69 - LABOR GYMNASTICS AND THE INTERFACE WITH ERGONOMICS: A CASE STUDY IN CENTRO UNIVERSITÁRIO FEEVALE

MAGALE KONRATH; JACINTA SIDEGUM RENNER; FRANCISCO CARLOS LEMES DE MENEZES
Centro Universitário FEEVALE - Novo Hamburgo / RS / Brazil
magalek@feevale.br; jacinta@feevale.br; franciscoclm@feevale.br

INTRODUCTION

Labor Gymnastics is a practice of physical exercise that was conceived to prevent muscular fatigue, as well as to prepare and/or to compensate the skeletal muscle structures for the activities, in the beginning or during the working hours (KOLLING, 1982). In general lines, fatigue has a physical, neuromuscular component; however it also involves psychological and social factors. Fatigue is not only related to the physical aspect, taking into consideration that one of the biggest concerns in the work environment is mental fatigue, that results in sensorial and perceptive changes, such as the decrease of the stimulations that can be processed, performance delay, irregular cycles. There are individual differences for fatigue, personal motivation being one of the critical aspects of it. (GUIMARÃES, 2006).

A Labor Gymnastics program takes place in the work environment itself, and has as objective to soothe the harmful impacts of the labor activity on the individual. Its goal is to act in a preventive way, in relation to occupational accidents and to work-related osteomuscular disturbances, as well as relating to stress situations, acting also in the increase of people's well-being and willingness, promoting socialization, interpersonal relationship and cooperation among the several collaborators. It can be stated, also, that foundations for the construction of a favorable environment for creativity, innovation and education are in self-esteem, empathy and affection. Without these elements, communication and understanding cannot be established. (CAÑETE, 1996; LIMA, 2003; KONRATH, 2006).

In Brazil, the first study happened between 1978 and 1979, as a pioneer experience that has its origin in the Physical Education course of Centro Universitário Feevale. It was a research, whose proposition was based in biomechanical analysis of the workers in their work environment and it was used as a support for the elaboration of the Recreational and Compensatory Physical Education Project. The work began with an investigation in the region, contacting companies that were interested in contributing with the study. Then, film shootings were made in different sections of each industry to verify in detail the type of movement and the task executed by each laborer. In another stage, a staff composed by faculty members and university students analyzed and diagnosed the most active muscular groups, the types of contraction and the antagonistic muscular groups for compensation. According to the consummated surveys, that identified fatigue hours and occupational accidents, the moments of application of the practice were established. Five companies participated of the project, confirming the proposed objectives and reaching the expected results (KOLLING, 1982). This project did not have continuity in the occasion, due to the cost to hire professionals, and Labor Gymnastics was forgotten for more than two decades.

In 2001, the institution resumed its activities in this area. So “Feevale's Labor Gymnastics Project” initiated as an isolated practice, attending departments of the institution that presented a greater demand with complaints of pain/discomfort or under medical orientation. From 1996, Labor Gymnastics was incorporated to “QVT Feevale (Feevale's Quality of Life at Work Program)” and other actions opposed it, contributing for the implementation of the work. In accordance with the objectives of QVT Feevale, “Feevale's Labor Gymnastics Project” propitiates an interaction with Education, Expansion and Research; promotes multi, inter and transdisciplinarity and takes care of the internal community through promotion of and complete attention to health.

Given that in the current health outlook, in which Brazil spends R$ 32 billion (or 4% of the national economy, the national GDP - Gross Domestic Product) a year with expenses associated to occupational accidents: the indemnities paid by Previdência Social (Brazil's Social Services), the costs in health, and the loss of productivity, among others. According to Previdência Social, from the total expenses, around R$ 8 billion correspond to accident-related benefits. (MINISTÉRIO DA SAÚDE, 2004).

In this context, the progressively need to invest efforts in the direction of minimizing the effects and impacts of work on the worker is identified. In this manner, the businesses try to find outlets to the problems, many times through solutions that hit on the body of workers, as well as actions that are directed in an individual form. The implantation of a Labor Gymnastics program is one of the collective alternatives that are adopted to minimize the problems that affect the health and the well-being of the workers.

