74 - LIFESTYLE AND CARDIOVASCULAR APTITUDE

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INTRODUCTION

It is observed nowadays that several studies have been doing research on growth and nutritional status, flexibility, obesity, cardio-respiratory capacity, showing concern with the physical and physiological capacity of children and adolescents. The merit of this type of study consists in demonstrating the profile of the surveyed population. However, there is a need to go beyond the diagnosis phase and propose intervention alternatives, particularly if we take it that the school is the institution responsible for formal education and for the spreading of certain behaviors throughout the population. On the other hand, the variables herein referred to are directly related to the habits and lifestyle.

Krebs and Pohl (2000), in an article where they address the growth profile and the nutritional status of school children in Santa Cruz do Sul, highlight the importance of the Constant evaluation of variables related to both food and life habits. Marques (1991), highlights for this population the importance of some variables, among them the lung and cardio-respiratory systems. In addition, "the organs and the systems of children and Young people adapt relatively well to aerobic burdens", therefore, the response of the infantile and Young organisms to the effort of these characteristics is considered to be "positive and adjusted" (MARQUES, 1991, p.88). Thus, given the importance of the organism's adaptation to the long lasting solicitations, which depend on the aerobic capacity, the present paper aims to present the results of a study on the cardio-respiratory capacity of a group of 13 and 14 year olds, of a private school in Santa Cruz do Sul, RS, BR.

Cardio-respiratory capacity and lifestyle

One of the risk factors for coronary diseases is sedentary life. According to *Healthy People 2000: National Health Promoting and Disease Prevention Objectives* apud Powers and Howley (2000), an increase in the number of physical activities is necessary to improve the cardio-respiratory function, which can be measured by comparing the VO2max., with health indicating patterns. From an aerobic point of view, the more efficient an oxygen providing system and blood flow distribution is, the better the functional capacity of this system, and therefore the cardio-respiratory resistance is related to the development of the cardiovascular and cardio-respiratory systems. A great number of scientists consider the VO2max. as the representative of the aerobic power and as the best manner to measure cardio-respiratory resistance. (WILMORE e COSTILL, 2000; POWERS e HOWLEY, 2000). According to Wilmore and Costill (2000), the cardio-respiratory capacity is intimately related to the offer and support of oxygen to the needs of the active muscles, because, according to Carpenter (2002), they require up to 20 times more oxygen as compared to a state of repose. To Ghorayeb and Barros (1999),

Maximum consumption of oxygen can be defined as the biggest volume of oxygen per unit of time that an individual manages to capture breathing atmospheric air during an exercise. It has been taken as the main reference pattern of cardio-respiratory aptitude, and is expressed in liters per minute (l/min.) or milliliters per kilogram per minute (ml/kg/min.) (GHORAYEB e BARROS, 1999, p.16).

Therefore, the VO2max. can be considered an indicator of the potential for work and resistance, degree of training (Ghorayeb and Barros, 1999). Trained subjects execute resistance activities with less effort and higher speed, improving their performance (WILMORE and COSTILL, 2000). Under the influence of training, what occurs is not only a higher VO2max., but also the consumption of oxygen in repose increases slightly after aerobic resistance training. The higher the initial conditioning state, the smaller the relative improvement for the same training program, therefore if two individuals are subjected to the same resistance training exercises, a sedentarian and a slightly trained individual, the sedentarian will have a relatively higher improvement in his cardio-respiratory capacity, and consequently of his physical aptitude related to this point. In short, a good cardio-respiratory aptitude is directly associated with the global aptitude for health, making it possible for human beings to participate in different activities, such as occupational, recreational and leisure, which are supposed to make up the everyday life of people (TRISCHLE, 2003).

Upon seeking a healthier life, the cardio-respiratory aptitude is directly related to active lifestyle. To Mendoza and Sagrera (apud Mattos et al. 1996), lifestyle is "a set of behavior patterns which define the common manner of life of an individual in a group" ((p. 8), and is associated "with the manner they relate to the learning of an individual in his socialization process and to the life conditions in this group" (p.8). However, we must consider the importance of the opportunity of individual choices (Sen, 2000), once the option of a great part of the population is restricted to survival, or, or as referred by Mattos et al. (1996), many confront themselves "with fundamental questions related to the existence, survival and human rights" (p. 8). What derives from this is the importance of the school in its function to make available options that lead to a more active life, once, according to Green (*apud* Mattos et al.,1996) the pedagogical interventions that lead to behavioral choices linked to health are important.

