

31 - OBESITY AND HYDROGINASTIC PRACTICES IN SCHOOLS

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doi:10.16887/89.a1.31

1. INTRODUCTION

Obesity has been characterized as a major public health problem worldwide, being close to an endemic and present in all age groups, including children and young people. Technical development and technological innovations often contribute to children becoming more sedentary and less active (hypokinesia), aggravating obesity.

Physical activities are indicated as a form of great relevance to the fight against obesity, and in childhood by the physical and motor changes, can be an opportune moment to carry out a real work. The interaction of hereditary and environmental factors causes the results in children to be unsatisfactory, with excess body mass occurring according to the growth of each child (GALLAHUE and OZMUN, 2001).

Faced with what has been described previously, obesity when present and identified in childhood has great possibilities to present itself in adult life.

By promoting aerobic exercises, for example, in the aquatic environment, they offer benefits to the practitioner, and may present symptoms such as overheating, perspiration and feeling of exhaustion, causing the water to bring benefits and improving the discomforts. Thus, the question is: can schoolchildren with obesity benefit from water aerobics?

The study sought to research obesity and water aerobics as a form of physical activity for schoolchildren. It is also necessary to: promote the discussion about obesity and water aerobics, understand how physical activity contributes to quality of life and describe actions that make the difference when practicing physical activities in water aerobics.

It is worth mentioning that over the years, there has been a considerable increase in obesity in schoolchildren, mainly due to lack of physical activity. Thus, the practice of physical exercises started to be considered a therapeutic tool that serves obese schoolchildren, who can improve the reduction of body fat and the prevention of diseases such as diabetes and high blood pressure among others. In this context, aerobic exercises, which may be effective and promote the prevention of metabolic syndrome, are indicated (PINHO et al, 2017).

The metabolic syndrome is related to the lack of physical activity among other factors. However it has shown that it can be prevented with regular physical exercises and good physical conditioning.

Aerobic exercises bring health benefits and also help in the fight against obesity, however the execution mostly causes it to produce joint impact and for cases of obesity and overweight, the risk of injury is high, so the suggestion is in water aerobics, where a low-impact alternative should be considered (PINHO et al, 2017).

The methodology and action strategy used was a bibliographical research carried out by means of a survey of theoretical references analyzed and published by written and electronic means, such as books and scientific articles, allowing to know about the proposed theme (FONSECA, 2002). Gil (2007) says that the characteristic of the bibliographic research proposes to analyze the different positions about the presented problem.

2. OBESITY AND HYDROGINASTIC PROGRAMS

Obesity is an ancient metabolic change, having its earliest writings since the seventeenth century. Defined as an excess body fat syndrome. There are differences between what is normal and arbitrary obesity, but it becomes obese when "the volume of adipose tissue increases and physical and psychological health becomes affected, worsening the quality of life" (MANCINI, 2001).

For McArdle, Katch and Katch (2008), obesity is defined as the excess accumulation of fat in the body implying health, when the energy consumption exceeds the energy expenditure. Studies indicate that obesity is present in childhood, increasing the probabilities to flourish obesity in adult life, when the comparison in normal body fat occurs.

Obviously, according to Guedes and Guedes (1998), the difference between the term overweight, that is, "obesity has a state of greater than normal amount of fat", while "overweight presents the weight total body, exceeds the imposed limits".

The body mass index (BMI) can be evaluated using the equation proposed by Gordon and Collaborators (1998, apud BAIA et al, 2014), with body mass - MC and stature - EST. After collecting the information, the Body Mass Index is calculated using the formula: BMI = mass (kg) / stature² (m²), based on the specific reference values for sex and age proposed by Cole et al. (2000, apud BAIA et al, 2014).

