111 - STUDY OF CARDIOVASCULAR RESPONSES DURING BODY PUMP CLASSES

ANDRÉ LUIZ QUAGLIOZ COSTA
UNIVERSIDAD CATOLICA NUESTRA SEÑORA DE LA ASUNCIÓN
ASSUNÇÃO, PARAGUAI
profandre@globo.com

INTRODUCTION.

The Science of Physical Education, no doubt, has advanced significantly in recent decades, particularly with regard to the physiology of exercise. However, we realize that most of the scientific literature has focused on the sport, leaving open space for the investigation of non-sport physical activities such as the activities carried out in gyms.

Technology has brought progress and, together with it, the diseases associated with hyperkinesias or inactivity. Thus, man is aware of the importance of the practice of physical activities, and different are the reasons that led the exercise, including: aesthetics, health, fitness and quality of life (GOMES, 1994; Novaes, 2001).

Novaes (1991) argues that there are numerous options for those seeking to practice a physical activity, and today one of the most sought after is found in gyms

These have become alternative sites to individual practice of outdoor activities, without professional guidance, or practice of sports found in elite clubs. The high level of skill required for the practice of sports activities has caused people to return to school, turning them into a good option to replace the sports clubs and related spaces (Novaes & Vianna, 2003).

Da Costa et al. (1996) argue that health clubs have emerged in the 30s and, by 1970, gained a new and played a major role in the social growth of the fitness in the world. In the late '70s and early '80s, there was a large explosion in the number of fitness centers throughout the country. This rapid expansion has led to other alternative activities emerge, in addition to fitness, bodybuilding, dance and fights. Costa (1996) comments that the proliferation of health clubs is an international phenomenon. An estimate made in 1984 by the Brazilian Association of Academies of Physical Activities and Sports (ABRAF) refers to the existence of 6000 thousand stores in the state of Rio de Janeiro.

The fitness centers have served as a field of research for a quantitative scholars. In recent years, growing interest and need to investigate this area of knowledge, highlighting the numerous dissertations and theses. (Lacerda, 1995, Pereira, 1996; Gerheim, 1996; SAMULSKI et al. 1997; Novaes, 1990, 1998; COELHO FILHO, 1998; MENEZES Dantas, 1998, COSTA, 1998; new saint, 1999, MELLO, 2002; MULLER, 2002; FARIA 2002, MALTA, 2002).

In these studies, there was a major concern with aspects of aesthetics, health and quality of life, and that awareness of the improved quality of life, from the practical activities in academia, has been presenting an increasing degree, and demonstrating its importance in our society. Tubino (1973) confirms the above position, warning that issues relating to the practice of physical activities these days are invariably located in the social perspectives of culture and quality of life.

ACSM (2000) adds that the maintenance or enhancement of muscular strength and muscular endurance allows any individual to perform tasks with less physiological stress, helping to maintain functional independence for a lifetime.

Thus, they become important research that will contribute to a better understanding of such activities, providing scientific support to them and the professionals who teach their practice.

According to Ferrari and Guglielmo1, a large number of activities have been offered in gyms, and the more practiced at present are those operating in the form of relief, such as Body Pump, Body Combat, Spinning, Power Jump, among others.

Regarding the mode that we investigated, Body Pump, Less Mills 2 seconds, this activity is present in over 60 countries, which reinforces the importance of investigating it.

OBJECTIVES

This study aimed to verify the effects of training in the BODY PUMP heart rate levels between the songs on the training class, students among adult non-athletes, noting that the heart rate training zone remained in the burning lipid

Inferential analysis

We evaluated the initial heart rate five minutes before the beginning of class and at the end of each song (test phase), totaling over 10 new measurements of heart rate. The survey was conducted in the mix of body pump 74.

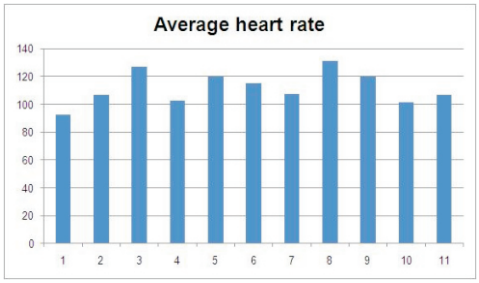
PRESENTATION AND DISCUSSION OF RESULTS.

