

28 - ERGONOMIC ASPECTS IN THE ACTIVITY OF BUS DRIVER

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INTRODUCTION

Moraes (2003), says that the ergonomics is a science that develops knowledges on capacities, limits and other characteristics of the human performance between individuals and other components of the syst.

Much are the workers' types that are subjected to overloads and body strains, among them themselves the drivers of bus, who assume unsuitable postures owing to the fatigue of his musculature, which is used continuously during long periods, overloads g great specially on the spine, that enable to provoke muscular imbalances Viel (2000).

lida (2003), comments that the drivers have a tendency to drive during long hours without a resting, besides that , many drivers are remunerated by tasks, then they try to work the possible maximum. Viel (2000) comes to the conclusion of which the duration of the work up to eight hours has a tendency to reduce the rate of accidents, nevertheless from eight hours, they begin to increase significantly. lida thinks, that the work of the drivers of bus also has many inconvenient aspects, due to the bad project of the places of work and the long working days.

According to Vieira ,Bruno and Souza (1999), commenting about physical posture, we can say that there are two different opinions: one tells to herself the posture standard, or ideal, of the mechanical point of view, and other one does the affirmation of that the posture is an individual question, being made a list to the behaviour of an individual. Moro (2000) when affirms that, there is not consensus on the concept of posture, principally when one intends to define what ideal is Posture , shortly speaking , we can think that the posture is the arrangement of the physical segments in the space at determined moment, and that, when the sum of the strength and the sum of the moments that act on the body are both equals to zero, the body is in balance; consequently in a sustainable posture.

It is possible to be said that the establishment of a posture and the possibility of his maintenance is a function of the mechanisms of general balance of the body and according to Gonçalves (1998), in the performance of any human activity several postures are adopted, in accordance with the necessity of strength, speed and precision of the gestures that compose each activity.

Posture and movements are basic for the realization of most of the activities, and they interfere separately or associated to other components, in the productivity and in the health of the workers.

Vieira (2000) also quotes that there is an adaptation of the articulate structure muscle - of an individual in front of the work. This adaptation takes place in reply to the tasks and mechanical loads, for which the muscles are usually subject and for the repetition of specific movements regarding the daily posture and the necessity of maintaining the sitting posture, what is the characteristic of the driver of bus.

Adding up these hours what one passes in the transport, to the table of meals, in the rest of the home, among others, many people pass more than 50 % of the day seated. The sedentary way of life of the modern man goes against his physiologic necessity of constant movement. Long period seated in incompatible conditions with the body produces human costs what is, not seldom, tries to surpass through improvisations and adaptations the existent situations.

According to the research carried out by Waldvogel (2002), the driver of bus it is exposed to a great number of situations of high potential stress . For the author, the factors that contribute to healthy that: the duration of the working day, the precarious situation of the roads, low salaries, the state of the vehicles that have problems of noise, temperature, the traffic jams, relations with the public, etc.

Gaigher and Melo (2001) concludes that when there is talked and analysed the causes, the forms of prevention, and the treatment properly stated, there seems to be a compilation of ideas, which always take the same techniques, like pauses, modifications in the process of work and furnishings.

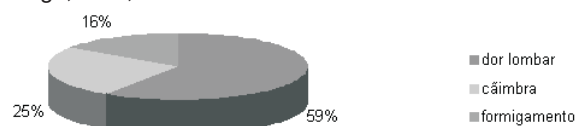
MATERIALS AND METHODS

The actual researches deals of a study of quantitative cross cut, of the epidemiologic character carried out in the west of the Paraná. The sample is composed by 80 drivers of bus of the same enterprise, participated of the research individuals of the masculine sex, which accepted to answer the hard-working questionnaire and signed the free and explained term, to have age superior to 20 years, to be a driver of bus. The collection of data was carried out in the period from 08/05/2009 to 16/08/2009, through the application of the adapted questionnaire of Scheffer, 2002, of form applicable, individual , with questions of alternatives and of easy understanding.

