154 - PHYSICAL GROWTH AND LUDIC-MOTOR ACTIVITIES

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INTRODUCTION

Although obesity is a consequence of many multifactorial actions, in which there is an interaction between genetics, metabolism and environment, the behaviour factors (eating habits and physical inactivity) are the most important factors related to the nowadays obesity, as, according to Troiano and Flegal (1998), the obesity is originated on the energetic balance between ingestion and energy loss. To these authors, this balance is due to the relation between energy input and demand, and can be classified as positive energy intake - , or negative energy deficit.

When the positive energetic balance is kept for some weeks or months, the result is weight gain, and when there is a negative energetic balance, also kept for some weeks or months, the consequence is weight loss (BOUCARD, 2003). So, if there is a positive energy balance, the energy excess will be stored as fat, increasing the deposits and producing, on extreme cases, obesity (GUEDES and GUEDES, 2003).

Considering that, on the last decades, there was a big decreasing on the daily energetic waste , without a change on the calories ingestion, establishing a positive energetic balance process, the result has been a society with high indices of overweight and obesity, even on childhood (BOUCARD, 2003), and this is becoming a world epidemic (BATISTA FILHO and RISSIN, 2003; OLIVEIRA et al., 2003).

Among the main health problems presented on the literature as consequence of obesity, the cardiovascular diseases get special place, once they keep a primary relation to obesity (PERES, 2005). In Brazil, data from Ministério da Saúde (1996) show that 11.5% of the Brazilian population from 1 to 19 years-old die due to respiratory system problems and 32.3% die due to circulatory problems.

Considering that the obesity acquired on childhood tends to continue over adulthood (CAMPOS et al., 2005), as its consequences to health, que diagnose and prevention on the first periods of life are very important to the improvement of the prognostic (OLIVEIRA et al., 2003).

So, this study had as its main aim to evaluate the level of physical growth and the effects on a multidiscipline program of prevention and reduction of childhood overweight and obesity indices.

METHODOLOGICAL PROCEDURES

This research was developed with a beginning sample of 280 scholars aged from 7 to 10, both sexes, enrolled on a public state school in Campo Grande-MS, on a period from July to November, 2007, and the study happened in tree steps I) diagnostic evaluation; II) intervention and, III) posttest evaluation.

The study followed in all the steps, the CNS Resolution number 196/96, and was approved by the Research Ethics Committee of the Universidade para o Desenvolvimento do Estado e da Região do Pantanal, under the protocol number 097/2007.

The research technique applied on the first and third steps was the anthropometric measurement analysis (weight and height), using the formula BMI=weight (kg)/height (m) ^{2} in order to determine the Body Mass Index (POLLOCK and WILMORE, 2003), classifying the results in eutrophics, overweighted and obese (CONDE and MONTEIRO, 2006).

The measurement of the body mass was made with barefoot children, wearing only shorts (boys) and bikini (girls), stand up, back to the scale, and inferior members laterally distant. The measurement of their height happened with barefoot children, back to the estadiometer, keeping contact to the back superficies of the heel, pelvic waist, scapular waist and occipital region, and having their head oriented to the Frankfurt plan, and the children on apnea.

The test to “sit and reach” was realized with barefoot schollars, sat in front of the Wells banch, with streight and united legs. Then, with one of their hands put on top of the other, elevating the arms verticaly, inclining the body to the front and reaching with their finger points the most distant point on the ruller, without having their knees flexed and without making the balance movement.

In order to have te abdominal resistence strenght test, the student was evaluated on the “dorsal decubitus” position, 90 degrees knee flexion, and with their arms crossed over the thorax. After this, the evaluator fixed the students feet to the field. On the sign, the student started his trunk flexion movements until reaching his thighs with his elbows, coming back to the first position (and it was not asked to touch his head on the exercise mat). The counters were made in a loud voice. It took one minute to finish the test, when the bigger number of repetitions were completed.

To the next step, all children that presented overweight risk (67), overweight (72) or obesity (27) were invited. After a three-week period, the program started with 17 schollars on the overweight risk, 26 overweighted and 12 obese.

After the diagnosed evaluation, the enrolled children participated on a five-month ludic activities program (test), three-day a week classes of fifty minutes each, light intensity, having, the Piaget cognitive development proposal and games classification (PIAGET, 1978) and motor development (GALLAHUE and OZMUN, 2003) as theoretical base to the elaboration of the games

Intervention finished, the children were submitted again to the BMI evaluations, on the same conditions of the first step protocol. However, due to fact that some students gave up the project, the final sample had 11 children from the overweighted risk group, 14 from the overweighted group and 6 obese, totalizing 31 children.

