99 - BLOOD PRESSURE AND HEART RATE: A PROFILE OF PRACTITIONERS OF EXERCISE IN ACADEMY OF NORTH ZONE TERESINA BY GENDER AND AGE

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INTRODUCTION

The global population is increasingly tied to sedentary life. This occurs for several reasons, including the convenience of the modern world and the technological resources available that put the lowest level of human body movement as well as the increase in urban violence, which inhibits individuals to the environment making them prisoners in their condominiums closed.

These changes in human behavior bring risks to health, putting the body vulnerable to involvement of non-transferable chronic diseases (NCD). Physical inactivity is considered a villain in many respects to the human body and is touted as the greatest risk of death, regardless of risk factors associated with it. Furthermore, it contributes to the increase in obesity and diseases caused by this (Matsudo, 2014).

Among the NCDs, one can cite the increase in blood pressure as one of the most common diseases in the modern world. Lolio (1990) defines high blood pressure as the force exerted by the blood on the inner walls of the arteries.

Pinto et. al., (2011) defines systemic arterial hypertension (SAH) as a multifactorial syndrome characterized by elevated blood pressure levels associated with metabolic and hormonal changes. Early identification of cardiovascular risk factors is of paramount importance for interventions aimed at promoting health in children can be performed.

According Zattar et. al., (2013) systemic arterial hypertension (SAH) is considered a major risk factor for cardiovascular disease and it is estimated that 54% of cases of stroke and 47% of acute myocardial infarctions are related to high blood pressure .

On the other hand, many studies have reported that one of the benefits of physical exercise on the human body is the reduction of blood pressure. Moreia and Caribé (2009) discuss that among the many factors that are drop in blood pressure through exercise, the main ones are: a decrease in cardiac debt that is associated with decreased heart rate, a decrease in systemic vascular resistance.

Heart rate is a hemodynamic parameter that is linked to the increase or decrease in blood pressure, which can be modified with exercise. In healthy adults and athletes often do not get between 60 and 80 bpm, however, elite marathoner in heart rate can be found in up to 27 beats per minute at rest (Araújo, 2010). The resting bradycardia can be found after a few months of aerobic training in previously sedentary individuals.

Regular and moderate exercise causes a persistent reduction in systolic and diastolic blood pressure (Jodar and Silva, 2011). According to these authors, there are cases of patients with high blood pressure, it is recommended that the patient join a program of regular exercise and moderate level before starting drug therapy, after which it may be required only minor or any (Jodar and Silva, 2011).

Despite many studies on the beneficial effects of exercise on blood pressure, there is a need for research in the city of Teresina-Pi on the subject. Knowing that before taking up a more in-depth study of a particular area of knowledge, it is necessary to trace an epidemiological profile in the target population to detect the actual needs. Given the above, that this research aims to analyze the blood pressure and heart rate of practitioners of physical exercise in a gym in the city of Teresina.

METHODOLOGY

The research is characterized as a documentary, descriptive study with quantitative approach. According to Pereira (1995) descriptive research aims to inform about the disposition of an event in quantitative population. Suggest explanations for the varieties of frequency, which is the basis for continued research on the topic, through analytical studies that associate events, seeking to clarify the relationship between a given discussion, in particular, and a specific effect.

To compose the sample population, documentary search was conducted through evaluation forms available at that gym, individuals of both genders that include ages equal to or greater than 20 and less than 90 years old and have enrollment effected in the period between 2013 and 2014, considering an error margin of 10%. Having thus, a final sample of 92 subjects of both genders divided into two groups: Group I, composed of subjects aged between 20 and 40 years, and group II containing a subject aged over 40 and less than 90 years of age.

Aiming to become the most homogeneous groups, it was decided to divide the sample into subgroups as follows: a) Group I containing a total of 51 subjects, 31 females and 20 males with ages ranging genre 20-39 years; b) Group II consists of 41 subjects aged between 40 and 86 years of age, 27 of the females and 14 males.