The data collected in the inquiry version will be in the statistical descriptive form, through the program SPSS, 15.0. The total people of the inquiry is composed by 80 professionals, drivers of bus, of the same enterprise, who act in the area of interstate transport. The criteria of inclusion to announce of present inquiry they were: to be of the masculine sex, to accept to respond to the hard-working questionnaire, to have age superior to 20 years.

RESULT AND DISCUSSION

After application of the questionnaire and verification on of the data it was possible to identify the high rate of pain, especially in lumbar region as it was presented in the 59 % of the tests. Because of young adults with the maximum age of 57 years and minimum of 26 years and since they have practiced the profession for more than 3 years, some (28 %) for more than 12 years the drivers of bus reported to be the pain the biggest problem of the practised activity, they showed yet that the lack of the practice of exercises is a high percentage, 62 %, and studies show that the lack of it worsen still more the seated position.



Source author, 2009.

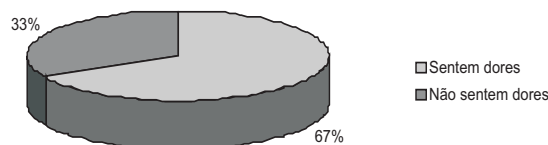
PICTURE 1: Principal complaints of pain

Regarding activity of the driver one of the principal characteristics reported by the participants was the long working day and association with lumbar pain 59 %, cramp is in second place as it was reported, 25 % and the same complemented saying that it attacks with more frequency during the night and the place of the pain are the legs; when it followed by formications 16 %.

The sitting posture, independently of any associate condition, reduces the lumbar physiologic curvature, increase 35 % to internal pressure of the inter vertebrae discs and it lengthens the subsequent structures of the spine. Agreeing with Rodgher and cols. (1996), which after several fulfilled studies, identified that the sitting posture can prejudice the individual, in this case the driver, to bigger rates of general, such as discomforts sensation of weight and formication in different parts of the body, cramps, besides the lumbar problems.

Though the complaint with bigger relevance they put as the pain in the lumbar region, for Dezan (2001), the lumbar pain is a osteomuscle which with bigger frequency limits the professional and daily activities of the workers. It can be caused by a bigger overload and imbalance postural in the development of the daily tasks. The discomfort is one of the principal indicators for the evaluate disease diagnosis, affirms Putz-Andersson (1998), since the principal physical alterations of the body are related to the work have a tendency to be of cumulative nature and are frequently preceded by subjective sensations of discomfort.

Picture 2: Percentage of bus drivers who feel pain in the



Source author, 2009

About the pains suffered by the drivers of bus during the working day, 67 % reported to feel some kind of pain, while 33 % does not feel pains.

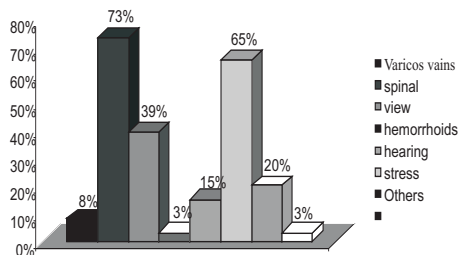
The reported pains it is a consequence of a bad posture adopted by a long period of time in which the professionals are subdued to keeping the same position, seated.

The simple fact of sitting puts the spine in an abnormal position. So when there is adopted the sitting posture, the inferior part of the spine, the lumbar back pain is reduced, suffering a reduction or elimination of his physiologic curvature, in other words, the lumbar bend has a tendency to make the lumbar curvature straight again or it comes itself being altered. With that, the existent space in the previous portion of the vertebrae diminishes and the space of the subsequent portion increases, doing so that the pulposus nucleus, what was in the centre of the disc, is pushed backwards when this posture is adopted.

