).

JUSTIFICATION

The interest in search the comparison of the motor profile of children in and out of the appropriate indexes BMI ran through the alarming data regarding this subject and especially with respect to data from university extension project: "Ball in the basket," for the past 20 years, obesity among children aged 6 to 11 years increased considerably, reaching a rate of 54%, and adolescent between 12 and 17 years, this growth is in the range of 39%.

Thus, due to concern over rising rates of obesity, and the importance of the development of fundamental movement skills and their consequent impact on higher levels of physical activity, especially for children with problems of overweight and obesity, this research has interest to investigate the motor profile of children who have this phenomenon.

Accordingly, it is expected that this study can help practitioners and grant physical education and related fields who work or will work with children on the condition of obesity and overweight, since identifying what is the motor profile of these children, it may assist in developing a program of activities directed motor skills in children can have greater delay in motor development.

OBJECTIVES

The objective of this study was to investigate and identify the factors related to overweight and body mass index that are directly related to the results of motor tests, and perform differently in female children, start practicing sports basketball, regularly three times per week.

Investigate the levels of BMI of the participants in “Basket Ball Project" and if they are outside the normal range have underperformed those that are within normal.

Analyze the data and suggest possible activities that can contribute to the development of motor skills that are experiencing poor performance or that are below the standard considered normal.

THEORETICAL FOUNDATION

It is estimated that in Brazil there are five million obese children, observing an increasing trend in the numbers for the future in different social classes (NETO, 2001). Given this fact, it should be emphasized that environmental factors can modify the course of child development, especially in the physical and motor, which directly affects your everyday life.

It is observed that the shortage of infant handling, lower parental involvement with their children, consumption of high-fat diet, decreased time toy away from home due to the increase of violence in large cities, and the increasing routine watching television and using the computer can transform the children into small obese, contributing to characterize childhood obesity as an epidemic worldwide.

The motor development is the continuous change in human behavior throughout the life cycle, conducted by the interaction between the needs of biological tasks and the environmental conditions that the individual stay (GALLAHUE, 2001).

The successive integration of motor skills involves the constant and permanent organic maturation. The movement and its end constitute a unit which will enhance increasingly as a result of progressive differentiation of structures integrative

human (ROSA NETO, 2010).

The beginning of formal schooling is an important change in the child's physical development. The school means the beginning of the period in which they must learn all the skills and specific roles that are part of the culture (BEE, 1997, apud PAZIN, 2006).

It is understood that the encouragement of physical activity within the school is a excellent way to educate children and families about the need to exercise and eat well to have a healthier life.

Covenants that the fundamental movements become important for physical activity. Thus, it is assumed that it is possible that children with difficulties in performance have lower chances in motor activity in physical education classes in schools, considerably reducing their participation in physical activities that will ensure quality of life.

During the development of activities in the project "Ball in the Basket" is emphasized activities that includes diversified movements, providing plenty of driving experience, therefore, applies to the initiation basketball and these procedures can broadly develop the capabilities and skills of the participants. Unfortunately the reality we face in most schools is quite different, because the cultivation of actions like these project are increasingly scarce, providing the entry of technological advancement in harmful ways in the lives of young people. That is, young people currently prioritize sedentary activities, such as: hours in front of the computer, and the creation of the virtual world to the detriment of exercise.

Because of the practice of these habits is increasingly present in our society the increase of childhood obesity and, before that, it is clear the importance of developing other projects, as well as the project "Ball in the Basket" with similar goals and that can make a difference in the lives of other children.

For all tests, the participants used up the body schema, which is the intellectual knowledge of body parts and their functions, is the notion of self, awareness and body awareness, and behaviors of imitation. Within this there is a body image that is the impression one has of herself (FONSECA, 1995).

MATERIALS AND METHODS

The characterization of the study according to Nelson and Thomas (2002) can be considered comparative, in which examined the initial and final testing of the subjects involved in the study.

Sample

It is known that the sample represents the subset of elements within the given population, and the collected information is later generalized to the entire population. Thus, the sample for this study consisted of 18 students selected purposefully (BASTOS et. Al, 2000), regularly enrolled between 5th and 8th s series of schooling (primary school), covering the age range between 10 and 14 years age, the State School Prof. Hugo Miele, the city of Presidente Prudente - SP, members of the Project in Basket Ball.

