39 - EFFECTS OF GYMNASTICS IN TEACHERS FROM PUBLIC ELEMENTARY SCHOOL, EVALUATED THROUGH PAINFUL SENSITIVITY POINTS

FABIO DA SILVA FERREIRA VIEIRA[1,2]
DANILO SAAD SOARES[2]
PAULO FERNANDES PIRES[1,2]
1. Universidade Estadual do Norte do Paraná – UENP - Jacarezinho – Paraná – Brasil.
2 Universidade Metodista de Piracicaba – UNIMEP. Piracicaba – São Paulo – Brasil.
fabio.vieira@uenp.edu.br

INTRODUCTION

With the Industrial Revolution, new inventions of machines and instruments replaced the work of man, and also started the growth of industries giving rise to mass production. A new routine was imposed on workers causing a pressure resulting from the high level of demand on the fulfilment of the goals. Thus arose the Gymnastics for the improvement of the quality of life of workers and the prevention of injury (FIGUEIREDO and MONTALVÃO, 2005).

Second Polito and Bergamaschi (2002) Gymnastics (GL) was developed in 1928 in Japan, where postal workers frequented daily sessions of GL aimed at relaxation and health cultivation.

With the various problems caused due to bad posture and the long period in which the employees passed during the workday, the companies started to seek the Gymnastics as a means of prevention, so soon the GL spread quickly to other countries. According to Figueiredo and Montalvão (2005) circa 1960 pró-ginástica labour movements have occurred in some countries like Bulgaria, Former East Germany, Sweden and Belgium, but gave consolidation only as practice mandatory in Japan.

As in other countries the Gymnastics also arrived in Brazil through the beginning in 1969, at Ishiksvajima, even today employees and directors practice exercises aiming primarily to the prevention of work accidents (POLITO and BERGAMASCHI 2002).

In 1989, the National Association of occupational medicine stated that the Ministry of health should require the practice of physical activities as a means of prevention of chronic degenerative diseases. With the effective support of unions and workers, in the short term the benefits were felt, especially by improving psychophysical workers and the consequent reduction in the incidence of absenteeism (FIGUEIREDO and MONTALVÃO, 2005).

The Art Work is booming as an ergonomic tool to improve workers ' quality of life and increase factors such as self-esteem and socialization between employees, therefore, efficiency and credibility show that tends to be one of the ways to a healthier life and with quality (BRITO and BEGO, 2010).

The main role of GL is to compensate for repetitive movements usually caused by production lines, continuity of work in cumbersome situations, which carries the bad posture. In this way the GL shall be responsible for performing exercises in the short term, in order to prepare employees for their daily activity at work (ALBUQUERQUE and LIMONGI-FRANCE, 1997).

Other factors such as lighting, noise, conditions of the materials used in the workplace also become risk factors and occurrences of health problems for employees (TEIXEIRA, 2001).

Among the objectives of Gymnastics can highlight the prevention of injury, muscle fatigue, cumulative trauma, reducing the number of accidents at work and increase the willingness of staff to start work and return to it, and above all promote the socialization and relaxation in the work environment (FIGUEIREDO, 2005).

The Gymnastics can also be defined as physical activity oriented and practiced during the operation hours for personal benefits at work, which aims to minimize the negative impacts arising from sedentary in the life and health of the worker (CARAVALHO, 2003).

A more economical, efficient alternative will be to deploy Gymnastics programs aiming to improve the quality of life of employees (OLIVEIRA, 2006).

According to Figueiredo (2005) the gymnastics can held 3 ways: 1 heating or Preparation, aiming to prepare the employee for the day's work; Compensatory 2: aiming to break the monotony of work and strengthen the muscles used most often; 3 Relaxation: in order to relax the muscles and the mind, relieve stress and tensions and yet minimize the number of disagreements at work, consequently improving the socialization.

Some researchers (TEIXEIRA, 2001, FIGUEIREDO and MONTALVÃO, 2005, OLIVEIRA, 2006) claim that there are not many variations with respect to the frequency and duration of GL, however most indicates the completion during 3 to 5 times a week for 10 to 15 min. (FIGUEIREDO, 2005).

The problems arising from poor posture and long period at work performing repetitive movements are not solved only with the GL, it minimizes the trauma suffered, but in order to have a better result it is necessary that other professionals are involved in this project, which has a multidisciplinary team with occupational physician, occupational safety technician, the professional of physical education among others involved (OLIVEIRA, 2006).

Figueiredo and Montalvão (2005) state that before initiating a program of quality of life is important to evaluate the goals to be achieved, the workplace and workplace ergonomics.

Thus the objective of this research was to evaluate the parts of the body with painful sensitivity of teachers of elementary school before and after the application of a gymnastics training.