Characteristic sample

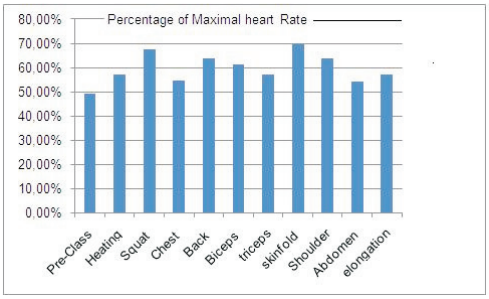
The study sample consisted of 15 participants (n = 15). The students were selected and evaluated by the factor of age, aiming to set the maximum heart rate according to the formula of Jones for females (HR Max = 205 - (0.5 x age))

Presentation of data collected

In Graph 1 we find the analysis of the overall average of 15 students regarding the 10 songs that have training in body pump.

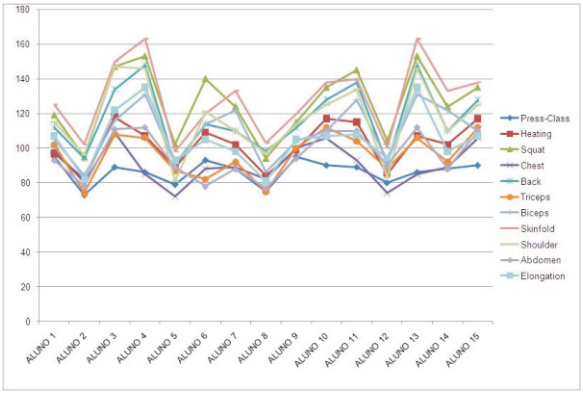


Regarding the second graph the percentage of maximum heart rate, the students reached the peak of 69.68% of maximum heart rate and a minimum value of 53.98%



Therefore in Figure 2, we observed that the ratio of percentage of heart rate, which the students remain in the burning zone of lipid from 60% to 70% of maximum heart rate.

In relation to Figure 3, there was a pattern of behavior similar among students regarding the measurement of frequencies



CONCLUSION

It was concluded that regardless of where the selection of repetition / overload is a continuation of single repetitions maximum or near maximum by series / 100 series of repetitions, there is a positive effect on heart rate, working in the burning zone lipid where it was found in an average percentage of maximum heart rate of 60.54% ± 9.5% and an average of 188 ± 16 beats per minute the heart, and the general welfare of the participant. Where he met a standard deviation> 1, meaning a true value and the distortion of the sample which is 0.595924

So in order to be able to achieve reduction of body fat in the medium and long-term practice of BODY PUMP with a short time, because the heart is located in the zone of burning fat from 60% to 70% (ACSM 1999, 2000), thus facilitating their daily activities.

Recommendations

The frequency, intensity, duration and type of exercise determine the efficiency of a training / exercise on reducing body fat and improvement of various components of physical fitness. The most widely followed guidelines for health and physical condition are released by the American College of Sports Medicine (2000). The position of the ACSM for the quantity and quality of training for the development and maintenance of aerobic fitness, body composition, muscular strength and endurance in healthy adults includes the following recommendations: Frequency of training 3-5 days a week.

Therefore the BODY PUMP is an efficient way of training that meets most criteria of ACSM in a gym class conference.

KEYWORDS: Body Pump, heart rate and body fat.

BIBLIOGRAPHY

GOMES, A. C. **Cross Trainning: uma abordagem metodológica.** Londrina, APEF, 1994.

NOVAES, J.S. **Ginástica em academia no Rio de Janeiro – uma pesquisa histórico descritiva.** Rio de Janeiro: Sprint, 1991.

AMERICAN COLLEGE OF SPORTS MEDICINE. **ACMS´s Guidelines for Exercise Testing and Prescription.** Philadelphia: Lippincott Williams & Wilkins, 2000.

DACOSTA, L. P.; NOVAES, G. S. & NOVAES, J.S. Estudo histórico dos objetivos das atividades gimnicas em academias no Rio de Janeiro. In: RODRIGUES, Maria A .A. e col. (Org.). **Coletânea do IV Encontro Nacional de História do Esporte Lazer e Educação Física.** Belo Horizonte: Universidade Federal de Minas Gerais, 1996. p. 282-290.

LACERDA, **Atividades corporais: o alternativo e o suave na educação física.** (Dissertação de Mestrado em ....). Universidade Gama Filho, Rio de Janeiro: 1995.

PEREIRA, G. B. P. **Ginástica de academia: potência de ser e equilíbrio pessoal (Dissertação de mestrado em .....).** Rio de Janeiro: Universidade Gama Filho, 1996.