Observe the table of classification of obesity, taking into account BMI values and the respective risk of presenting a disease:

TABLE 1: CLASSIFICATION OF THE BODY MASS INDEX (BMI)

Ranking	BMI (kg/m ²)	Risk of Comorbidities
Low weight	<18.5	Low (increased risk due to other problems)
Normal variation	18.5 – 24.9	Medium
Pre-obesity	25.0 – 29.9	Increased
Obesity class I	30.0 – 34.9	Moderate
Obesity class II	35.0 – 39.9	Serious
Obesity class III	≥ 40.0	Very serious

Source: World Health Organization (2000).

Prevalence and excess in the person and obesity in children and young people is worrying about the rampant increase in the world.

According to McArdle, Katch and Katch (2008), obesity is present in childhood and shows a probability that the child is an obese adult. Therefore, the more premature the onset of physical activity in children, the lower the chances of developing problems that occur due to obesity such as heart attacks, strokes, high cholesterol among others.

Metabolic syndrome is described as syndrome X or insulin resistance syndrome, described as the deadly quartet or plurimetabolic syndrome, described by the combination of cardiovascular risk factors such as hypertension, insulin resistance, hyperinsulinemia, glucose / diabetes intolerance type 2, central obesity and dyslipidemia (LDL-high cholesterol, high triglycerides and low HDL-cholesterol) (CIOLAC, GUIMARÃES, 2004).

Metabolic syndrome is also described as a complex disorder, represented by a set of cardiovascular risk factors, usually related to central fat deposition and insulin resistance. It is worth mentioning that the junction of the metabolic syndrome and cardiovascular disease, increase overall mortality by approximately 1.5 times and cardiovascular mortality by 2.5 times (BRAZILIAN SOCIETY OF CARDIOLOGY, 2005).

Leon (2013) points out that the risks that obesity brings to the child's health are related to orthopedic alterations, hypertension, dermatological and respiratory disorders, increases in cholesterol and triglycerides levels, and lead to adulthood such as hernias, varicose veins, coronary diseases, atherosclerosis, among other comorbidities. The same author indicates that the factors leading to obesity are "genetic, environmental, cultural, ethnic and psychosocial."

The etiology of obesity is related to several factors such as biochemical, dietary and behavioral, which help in the accumulation of fat in the body. The pathophysiology of obesity is in complexity and precarious understanding (DEMARIA, 2007 apud SOUZA; PAVANELO, 2008). Observing in the common sense, obesity happens to be seen as an energy imbalance, that is, "energy ingested, is greater than that spent for a considerable period of time, where diverse and complex factors give rise to a positive energy balance." In this approach, obesity results in a greater energy balance than the gradual weight gain that persists for a considerable period, unbalancing and becoming a chronic disease.

Obesity is a state, which presents physiological processes that maintains the body mass presented. Individual susceptibility demonstrates that epidemiology shows primary causes related to environmental and behavioral issues, while some genetic alterations are also present in the population, since the increase of fat in foods, diets with energy density and sedentary lifestyle are factors to increase of body mass.

When presented with a picture of obesity, the health consequences appear in different ways, being able to prematurely take life or diseases that weaken the organism, worsening the quality of life (MALNICK et al, 2006 apud SOUZA; PAVANELO, 2008).

The so-called obesity-related comorbidities indicate the severity of the disease. "When obesity and excess body mass can present biological disorders, social problems, problems at work and emotional order." A silent disease is insulin resistance, reducing oral glucose tolerance, acquiring type 2 diabetes, cardiovascular problems, hypertension, biliary and neoplastic disorders, joint disorders. In relation to social problems there are many limitations, also causing problems at work in which progress and getting a job is difficult. Regarding emotional issues, depression is the case of greater relevance.

According to Souza; Pavanelo (2008) sedentary lifestyle has been increasing the number of people causing obesity, occurring to morbidity and mortality. The WHO - World Health Organization describes obesity as an epidemic, present in the lives of many children, adolescents and adults, indicating as the second leading cause of death in the world. With the advancement of technology and studies, science has shown that some measures may contribute to the battle against this disease.