Study Variables

This study sought to evaluate the overall physical fitness, and this is composed of biologic and psychosocial factors which in turn are composed of different features (MATSUDO, 2005).

To get to the data were applied motor tests, as follows: abdominal resistance for 1 minute; velocity of 50 meters; Resistance - 1000 meters; agility - Shuttle Run and impulsion: vertical and horizontal, in a before and after evaluation. It is noted that these tests were conducted in the normal group as the group outside the normal range. Were measured, yet, height, weight and wingspan, thereby determining the two groups inside and outside the normal BMI.

Statistical Analysis

To analyze the average results of the evaluations we used the paired t test to compare the average of the first and second evaluation, in each pair of variables. Verification of difference between means according to BMI was performed using the one-way ANOVA test. In the analyzes we used SPSS v.17 statistical software, and the level of significance was set at p values <0.05.

Results

We evaluated 18 girls in this study, with a mean age of 11.0 ± 1.03 at pretest and 11.7 ± 1.02 at posttest. The height of the girls evaluated showed significant between evaluations, as well as the weight and wingspan. There was no increase in BMI. Regarding motor tests, significant improvement in all physical valences evaluated in the test, with the exception only of the abdominal test, whose increase was not statistically significant (Table 01).

Analyzed the BMI factor, significant differences were found between the mean test speed, agility and vertical jump at the first evaluation and testing speed, endurance, agility and vertical jump at the second evaluation (Table 02), so that BMI is associated with performance tests.

Thus, after analyzing the results of motor tests by extracts of BMI, we found that the results obtained by the girls who had BMI less than 24.9 were better than the results of the girls who were overweight at both assessments. Nevertheless, the basketball training promoted significant improvement in the performance of girls in most physical valences evaluated (Table 03).

Table 01 – Anthropometric characteristics and motor girls before and after the training period for basketball.

	Pretraining	Post-training	Difference	P value
Age (years)	11,0 ± 1,03	11,7 ± 1,02	0,72	-
Height (m)	1,51 ± 0,86	1,55 ± 0,81	0,04	0,001*
Weight (kg)	47,0 ± 17,2	50,0 ± 17,5	0,97	0,001*
Wingspan (m)	1,52 ± 0,10	1,57 ± 0,09	0,05	0,001*
BMI (weight/height²)	20,4 ± 6,95	20,6 ± 6,34	0,17	0,425
Abdominal in 1 minute	30,28 ± 6,23	30,78 ± 7,31	0,50	0,743
50 meters sprint (s)	11,93 ± 1,28	11,16 ± 1,21	0,78	0,001*
Resistance run 1000m (s)	141,0 ± 22,9	118,3 ± 25,0	22,70	0,002*
Shuttle Run - Agility (s)	11,92 ± 1,21	11,34 ± 1,37	0,58	0,012*
Vertical jump (cm)	22,9 ± 4,91	30,7 ± 5,59	7,83	0,001*
Horizontal jump (m)	1,25 ± 0,17	1,39 ± 0,20	0,14	0,001*

* p values of the paired t test, with statistical significance (p <0.05).

Table 02 – Difference between the means of testing engines for girls BMI factor, before and after the training period for basketball.

			Pretraining		Post-training	
	Source of variation	**Degree of freedom**	**F_1**	**P_1 value**	**F_2**	**P_2 value**
Abdominal in 1 minute	Between groups	4	2,857	0,067	2,095	0,140
	Within groups	13				
	Total	17				
50 meters sprint (s)	Between groups	4	11,724	0,000	9,332	0,000
	Within groups	13				
	Total	17				
Resistance run 1000m (s)	Between groups	4	0,764	0,567	13,951	0,000
	Within groups	13				
	Total	17				
Shuttle Run - Agility (s)	Between groups	4	11,965	0,000	4,836	0,000
	Within groups	13				
	Total	17				
Vertical jump (cm)	Between groups	4	4,928	0,000	4,614	0,000
	Within groups	13				
	Total	17				
Horizontal jump (m)	Between groups	4	2,602	0,085	2,328	0,111
	Within groups	13				
	Total	17				

* statistical significance test for one-way ANOVA ($p < 0.05$)

Table 03 – Comparative of anthropometric and motor girls evaluation after training basketball period, according to the classification of body mass index.