MATERIAL AND METHODS

The survey sample was comprised of 9 teachers of elementary public network of 1° to 5° year Joaquim Tavora City (PR), volunteers aged between 23 and 45 years.

The inclusion of volunteers gave up for approval by the Director of the educational establishment and acceptance of volunteering through an informed consent form.

EVALUATION

The evaluations were reports of parameter sensitivity painful points in 9 regions: cervical, thoracic, predetermined lumbar, shoulder, arm, punhomão, hip, knee and ankle.

The instrument for evaluation of the painful sensitivity was the diagram, according to Fleck et al. (2000), through voluntary individual fulfillment. It is worth noting that each volunteer could have one or more painful sensitivity points, reaching a maximum of 9 points.

The diagram has two distinct ratings moments M1 (immediately before the GL training) and M2 (after 3 months of training application of GL).

DESCRIPTION OF THE EXPERIMENTAL PROCEDURE

The application of the training lasted 12 weeks in total, with a frequency of 3 weekly sessions.

The sport of Gymnastics adopted for this study was Preparatory exercises developed during 10 minutes, starting at 07:50 and end at 08:00 hours.

In M1 the teachers passed the evaluation through the diagram where these should point to the location of more painful intensity they felt to perform their duties.

During the days of the planned exercises were used GL as the results obtained, in order to prepare the global muscle as a whole for the work, using relaxation techniques, stretching, breathing and also group activities to improve the socialization.

In General were carried out exercises for upper and lower body. So that for cervical region exercises were: 1-tilt head back slowly taking a break and returning the head forward again, exercise repedido of 8 to 10 times; 2-slope of the neck to the side, holding the position for about 10 seconds, repeating the same exercise for the opposite side; 3-rotation of the head slowly to one side, repeating the motion 5 times to the right side and 5 on the left side.

For the shoulder exercises were: 1-shoulder Elevation and return from the initial position, alternately, repeating the motion 5 times; 2-stump Circumduction of the shoulder back and forth, repeating this motion by 5 times; 3-deltoid muscle Stretching, positioning the contralateral shoulder, right hand and left hand pushing the right elbow back, holding the position for 10 seconds, and finally repeating the same position on the contralateral side; 4-triceps brachii muscle Stretching, positioning arm and elbow fully flexed with the outstretched left hand touching the upper thoracic region, and his right hand touching the left elbow to push you down, holding the position for 10 seconds, and finally repeating the same position on the contralateral side.

For the hands and wrists, were developed the following exercises: 1-With upper limbs outstretched in front of body, open and close your hands; 2-muscle Stretching wrist extensors, with an extended upper limb in front of body, carrying out an extension of the wrist and fingers, pulling them back with help from the contralateral hand, holding for 10 seconds, and finally repeating the same position on the contralateral side; 3-Circumduction handles to the right and left, with upper limbs extended in front of the body.

For the lower limbs exercise performed were: 1-Stretching of the quadriceps muscle, requesting that the voluntary support in a colleague or in a wall, and after flexionasse the knee in front approaching from the trunk, holding the position for 10 seconds, and finally repeating the same position on the contralateral side; 2-Stretching of thigh muscles later, requesting that the volunteer facing each other, holding hands, it would Flex the torso forward, keeping your arms extended in line with the shoulder and neck, holding the position for 10 seconds.

At the end of the training of gymnastics after 3 months, the diagram was again passed to obtain new results in order to verify the changes.

STATISTICAL ANALYSIS

To test the normality of the data was used the Shapiro-Wilk test. With the results found with the sensitivity Points diagram was used Wilcoxon test for the paired and non-normal data. Statistical analysis was performed using SPSS 13.0 software (Chicago, USA), considering as significant differences $p<0.05$.

RESULTS AND DISCUSSION

The results observed in accordance with the existence of complaints of painful body regions were expressed as the table 1.

Volunteers	IE	IF
1	7	2
2	9	3
3	7	4
4	8	2
5	8	4
6	7	2
7	8	3
8	6	3
9	8	2
Mean/SD	7,5 ± 0,88	2,77 ± 0,83*

According to the findings expressed in table 1, can show a significant improvement ($p<0.001$) between the beginning and end of treatment after application of gymnastics training.

Comparing the results found in this study with those of Longen (2003), there is a close agreement with regard to the reduction of painful points of the body in General after applying a gymnastics training even considering that the sample was greater than that of the present study.

According to Martins and Duarte (2000), the promising results obtained during the initial period and end of GL are due to changes in lifestyle, noting as well that the Gymnastics is able to change the lifestyle of the practitioners, and providing a better quality of life.

Martins and Duarte (2000) also note in his work the importance of GL to the decrease in fat percentage and flexibility, also due to the change in lifestyle.