By understanding the excess body mass, classified as overweight and obese have worried all those linked to health, especially in the period of childhood. In Brazil the evaluation of the nutritional status of children is on alert. The WHO (2015) has reported the number of children and adolescents with obesity and overweight increasing from 32 million in 1990 to 42 million in 2013. At this level estimates indicate until the year 2025, more than 70 million children will be hit hard globalized Pegolo and Silva (2008) say that "this phenomenon is occurring in inadequate nutritional factors", worrying the quality of life of schoolchildren.

In this context, the interventions performed by multidisciplinary teams appear, since obesity occurs due to the "erroneous ingestion of calories, associated to sedentarism", collaborating so that these people become obese (SOUZA; PAVANELO, 2008).

The Secretariat for Human Rights (2006) also points out that in the age group 5 to 9 years, children with excess body mass reach 33.5%. In adolescence, the percentage is 20.5%.

The indicators point to the increase of excess body mass in overweight and obesity, to levels of concern among practically all the age groups of the Brazilian population (2016). There are critical periods for the development of greater accumulation of body fat, which pose greater risks for the onset of obesity: gestation, first year of life, pre-school age between 5 and 7 years of age, and adolescence, as stated by Josué and Rocha (2002). Regarding obesity, they indicate that its etiology is multifactorial, where the factors may be characterized as follows: biochemical, dietary and behavioral.

When obesity problems occur, the first word that appears automatically relates to weight loss, being a form of treatment, the balance between calorie intake and energy expenditure. Other forms of treatment, such as diet, drugs, surgery, behavior change, mutual support groups, psychoanalysis and psychotherapy, as well as physical activity, are the subject of study in this article. Dionne and Tremblay (2003) says that;

Physical exercises are considered one of the most effective treatments against excess body mass because they promote the restoration of energy and fat balance by increasing energy expenditure and fat oxidation, at rest and during exercise. In combination with nutritional changes, they help further the maintenance of body mass loss, since diet causes a decrease in central nervous system activity and energy expenditure. Exercise, in turn, is an efficient way of counteracting this difficulty, since it increases activity in the central nervous system, increasing energy expenditure and oxidation of fats.

Still in this line of reasoning, realizing the relevance of physical activity, is in thinking it as indispensable for the human being. Thus, when characterized by Guedes and Guedes (1998), body movement when performed contributes to energy expenditure.

The difficulty of energy expenditure has occurred due to changes in the modern world of technology and mechanization, making the practice of physical activity, prevention, conservation and improvement of the physiological patterns of the human being (PELLEGRINOTTI, 1998).

Physical exercises may be indicated to improve the obesity situation, in which case the study indicates water aerobics. It is a Greek word defined as 'gymnastics in the water', being an ancient activity. Souza; Pavanelo (2008) defines the

word aqua-gymnastics in a simple way, "aquatic activity and / or modality of physical exercise in the aquatic environment, performed in programs of body mass control". The advantage of using movements in the water, and the reduction of joint overload and with great aerobic intensity.

It is pointed out that energy expenditure is not occurring due to social changes, resulting from modernization and presenting sedentary lifestyle. Unfortunately the energy expenditure is not occurring, since the person uses motorized transportation and mechanical equipment present at home and at work, causing these people not to perform tasks that require movement.

Who (2000 apud BORGES, 2007) says that "by shifting, from a historical perspective, physical activities related to work decreased in the last decades, while free time is employed in activities in which energy expenditure is lower."

The activities performed within the water promote in the individual sensation of reduction in weight, tension on muscles and joints. Thus, the exercises related in the class, offer facilities and yields that do the greater number of activities, for a greater time. Water also reduces the impact, pain and muscle spasms after the activities. Bonachela (1997) says that water aerobics develops an aerobic exercise, causing high caloric expenditure, strengthening the muscles, recovering lesions, and helping physical conditioning, injuries, muscular strength and improving body composition. For Barbosa (2009) "the exercises performed within the class spend a quantity of calories once and a half times greater than the same modality in the soil".