Individuals who adopt frequently the same physical position during the working day, can produce significant alterations in the physical alignment, besides presenting pain or discomfort in the most used musculature. The same thing finishes acquiring vices posturais, besides other problems originating from the work. These, if not prevented or eased by informations on his post of work and the risks that involve them, affect to middle and long term his performance in the daily life and in the health and, consequently, his quality of life (Comparim, 2006)

Soares, Quéiroga and Szeto, they agree that to remain in the same posture for a prolonged time can provoke pain in the lumbar region, since this region subject to compress due to abrupt movements, vibrations and other factors of overload. Besides several rotations of head and I body also have repercussions on pain on the region of the spine

PICTURE 3: location of more reported pains:



From the data of the printer 3, all the drivers reported to feel some type of pain when they are working, as to that the spinal had bigger percentage rate (73 %), audition and vision were thought high percentages, where even they reported them to suffer visual alterations (65 %) and hearing (39 %).

These data show the situation of the driver of bus, who is subject to several occupational diseases, among them to three main according to Winkleby et al (1988), which are: cardiovascular, gastrointestinal and skinny-muscle. Significant data of recent studies also point to the hearing loss, like one of the principals due to continuous exhibition to the urbane and road noises (Latance, 2001).

According to Verriest (1986), when the vibration reaches a frequency above the normal during a journey as in asphalt, paving or in passages without paving, the organs enter in resonance exceeding his limits. The driver will be able to present visual problems, disturbances gastrointestinais, alteration in the breathing, as well as adoption of unsuitable postures due to muscular fatigue, this also, it is connected with the necessity of remaining seated for the realization of the task, carrying out constant inclinations, rotations and maintenance of determined muscular contracted groups, like legs and trunk, to point of producing physical discomforts, alterations postural, varicos veins and lumbar pain (Quéiroga, 1999).

FINAL CONSIDERATIONS

Through the analysis of the results obtained in the inquiry and according to the objectives proposed by the study, it is possible to conclude that the profile of the driver has his peculiarities, they practice little physical activity and that finishes being turned into one of the originators of strains and discomforts postural.

In this way, the predominance of discomfort to the different parts of the body pointed the spine of bigger percentage,

being the lumbar column. The most reported complaints were a cramps, formication, numbness and by analysing these data it is possible to be saide daily task of the driver of bus provokes different levels of embarrassment skinny-muscle to point of producing physical discomforts that influence his quality of life and of the work.

A necessity of basic directions is noticed in order that habits are changed improving so the quality ergonomic of the worker.

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ERGONOMIC ASPECTS IN THE ACTIVITY OF BUS DRIVER

ABSTRACT

The objective of the present study was to identify the aspects ergonomic in drivers of bus of long distances, and its relation with the post of work. The date analysed were from the complaints relates to quality of life, the physical discomfort developed during the execution of the activities, and the habits of life related from the practice of physical activity. For the sample there were selected 80 drivers of bus of an enterprise of interstate bus of the south region of Brazil, in service of the profession. The instrument of collection of data was the questionnaire with referring questions the conditions of work, of health, habits and way of life when the practice of physical activity. The results were analysed using: descriptive statistic, descriptive, average, I divert standard and percentage. From the analysis significant percentages of physical discomfort happened in the spine were noted , principally in the lumbar region. The most reported complaints were: cramps, formications, numbness and located pains. The conclusion iis that the activity of the drivers of bus of long distances provokes different levels of srhinking muscle skinny-muscle, until producing physical significant discomforts that influence his quality of life and work. This is direct associate to the conditions of work, the pauses, the daily journey, the conditions of health, I as well as , the practice of physical activity.

KEY-WORDS: long journey bus driver - corporal discomfort- post of work

ASPECTS ERGONOMIQUES DU CONDUCTEUR D'AUTOBUS ACTIVITÉ

RÉSUMÉ

L'objectif de la présente étude était d'identifier les aspects ergonomiques dans les chauffeurs de bus de longues distances et de sa relation avec le poste de travail. La date analysée était des plaintes s'entend à la qualité de la vie, le manque de confort physique développé pendant l'exécution des activités et des habitudes de vie rattachée de la pratique d'activité physique. Pour l'échantillon là ont été choisis 80 chauffeurs de bus d'une entreprise de bus entre états de la région sud du Brésil, dans le service de la profession. L'instrument de collecte des renseignements était le questionnaire avec les questions faisantes allusion les conditions de travail, de la santé, les habitudes et le mode de vie quand la pratique d'activité physique. Les résultats ont été analysés en utilisant : descriptif statistique, descriptif, moyen, je détourne la norme et le pourcentage. De l'analyse les pourcentages significatifs de manque de confort physique arrivé dans l'épine dorsale ont été notés, principalement dans la région