	Underweight (IMC $\leq$ 18.5)	*P value*	Standard weight (IMC 18.6- 24.9)	*P value*	Overweight (IMC $\geq$ 25)	*P value*
Height (m)						
Before	1,51 ± 0,10		1,49 ± 0,07		1,52 ± 0,08	
After	1,54 ± 0,09	0,010*	1,52 ± 0,07	0,001*	1,58 ± 0,06	0,027*
Weight (kg)						
Before	37,3 ± 7,77		49,4 ± 7,26		75,5 ± 20,9	
After	40,3 ± 7,95	0,001*	52,1 ± 7,51	0,015*	78,6 ± 22,3	0,064
Wingspan (m)						
Before	1,51 ± 0,11		1,49 ± 0,08		1,57 ± 0,10	
After	1,57 ± 0,10	0,001*	1,54 ± 0,08	0,001*	1,61 ± 0,08	0,120
BMI (weight/height²)						
Before	16,2 ± 1,52		21,6 ± 1,97		32,5 ± 8,96	
After	16,7 ± 1,67	0,003*	21,8 ± 1,89	0,572	31,3 ± 8,60	0,149
Abdominal in 1 minute						
Before	31,4 ± 5,13		30,4 ± 3,65		26,3 ± 12,5	
After	33,0 ± 6,45	0,401	32,2 ± 5,76	0,543	21,0 ± 5,29	0,356
50 meters sprint (s)						
Before	11,4 ± 0,73		11,8 ± 0,81		13,7 ± 2,01	
After	10,7 ± 0,68	0,001*	11,2 ± 0,80	0,001*	12,8 ± 1,98	0,001*
Resist. run 1000m(s)						
Before	136,8 ± 26,3		141,0 ± 16,0		155,0 ± 21,7	
After	106,7 ± 14,9	0,017*	120,0 ± 10,9	0,003*	154,3 ± 37,8	0,950
Shuttle Run-Agility (s)						
Before	11,3 ± 0,39		12,4 ± 0,98		13,3 ± 2,06	
After	11,0 ± 1,04	0,357	11,4 ± 0,92	0,028*	12,6 ± 2,49	0,128
Vertical jump (cm)						
Before	25,9 ± 3,54		19,0 ± 3,46		19,3 ± 4,73	
After	33,0 ± 3,62	0,001*	30,8 ± 4,14	0,001*	23,0 ± 7,55	0,173
Horizontal jump (m)						
Before	1,33 ± 0,10		1,13 ± 0,21		1,15 ± 0,15	
After	1,49 ± 0,17	0,004*	1,27 ± 0,20	0,019*	1,23 ± 0,12	0,342

* p values of the paired t test, with statistical significance ($p < 0.05$).

DISCUSSION

Anthropometric variables demonstrated a significant increase due to meet girls in the age group of full development. However, as there was no increase in body mass index, this development has occurred in a healthy and proportional, balanced ratio of weight X height.

Nevertheless, the motor tests demonstrated better overall results in the second evaluation, which means that even with the rapid gain of body components, performance tests yet been optimized.

Through stratification of BMI, more specific results related to test performance could be obtained as the result of the tests statistically significant mean difference referred the idea that BMI is a factor that could affect performance on tests. Thus, it was observed that overweight girls reached underperformed the others in all motor tests.

Although these results come against the difficulty in achieving the body movements due to excess weight, the results were also optimized even in girls with a BMI of 25 and over, through regular and systematic training school basketball.

CONCLUSION

The motor profile of girls aged 10 to 14 shows different results according to the body mass index. Girls with a BMI above the level recommended by the World Health Organization (1997) reached underperformed the others of the same age in both evaluations.

Systematic school basketball training applied to evaluated girls improved performance in all motor tests, most of them very significant statistically.

Activities developed in the project "Ball in the Basket" promoted better health conditions for girls participating in order to contemplate the development of physical skills that are important for human development and fulfillment of their daily tasks.

The school basketball training helped in musculoskeletal development, limiting weight gain in a healthy way as the girls have developed and provided improvements in their body movements.