Before the practical application of a Labor Gymnastics program, it is necessary to accomplish an ergonomic study where the main biomechanical and skeletal muscle problems are identified. According to Hendrick (1991), ergonomics as a science is about developing knowledge about the capacities, the limits and other features of the human performance and that associate with the interface project, among individuals and other components of the system. As practice, Ergonomics includes the application of the man-system interface technology to increase the safety, the comfort, the efficiency, and the quality of life. This technology, up to the present moment, has four important components, which are: man-machine interface technology or Hardware Ergonomics; man-environment interface technology or Environmental Ergonomics; user-system interface technology or Software Ergonomics; and organization-machine interface technology or Macroergonomics.

Considering that a work environment must be a healthy environment, free from disturbances or occupational diseases, not only Labor Gymnastics, but also ergonomics are converted into an important tool to reach these goals.

METHODOLOGY

After the recommencement of Labor Gymnastics at Feevale, there was a gradual implantation process, when the most problematic sectors were prioritized. At the present moment (September 2007), the program is in the proximity to complete seven years and is already present at the whole institution. Since the “Feevale's Labor Gymnastics” project was resumed, it has been consolidating itself progressively.

The Labor Gymnastics groups are divided in a way that the individuals participate of at least two group sessions a week, with an average of ten minutes duration. Initially, an interview is applied to verify the health situation of each individual and, thus, if necessary, to proceed with a conduct to the Medicine and Work Safety Services. In each new group this procedure is repeated. The activities are planned for each sector, according to the duties performed and the types of movement executed.

This is an expansion and social responsibility activity that has the aspects regarding the social relevance and institutional identity entwined, since it reaches and benefits the internal public of the Institution, having impact in the health and the quality. Besides, because of its historical relevance, Feevale, as a teaching institution, marks its presence and has a

significance in the region as a reference in this subject.

The Labor Gymnastics program was of easy acceptance and implantation because of the Institution's history. This approach facilitated and fomented the process of sensitization for ergonomics. It was necessary to proceed with the exercise program for some years, transmitting knowledge about body care, to be able to, with the improvement in corporal perception, gradually evolve to the implantation of the ergonomics program.

The implantation of the Ergonomics Project, along with the Quality of Life at Work Program - QVT Feevale - occurred in January, 2005. The ergonomics demand emerged from the complaints of the collaborators for the interns and teachers of Physical Education that applied and monitored the exercise program. The ergonomic studies had their beginning in the administrative sector, where the biggest number of skeletal-muscular complaints was found.

In terms of integrated actions between courses and institutes, during the subject of ergonomics in the Design, Production Engineering, Chemistry and Electronics courses, the students make researches and field activities that have as a main focus the identification of ergonomic demands in all the institution. These demands are taken care of by the students of the classes of Applied Practice III from the Physiotherapy course, where the main focus is the questions connected to the workers' health. In this context, the Physiotherapy students accomplish educational activities regarding health, including: educational brochures for a better use and behavior of the body in the work place, educational lectures about posture and gestures at work, as well as prophylactic care as the use of heat and/or ice in complaints of discomfort and pain (specially in the cases of muscular fatigue).

Another multidisciplinary action was the elaboration of a feet support for the users of computer workstations, integrating ICET (Instituto de Ciências Tecnológicas - Technological Sciences Institute) and ICS (Instituto de Ciências da Saúde - Health Sciences Institute). The feet support, under the point of view of ergonomics, is indispensable for people of low stature, allowing the feet to be supported. It is recommended for all users of computer workstations, because it promotes circulatory and biomechanical benefits. Five hundred feet supports were developed, contemplating all the computer workstations, benefiting its users among the institution.

One of the concerns of institutional character is the use of clean technology. In this context, the feet support was developed (research of a Chemical Engineering student) in association with a company of Vale do Sinos, from recycled supermarket plastic bags. The material is 100% recyclable. The composition has as its main component Low Density Polyethylene. This material is usually used in supermarket plastic bags and packing sacks.

RESULTS

In reference to the quantitative data, while in 2006 there were 16 sectors participating in Campus II, in 2007 there are 65 sectors participating, reaching also Campus I. The number of participants passed from 200 (2006) to over 500 (2007) and the consultations increased in 399.4%, being 800 the consultations in December, 2006 and 3194 consultations registered in June, 2007. Considering the whole year (2007), until the end of September, there were 19618 consultations in both campuses.