When using water aerobic activities, it has the function of triggering physiological reactions in the body, reacting to each stress situation with the liquid medium and water temperature, immersion and duration of immersion, intensity and duration of exercise; Rocha (2001). In this sense, the physical properties of the aquatic environment make the energy cost of exercise in the water different from those that determine exercises on earth. The relevance of the exercises causes that the energy expenditure in the water, when compared to the movements of the earth varies of the depth and temperature of the water and the speed of the realized activity.

It is described that the aquatic environment, it offers physical property, that collaborate to improve the energetic cost of the exercise in the water. Thus, the pattern of movements in the water collaborates so that there is an impulsive force reduces the corporal mass of the body, by the force of gravity (VARELA, 1999).

The benefits of aquatic activities indicate that water exercises have properties with therapeutic effects improving the following aspects, according to Grimes; Krasevec (2002) are:

- Improvement in cardiopulmonary condition and aerobic conditioning;
- Reduce fat mass;
- Improve strength and muscular endurance;
- Improve flexibility, muscle spasms, pain;
- Improves joint overload with the force and thrust exerted by - water;
- Improve breathing during exercise.

In the context of obesity and the need for physical activities, when it offers physical activities in water aerobics for obese people, who need to lose weight and reduce mass of adipose tissue and can not perform solo exercises, because they require movements that hinder them. Thus, water exercises help because flotation and immersion reduces stress in weight bearing joints compared to soil exercises (KRUEL, 2000).

Water exercises are indicated by the effects of resistance imposed by water, making it possible to expend energy with little effort to the joints to the lower limbs and to increase the intensity, frequency and duration of the exercises, reducing the risk of trauma (LEITE, 1984).

There is still a suggestion of running water exercises by obese people to be beneficial in an exercise program that utilizes the specific high heat and water conductivity, increasing the body's ability to remove heat, causing water to improve stress during exercises (Mcardley, Katch and Katch, 2008).

On the benefits of exercise in water, making the obese gain confidence and realize being able to perform physical activities, causing caloric expenditure to help decrease body mass (KRUEL, 2000). In childhood, being overweight and childhood obesity is a fact, it is necessary to develop aquatic activities in a playful way and making it more pleasurable, realizing that it needs to improve the resistance, reduce the monotony and make realize that the exercises can collaborate.

3. FINAL CONSIDERATIONS

Retrieving the study objective through bibliographic research, the topic obesity was explored in schoolchildren, indicating water gymnastics as a form of physical activity, collaborating so that in the future there is a guarantee of quality of life.

It was observed that the studies surveyed indicate the prevalence of excess body mass in the general population, affecting all age groups, in this case, the research sought the students, showing a high prevalence of overweight and obesity.

Thus, when physical activity of water aerobics was indicated, great benefits were perceived and could prevent children in childhood from becoming obese and treat schoolchildren in the infanto-juvenile age, who are sedentary and do not practice physical activities.

Thus, the practice of physical exercises can function as a therapeutic tool, aiming to decrease body mass and prevent the occurrence of diseases. In the various types of exercises, aerobics appear that besides contributing to the reduction of glycemia, insulinemic and pressure, it improves the metabolic syndromes.

With regard to the proposal of offers water aerobics, it presents significant results, mainly in the joint impact, recurrent physiological alterations that from the clinical point of view improves the emotional conditions of adrenaline.

Therefore, the practice of physical exercises such as water aerobics, makes it possible to act positively in the prevention of diseases related to excess body mass, causing the Body Mass Index (BMI) to suffer a reduction. This modality of physical exercise improves aerobic physical conditioning, showing to be effective and collaborating so that health and quality of life are in balance.