Therefore, as the present study showed a significant improvement in the number of tender points after application of gymnastics training for future work it is recommended to evaluate the intensity of painful symptoms by using visual analogue scale of pain, evaluation of joint flexibility through the instrument flexímetro and evaluation of cholesterol values, since this research has limitations to evaluation of these variables.

CONCLUSION

After applying a gymnastics training in school working environment was observed significant improvement as regards the reduction of painful points presented in voluntary teachers of elementary school.

REFERENCES

ALBUQUERQUE, L.G.; LIMONGI-FRANÇA, A.C. Estratégias de recursos humanos e gestão da qualidade de vida no trabalho: o stress e a expansão do conceito de qualidade total, RAUSP Revista de Administração, São Paulo, FEA/USP, v. 33, n.2, p. 40-51, abril/junho, 1998.

BRITO, S. R.; BEGO, M. A. Ginastica Laboral. 8ª Mostra Acadêmica UNIMEP. 2010.

FIGUEIREDO, F.; MONTALVÃO, C. Ginástica laboral e ergonomia. Ed. Sprint. Rio de Janeiro – 2005.

POLITO, E.; BERGAMASHI, C. Ginástica Laboral teoria e prática. Ed.Sprint. Rio de Janeiro – 2002.

TEIXEIRA, B.; SOUSA, C. Projeto – Ginastica Laboral. 2001.

OLIVEIRA, J.R.G. A prática da Ginastica Laboral. Ed. Sprint. Rio de Janeiro – 2006.

FLECK, M.P.A., LOUZADA, S., XAVIER, M., CHACHAMOVICH, E., VIEIRA, G., SANTOS, L., PINZON, V. Aplicação da versão em português do instrumento abreviado de avaliação da qualidade de vida "WHOQOL-bref". Revista de Saúde Publica, 34(2): 178-83, 2000.

MARTINS, C.O., DUARTE, M.F.S. Efeitos da Ginastica Laboral em Servidores da Reitoria da UFSC. Revista Brasileira de Ciência e Movimento, Brasília, v. 8, n.4, p. 7-13, set. 2000.

LONGEN, W.C. Ginastica Laboral na prevenção de LER/DORT? – Um estudo reflexivo em uma linha de produção. Dissertação (Mestrado em Engenharia de Produção, Área de Concentração: Ergonomia) – Universidade Federal de Santa Catarina, Florianópolis, 2003.

FABIO DA SILVA FERREIRA VIEIRA
Rua Coronel Baptista, 326
Centro – Jacarezinho – PR – Brasil
CEP.: 86400-000
fabio.vieira@uenp.edu.br

EFFECTS OF GYMNASTICS IN TEACHERS FROM PUBLIC ELEMENTARY SCHOOL, EVALUATED THROUGH PAINFUL SENSITIVITY POINTS

ABSTRACT

This study aimed to verify the benefits acquired in a Gymnastics (GL) in public primary education from 1st to 5th year in the town of Joaquim Tavora (PR), considering the working environment where the teachers are inserted and after evaluating the pain and discomfort through painful sensitivity diagram, it was possible to draw up a programme of gymnastics can compensate the muscles required during the workday of educators. During the journey out of work teachers end up experiencing moments that become responsible for much of the stress of teachers, the main purpose of the GL was to minimize the stress, because stimuli are large, thus breaking the monotony and rigidity, thus improving the quality of life in the school environment. The sample was composed of 9 volunteers, female. The training of gymnastics was held in the morning with duration of 10 minutes during three consecutive months with frequency of 3 weekly sessions. With the results obtained showed a significant improvement in the painful sensitivity points total made by volunteers ($p < 0.0001$). For checking the normality of the data was used the Shapiro-Wilk test and comparison of data was used Wilcoxon test for paired and non-normal data considering as significant differences $p<0.05$. Thus we conclude that the labor gymnastic training improves the quality of life of workers as regards the amount of soreness.

KEYWORDS: Ergonomics, quality of life, school, teachers.

EFFETS DES ENSEIGNANTS EN GYMNASTIQUE DE L'ÉCOLE ÉLÉMENTAIRE PUBLIQUE, ÉVALUÉE AU MOYEN DE POINTS DE SENSIBILITÉ DOULOUREUSE