To ensure the accuracy of the data collected in that institution, searched for information about the data collection instruments of arterial pressure by the owner and director of professional responsible for the physical assessment. According to information from the assessor, blood pressure was measured with electronic digital reading devices the Z-40 model brand Techline calibrated. Unable to determine, however, the time of collection.

Then the selection of evaluation sheets that met the criteria of this study, the data were entered, and subsequently conferred. Data analysis was performed using Microsoft Excel 2007 software version, using as measures: description in average, maximum and minimum values. In sequence, arranging them in tabular form enabling better understanding of the provision and outcomes.

To ensure the security and confidentiality of data relating to students enrolled in the academy, which was chosen as the site for the research, a term of trustee was signed was signed by the manager responsible for the company after a verbal authorization.

RESULTS

Individuals who were selected as the sample for this study, based on the documents available N gym were 92 subjects aged between 20 and 86 years of age. The results are described in average, maximum and minimum values. The tables are arranged according to age groups.

Are in Table 1 the results for the group I, containing variables, systolic blood pressure, diastolic blood pressure and heart rate, expressed as mean, maximum and minimum values.

FEMALE I GROUP					MEN'S GROUP I				
N	AGE	SBP	DBP	HR	N	AGE	SBP	DBP	HR
31	29,87	106,45	70,64	77,48	**20**	29,81	123,33	84,76	78,76
-	39	130	90	100	-	39	140	100	110
-	20	90	60	60	-	22	100	70	60

N=absolute number; SBP= Systolic blood pressure DBP = Diastolic blood pressure; HR = Heart Rate fonte: autores, 2014.

Table 1 shows the results of group I, containing a total of 51 subjects aged between 20 and 39 years. The variables analyzed were gender, age, systolic blood pressure, diastolic blood pressure and heart rate.

The group I consisted of 51 subjects, 31 females and 20 males. The mean age was 29.87 (> 39 and <20) years for females and 29.81 (> 39 and <22) for males. The PAS scores a 106.45 (> 130 and <90) for females and 123.33 (> 140 and <100) for the male group, whereas DBP was on average 70.64 (> 90 and <60) and 84.76 (> 100 and <70) respectively for males and females. The FC for females behaved as follows: 77.48 beats per minute (bpm) on average (> 100 and <60), while the mean value for the male group was 78.76 (bpm) and the maximum values and minimum (> 100 and <60).

Table 2 shows the results for the willing group II, containing variables, systolic blood pressure, diastolic blood pressure and heart rate, expressed as mean, maximum and minimum values.

FEMALE II GROUP					MEN'S GROUP II				
N	AGE	SBP	DBP	HR	N	AGE	SBP	DBP	HR
27	49,18	112,22	75,92	77,11	**14**	52,57	119,28	84,85	72,21
	60	140	90	104		86	130	100	84
	40	80	60	54		42	100	70	56

N=absolute number; SBP= Systolic blood pressure DBP = Diastolic blood pressure; HR = Heart Rate fonte: autores, 2014

Table 2 shows the results of Group II is composed of 58 subjects, 31 females and 27 males. The average age was 49.18 (> 60 and <40) for females and 52.57 (> 86 and <42) for the male group. The mean SBP in the female group was 112.22 (> 140 and <80) and 119.28 in the male (> 130 and <100). The mean DBP were 75.92 (> 90 and <60) and 84.85 (> 100 and <70) for the female and male groups, respectively. HR behavior for women and men were on average 77.11 (> 104 and <54) and 72.21 (> 84 and <56) in that order.

DISCUSSION

Variables, age, gender, blood pressure and heart rate were analyzed. For better understanding, the data were divided into groups according to age and gender. The age variable was kept linear for both genders in GI and GII.

Araújo et al., (2010) conducted a survey of practicing exercises in gyms, but the sample included only 20 subjects were female and the average age was 26 years old. In our investigation we did not find described in the evaluation sheets specifying the exercises performed by the sample population.

