97 - THE BEHAVIOR OF THE FAT BODY OF THE SCHOOL DURING THE RECESS OF THE PRACTICAL ACTIVITIES OF THE SWIMMING

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ABSTRACT

The Project NATESC/UNIVILLE occurs to the school since 2005, with regular classes in swimming and two evaluations anthropometric annually. During the practice period, the percentage of fat tends to decrease, but in the recess at school these values increase. This factor suggests to establish a partnership with parents to encourage healthy habits. The goal was to develop a swim program that prioritize work in a team - teachers, students, and parents – for the reduction and/or control of body weight of the adolescents and encourage healthy habits. The research was conducted with schoolchildren 10 to 13 years, of the schools public of Joinville-SC. The sample was composed of 19 boys and 20 girls. The data collected were weight, height, folds tricipital and subscapular skinfold. The protocols used were the Slaughter (1988) and the classification according to Lohman (1987). As the instrument was considered to be the swim program and seminar awareness were conducted with the parents of the school. The Shapiro-Wilk test showed normality in all data, therefore, we adopted the Student t test for paired samples/independent and the test F. Contrary to what had been going on, this group of the sample showed decrease in the percentage of fat during the school break. The female has decreased to 7.98% and the male 6,93% on the average. This result may be related with the lecture: "The Effect of Obesity in Pre-adolescents and Adolescents, and the importance of acquiring healthy habits". It's considered that there was the awareness of parents, encouraging the school positively in the regulation of feeding and in the practice of physical activities, helping to control the trend of increase in rates of obesity. In this study, the school of both sexes showed a decrease in the percentage of fat, according to the classification proposed by Lohman (1987).

Key words: Obesity, swimming, school.

INTRODUCTION

In the course of time, the company has been acquiring new habits such as, sedentary lifestyle and inadequate diet, which has proven to involve in the development of chronic non-communicable diseases such as, for example, diabetes mellitus type 2, atherosclerosis, heart diseases (MELO et al., 2004; Arenas and Martínez, 2015; Soares and Petroski, 2003). Although these diseases have a significant genetic load, the habits of life such as those listed above have a large influence on the appearance of these pathologies.

Gallahue and Ozmun (2005) argue that the combination of physical activity and the right food habits are important factors for the adjustment of the control body, increasing muscle mass and decreasing fat mass.

The twenty-first century, with its remarkable technological advances brought new forms of entertainment that came to occupy a space in the daily life of the population that should be filled with activities that require movement of the body, but, on the contrary, the population is a good part of his free time in front of the television, videogame, computer, and other means of virtual leisure considered sedentary activities.

Another relevant factor in this context is the wide variety and availability of processed foods, which, during their production process, they lose the nutritional values important, making them inefficient to meet the nutritional needs, in addition to offer consumers with large amounts of preservatives, sugars, salts and fats that influence in the increase of the adipose tissue.

Farias et al (2009) point out that children and adolescents with overweight and obesity has been presenting diseases of adults early, such as psychosocial disorders, depression, low self-esteem, isolation, and points out that physical activity can generate changes in body composition thus being an important factor in the control of body composition. Leite et al (2009) state that with the large amount of processed foods available for consumption, coupled with sedentary lifestyles, particularly for children from urban areas, are factors that involve in the development of obesity in children and adolescents.

The Project Swimming in the School: Health and Education/ NATESC is carried out for 11 years and attends school (between 10 and 15 years of age) of the public school network of the region of Joinville, by introducing the practice of swimming in the routine of the students. The project has three main actions: 1) to teach the techniques of survival in various aquatic environments, 2) to teach live sports and 3) to monitor the growth and development of the participants through evaluation of anthropometric.

A study by Magri and Pereira (2010) showed that during the regular practice of swimming, the body fat percentage tends to maintain or even decrease, however, in the period of the holiday, the index of fat tends to increase again. This phenomenon is attributed to the break with the practice of swimming and the beginning of a period less physically active, the school holidays. Therefore, it becomes interesting to encourage the practice of physical activity, no matter what, and that it would be important to establish dialogues with families to orient them and invites them to participate in the process.

For this reason, the objective of this study was to evaluate the effectiveness of a program of swimming that prioritize work in a team – teachers, students, and parents – for the reduction and/or control of the body fat percentage of adolescents who participate in the project.

It is believed that with a methodological approach to awareness about the benefits of healthy lifestyle habits directed at children and their respective responsible it is possible to view the positive effects on the body composition of the students.

METHODS

The research was of quantitative character and was associated with the Project NATESC, which is held in information systems. To form the group of research subjects, were invited every school in the age group of 10 to 13 years, who were part of the project in the year 2015 and that they would return to the swimming lessons in the year 2016.

The sample was composed of a total of 39 participants, 19 male and 20 sex female.

