

**56 - IDENTIFICATION OF THE MAIN PROBLEMS OF THE LOCOMOTIVE APPARATUS ACCOMPANYING TEXTILE WORKERS**

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**INTRODUCTION**

Man, as a social being, is accomplished through work, provided he has health to perform his work. The lack or excess of work favor the development of physical and psychic dysfunctions, which lead to the rupture of the balance between the organic systems of man, causing the appearance of several diseases.

With the increase in the search for physical activity in the workplace, it is necessary to retrieve studies and publications about the science of companies that practice modern administrative policies, creating interventions during the work day with the objective of occupational health, aiming at the well being of its employees. However, few companies have the opportunity to participate in quality-of-life programs.

With the arrival of the Industrial Revolution a new system of economic relations was announced, where the industrial sector happened to be essential element of the economy. It was only after the increase in the rate of withdrawals from work by so-called occupational diseases that the worker began to look upon as "a body of feels."

In view of this reality, the objective of the research is to identify the structures of the locomotive apparatus that most suffer loads according to their sector of work and in view of these data, prescribe specific interventions to assist the worker in strengthening and relaxation of these structures.

**JUSTIFICATION AND BENEFITS**

With increasing requirements in the work environment, new technologies were created that had a decisive impact on productivity growth, but as a consequence, cases of occupational diseases within companies increased considerably. It is known that interventions performed within industries, such as the ergonomic analysis of work stations and physical activity programs have been a subject of current studies and are being applied as alternatives to prevent the risks of development of occupational diseases.

The data obtained with this research may serve to identify how the health of the industry workers is considered before the legal representatives of the company. They also serve as an incentive to create new studies, research and new projects to be developed regarding the proposed content.

**METHODOLOGICAL PROCEDURES**

The sample for research were employees of a Textile industry in São Gabriel da Palha of the sectors of cut and sew. All workers in these sectors participated in the survey. To obtain the data, a field survey was conducted in the form of a questionnaire with the objective of identifying and characterizing dysfunctions that may be related to the postures adopted during the working day. The sample consisted of 113 employees of both sexes, being 78% women and 22% men.

The employees were gathered in the hall of Industry, where they were presented with a brief lecture on occupational diseases and the project of Work Gymnastics. The questionnaire was applied the following week, before the beginning of the proposed activities. Along with the questionnaires, the employees received a consent form for reading and signing. No risk was presented to individuals who agreed to participate in the study, since no intervention was intentionally performed on the physiological, social and psychological factors of the participants.

For the analysis of the data of this research, the obtained data were treated with Statistical Methods through SPSS® software.

**ANALYSIS AND DISCUSSION OF RESULTS**

The questionnaire had twelve questions, related to the identification of the worker and the quality of life of the same inside and outside his place of work. For the classification of the age group, we divided into four categories, being up to 20 years (6%), 21 to 30 years (35%), 31 to 40 years (24%) and over 40 years (0%). With regard to working time in the company, 46% of the participants worked in the company for two years or less, representing the majority. Two to five years for (15%), five to ten years (15%) and more than 10 years for only 6%. 18% of respondents did not answer this question.

Regarding quality of life, 82% of respondents said they had a good quality of life, 8% were very good, 7% said they considered it bad and 1% did not respond to this question.

When asked about physical activities, 32% of the sample reported having some practice, even though it is not detailed. The rest, 68% do not perform any physical activity. The sample of participants who said they did not perform any type of physical activity also reported that among the main reasons is the lack of time and laziness or "lack of courage." The 7% who rated quality of life as bad, were among the 68% who do not practice any type of physical activity.

According to Stort (2006) it was observed that the practice of regular physical exercises improve the levels of production of the individual, as well as humor, interfering in a positive way for the worker and the company.

The "lack of time" factor described by the participants as interference in the practice of physical activity may be related to the increase in overtime worked. In general, the workday of the individual in the textile industry starts at 07:00 and closes at 17:00. However, many employees remain in the industry beyond these hours. This extraordinary hour, as it is called directly affects the health of the worker. Since the worker does not maintain the same rhythm of productivity that is expected in this period, and in turn, increases physical and mental fatigue, it tends not to recover completely for the new day of work, increasing the chances of developing various diseases occupational diseases.

For the coronary disease factors, the main changes were stress (62%), followed by sedentarism (15%), hypertension (11%), cholesterol (9%), smoking and palpitations (both 8%), menopause (5%), diabetes (4%) and urea (3%). Barreto and Barbosa-Branco (2000), say that stress can lead to depression, anxiety, fatigue, weakness, among others. In addition to generating situations of insecurity in employment, lack of expectations, and limitations in interpersonal contacts.