The SBP proved within normal in all groups, being lower in the female population. GI in the mean SBP was 106.45 123.33, 119.28 and 112.22 in GII 113.26 and 114.25, with the latter figure being the male groups and the first group of women.

The DBP behaved similar to SBP, higher in males and lower in female groups. The average values for the respective female and male groups are: GI 70.64, 84.76, 75.92 84.85 GII. In general the average DBP is in good standard in accordance with the Treaty of Cardiovascular Medicine (2003), remaining higher in the male group.

Jodar and Silva (2011) in research involving groups of women practitioners and non-exercisers aged 35-82 in Sorocaba, this research found higher than average values, yielding 128.4 and 129.13 SBP and DBP of 78.84 and 77.82 respectively for sedentary and practitioners.

The HR remained within a standard considered normal for exercisers, women in the highest GII 77.11 and 72.21, only 77.48 78.76 GI males obtained higher value, but not significant.

Study by Santos and Silva (2012) demonstrated that treadmill exercise scaled promoted significant improvements in both systolic and diastolic blood pressure as well as heart rate reduction practitioners. This research used a sample of 20 subjects of both genders, aged between 60 and 72 years Diadema- SP, divided into experimental and control groups. After three months of staggered exercise, the experimental group had significant SBP, DBP and HR, the control group received no differences after the same period.

This research, however, used three groups with different age groups, hampering our discussion. Moreover, it was not possible to identify the type of activity practiced in the gym, since it offers different exercise modalities, including: jump, step, strength training and dance.

CONCLUSION

We conclude that the study group meets BP at good standard, noting lower values in female age groups. Also, there were no significant differences between age group and gender. This finding seems to have a positive relationship with the practice of exercise, since, even in the higher age groups, blood pressure and heart rate remained within the desirable standards. However, we emphasize that it was not possible to investigate the use of antihypertensive medication in the target population of this research, as well as the mode of exercise practiced by the target population of this study.

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BLOOD PRESSURE AND HEART RATE: A PROFILE OF PRACTITIONERS OF EXERCISE IN ACADEMY OF NORTH ZONE TERESINA BY GENDER AND AGE

ABSTRACT

Studies indicate that one of the benefits of physical exercise on the human body is the reduction of blood pressure. Heart rate exercisers is lower when compared with other untrained. The objective of this research was to measure the blood pressure and heart rate of praticiens of physical exercise in a gym in the city of Teresina. The sample selection was made through the pursuit of fitness evaluations in a gym in the northern area of Teresina-PI, consisting of 92 subjects of both genders, being, however, divided into two groups: group I, consisting of subjects with aged between 20 and 40 years, and group II containing a subject aged over 40 and under 90 years of age. Data analysis was performed using Microsoft Excel 2007 software version, using as measures: description in average, maximum and minimum values. In sequence, arranging them in tabular form enabling better understanding of the provision and outcomes. The results show that the overall mean SBP and DBP is average and there were no significant differences between genders and age groups. The HR remained balanced between genders and age groups. We conclude that in the studied group exercise training seems to have favored the maintenance of desirable levels of blood pressure and heart rate.

KEYWORDS: Practice exercise, blood pressure, heart rate.

RÉSUMÉ

Les études indiquent que l'un des avantages de l'exercice physique sur le corps humain est la réduction de la pression artérielle. Exerciseurs de fréquence cardiaque est plus faible par rapport aux autres sans formation. L'objectif de cette recherche était de mesurer le taux de praticiens de l'exercice physique la pression artérielle et le cœur dans un gymnase de la ville de Teresina. La sélection de l'échantillon a été faite à travers la poursuite de l'évaluation de la condition dans un gymnase dans la zone nord de Teresina-PI, composé de 92 sujets des deux sexes, étant toutefois divisée en deux groupes: le groupe I, composé des sujets avec âgés entre 20 et 40 ans, et le groupe II contenant un sujet âgé de plus de 40 et moins de 90 ans. L'analyse des données a été réalisée en utilisant Microsoft Excel 2007 version de logiciel, en utilisant des mesures: description en valeurs moyennes, maximales et minimales. Dans l'ordre, en les organisant sous forme de tableau permettant une meilleure compréhension de l'offre et les résultats. Les résultats montrent que la SBP et DBP moyenne globale est moyenne et il n'y avait pas de différences significatives entre les sexes et les groupes d'âge. Le HR est resté équilibré entre les sexes et les groupes d'âge. Nous concluons que, dans la formation d'exercice de groupe étudié semble avoir favorisé le maintien des niveaux souhaitables de la pression artérielle et la fréquence cardiaque.