Besides the quantitative data, the participants' comments reinforce the positive results in the psychological and social ambit. The individuals feel modifications in their performance during work after the completion of Labor Gymnastics; they comment that even their whole well-being has increased; they end up finding themselves as capable of giving and receiving, being useful in a complete way; their self-esteem and their corporal conscience is increased; and, what is even better, the internal relationship of the sectors is modified, becoming more harmonious. It is worth reminding that healthy individuals are happier, work better and have conscience of their potential as beings that are shapers of the society where they live.

Concerning the sectors that had the practice implemented recently, we realize that the receptivity was very large, because they were waiting for a long time for the beginning of the activities. The employees comment on how long they waited for this integration moment, when they can relax, stretch and at the same time exchange ideas informally. This active stop also promotes socialization, because sectors in where there is a small amount of people are grouped in the hallway and people integrate in one only goal: to take care of themselves. In the beginning of the classes many displayed difficulties in the execution of some exercises, mainly because they do not perform any practice outside the Institution. Two months after the project enlargement, the participants are already realizing that they can perform the suggested exercises in an easier way, because, gradually, they are gaining better flexibility. Moreover, we have as response from the collaborators the increase of motivation and interest, in addition to the perceived improvement, especially regarding flexibility and corporal conscience.

In this acceptation, we agree with Tamayo (2004) when referring to Labor Gymnastics as going beyond ministering physical exercises sections. It serves also as a way to encourage and value health promotion, diminishing sedentariness and stress, as well as favoring the corporal consciousness and the interpersonal relationship of the ones who practice it. This new proposal tries to understand the human being with its needs and aspirations. For that to happen, we get surrounded by different looks and contemplate the complexity of the aspects that concur to the health, in an interdisciplinary approach.

In terms of results of the ergonomic analysis problems associated mainly to the workstation conformation (small depth on the tables, lack of feet support, computer monitor height, among others) and to the postural behavior of the users in the workplace were found. To contemplate these actions, a health care brochure was organized and educational “in loco” lectures were accomplished in the administrative sectors, which were converted into a continuous process of improvement. After the ergonomic problems were identified, one of the improvements in implantation phase is the acquisition of LCD monitors that create a bigger space on the desk, allowing the support of the upper parts of the human body, hindering the static positioning. Up to the present moment, 280 conventional monitors were replaced by LCD monitors, and the agenda is to substitute more 220 monitors in 2008.

Another positive result in terms of ergonomic actions with environmental impact was the development of the feet support with plastic bags. The recycled material, after compacted and transformed into feet support is composed, in average, of 1000 supermarket bags. The environmental results promoted by the use of plastic residues removed from the environment 50.000 plastic bags. In financial terms, the average cost of a unit of the support of the conventional type found in the market is R$ 80,00 (eighty reais). The cost of the feet support made with recycled material was of R$ 19,50 (nineteen reais and fifty cents) per unit. Considering the need of acquisition of 500 feet supports, R$ 30.250,00 (thirty thousand two hundred fifty reais) were saved. Through this action, two extremely relevant aspects are contemplated: the promotion of quality of life associated to environmental responsibility.

Additionally, the institution, concerned with the inseparableness between instruction, research and extension, has been accomplishing several studies involving the thematic of quality of life at work, not only in Feevale, but also in other institutions and companies. In the list of productions are included: course conclusion research papers, articles and master's degree dissertations, without disregarding the research papers organized in other businesses, whose interest emerged from the observation of the project.

FINAL CONSIDERATIONS

Knowing that the Institution has as objective to be an excellence center, it also searches the well-being of its employees, who, when feeling “at ease”, tend to work better and with more dynamism. In such a way, they end up furthering the quality of the services offered to the community and to the student body. Therefore, they contribute directly to the growth of the Institution's image.

Although this narration is pertinent to a “case” that occurs in an academic context, as in any other company, in the university some resistances were found. One of them is that the regular process of implantation would be the accomplishment, in the first moment, of the ergonomic diagnosis, identifying the biomechanical problems: critical posture and gesture, work load and movements used in the execution of work activities. However, the wider and deepened ergonomic diagnosis was left to the second plane. Hence, the implantation of the Labor Gymnastics program before the ergonomic study was shooter.