Still based on quality of life, 54% of the sample says they are satisfied with sleep, dissatisfied with 25% and very dissatisfied with 3%. Already for levels of job satisfaction, 77% said they were satisfied, dissatisfied with 10%, very satisfied 10%,

and 3% did not respond.

One of the questions is related to the sensation of bodily pain. "Do you feel pain in any part of the body?" For the answer, the questionnaire had an attached doll, with the points to identify the place of the pain as well as the degree of pain of feeling. Among those interviewed, 85% said they felt pain in some region of the body. And only 15% said they did not feel any pain.

According to Trindade et al (2012), pain is one of the main factors that decrease the quality of life of the worker, resulting in suffering and causing various dysfunctions such as physical and psychosocial. These main causes interfere negatively in the performance of the work performed, as well as their personal and family life.

The highest indexes of pain were identified in the trunk, being the largest in the neck (49%), lumbar spine (47%), thoracic spine (37%). The pain appears due to inadequate positions or movements performed for a long time, especially to those who perform manual tasks that require dexterity and a fixed stare to keep attention, keeping the head flexed or in some other inadequate position.

According to the Albert Einstein Care Document Protocol, neck pain is a localized pain in the cervical (neck) region. This pain is described as a shock that usually radiates to the chest or spine, and may cause limitation of some upper limb movements. As for the lumbar spine, second index of greatest pain, the main contributory aspects for occupational low back pain are related to factors such as sitting for long periods of time, inadequate postures, support of heavy loads and activities related to trunk rotations. The majority of the sample that related the highest pain indexes to the region of the spine, works in the sewing sector, spending most of the day in the seated position, usually in incorrect positions with bent head and curved posture on the sewing machines.

This aspect serves as a basis for the identification of the main places of pain of employees located in the region of the spine. In relation to the lower limbs the percentages were not very different, 36% reported feeling pain in the feet, followed by knees (34%) and legs (27%). In addition to the sitting position, a second portion of these employees performs the task standing, as is the case of the cutting sector. In addition to inadequate working conditions, standing posture is widely used in the textile industries, predisposing the worker to various painful situations, such as pain in the spine, leg and foot pains, tingling and postural fatigue. All these factors happen due to the increased static position of load to maintain the positions of feet, knees, hips and spine.

According to REID et al (2010), pain in the lower limbs is a multifactorial and chronic evolution. Therefore, by subjecting the individual to repetitive movements, incorrect postures and constant handling of the load, this worker can be triggered by a strong chance of being affected by the pain referred to the work.

Other regions referred to as workers' pain points were the shoulders (32%), wrists (26%) and elbows (16%).

According to Grandjean and Kroemer (2005), the tables may be very high, causing the work to raise the arms and shoulders, generating overload and tension in these segments. This failure ergonomics of the jobs leads to the emergence of painful states in the regions of the back (neck, shoulders and back).

#### CONCLUSION

The textile industries are currently the subject of much research, especially regarding the worker's quality of life. The overload that most of the individuals working in the textile industry receives is due to innumerable factors related to work. Excessive overtime, lack of ergonomic analysis of the work environment, incorrect postures, overload, are some of the factors found to justify such problems revealed by the workers involved in the research.

The occupational diseases that affect the individuals of the sectors of cut and sew are mainly neck pain and low back pain. Besides these, pains in the legs and feet, as well as tingling, present themselves in a constant way in these workers. Most of these individuals are sedentary and consider themselves stressed which associated with occupational diseases already present can further aggravate the risk factors for new diseases.

Through this study, it was possible to identify strong indications for the development of occupational diseases by the involvement of structures overloaded by work. To present the importance of the implantation of a Work Gymnastics Program, since the majority of the workers do not practice any physical activity, their anatomical structures are strongly weakened and / or stressed by routine activities.