MOTS-CLÉS: exercice pratique, la pression artérielle, la fréquence cardiaque.

RESUMEN

Los estudios indican que uno de los beneficios del ejercicio físico sobre el cuerpo humano es la reducción de la presión arterial. Ejercicios de frecuencia cardíaca es menor en comparación con otros no entrenado. El objetivo de esta investigación fue medir la tasa de la presión arterial y el corazón de los practicantes de ejercicio físico en un gimnasio en la ciudad de Teresina. La selección de la muestra se realizó a través de la búsqueda de las evaluaciones de aptitud física en un gimnasio en la zona norte de Teresina-PI, que consta de 92 sujetos de ambos sexos, siendo, sin embargo, divididos en dos grupos: grupo I, formado por sujetos con edades comprendidas entre 20 y 40 años, y el grupo II que contiene un tema de edad de más de 40 y menos de 90 años de edad. Se realizó el análisis de datos utilizando Microsoft Excel 2007 versión de software, utilizando como medidas: descripción en valores medios, máximos y mínimos. En secuencia, la organización de ellos en forma de tabla que permite una mejor comprensión de la disposición y los resultados. Los resultados muestran que la media de la PAS y PAD en general es normal y no hubo diferencias significativas entre sexos y grupos de edad. La HR se mantuvo equilibrada entre géneros y grupos de edad. Llegamos a la conclusión de que en el entrenamiento de ejercicio de grupo estudiado parece haber favorecido el mantenimiento de los niveles deseables de la presión arterial y la frecuencia cardíaca.

PALABRAS CLAVE: Ejercicio de práctica, la presión arterial, la frecuencia cardíaca.

PRESSÃO ARTERIAL E FREQUÊNCIA CARDÍACA: UM PERFIL DE PRATICANTES DE EXERCÍCIO EM ACADEMIA DA ZONA NORTE DE TERESINA SEGUNDO GÊNERO E FAIXA ETÁRIA

RESUMO

Estudos indicam que um dos benefícios da prática de exercício físico sobre o organismo humano é a redução da pressão arterial. A frequência cardíaca de praticantes de exercícios é mais baixa quando comparadas com outros não treinados. O objetivo desta pesquisa foi aferir a pressão arterial e a frequência cardíaca de praticantes de exercício físico em uma academia da cidade de Teresina. A seleção da amostra foi feita por meio da busca de avaliações físicas em uma academia da zona norte de Teresina-pi, sendo composta por 92 sujeitos de ambos os gêneros, sendo, entretanto, dividida em dois grupos: grupo I, composto por sujeitos com idade entre 20 e 40 anos, e grupo II, formado por sujeitos contendo idade acima de 40 e menor que 90 anos de idade. A análise dos dados foi efetuada por meio do software Microsoft Excel versão 2007, usando-se como medidas: descrição em média, valores máximo e mínimo. Na sequencia, organizando-os em forma de tabela permitindo melhor disposição e compreensão dos resultados. Os resultados demonstram que a média geral da PAS e PAD se encontra na média e não houve diferenças significativas entre os gêneros e as faixas etárias. A FC se manteve equilibrada entre os gêneros e grupos etários. Conclui-se que no grupo estudado a prática de exercício parece ter favorecido na manutenção dos níveis desejáveis de pressão arterial e frequência cardíaca.

PALAVRAS-CHAVE: Prática de exercício, pressão arterial, frequência cardíaca.