The data was analysed using the central tendency tests (frequency and media). In order to compare the gotten values on the pre and posttests, the “Studant *t”* test was used.

RESULTS AND DISCUSSION

The results show that the majority of the children enrolled on the intervention program, even on the pre and on the posttest step, were overweighted. The frequency analysis shows that, only one child had its nutritional state changed from obese

to overweighted. However, one child got worse, going from euthrophic to overweighted.

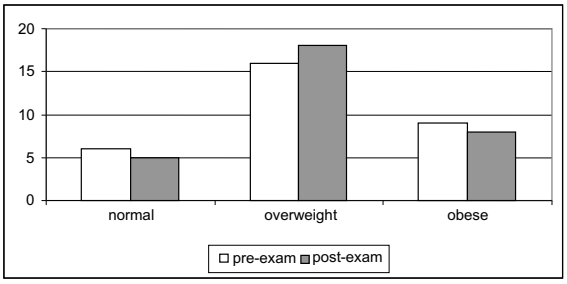


Figure 1 Nutritional state frequency anaysis of the schollars enrolled on the multidiscipline intervention program.

On the evaluation of the IMC media values, it could be seen that on the pre-test steps, children showed M=20,29Kg/m^2 , and on the posttest M= 20,35 Kg/m^2, as it can be seen on figure 2.

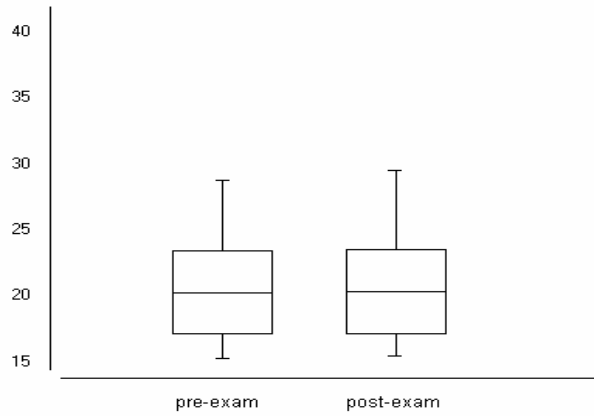


Figure 2 media distribution bloxpot, minimun and maximun BMI of the schollars enrolled on the multidisciplinary intervention program.

When analyzing the effects of the program on the reduction of the body mass excess (overweight and obesity), it was seen that the results were negative, in other words, the ludic motor activities program with psychological and nutritional help, did no make significant statistical influence on te MBC reduction (*t=0,9373; p>0,05).*

Although the physical activity has its importance on the reduction and maintenance of body weight, becoming a compulsory use on overweight and obesity control and prevention programs (WILMORE and COSTILL, 2001), the lack between statiscial significance among the results may be related to the kind of activities applied, its intensity and frequency, as, acoording to Bernardes et al. (2003), different trainees promote different effects on the metabolism.

In relation to intensity, it can be said that the developed activities had light intensity, as they were games which generaly had a caloric waist of 6kcal/min (GUEDES and GUEDES, 2006). According to Marrugat et al. (1996), physical activities developed on a higher or equal to 7.5Kcal per minute intensity are more appropriated to the physical fitness and to the lipidic profile.

Moreover, the results could have been influenced by the frequency on which the activities were done (three times a week), as exercises of obesity treatment therapy, when limited to three times a week, light intensity, do not have any effect or the effects are too small (VOTRUBA et al.,2000). Bernardes et al. (2003) also understands this way, saying that five-day-a-week programs show a bigger action over the obesity problem. This probably occurs due to the fact that physical activities of light intensity are not enought to cause significant changes on the lipidic profile (MARRUGAT et al., 1996).

CONCLUSION

The results show that the intervention program was not enough to make changes on the nutritional state of the enrolled children, maybe showing that it could be related to the kind, intensity and frequency of the applied activities. However, it is important to consider that other aspects may also have influenced the results, as, beyond the activities held by the program, it is also necessary to have changes on the lifestyle of the people enrolled on the intervention program, mainly the reduction of the sedentary activities and the nutritional habits improvement.