Nevertheless, QUADROS and KREBS (1998), demonstrate through a survey of 6 to 11 year old students that the levels of physical aptitude are below the Reference Pattern used, inducing them to conclude that the School Physical Education Program is not providing physical activities able to develop levels of physical aptitude appropriate for this age group. As the teenagers rarely show symptoms related to degenerative diseases, little is invested in their school education, although, according to Oliveira et al (2003), "the promotion of healthier lifestyles, for adolescents, has been pointed out as one of the essential elements for improving individual and collective health levels", once studies "have demonstrated that behaviors and attitudes at this stage of life can (...) predict or affect the health conditions of adult life" (p. 72). According to Guedes (1995), "there seems to be logical foundation for changing the directives offered to the Physical Education classes toward an educating-for-health focus", and besides providing a satisfactory physical aptitude, seeking the acquisition of the physical exercises habit, this has led many schools to provide school sports clubs in addition to the curricular physical activities, trying a more intense involvement of their students with sports activities, thus leading to a physically active life. Within this context, Physical Education in school, according to Schmidt a*pud* Schwendler (2004), is seen as the ideal place for promoting regular physical activities, as a great number of school children regularly attend these classes whose primordial objective is higher physical aptitude and the promotion of health, and it is up to the Physical Education professional to rethink his role as promoter of active lifestyles (TOSCANO, 2001).

Methodology

The present study is characterized as group comparative exploratory descriptive. The subjects of the study were 13 teenage girls and 7 teenage boys, students of the 8th year in a private school in Santa Cruz do Sul. The variable studied was aerobic resistance, evaluated according to the protocol of Brazil Sports Project (PROESP-BR), of the Ministry of Sports and Tourism, Sports Excellence Center, CENESP-UFRGS, according to the 9 minute test and corresponding classification.

Results

Of the surveyed students, 76% attend Physical Education classes and take part in school sports clubs, however, only 32% of them show cardio-respiratory aptitude within the minimum levels indicated for good health by PROESP-BR *apud* SCHWENDLER (2004), pointing to the fact that the reflections of these activities are not evident in the cardio-respiratory aptitude levels, as expressed by the following results.

It was observed that the participation or not in sports clubs, besides the Physical Education classes, did not show relevant differences in performance so much that some girls who participate in clubs achieved lower rates than others who only do Physical Education, might derive from the biological individuality principle, and the activities provided by the clubs might have an effect on some girls, and another effect on other girls, without providing the same benefits to all of them. The same result came up with the boys. (Illustration 1 e 2).

As shown in illustration 3, of the five 13-year-old girls who took the 9 minute test, four showed a performance rate below the minimum considered healthy by PROESP-BR (2000), in spite of doing physical activities in the physical Education classes and in the school sports clubs, and considering that one student achieved the recommended rate for health (subject 3),

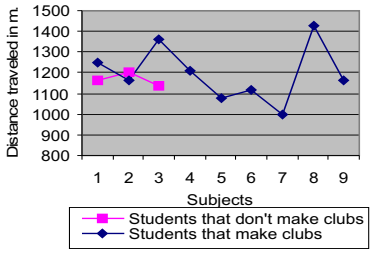

Illustration 1. Comparative chart of female performance.

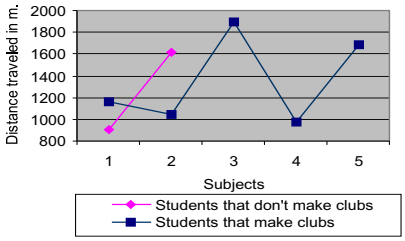

Illustration 2. Comparative chart of male performance.

over 1300m. Of the 13 year old boys, only one achieved the performance rate within the 1450-2000m range in the 9 minute test. It was subject 3, who, besides the Physical Education classes and school sports clubs, runs regularly, confirming the statements by Wilmore and Costill (2000), that aerobic training can improve the VO2max. All other students had a performance way below the 1450m, attesting to a cardio-respiratory capacity below the desired rate considered healthy for their age.

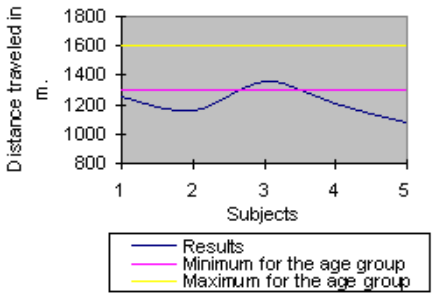

Illustration 3. Comparative chart of girls performance 13 years old

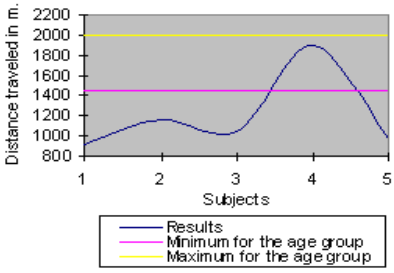

Illustration 4. Comparative chart of boys performance 13 years old.