GERHEIM, J. M. **O esquema corporal no exercício localizado em ginástica de academia**. Dissertação de Mestrado em ..... Universidade Castelo Branco, Rio de Janeiro: 1996.

SAMULSKI, D. M.; LEMOS. K. L. & CHAGAS, M. H. **Análise da motivação na ginástica aeróbica competitiva.** In: SAMULSKI, D. M.; GRECO, P. J. & CARAN. E. J. (ORG.). Temas atuais em educação física e esportes. Belo Horizonte: Universidade Federal de Minas Gerais, 1997.

NOVAES, J.S. **Ginástica de academia no Rio de Janeiro (Dissertação de Mestrado em....).** Rio de Janeiro: Universidade Federal do Rio de Janeiro. 1990.

MENEZES, DANTAS, M. S. Perfil social e motivações dos usuários de academias de ginástica da cidade de Maceió. (Dissertação de Mestrado em ...) Rio de Janeiro: Universidade Gama Filho, 1998.

NOVAES, S.R.SANTOS. **Comparação de efeitos da ginástica de academia (Localizada) na zona alvo de treinamento de forma contínua e intervalada.** (Dissertação de Mestrado em .....). Universidade Castelo Branco: Rio de Janeiro, 199.

NOVAES, S.R.SANTOS; NOVAES, J.S. e DANTAS, FERNANDES, J.F. **Comparação de Efeitos da Ginástica de Academia (Localizada) na Zona Alvo de Treinamento de Forma Contínua e Intervalada.** Revista Fitness & Performance, vol. 1, nº5, p. 44-51, 2002.

MELLO, DANIELLI BRAGA. **Alterações fi siológicas no ciclismo indoor.** (Dissertação de Mestrado em ...) Rio de Janeiro: Universidade Castelo Branco, 2002.

MALTA, PAULO. **Comparação de efeitos de diferentes aulas de ginástica localizada sobre o consumo de oxigênio.** (Dissertação de Mestrado em ....). Rio de Janeiro: Universidade Castelo Branco, 2002.

MALTA, PAULO & DANTAS, ESTÉLIO **Comparação de efeitos de diferentes aulas de ginástica localizada sobre o consumo de oxigênio.** Revista Fitness Perfomance Rio de Janeiro, 2002.vol. 1 nº5 pp. 26-36.

TUBINO, M.J.G. **As Qualidades Físicas na Educação Física e Desportos.** 2º ed. Rio de Janeiro: Fórum, 1973.

ENDEREÇO : RUA DOUTOR JURUMENHA 5671, SÃO GONÇALO, RIO DE JANEIRO
CEP 24415-230
E-MAIL: profandre@globo.com

ANALYTICAL STUDY RELATING TO GAIN MUSCLE STRENGTH OF LOWER LIMB FOR MEN AND WOMEN PRACTITIONERS BODY PUMP

ABSTRACT:

The aim of this study was to investigate cardiovascular responses to training BODY PUMP, along with the levels of heart rates among adult non-athletes. The sample comprised 15 students (n = 15) with a mean age of 30.5 ± 8.7. Data were collected from pre-school, during class, and salutes to the end of each song the workout of BODY PUMP, during the 74 mix. After obtaining these data, we performed a descriptive statistical treatment, aiming to define the profile of the group. Applied the statistical test of arithmetic mean, standard deviation, distortion and percentage of heart rates, because through them you can compare the group data, looking for differences in central tendency, variability, or whatever. The results indicate that there is homogeneity statistically significant between the heart rate levels of students. However, we can conclude that the BODY PUMP is an excellent way of improving cardio respiratory fitness training, he obtained statistically significant results in comparison with the students of the training, thus helping to break the myth that only the activity serves as an exercise for training reduction of body fat.

The results also speak for those who for various reasons cannot or do not like training in weight rooms, thus providing a new option of training in gyms, clubs, spa or similar places.

KEYWORDS: Body Pump, heart rate and body fat.

ÉTUDE DE REPONSES CARDIOVASCULAIRES A L'CLASSES BODY PUMP.