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ABSTRACT: The article has the theme obesity in schoolchildren, indicating the program of hydrogymnastics as a form of physical activity. Obesity at present affects all age groups and large numbers of people in the world population. The objective of the study was to research on obesity and physical activities of water aerobics that can collaborate with schoolchildren regarding the better quality of life. The methodology and action strategies used were exploratory and bibliographic research. The results indicate that obesity is really worrisome and physical activity in an aqua-gymnastics program can help reduce body mass and help comorbidities not occur, improving quality of life. The final considerations indicate that the practice of physical exercise in hydrogymnastics prevents diseases that occur when there is excess body mass, causing the BMI to reduce. In this practice the physical activities, collaborate with the aerobic physical conditioning, important for the activities of several mechanisms of the human being.

Key words: Hydrogeology, Obesity, Schooling.

RÉSUMÉ: Cet article a pour thème l'obésité chez les écoliers, indiquant le programme d'hydrogymnastique comme forme d'activité physique. L'obésité touche actuellement tous les groupes d'âge et un grand nombre de personnes dans la population mondiale. L'objectif de l'étude était de faire de la recherche sur l'obésité et les activités physiques d'aérobic aquatique pouvant collaborer avec les écoliers pour une meilleure qualité de vie. La méthodologie et les stratégies d'action utilisées étaient des recherches exploratoires et bibliographiques. Les résultats indiquent que l'obésité est vraiment inquiétante et que l'activité physique dans le cadre d'un programme d'aquagymnastique peut aider à réduire la masse corporelle et à éviter les comorbidités, améliorant ainsi la qualité de vie. Les dernières considérations indiquent que la pratique de l'exercice physique en hydrogymnastique prévient les maladies qui se produisent lorsque la masse corporelle est en excès, entraînant une réduction de l'IMC. Dans cette pratique les activités physiques, collaborent avec le conditionnement physique aérobic, important pour les activités de plusieurs mécanismes de l'être humain.

Mots-clés: hydrogéologie, obésité, scolarisation.

RESUMEN: El artículo tiene el tema obesidad en escolares, indicando el programa de hidrogenástica como una forma de actividad física. La obesidad en la actualidad alcanza a todas las edades y gran número de personas de la población mundial. El objetivo del estudio fue investigar sobre la obesidad y actividades físicas de hidrogenástica que pueden colaborar con los escolares en lo que se refiere a la mejor calidad de vida. La metodología y las estrategias de acción utilizada fue investigación exploratoria y bibliográfica. Los resultados indican que la obesidad realmente es preocupante y la actividad física en un programa de hidrogenástica puede colaborar para que haya reducción de la masa corporal y ayudar a que las comorbidades no ocurran, mejorando la calidad de vida. Las consideraciones finales indican que la práctica de ejercicios físicos en la hidrogenástica previene las enfermedades que ocurren cuando hay exceso de masa corporal, haciendo que el IMC disminuya. En esta práctica las actividades físicas, colaboran con el acondicionamiento físico aeróbico, importante para las actividades de varios mecanismos del ser humano.

Palabras Clave: Hidrogenástica, Obesidad, Escolares.

RESUMO: O artigo tem o tema obesidade em escolares, indicando o programa de hidrogenástica como uma forma de atividade física. A obesidade na atualidade atinge todas as faixas etárias e grande número de pessoas da população mundial. O objetivo do estudo foi pesquisar sobre a obesidade e atividades físicas de hidrogenástica que podem colaborar com os escolares no que se refere a melhor qualidade de vida. A metodologia e a estratégias de ação utilizada foi pesquisa exploratória e bibliográfica. Os resultados indicam a obesidade realmente é preocupante e a atividade física num programa de hidrogenástica pode colaborar para que haja redução da massa corporal e ajudar para que as comorbidades não ocorram, melhorando a qualidade de vida. As considerações finais indicam que a prática de exercícios físicos na hidrogenástica previne as doenças que ocorrem quando há excesso de massa corporal, fazendo com que o IMC reduza. Nesta prática as atividades físicas, colaboram com o condicionamento físico aeróbico, importante para as atividades de vários mecanismos do ser humano.

Palavras – Chave: Hidrogenástica, Obesidade, Escolares.