The subjects of the research participate in activities in the morning or afternoon and are divided into classes according to skill level. All students and caregivers have signed the Term of Free and Informed Consent – IC.

The study was approved by the research ethics committee of the University of Joinville Region – UNIVILLE, under the

opinion 008/2011 and follow the norms of resolution 196/96 of the National Health Council about research involving human beings.

As research instrument was used a swim program, providing physical activity on a regular, talks with the parents addressing the topic: “the effect of obesity in teens and pre-teens, and the importance of acquiring healthy habits”, seeking to emphasize the effect of physical activity and proper nutrition as essential factors for health and the control of body composition of the school.

To track the growth and physical development of the school was carried out an anthropometric assessment in the month of April 2016, when we collected weight, height and skin folds tricipital and subscapular skinfold, with the aim of comparing with the last assessment in November 2015, and to analyze which was the behavior of the adipose tissue of the school during the holiday period. The protocols used were the Slaughter, and cols. (1988) for the calculation of fat percentage (%G), and the rank of %G according to Lohman (1987). In the collection of the data of the anthropometric assessment was used, in the Laboratory of Exercise Physiology of UNIVILLE- LAFIEX, a stadiometer brand Gofeka (Ind. With. Ltda-ME) to measure the stature, an electronic scale Filizola (Industry Filizola S/A, Sao Paulo, BR – precision of 100g to determine body mass and an adipometer brand Cescorf (accuracy 0.1 mm) for collection of the skin folds tricipital and subscapular skinfold.

For data analysis we used the Shapiro-Wilk test, which showed normal values in all the variables, therefore, we decided to use analysis parametric. The Student's t-test for paired samples, and independent, which showed a significant difference in all the data collected in this time interval. The $p < 0.05$ was considered statistically significant indicator.

RESULTS AND DISCUSSION

Assessments anthropometric were performed from November 2015, when it was closed the activities of NATESC and redone in April 2016, a month after the re-enrolment of the school in the project NATESC. The results are presented below (table 1, 2 and 3).

Table 1

	Female	Male	Total
Nº	20	19	39

Nº sample size.

The transition from childhood to adolescence, the period that characterizes the pre-teen starts between 10 and 12 years. Typically, women, begin their development process two years prior to the boys, acquiring greater stature, body weight and fat percentage (%G) (MALINA, BOUCHARD, 2002), however, in our study, we found adverse results to this information. When the comparison of the variables between the female and male in 2015 and 2016, were not found significant differences in relation to stature, body weight, %G, and age ($p > 0.05$) when compared the groups of boys and girls.

Table 2

	Male 2015	Male 2016			
	X±SD	X±SD	Δ	Δ%	P-value
Stature (m)	1,48±0,1	1,51±0,11	0,03	2,0%	0,001*
Weight (kg)	39,51±7,07	41,38±7,77	1,87	4,7%	0,001*
%G	23,11±7,51	16,18±6,44	-6,93	-30,0%	0,001*
Triceps	10,97±3,47	11,85±5,42	0,87	8%	0,27
Subscapular	8,49±4,34	7,02±2,95	-1,38	-16%	0,02*

X mean.
SD standard deviation.
Δ absolute difference.
Δ% relative difference.
* Significant difference.
P-value = Student t test for paired sample α <0,05.

A study by Magri and Pereira (2010), demonstrated that the school tend to decrease the %G for the regular practice of swimming, (on account of the greater caloric expenditure, BMR, suppression of hunger), however, during the school break, swimming lessons also closed and the school has a propensity to return to the values previous of body fat percentage. Contrary to the results found by Magri Pereira (2010), both sexes showed a decrease in the percentage of body fat during the school holiday period.

Teachers, parents, and or guardians to be people very close to the school, play a key role in encouraging them in a positive way in the regulation of feeding and in the practice of physical activity, helping to decrease the trend of increasing obesity (GALLAHUE; OZMUN, 2005). Therefore, the reduction of body fat, which the school presented can be associated with the methodology applied in the group, which had as its goal to sensitize parents to encourage their children to practice physical activities frequently, regardless of which, during the school break, in addition to better control the feeding. Alba-Martin (2016), points out that to achieve a good result in the intervention of childhood obesity, and encourage the practice of physical activity and the regulation of diet is important that there is a partnership with parents and the various professionals of the health to provide awareness and improves on-demand feeding of the children.

Table 3

	Female 2015	Female 2016			
	X±SD	X±SD	Δ	Δ%	P-value
Stature (m)	1,49±0,06	1,51±0,07	0,02	1,3%	0,001*
Weight (kg)	37,96±7,9	39,38±8,05	1,42	3,7%	0,001*
%G	24,81±9,17	16,83±6,57	-7,98	-32,2%	0,001*
Triceps	11,93±5,54	10,74±5,58	-1,19	-10%	0,05
Subscapular	9,86±5,76	7,92±4,13	-1,94	-20%	0,006*

X mean.
SD standard deviation.
Δ absolute difference.
Δ% relative difference.
* Significant difference.
P-value = Student t test for paired sample α <0,05.