In many companies, it seems to be shooter to act firstly with a collective program that prioritizes the focus in the individual (exercise), since ergonomics has a more including and, in a way, a “compromising” character for the organization. Through the ergonomic study, many times, the organization faces problems of different nature, that go from work journey, rhythm, repetitiveness, work overload, to the effective production system. Undoubtedly, “dealing” with the work organization is more compromising than working with individuals. Nonetheless, the Labor Gymnastics Program, in the case of Centro Universitário Feevale, was of extreme relevance to the sensitization of all the players of the organization, stimulating daily the corporal perception, with the workers of several hierarchic levels and sectors. While Labor Gymnastics was being incorporated by the organization and people were perfecting their corporal perception, the need for ergonomics to improve the environment, the workplaces and the activities was sensed naturally.

From the experience related in this article, it is evident that a multi, inter and transdisciplinarity integrated work needs to cease being “mere fallacy” to become reality. In the academic context, we have the fertile land to find an outlet for the integrated work. The market experience focus everyday more actions that are dissociated, having as example the reality experienced by health at work professionals, specially in related areas, which is the case of physical education, physiotherapy, and ergonomics, among others. Only through an integrated work between the professional of several courses and institutes, it was possible to obtain the mentioned results, the integration of the program of Labor Gymnastics and Ergonomics that, associated to a Quality of Life program of institutional enclosure, has positively impacted the life of all the people involved as well as the outcomes of the corporation.

BIBLIOGRAPHICAL REFERENCES

CAÑETE, Ingrid. **Humanização: desafio da empresa moderna: a ginástica laboral como um caminho**. Porto Alegre: Artes e Ofícios, 1996. 198p.

GUIMARÃES, Lia Buarque Macedo. **Ergonomia de processo**. Volume 2, 5ª edição. Editora FENGE - Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, 2006.

KOLLING, Aloysio. **Estudo sobre os efeitos da ginástica laboral compensatória em grupos de operários de empresas industriais.** 1982. Dissertação (Pós-Graduação em Educação), Universidade Federal do Rio Grande do Sul, Porto Alegre. 116p.

KONRATH, Magale. **As representações sociais do trabalho entre um grupo de praticantes de ginástica laboral: um estudo de caso no Centro Universitário FEEVALE.** São Leopoldo: 2006. 131 f. Dissertação (Pós-Graduação em Ciências Sociais Aplicadas) - UNISINOS.

LIMA, Valquiria de. **Ginástica Laboral - atividade física no ambiente de trabalho**. São Paulo: Phorte, 2003. 240p.

MINISTÉRIO DA SAÚDE. **Política Nacional de Segurança e Saúde do Trabalhador.** Brasília- 29.12.2004. Available at: http://portal.saude.gov.br/portal/arquivos/pdf/insumos_portaria_interministerial_800.pdf

TAMAYO, Alvaro. **Cultura e saúde nas organizações**. Porto Alegre: Artmed, 2004. 255p.

Centro Universitário FEEVALE
RS 239, 2755 / CEP 93352-000 / Novo Hamburgo - RS / Brazil

LABOR GYMNASTICS AND THE INTERFACE WITH ERGONOMICS: A CASE STUDY IN CENTRO UNIVERSITÁRIO FEEVALE

ABSTRACT

The worker's health as a complex and charged with meaning theme, not only in the cultural and economic context, but also in the anthropologic and social background, requires more multi, inter and transdisciplinary actions in search of resolution for problems originated from the work relations and environment. This article illustrates the report of a case study experienced in Centro Universitário Feevale, RS - Brazil. Through integrated actions between Physical Education, Physiotherapy and Ergonomics professionals, it was possible to achieve excellent results in terms of effectiveness of a larger and more including program - the Quality of Life at Work program (QVT Feevale). The results achieved from Labor Gymnastics and Ergonomics actions benefit the internal public of the Institution, impacting their health and quality of life, also contributing in a direct way for the growth of the Institution's image. From the experience narrated in this article, it is evident that a multi, inter and transdisciplinary integrated work needs to cease being “mere fallacy” to become reality. Only through an integrated work between professionals of the several courses and institutes, it was possible to collect the mentioned results.