lombaire. Les plaintes les plus annoncées étaient : les crampes, formications, l'engourdissement et les douleurs trouvées. La conclusion iis que l'activité des chauffeurs de bus de longues distances provoque de différents niveaux de muscle maigrichon de muscle rhinking, jusqu'à la production des manques de confort significatifs physiques qui influencent sa qualité de la vie et travail. C'est l'associé direct aux conditions de travail, les pauses, le voyage quotidien, les conditions de santé, je aussi bien que, la pratique d'activité physique

MOTS CLÉ : longtemps le conducteur d'autobus de journey - le manque de confort corporel - le poste de travail

LOS ASPECTOS ERGONÓMICOS DEL CONDUCTOR DEL AUTOBÚS ACTIVIDAD

RESUMEN

El objetivo de este estudio fue identificar ergonomía de los conductores de autobús de larga distancia, y su relación con el trabajo. Las variables analizadas fueron las quejas sobre la calidad de vida, el cuerpo molestias que durante la ejecución de las actividades y hábitos de vida relacionados con la actividad física. Para la muestra se han seleccionado 80 conductores de autobús de una compañía de autobuses interestatales en el sur de Brasil, en la práctica. El instrumento de recolección de datos fue un cuestionario sobre las condiciones de trabajo, la salud, los hábitos y estilo de vida, la actividad física relacionada. Los resultados fueron analizados utilizando estadística descriptiva, media, desviación estándar y porcentaje. A partir del análisis hubo porcentaje significativo de las molestias corporales en la columna vertebral, especialmente en la región lumbar. Las quejas más frecuentes fueron: calambres musculares, sensación de hormigueo, entumecimiento y dolor localizado. Por lo tanto, parece que la actividad de los conductores de autobús de larga distancia hace que los diferentes niveles de limitaciones musculoesqueléticas, el punto de producir importantes molestias físicas que afectan a su calidad de vida laboral. Esto está directamente ligado a las condiciones de trabajo, las pausas, su diario, las condiciones de salud, así como la práctica de actividad física.

PALABRAS CLAVE: conductor de autobús, de larga distancia, el malestar del cuerpo, trabajo.

ASPECTOS ERGONÔMICOS NA ATIVIDADE DE MOTORISTA DE ÔNIBUS

RESUMO

O objetivo do presente estudo foi identificar os aspectos ergonômicos em motoristas de ônibus de longa distância, e sua relação com o posto de trabalho. As variáveis analisadas foram as queixas relacionadas a qualidade de vida, o desconforto corporal referido durante a execução das atividades, e os hábitos de vida relacionados à prática de atividade física. Para a amostra foram selecionados 80 motoristas de ônibus de uma empresa de ônibus interestadual da região sul do Brasil, em exercício da profissão. O instrumento de coleta de dados foi o questionário com questões referentes as condições de trabalho, de saúde, hábitos e estilo de vida relacionado a prática de atividade física. Os resultados foram analisados utilizando: estatística descritiva, média, desvio padrão e percentual. A partir da análise verificaram-se percentuais significativos de desconforto corporal na coluna vertebral, principalmente na região lombar. As queixas mais relatadas foram: câibras, formigamentos, dormência e dores localizadas. Portanto, conclui-se que a atividade dos motoristas de ônibus de longa distância provoca diferentes níveis de constrangimentos musculoesqueléticos, a ponto de produzir desconfortos corporais significativos que influenciam sua qualidade de vida no trabalho. Isto está diretamente associado às condições de trabalho, as pausas, a jornada diária, as condições de saúde, como também, a prática de atividade física.

PALAVRAS-CHAVES: motorista de ônibus de longa distância, desconforto corporal, posto de trabalho.

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