These objectives achieved by the project serve as an incentive to school physical education classes, which shall include appropriate activities that satiate the motor needs of children.

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COMPARISON OF MOTOR PROFILE OF CHILDREN INSIDE AND OUTSIDE OF APPROPRIATE BODY MASS INDEX (BMI) IN A BASKETBALL PROJECT.

ABSTRACT

It is observed that the motor development constitutes one of the most important research fields in the area of physical education with applied research in various fields of professional practice. In the pediatric population, the study of motor development through sports is fundamental, because it is during this period that children acquire motor experience to enjoy them into adulthood and become physically active. The article presents a comparison of the profile of children with different body mass index (BMI) involved in University extension project "Basket ball", that develops the initiation to basketball, thus follows a comparative methodology between the pre and post evaluation. The research consisted of 18 girls aged 10 to 14 years. Were applied the following tests: abdominal resistance test; the test of 50 meters; the test of 1000 meters and the Shuttle Run test, besides the jump tests: vertical and horizontal. For BMI using height and weight measurements, (weight/height squared). We analyzed the difference between pre and post evaluation data, both in the IMC as in motor testing, that pointing out the importance of physical activity to maintain a healthy lifestyle in the pre and early teens. School basketball training improved skeletal muscle development, limiting the gain weight healthily as the girls developed and provided improvements in their body movements. The motor profile of the girls between 10 and 14 years has different results when related to BMI. Girls with a BMI above the recommended by the World Health Organization have underperformed of the others from the same age, in both evaluations. Therefore, we were able to analyze and conclude that girls with a BMI in the normal range have better physical fitness than those that are outside the normal range.

KEYWORDS: BMI, fitness, sports initiation.

COMPARAISON DU PROFIL MOTEUR DES ENFANTS À L'INTÉRIEUR ET À L'EXTÉRIEUR DE INDICE DE MASSE CORPORELLE (IMC) APPROPRIÉE DANS UN PROJET DE BASKET.

RÉSUMÉ

On observe que le développement moteur constitue l'un des domaines de recherche les plus importants dans le domaine de l'éducation physique à la recherche appliquée dans divers domaines de la pratique professionnelle. Dans la population pédiatrique, l'étude du développement du moteur à travers le sport est fondamental, car c'est durant cette période que les enfants acquièrent l'expérience motrice pour les apprécier à l'âge adulte et devenir physiquement actifs. L'article présente une comparaison du profil des enfants avec indice de masse corporelle différente (IMC) qui participent à l'extension Université "Basket ball" du projet, qui développe l'initiation au basket-ball, suit donc une méthodologie comparative entre l'évaluation pré et post. La recherche se composait de 18 jeunes filles âgées de 10 à 14 ans. Ont été appliqués les tests suivants: test de résistance abdominale; l'épreuve du 50 mètres: le test de 1000 mètres et le test de course navette, outre les tests de saut: vertical et horizontal. Pour l'IMC en utilisant la taille et du poids, (poids / taille au carré). Nous avons analysé la différence entre les données d'évaluation avant et après, à la fois dans l'IMC comme dans les essais moteur, qui soulignaient l'importance de l'activité physique pour maintenir un mode de vie sain dans les années de l'adolescence et au début du pré. La formation de basket-ball scolaire à améliorer le développement des muscles squelettiques, en limitant le gain de poids sainement que les filles développé et fourni des améliorations dans leurs mouvements du corps. Le profil du moteur des filles entre 10 et 14 ans donne des résultats

différents lorsque lié à l'IMC. Les filles ayant un IMC supérieur à celle recommandée par l'Organisation mondiale de la santé ont sous-performé les autres à partir du même âge, dans les deux évaluations. Par conséquent, nous avons été en mesure d'analyser et de conclure que les filles ayant un IMC dans la fourchette normale de remise en forme ont un meilleur physique que ceux qui sont en dehors de la plage normale.

MOTS CLÉS: IMC, remise en forme, initiation sportive.

COMPARACIÓN DEL PERFIL DE MOVIMIENTO DE LOS NIÑOS DENTRO Y FUERA DEL ÍNDICES DE MASA CORPORAL ADECUADO (IMC) EN UN PROYECTO DE BALONCESTO.