As girls aging 13 years old, children aging 14 years old had unsatisfactory performance, considering that the majority attended to physical education classes and school sport clubs, as can be seen in illustration 5. The healthy index in the 9 minutes test (1300-1750m) was reached only for one girl that attended to school clubs and physical education classes, fact that take us to consider that the activities offered to the girls aging 13 and 14 years either in physical education classes or school sport clubs are not promoting the development of the cardio respiratory capacity in adequate levels for health. These data confirm those of Gaya (2000), in Porto Alegre, where girls aging 13 and 14 years old were also bellow the standard indexes of reference used. Boy aging 14 years old (Illustration 6) had fitness over the minimal level expected for their age, being within the range of 1550-2000m, which also agree with the data of Gaya (2000), that showed the boys in this age had levels above the standard indexes of reference used.

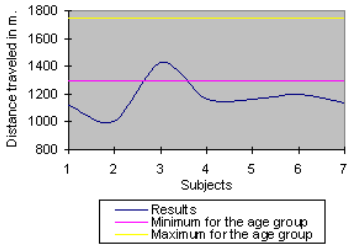

Illustration 5. Comparative chart of girls performance 14 years old

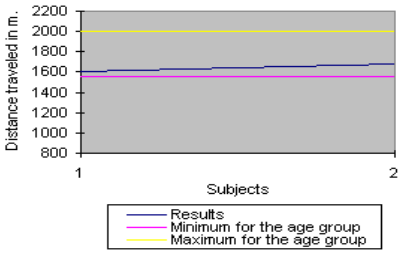

Illustration 6. Comparative chart of girls performance 14 years old

CONCLUSION

The results of the research showed the participation of the studied school-aged individuals in school sport clubs together with the physical education classes did not change significantly their cardio respiratory condition as observed by the 9 minutes test. Because, individuals not attendant to school sport clubs showed very similar results to those which were participants. When one considers the capacity intervals for a good health of the PROESP-BR (2000), we perceive that few school-aged boys and girls show cardio respiratory capacity above the minimal limit for health. We also verify that boys in general showed higher results than girls in all age intervals. Form the 13 and 14 years old girls, only one in each age interval reached the minimal index for a good health. Boys had higher indexes, mainly those which are enrolled in running activities as resistance training.

We can consider from this study that either the classes of physical education or school clubs have not been enough to generate the development of cardio respiratory capacity. This fact can be related to the frequency of the classes of physical education that, nowadays, occur in most schools two times a week (50 minutes each), which does not favor the occurrence of physiological adaptations adequate to the development of the individuals. Conversely, clubs have been developing activities directed to the sport technique, taking o into consideration factors that are considered as needed to the physical adaptation related to health. Therefore, there is a need that the schools offer in spite of sport techniques seen in the classes of physical education and in sport clubs, also programs directed to activities aiming the development of health related skills, creating the habit of a healthy life that maintains up to the adulthood.

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LIFE STYLE AND CARDIOVASCULAR APTITUDE .

ABSTRACT

This study aimed to compare differences in cardiovascular aptitude in students of the 8th grade enrolled only in physical education classes and students that besides enrolled in physical education classes are also enrolled in sport school. This study was descriptive exploratory been evaluated 13 females and 7 males aging 13 and 14 years of a private school of Santa Cruz do Sul, RS, Brazil. The study variable was the cardiovascular aptitude obtained by a survey questionnaire and the test of 9 minutes proposed by the PROESP-BR (2000). Results showed there was not difference in the cardiovascular aptitude between the participating students that only enrolled in physical education classes plus sport clubs. It was also observed that most students did not obtain satisfactory when compared to the gold standards of health given the age and sex of the individual. Therefore, results pointed out the either physical education classes a and sport clubs have not been enough for the development of the cardiovascular aptitude of the students, i.e. they are not offering motor activities able to develop levels of fitness related to health adequate to this age interval.

Key words: cardiovascular aptitude, physical education, school sports clubs.

STYLE DE VIE ET APTITUDE CARDIORESPIRATOIRE.