#### REFERENCES

- BARRETO, A.C.; BARBOSA-BRANCO, A. Influência da atividade física sistematizada no estresse e na fadiga dos trabalhadores do restaurante universitário da Universidade de Brasília. *Revista Brasileira de Atividade Física & Saúde*, v.5, n 2, p 23-29, 2000.
- Barreto, M. Lesões por esforços repetitivos: que danos causam no cotidiano das mulheres. Trabalho apresentado In.: *International Congress Women Work Health*, Barcelona, April, 1996.
- CAILLET, R. *Doenças dos Tecidos Moles*. 3 ed. Porto Alegre: Artmed, 2000. p. 467-475.
- KROEMER, K. H. E.; GRANDJEAN, E. *Manual de ergonomia: adaptando o trabalho ao homem*. 5. ed. Porto Alegre: Bookman, 2004. 328p.
- LIMA, Valquíria de. *Ginástica Laboral: Atividade Física no Ambiente de Trabalho*. 3 ed. São Paulo: Phorte, 2007. 349 p.
- OLIVEIRA, L. et al. Physical activity barriers as related to behavior stage in white collar workers. *Medicine Science Sport Exercise Book of Annual Meeting American College of Sports Medicine*. v. 5, n. 30, p. 121, 1998.
- Pinheiro FA, Tróccoli, BT, Paz MGT. Preditores psicossociais de sintomas osteomusculares: a importância das relações de mediação e moderação. *Psicologia: Reflexão & Crítica*. 2006; 19(1):142-150.
- REID, C. R.; BUSH, P. M.; KARWOWSKI, W.; DURRANI, S. K. Occupational postural activity and lower extremity discomfort: A review. *International Journal of Industrial Ergonomics*, v. 40, n. 3, p. 247-256, may. 2010.
- STORT, R.; SILVA, F.P.; REBUSTINI, F. Os efeitos da atividade física nos estados de humor no ambiente de trabalho. *Revista Brasileira de Educação Física, Esporte, Lazer e Dança*. Brasil, 2006. 1: 26-33.

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#### IDENTIFICATION OF THE MAIN PROBLEMS OF THE LOCOMOTIVE APPARATUS ACCOMPANYING TEXTILE WORKERS

Introduction - With the increase in the search for physical activity in the workplace, it is necessary to retrieve studies and publications about the science of companies that practice modern administrative policies, creating interventions during work hours for occupational health, aiming at the welfare of its employees. Objective - To identify the structures of the locomotive

apparatus that most suffer loads according to their sector of work and prescribe specific interventions to assist the worker in strengthening and relaxation of these structures. Methods - Quantitative research, in the form of a questionnaire, applied to all components of the sample, along with Consent Term. Sample composed of 113 employees of a textile industry in São Gabriel da Palha, being women (78%) and men (22%). Questionnaire composed of twelve questions, related to worker identification and the quality of life inside and outside your workplace. SPSS® software was used. Results - 85% of workers feel pain in the body, and only 15% do not feel any type of pain. The sites with the highest pain rates were the neck (49%), the lumbar spine (47%) and the thoracic spine (37%). Pain may appear due to inadequate positions or movements performed over a long period, especially to those individuals who perform manual tasks that require dexterity and a fixed stare to stay in attention, with a bent head or some other inappropriate position. In relation to the lower limbs, the percentages were pain in the feet (36%), in the knees (34%) and in the legs (27%). Conclusion - The occupational diseases that affect individuals in the cutting and sewing sectors are neck pain and low back pain. Besides these, pains in the legs and feet, as well as tingling, present themselves in a constant way in these workers.

Key words: Occupational diseases, textile industry, body-work.

#### IDENTIFICATION DES PROBLEMES PRINCIPAUX DE L'APPAREIL LOCOMOTEUR ACCOMPAGNANT LES TRAVAILLEURS TEXTILES

Introduction - Avec la croissance de l'activité physique dans les locaux de travail, il est nécessaire une révision des études et recherches sur la science des entreprises qui pratiquent des politiques administratives modernes vis-à-vis de la santé au travail. À partir d'interventions pendant les heures de travail, elles cherchent le bien-être de ses employés. Objectif - Identifier les structures locomotrices humaines qui sont plus chargées en fonction des activités réalisées dans divers secteurs d'une industrie textile. Prescrire des interventions spécifiques aux travailleurs pour renforcer et relaxer ces structures. Méthodes - La méthode utilisée est la recherche quantitative, sous la forme d'un questionnaire, appliquée à toutes les composantes de l'échantillon, avec le terme de consentement. L'échantillon est composé de 113 employés d'une industrie textile de São Gabriel da Palha, dont 78% étaient des femmes et 22% des hommes. Le questionnaire a été préparé avec douze questions liées à l'identification du travailleur et à leur qualité de vie à l'intérieur et à l'extérieur du lieu de travail. Résultats - 85% des travailleurs ressentent de la douleur dans le corps et seulement 15% ne ressentent aucune douleur. Les endroits avec des niveaux de douleur plus élevés étaient le cou (49%), la colonne lombaire (47%) et la colonne vertébrale thoracique (37%). La douleur peut apparaître en raison des mauvaises positions ou des mouvements effectués pendant une longue période, principalement aux personnes qui ont un travail exigeant une dextérité manuelle et un regard fixe pour maintenir la concentration, la tête baissée ou une autre mauvaise position. En ce qui concerne les membres inférieurs, les pourcentages sont : douleur au pied (36%), aux genoux (34%) et aux jambes (27%). Conclusion - Les maladies professionnelles qui touchent les individus dans les secteurs de l'industrie textile sont principalement la douleur au cou et la lombalgie. En plus, les douleurs et fourmillements dans les jambes et les pieds sont aussi fréquentes sur ces travailleurs.