RESUMEN

Se observa que el desarrollo motor constituye uno de los campos de investigación más importantes en el área de educación física con la investigación aplicada en diversos campos de la práctica profesional. En la población pediátrica, el estudio del desarrollo del movimiento através del deporte es fundamental, ya que es durante este período que los niños adquieren experiencia motor para gozar de ellos en la edad adulta y ser físicamente activo. El artículo presenta una comparación entre el perfil de los niños con índice de masa corporal (IMC) implicada en el proyecto "Baloncesto" de extensión de la Universidad , que se desarrolla la iniciación al baloncesto, tanto sigue una metodología comparativa entre la evaluación pre y post. La investigación consistió en 18 muchachas de 10 a 14 años. Las pruebas se aplicaron los siguientes: Prueba de resistencia abdominal, la prueba de 50 metros, la prueba de 1000 metros y la prueba de traslado de ejecución, además de las pruebas de salto: vertical y horizontal. Con respecto al IMC utilizando medidas de altura y peso (peso / altura al cuadrado). Se analizó la diferencia entre los datos de la evaluación pre y post, ambones en el IMC en las pruebas de movimiento, que señala la importancia de la actividad física para mantener un estilo de vida saludable en los adolescentes y pre temprana. Entrenamiento de baloncesto mejor desarrollo del músculo esquelético, lo que limita el aumento de peso de forma saludable para las chicas desarrollados y una mejoría en los movimientos de su cuerpo. El perfil de motor de las chicas entre 10 y 14 años tiene resultados diferentes al relacionado con el IMC. Las niñas con un IMC superior a la recomendada por la Organización Mundial de la Salud han estado por debajo de los otros a partir de los mismos hechos, en las evaluaciones de yunque. Por lo tanto, hemos sido capaces de analizar y concluir que las jóvenes con un IMC en el rango normal tienen mejor forma física que los que están fuera del rango estándar.

PALABRAS CLAVE: IMC, aptitud, deportes de iniciación.

COMPARAÇÃO DO PERFIL MOTOR DE CRIANÇAS DENTRO E FORA DOS ÍNDICES DE MASSA CORPORAL (IMC) ADEQUADOS NO PROJETO BOLA NA CESTA.

RESUMO

Observa-se que o desenvolvimento motor se constitui em um dos campos de investigação de maior relevo na área da educação física, com pesquisas aplicadas nos mais variados campos de atuação do profissional. Na população infantil, o estudo do desenvolvimento motor através de esportes é fundamental, porque é nesse período que as crianças adquirem experiência motora para desfrutá-las na idade adulta e se tornarem fisicamente ativas. O artigo apresenta comparação do perfil motor de crianças com diferentes índices de massa corporal (IMC) envolvidas no projeto de Extensão Universitária “Bola na Cesta”, onde, desenvolve-se a iniciação ao basquetebol, dessa forma, segue uma metodologia comparativa entre os pré e pós-coleta de dados. O n constou de 18 meninas na faixa etária de 10 aos 14 anos. Foram aplicados os testes: abdominal; o teste de 50 metros; o teste de 1000 metros e o Shuttle Run, além dos saltos: vertical e horizontal. Para IMC utilizou-se as medidas de estatura e peso, (peso/estatura²). Analisou-se a diferença entre os dados de pré e pós-coleta, tanto no IMC, como, nos testes motores, o que nos aponta a importância da atividade física desportiva para a manutenção de uma vida saudável na pré e adolescência. O treinamento de basquetebol escolar auxiliou no desenvolvimento musculoesquelético, limitando o ganho de peso de forma saudável à medida que as meninas se desenvolveram e proporcionaram melhoras nos seus respectivos movimentos corporais. O perfil motor de meninas de 10 a 14 anos apresenta diferentes resultados quando relacionado ao IMC. Meninas com IMC acima do recomendado pela Organização Mundial de Saúde atingiram desempenho inferior às demais de mesma faixa etária, em ambas as avaliações. Portanto, conseguiu-se analisar e concluir que meninas com IMC dentro da normalidade possuem melhor aptidão física do que aqueles que estão fora da normalidade.

PALAVRAS CHAVES: IMC, aptidão, iniciação esportiva.