Using the protocol of Slaughter et al. (1988, as cited HEYWARD; STOLARCZYK, 2000) to identify body fat percentage, and the table of classification of Lohman (1987, as cited HEYWARD; STOLARCZYK, 2000) the data were distributed according to the percentage of fat. The average fat percentage of the female remained within the range considered as normal (16 - 25%) in 2015 and 2016 (24.8% and 16,8%), respectively. The male at the end of 2015, was classified as moderately high (19 to 25% present %G of 23.2 and when they returned in 2016 began to be classified within the normal range (13% to 18%) with %G= 16,2.

These changes in the fat percentage may be related with the phase of the growth spurt that occurs between 10 and 12 years, and implies changes in body composition in addition to sexual maturation. These changes can occur in a more intense or

less intense, it varies according to the biological individuality, socio-economic and cultural adolescent (Farias,2009).

CONCLUSION

In this study, the school of both sexes showed a decrease in the percentage of fat, according to the classification proposed by Lohman (1987). It is considered that the presentation of awareness had a positive result on the awareness of those responsible and the school, about the importance of acquiring healthy life habits, such as proper nutrition and practice physical activity regularly during the school break. However, it is essential that studies such as this occur with other populations, to identify whether the results obtained in this study can be found in other research.

It also suggests that in the next studies, the parents are interviewed to confirm whether or not the change of habits based on the guidance received.

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ABSTRACT

The Project NATESC/UNIVILLE occurs to the school since 2005, with regular classes in swimming and two evaluations anthropometric annually. During the practice period, the percentage of fat tends to decrease, but in the recess at school these values increase. This factor suggests to establish a partnership with parents to encourage healthy habits. The goal was to develop a swim program that prioritize work in a team - teachers, students, and parents – for the reduction and/or control of body weight of the adolescents and encourage healthy habits. The research was conducted with schoolchildren 10 to 13 years, of the schools public of Joinville-SC. The sample was composed of 19 boys and 20 girls. The data collected were weight, height, folds tricipital and subscapular skinfold. The protocols used were the Slaughter (1988) and the classification according to Lohman (1987). As the instrument was considered to be the swim program and seminar awareness were conducted with the parents of the school. The Shapiro-Wilk test showed normality in all data, therefore, we adopted the Student t test for paired samples/independent and the test F. Contrary to what had been going on, this group of the sample showed decrease in the percentage of fat during the school break. The female has decreased to 7.98% and the male 6,93% on the average. This result may be related with the lecture: "The Effect of Obesity in Pre-adolescents and Adolescents, and the importance of acquiring healthy habits". It's considered that there was the awareness of parents, encouraging the school positively in the regulation of feeding and in the practice of physical activities, helping to control the trend of increase in rates of obesity. In this study, the school of both sexes showed a decrease in the percentage of fat, according to the classification proposed by Lohman (1987).

Key words: Obesity, swimming, school.

LE COMPORTEMENT DE LA GRAISSE DU CORPS, DE L'ÉCOLE, PENDANT LA RÉCRÉATION DE LA PRATIQUE DES ACTIVITÉS DE LA NATATION

RÉSUMÉ

Le Projet NATESC/UNIVILLE se produit à l'école depuis 2005, avec des cours réguliers en piscine et deux évaluations anthropométriques chaque année. Au cours de la période d'entraînement, le pourcentage de graisse a tendance à diminuer, mais dans le renfoncement à l'école, ces valeurs augmentent. Ce facteur, propose d'établir un partenariat avec les parents pour encourager les saines habitudes de vie. L'objectif était de développer un programme de natation qui donnent la priorité au travail en équipe, des élèves et des parents pour la réduction et/ou de contrôle de poids, les adolescents et les encourager de saines habitudes de vie. La recherche a été menée auprès des élèves de 10 à 13 ans, les écoles publiques de Joinville-SC. L'échantillon était composé de 19 garçons et 20 filles. Les données recueillies sont le poids, la taille, plis tricipital et sous-scapulaire du pli cutané. Les protocoles utilisés sont la Slaughter (1988) et de la classification selon la Lohman (1987). Comme l'instrument a été considéré comme le programme de natation et de séminaires de sensibilisation ont été menées avec les parents de l'école. A été utilisé de Shapiro-Wilk test, test-t de Student pour échantillons appariés, et .indépendant contrairement À ce qui s'était passé, ce groupe de l'échantillon a montré la diminution du pourcentage de graisse pendant la relâche scolaire. La femelle a diminué de 7.98% et le mâle 6,93% sur la moyenne. Ce résultat peut être lié avec la conférence: "L'Effet de l'Obésité chez les Pré-adolescents et les Adolescents, et l'importance de l'acquisition de saines habitudes de". Dans

cette étude l'école des deux sexes ont montré une diminution du pourcentage de gras, selon la classification proposée par Lohman (1987).