Mots-clés: Maladies professionnelles, industrie textile, corps-travail.

#### IDENTIFICACIÓN DE LOS PRINCIPALES PROBLEMAS DEL APARATO LOCOMOTOR QUE AFECTAN A LOS TRABAJADORES DE LA INDUSTRIA TEXTIL

Introducción - Con el aumento de la búsqueda por actividad física en el lugar de trabajo, se hace necesario un rescate de estudios y publicaciones acerca de la ciencia de las empresas que practican políticas administrativas modernas, creando intervenciones durante el horario de trabajo con objetivo de salud ocupacional, visando el bienestar de sus empleados. Objetivo - Identificar las estructuras del aparato locomotor que más sufren cargas de acuerdo con su sector de trabajo y prescribir intervenciones específicas para atender al trabajador en el fortalecimiento y relajación de estas estructuras. Métodos - Investigación cuantitativa, en forma de cuestionario, aplicado a todos los componentes de la muestra, junto con el Término de Consentimiento. Una muestra compuesta por 113 funcionarios de una industria textil de San Gabriel de la Paja, siendo mujeres (78%) y hombres (22%). Cuestionario compuesto por doce preguntas, relacionadas con la identificación del trabajador y la calidad de vida dentro y fuera de su lugar de trabajo. Se utilizó el software SPSS®. Resultados - 85% de los trabajadores sienten dolor en el cuerpo, y sólo el 15% no siente ningún tipo de dolor. Los lugares con mayores índices de dolor fueron, el cuello (49%), columna lumbar (47%) y columna torácica (37%). El dolor puede aparecer debido a posiciones o movimientos inadecuados realizados por largo período, principalmente a los individuos que realizan trabajos manuales que exigen destreza y mirada fija para mantenerse en atención, con cabeza fletida o alguna otra posición inadecuada. Con respecto a los miembros inferiores los porcentajes fueron dolor en los pies (36%), en las rodillas (34%) y en las piernas (27%). Conclusión - Las enfermedades ocupacionales que afectan a los individuos de los sectores de corte y costura son principalmente la cervicalgia y la lumbalgia. Además de estos, dolores en las piernas y pies, así como hormigueos, se presentan de forma constante en estos trabajadores.

Palabra clave: Enfermedades ocupacionales, industria textil, cuerpo-trabajo.

#### IDENTIFICAÇÃO DOS PRINCIPAIS PROBLEMAS DO APARELHO LOCOMOTOR QUE ACOMETEM OS TRABALHADORES DA INDÚSTRIA TÊXTIL

Introdução - Com o aumento da busca por atividade física no local de trabalho, se torna necessário um resgate de estudos e publicações a respeito da ciência das empresas que praticam políticas administrativas modernas, criando intervenções durante o expediente de trabalho com objetivo de saúde ocupacional, visando o bem estar de seus funcionários. Objetivo - Identificar as estruturas do aparelho locomotor que mais sofrem cargas de acordo com o seu setor de trabalho e prescrever intervenções específicas para atender o trabalhador no fortalecimento e relaxamento destas estruturas. Métodos - Pesquisa quantitativa, sob forma de questionário, aplicado a todos componentes da amostra, juntamente com Termo de Consentimento. Amostra composta por 113 funcionários de uma indústria têxtil de São Gabriel da Palha, sendo mulheres (78%) e homens (22%). Questionário composto por doze perguntas, relacionadas à identificação do trabalhador e à qualidade de vida dentro e fora de seu local de trabalho. Utilizou-se o software SPSS®. Resultados - 85% dos trabalhadores sentem dor no corpo, e somente 15% não sentem nenhum tipo de dor. Os lugares com maiores índices de dor foram, o pescoço (49%), coluna lombar (47%) e coluna torácica (37%). A dor pode aparecer devido a posições ou movimentos inadeguados realizados por longo período, principalmente aos indivíduos que realizam trabalhos manuais que exigem destreza e olhar fixo para se manter em atenção, com cabeça fletida ou alguma outra posição inadequada. Com relação aos membros inferiores as porcentagens foram dores nos pés (36%), nos joelhos (34%) e nas pernas (27%). Conclusão - As doenças ocupacionais que acometem os indivíduos dos setores de corte e costura são principalmente a cervicalgia e a lumbalgia. Além destes, dores nas pernas e pés, assim como formigamentos, se apresentam de forma constante nestes trabalhadores.

Palavra chave: Doenças ocupacionais, indústria têxtil, corpo-trabalho.