RÉSUMÉ:

Le but de cette étude était d'étudier les réponses cardiovasculaires à la formation Body Pump, ainsi que les niveaux de fréquence cardiaque chez les adultes non-athlètes. L'échantillon comprenait 15 étudiants (n = 15) avec un âge moyen de 30,5 ± 8,7. Les données ont été recueillies du pré-scolaire, en classe, et salue à la fin de chaque chanson de la séance d'entraînement du corps de pompe, au cours de la combinaison 74. Après l'obtention de ces données, nous avons effectué un traitement statistique descriptive, visant à définir le profil du groupe. Appliqué le test statistique de moyenne arithmétique, l'écart-type, la distorsion et le pourcentage de la fréquence cardiaque, car à travers eux, vous pouvez comparer les données de groupe, à la recherche de différences dans la tendance centrale, la variabilité, ou autre chose. Les résultats indiquent qu'il existe une homogénéité statistiquement significative entre la fréquence cardiaque des élèves. Cependant, nous pouvons conclure que le CORPS DE POMPE est un excellent moyen d'améliorer la formation de remise en forme cardio-respiratoire, il a obtenu des résultats statistiquement significatifs en comparaison avec les étudiants de la formation, contribuant ainsi à briser le mythe selon lequel seule l'activité sert comme un exercice de formation la réduction de la graisse corporelle.

Les résultats ont également encourager ceux qui pour diverses raisons, ne peuvent pas ou n'aiment pas la formation en salles de musculation, donnant ainsi une nouvelle option de la formation dans les gymnases, clubs, spa ou autres lieux semblables

MOTS-CLÉS: Body Pump, fréquence cardiaque et la masse grasse corporelle

ESTUDIO DE LAS RESPUESTAS CARDIOVASCULARES EN CLASES BODY PUMP

RESUMEN:

El objetivo de este estudio fue investigar las respuestas cardiovasculares a la formación de cuerpo de bomba, junto con los niveles de frecuencia cardíaca entre los adultos no atletas. La muestra está compuesta por 15 estudiantes (n = 15) con una edad media de 30,5 ± 8,7. Los datos fueron recogidos desde la etapa preescolar, durante la clase, y saluda al final de cada canción el entrenamiento de BODY PUMP, durante la mezcla 74. Después de obtener estos datos, se realizó un análisis estadístico descriptivo, con el objetivo de definir el perfil del grupo. Aplicó la prueba estadística de la media aritmética, desviación estándar, la distorsión y el porcentaje de las tasas de corazón, porque a través de ellos usted puede comparar los datos del grupo, en busca de diferencias en la tendencia central, la variabilidad, o lo que sea. Los resultados indican que existe una homogeneidad estadísticamente significativas entre los niveles de frecuencia cardíaca de los estudiantes. Sin embargo, podemos concluir que el CUERPO BOMBA es una excelente manera de mejorar el entrenamiento de la aptitud cardiorrespiratoria, obtuvo resultados estadísticamente significativos en comparación con los alumnos de la formación, contribuyendo así a romper el mito de que sólo la actividad sirve como un ejercicio para la formación la reducción de grasa corporal.

Los resultados también animar a aquellos que por diversas razones no pueden o no les gusta la formación en las salas de peso, dando así una nueva opción de entrenamiento en gimnasios, clubes, spa o lugares similares.

PALABRAS CLAVE: Body Pump, la frecuencia cardíaca y la grasa corporal.

ESTUDO DAS RESPOSTAS CARDIOVASCULARES DURANTE AULAS DE BODY PUMP

RESUMO:

O objetivo deste estudo foi verificar as respostas cardiovasculares do treinamento de BODY PUMP, juntamente com os níveis das freqüências cardíacas entre mulheres adultas não-atletas. A amostra foi composta por 15 alunas (n=15), com idade média de 30,5 ± 8,7. Os dados foram coletados a partir da pré-aula, durante aula, sendo mesurado ao final de cada música do treino de BODY PUMP, durante o mix 74. Após a obtenção desses dados, foi realizado o tratamento estatístico descritivo, objetivando definir o perfil do grupo. Aplicou-se o teste estatístico de Media aritmética, Desvio padrão, Distorção e percentual das freqüências cardíacas, pois através deles é possível comparar os dados do grupo, buscando-se diferenças na tendência central, variabilidade, ou qualquer outra. Os resultados indicam que há homogeneidade estatisticamente significantes entre os níveis de frequência cardíaca das alunas. Contudo, pode-se concluir que o BODY PUMP é uma excelente forma de treinamento melhorando o condicionamento cardiorrespiratório, já que obteve resultados estatisticamente significantes na comparação com as alunas do treinamento, ajudando assim a derrubar o mito que somente a atividade ergométrica serve para o treinamento da redução da gordura corporal.

Os resultados favorecem também aqueles que por diversos motivos não conseguem ou não gostam de treinar em salas de musculação, dando assim uma nova opção de treinamento em academias, clubes, SPA ou lugares afins.

PALAVRAS-CHAVES: Body Pump, Frequência cardíaca e gordura corporal.