Mots clés: Obésité, de la natation, de l'écol

COMPORTAMIENTO DE LA GRASA CORPORAL DE LOS ESCOLARES DURANTE EL RECESO DE LAS ACTIVIDADES PRÁCTICAS DE LA NATACIÓN

RESUMEN

El proyecto NATESC/UNIVILLE es para la escuela desde el año 2005 con las clases de natación regulares y dos evaluaciones antropométricas anuales. Durante la práctica, el porcentaje de grasa tiende a disminuir, pero la escuela romper aumentar estos valores. Este factor sugiere una asociación con los padres para fomentar hábitos saludables. El objetivo era desarrollar un programa de natación que prioriza el trabajo en equipo para reducir y/o de control del peso corporal de los adolescentes y fomentar hábitos saludables. La encuesta se realizó con estudiantes de 10 a 13 años, las escuelas públicas de Joinville-SC. La muestra estuvo constituida por 19 niños y 20 niñas. Los datos recogidos fueron el peso, la altura, tríceps y los pliegues subescapular. Los protocolos utilizados fueron Slaughter(1988) y la clasificación según Lohman(1987). Como instrumento fue considerado como el programa de natación y una conferencia celebrada sensibilización con los padres de la escuela. La prueba de Shapiro-Wilk mostró normal en todos los datos, por lo que adoptó la t de Student para muestras apareadas/independientes. Al contrario de lo que estaba ocurriendo, este grupo muestra mostró una disminución en el porcentaje de grasa durante el receso escolar. La hembra se redujo 7,98% y el 6,93% de los hombres en promedio. Este resultado puede estar relacionado con la conferencia: "La obesidad Efecto del pre-adolescentes y adolescentes y la importancia de la adquisición de hábitos saludables." Se consideró que existía la conciencia de los padres, fomentando la escuela positivamente en la regulación de la dieta y la actividad física, ayudando a controlar la tendencia de aumento de las tasas de obesidad. En este estudio, al contrario de lo que se encontró por Magri y Pereira (2010), los estudiantes de ambos sexos mostró una disminución en el porcentaje de grasa, de acuerdo con la clasificación propuesta por Lohman(1987).

Palabras clave: Obesidad, natación, escuela.

COMPORTAMENTO DA GORDURA CORPORAL DOS ESCOLARES DURANTE O RECESSO DAS ATIVIDADES PRÁTICAS DA NATAÇÃO

RESUMO

O Projeto NATESC/UNIVILLE ocorre para escolares, desde 2005 com aulas regulares de natação e duas avaliações antropométricas anuais. Durante o período de prática, o percentual de gordura tende a diminuir, porém no recesso escolar esses valores aumentam. Esse fator sugere estabelecer uma parceria com os pais para incentivar hábitos saudáveis. O objetivo foi desenvolver um programa de natação que priorize o trabalho em equipe - professores, alunos e pais – para a redução e/ou controle do peso corporal dos adolescentes e incentivo a hábitos saudáveis. A pesquisa foi realizada com escolares de 10 a 13 anos, das escolas pública de Joinville-SC. A amostra foi composta por 19 meninos e 20 meninas. Os dados coletados foram peso, estatura, dobras tricipital e subescapular. Os protocolos utilizados foram o Slaughter (1988) e a classificação segundo Lohman (1987). Como instrumento foi considerado o programa de natação e a palestra de sensibilização realizada com os pais dos escolares. O teste Shapiro-Wilk apresentou normalidade em todos os dados, portanto adotamos o teste t de Student para amostras pareadas/independentes e o teste F. Ao contrário do que vinha ocorrendo, este grupo amostral apresentou diminuição do percentual de gordura durante o recesso escolar. O sexo feminino diminuiu 7,98% e o sexo masculino 6,93% nas médias. Este resultado pode estar relacionado com a palestra: "O Efeito da Obesidade em Pré-adolescentes e Adolescentes e a importância de adquirir hábitos saudáveis". Considera-se que houve a sensibilização dos pais, encorajando os escolares positivamente na regularização da alimentação e na prática de atividades físicas, ajudando a controlar a tendência de aumento dos índices de obesidade. Neste estudo, ao contrário do que foi constatado por Magri e Pereira (2010), os escolares de ambos os sexos apresentaram diminuição do percentual de gordura, de acordo com a classificação proposta por Lohman (1987).

Palavras-chave: Obesidade, natação, escolares.