RÉSUMÉ

Cet étude à eu pour but la comparaison des différences dans la capacité cardiorespiratoire des élèves de l'huitième sèrie scolaire, soumis à des cours d'education physique et aussi à des élèves en dehors de cours d'éducation physique appartenant à des associations scolaires et sportives. Dans cet essai exploratoire et comparatif, treize jeunes filles et sept garçons agées entre treize et quatorze ans respectivement ont été observés. La variable analisée étant l'aptitude cardiorespiratoire, et pour la collecte des données ont a apliqué un questionnaire de sondage ainsi qu'un test de neuf minutes preparé par le PROESP - BR (2000). Les résultats ont montré que n'existent pas de differences dans l'interprétation cardiorespiratoire entre les élèves que suivent seulement des cours d'education physique et ceux qui suivent des cours dans les associations sportives. On a aussi observé que la plupart des élèves n'ont pas obtenu des résultats satisfaisants, comparés

à des chiffres récommandés de santé pour leur âge et sexe. Ainsi, les résultats obtenus démontrent que les cours d'éducation physique et les clubs sportifs laissent à desirer dans leurs resultants concernant l'aptitude cardiorspiratoire des élèves, dans d'autres termes, ils ne sont pas en train de optimiser les activités que puissent dévélopper des niveaux d'aptitude physique en étroite rélation avec la santé et en équation avec cette ligne d'âge.

Mots - clef: aptitude cardiorespiratoire, éducation physique, associations scolaires et sportives.

ESTILO DE VIDA Y APTITUD CARDIORRESPIRATORIA.

RESUMEN

El presente estudio tuvo como objetivo comparar diferencias en la capacidad cardiorrespiratoria de alumnos de 8º año, sometidos solamente a clases de Educación Física y alumnos que participan, además de las clases de Educación Física, de clubes escolares deportivos. En el estudio descriptivo exploratorio comparativo de grupo fueron sujetos trece niñas y siete niños, alumnos de una escuela particular de Santa Cruz do Sul, con edades entre 13 y 14 años. La variable estudiada fue la aptitud cardiorrespiratoria, siendo que para colecta de datos fue utilizado un cuestionario de sondeo y el test de 9 minutos propuesto por el PROESP-BR (2000). Los resultados apuntaron que no existen diferencias en el desempeño cardiorrespiratoria entre alumnos que practican solamente clases de Educación Física y que practican estas clases sumadas a los clubes deportivos. Se observó también que grande parte de los alumnos no obtuvo desempeño satisfactorio, cuando comparado a las fajas recomendadas de salud para su edad y sexo. Por lo tanto, los resultados apuntan que, tanto las clases de Educación Física como los clubes deportivos no están siendo suficientemente eficientes para el desarrollo de la aptitud cardiorrespiratoria de los alumnos, es decir, estos no están oportunizando actividades que puedan desarrollar niveles de aptitud física relacionada a la salud, adecuados a esa faja etaria.

Palabras clave : aptitud cardiorrespiratoria, educación física, clubes escolares deportivos

ESTILO DE VIDA E APTIDÃO CARDIORRESPIRATÓRIA.

RESUMO

O presente estudo teve como objetivo comparar diferenças na capacidade cardiorrespiratória de alunos de 8ª série, submetidos somente a aulas de Educação Física e alunos que participam, além das aulas de Educação Física, de clubes escolares esportivos. Caracterizou-se a pesquisa por um estudo descritivo exploratório comparativo de grupo; foram sujeitos treze meninas e sete meninos, alunos de uma escola particular de Santa Cruz do Sul, com idades entre 13 e 14 anos. A variável estudada foi a aptidão cardiorrespiratória, sendo que para coleta de dados foi utilizado um questionário de sondagem e o teste de 9 minutos proposto pelo PROESP-BR (2000). Os resultados apontaram que não existem diferenças no desempenho cardiorrespiratória entre alunos que praticam somente aulas de Educação Física e que praticam estas aulas, acrescidas de clubes esportivos. Observou-se também que grande parte dos alunos não obteve desempenho satisfatório quando comparado às faixas recomendadas de saúde para sua idade e sexo. Portanto, os resultados apontam que, tanto as aulas de Educação Física quanto os clubes esportivos não estão sendo suficientemente eficientes para o desenvolvimento da aptidão cardiorrespiratória dos alunos, ou seja, estes não estão oportunizando atividades que possam desenvolver níveis de aptidão física relacionada à saúde, adequados a essa faixa etária.

Palavras-chave: aptidão cardiorrespiratória, educação física, clubes escolares esportivos.