KEY-WORDS: Labor Gymnastics, Ergonomics, Quality of life at work

LA GYMNASTIQUE DU TRAVAIL ET L'INTERFACE AVEC L'ERGONOMIE: UNE ÉTUDE DE CAS AU CENTRE UNIVERSITAIRE FEEVALE

RÉSUMÉ

La santé du travailleur, en tant que thématique complexe et chargée de significations dans le contexte culturel, économique, anthropologique et social, demande de plus en plus des actions multi, inter et transdisciplinaires, à la recherche de la résolution de problèmes originaires des rapports et de l'ambiance de travail. Cet article présente le récit de l'étude de cas expérimenté au Centre Universitaire Feevale, RS - Brésil. À partir d'actions intégrées entre professionnels d'Éducation Physique, Physiothérapie et Ergonomie, a été possible parvenir à d'excellents résultats concernant l'éffectivité d'un programme majeur et de plus grande portée - Le programme Qualité de Vie au Travail - QVT Feevale. Les résultats obtenus à partir d'actions de la Gymnastique du Travail et de l'Ergonomie bénéficient le public interne de l'Institution, impactant sur la santé et qualité de vie, au-delà de contribuer de façon directe à la croissance de l'image de l'Institution. À partir de l'expérience relatée dans cet

article, c'est évident qu'un travail intégré multi, inter et transdisciplinaire, au lieu d'être un simple bavardage, a besoin de devenir une réalité. Seulement à travers le travail intégré entre les professionnels des divers cours et instituts, a été possible cueillir les résultats mentionnés.

MOTS-CLE : Gymnastique du Travail, Ergonomie, Qualité de vie au Travail.

LA GIMNASIA LABORAL Y LA INTERFACE CON LA ERGONOMIA: UN ESTUDIO DE CASO EN EL CENTRO UNIVERSITÁRIO FEEVALE

RESUMEN

La salud del trabajador enguanto temática complexa y repleta de significados, tanto en el contexto cultural y económico, cuanto antropológico y social, cada vez mas requerí acciones multi, inter y transdisciplinares en la busca da resoluciones de los problemas oriundos de las relaciones y del ambiente del trabajo. Este articulo presenta el relato de un estudio de caso vivenciado en el Centro Universitario Feevale, RS - Brasil. A partir de acciones integradas entre profesionales de Educación Física, Fisioterapia y Ergonomía, se faz posible alcanzar excelentes resultados en termos de efectividad de un programa mayor y mas abran gente - El programa Calidad de Vida en el Trabajo - QVT Feevale. Los resultados obtenidos a partir de acciones de la Gimnasia Laboral y de la ergonomía benefician el público interno de la Institución, impactando en la salud y calidad de vida, contribuyendo de forma directa para el crecimiento de la imagen de la Institución. A partir de la experiencia relatada en este articulo, se torna evidente que un trabajo integrado multi, inter y transdisciplinar precisa dejar de ser una “mera falacia” para se tornar realidad. Solamente a través del trabajo integrado entre los profesionales de las diversas careras y institutos, fue posible tener los resultados mencionados.

PALABRAS-CLAVES: Gimnástica Laboral, Ergonomía, Calidad de vida en el trabajo.

A GINÁSTICA LABORAL E A INTERFACE COM A ERGONOMIA: UM ESTUDO DE CASO NO CENTRO UNIVERSITÁRIO FEEVALE

RESUMO

A saúde do trabalhador enquanto temática complexa e carregada de significados, tanto no contexto cultural e econômico, quanto antropológico e social, cada vez mais requer ações multi, inter e transdisciplinares na busca da resolutividade dos problemas oriundos das relações e do ambiente de trabalho. Este artigo apresenta o relato do estudo de caso vivenciado no Centro Universitário Feevale, RS - Brasil. A partir de ações integradas entre profissionais da Educação Física, Fisioterapia e Ergonomia, se fez possível alcançar excelentes resultados em termos de efetividade de um programa maior e mais abrangente - O programa Qualidade de Vida no Trabalho - QVT Feevale. Os resultados obtidos a partir de ações da Ginástica Laboral e da ergonomia beneficiam o público interno da Instituição, impactando na saúde e qualidade de vida, além de contribuir de forma direta para o crescimento da imagem da Instituição. A partir da experiência relatada neste artigo, fica evidente que um trabalho integrado multi, inter e transdisciplinar precisa deixar de ser “mera falácia” para se tornar realidade. Somente através do trabalho integrado entre os profissionais dos diversos cursos e institutos, foi possível colher os resultados mencionados.

PALAVRAS-CHAVE: Ginástica Laboral, Ergonomia, Qualidade de vida no trabalho.