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PHYSICAL GROWTH AND LUDIC-MOTOR ACTIVITIES

ABSTRACT

On the last decades, obesity has become a world epidemic and involving all ages. Considering that, as soon as the problems of body mass excess are diagnosed and treated, better are the results, this study had as its aim to diagnose the physical growth and the effects of a multi-subject program of the overweight and obesity indexes prevention and reduction on children aged from 7 to 10. This project studied 31 children, among them, 11 were euthrophic and on a overweight risk, 14 overweighted and 6 were obese. The research technique applied was the evaluation of the anthropometric measures (weight and height), using the BMI formula=weight/height^2 in order to determine the Body Mass Index (BMI). The results show that the majority of children were overweight, even on the previous and on the post test period. By the analysis of the differences between the values, it could be seen that the program did not have any significant statistical influence (t=0,9373; p>0,05) over the reduction of BMI. It was concluded that the program was not enough to produce changes on the nutritional aspects.

Key-words: Overweight. Obesity. Schollars.

CROISSANCE PHYSIQUE ET ACTIVITES MOTEURS DE LOISIRS

RÉSUMÉ

L'obésité au cours des dernières décennies a fait une épidémie mondiale, qui touche tous les âges. Considérant que, quant plus vite les problèmes d'excès de masse corporelle sont diagnostiqués et traités, meilleurs seront les résultats, cette étude vise à diagnostiquer la croissance physique et les effets d'un programme multidisciplinaire dans la prévention et la réduction du taux de surpoids et d'obésité chez les enfants de 7 à 10 ans. 31 enfants ont participé au projet avec 11 eutrophe au risque de surcharge pondérale, 14 avec surpoids, 6 obèses. La technique de recherche appliquée a été l'évaluation des mesures anthropométriques (poids et hauteur), en utilisant la formule IMC = poids et hauteur2 pour déterminer l'indice de masse corporelle (IMC). Les résultats montrent que la plupart des enfants se trouvaient en surpoids pré-post test. En analysant les différences entre les valeurs trouvées on a constaté que le programme n'a pas exercé aucune influence très importante (t = 0,9373, p> 0,05) sur la réduction de l'IMC. Il a été conclu que l'émission d'intervention ne suffit pas à provoquer des changements dans l'état nutritionnel.

Mots clés: surpoids. l'obésité. écoliers.

CRESCIMIENTO FÍSICO Y ACTIVIDADES MOTORAS LÚDICAS

RESUMEN

La obesidad en las últimas décadas se ha constituido en una epidemia mundial, atingiendo todas las edades. Considerando que cuanto antes los problemas de exceso de masa corporal sean diagnosticados y tratados, mejores pueden ser los resultados, este estudio tuvo como objetivo diagnosticar el crecimiento físico y los efectos de un programa multidisciplinar en la prevención y reducción de los índices de sobrepeso y obesidad en niños de 7 a 10 años. Participaron del proyecto 31 niños, siendo 11 eutróficos con riesgo a sobrepeso, 14 con sobrepeso y 6 con obesidad. La técnica de investigación aplicada fue la evaluación de las medidas antropométricas (peso y estatura), utilizando la fórmula IMC=peso/estatura^2 para determinar el Índice de Masa Corporal (IMC). Los resultados muestran que la mayoría de los niños se encontraba con sobrepeso, tanto en la fase pre cuanto pos teste. En el análisis de las diferencias entre los valores se constató que el programa no ejerció ninguna influencia estadísticamente significante (t=0,9373; p>0,05) sobre la reducción del IMC. Se concluyó que el programa de intervención no fue suficiente para provocar cambios en el estado nutricional.

Palabras-llave: Sobrepeso. Obesidad. Escolares.

CRESCIMENTO FÍSICO E ATIVIDADES MOTORAS LÚDICAS

RESUMO

A obesidade nas últimas décadas tem se constituído numa epidemia mundial, atingindo todas as idades. Considerando que quanto antes os problemas de excesso de massa corporal forem diagnosticados e tratados, melhores podem ser os resultados, este estudo teve como objetivo diagnosticar o crescimento físico e os efeitos de um programa multidisciplinar na prevenção e redução dos índices de sobrepeso e obesidade em crianças de 7 a 10 anos. Participaram do projeto 31 crianças, sendo 11 eutróficas com risco a sobrepeso, 14 com sobrepeso e 6 com obesidade. A técnica de investigação aplicada foi a avaliação das medidas antropométricas (peso e estatura), utilizando a fórmula IMC=peso/estatura^2 para determinar o Índice de Massa Corporal (IMC). Os resultados mostram que a maioria das crianças encontrava-se com sobrepeso, tanto na fase pré quanto pós-teste. Na análise das diferenças entre os valores constatou que o programa não exerceu nenhuma influencia estatisticamente significante (t=0,9373; p>0,05) sobre a redução do IMC. Conclui-se que o programa de intervenção não foi suficiente para provocar mudanças no estado nutricional.

Palavras-chave: Sobrepeso. Obesidade. Escolares.