RÉSUMÉ

Cette étude visait à vérifier les avantages acquis dans une gymnastique (GL) dans l'enseignement primaire public du 1er au 5e année dans la ville d'Andover, compte tenu de l'environnement de travail où les enseignants sont insérés et après évaluation de la douleur et l'inconfort dans le diagramme de sensibilité douloureuse, il était possible d'élaborer un programme de gymnastique peuvent compenser les muscles nécessaires au cours de la journée de travail des éducateurs. Malaises par diagramme de sensibilité douloureuse, il était possible d'établir un programme de gymnastique peut compenser les muscles nécessaires au cours de la journée de travail des éducateurs. L'échantillon était composé de 9 volontaires, femelles. La formation de gymnastique a eu lieu le matin avec une durée de 10 minutes pendant trois mois consécutifs avec une fréquence de 3 séances hebdomadaires. Avec les résultats obtenus ont montré une amélioration significative dans le totales des points douloureux sensibilité effectuée par des bénévoles (p 0, 0001). Pour vérifier la normalité des données a été utilisé le test de Shapiro-Wilk et comparaison des données a été utilisé test de Wilcoxon pour données appariées et non normal considérer comme importantes différences p 0,05. Par conséquent, nous concluons que l'entraînement en gymnastique du travail améliore la qualité de vie des travailleurs en ce qui concerne le montant de la douleur.

MOTS-CLÉS: Ergonomie, qualité de vie, l'école, les enseignants.

EFECTOS DE LA GIMNASIA EN MAESTROS DE ESCUELA PÚBLICA, EVALUADO ATRAVÉS DE PUNTOS DE SENSIBILIDAD DOLOROSA.

RESUMEN

Este estudio pretende comprobar los beneficios adquiridos en una gimnasia (GL) en la educación primaria pública del 1 al 5 º año en la ciudad de Andover, teniendo en cuenta el ambiente de trabajo donde se insertan los maestros y después de evaluar el dolor y las molestias mediante diagrama de sensibilidad dolorosa, fue posible elaborar un programa de gimnasia pueden compensar los músculos necesarios durante la jornada de trabajo de los educadores. Durante el viaje de trabajo profesores terminan viviendo momentos que se convierten en responsables de gran parte del estrés de los profesores, el objetivo principal del GL fue minimizar el estrés, porque los estímulos son grandes, rompiendo así la monotonía y rigidez, mejorando así la calidad de vida en el entorno escolar. La muestra estaba compuesta por 9 voluntarios, hembras. La formación de gimnasia se celebró en la mañana con una duración de 10 minutos durante tres meses consecutivos con frecuencia de 3 sesiones semanales. Con los resultados obtenidos mostraron una mejoría significativa en los totales de puntos de sensibilidad

dolorosa hecha por voluntarios (p <0.0001). Para comprobar la normalidad de los datos se utilizó la prueba de Shapiro-Wilk y comparación de datos se utilizó test de Wilcoxon para datos vinculados y no normal considerar tan importantes diferencias p< 0.05. Por lo tanto concluimos que la formación de gimnasia laboral mejora la calidad de vida de los trabajadores en cuanto a la cantidad de dolor.

PALABRAS CLAVE: Ergonomía, calidad de vida, la escuela, los maestros.

EFEITOS DA GINÁSTICA LABORAL EM PROFESSORES DA REDE PÚBLICA DE ENSINO FUNDAMENTAL, AVALIADOS POR MEIO DE PONTOS DE SENSIBILIDADE DOLOROSA

RESUMO

O presente estudo teve como objetivo verificar os benefícios adquiridos em um plano de Ginástica Laboral (GL) implantado na rede pública de ensino fundamental de 1º a 5º ano na cidade de Joaquim Távora, considerando o ambiente de trabalho onde as professoras estão inseridas e após avaliar as dores e desconfortos através do diagrama de sensibilidade dolorosa, foi possível elaborar um programa de Ginástica laboral capaz de compensar os músculos exigidos durante a jornada de trabalho dos educadores. Durante a jornada de trabalhos os professores acabam vivenciando momentos que se tornam responsáveis por grande parte do estresse dos professores, o principal objetivo da GL foi minimizar ao máximo o estresse, pois os estímulos são grandes, quebrando assim a monotonia e a rigidez, melhorando assim a qualidade de vida no ambiente escolar. A amostra foi composta por 9 voluntários, do gênero feminino. O treinamento de ginástica laboral foi realizado no período da manhã com duração de 10 minutos durante três meses consecutivos com frequência de 3 sessões semanais. Com os resultados obtidos observou-se uma melhora significativa no total de pontos de sensibilidade dolorosa apresentados pelas voluntárias (p<0.0001). Para a verificação da normalidade dos dados foi utilizado o teste de Shapiro-Wilk e para comparação dos dados foi utilizado o teste de Wilcoxon para dados pareados e não-normais considerando como diferença significativa o valor de p<0.05. Dessa forma conclui-se que o treinamento de ginástica laboral melhora na qualidade de vida dos trabalhadores no que diz respeito à quantidade de pontos de sensibilidade dolorosa.

PALAVRAS-CHAVE: Ergonomia, Qualidade de Vida, Escola, Docentes.