

# AN APPLICATION OF PHYSIOTHERAPY TO SOUTH AFRICAN INDUSTRY \*

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In a society where waiting lists are part of every physiotherapy department, as are acute shortages of staff, it is time that physiotherapists became more involved in a preventive role than is the case at present. What better place to do this than in the work place where the majority of complaints begin and the majority of the population are to be found. Physiotherapists have been found to be valuable members of the Occupational Health team in other countries such as Sweden, where there are over three hundred physiotherapists in occupational health, and numbers are growing. These therapists spend their time involved in preventive studies and research of working conditions. They use five main topics for discussion and research:

- Physical strain factors at work, their elimination or minimisation, their relationship to locomotor disorders and the prevention and treatment of such disorders.
- Working posture and correction of factors leading to stressful, tiring postures.
- Preventive pause gymnastics, use of leisure time and breaks.
- The role of psychological factors in musculo-skeletal disorders.

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- Ergonomics which concerns the measuring of working place dimensions and worker anthropometry, well-designed mechanical aids and tools.

A study was made using three Cape Town factories where the managers had agreed to co-operate with the following procedure:

- All the staff were interviewed, as many were illiterate. Employees entered the office individually and were assured of the confidential nature of the survey. They were asked their name, age, occupation in the factory and whether they had any aches or pains. If so they had to indicate the area on anterior and posterior diagrams of the body.
- A tour around the factory followed the interview and an explanation was provided of what each employee or group of employees was doing.
- Observations were made and each major group of employees was assessed in their work situation.
- From the results recommendations for the entire factory, e.g. lighting and ventilation were made.

## CLOTHING MANUFACTURER (FACTORY A)

Fifty eight per cent of the employees interviewed were machinists, all female and average age 25 - 30 years. A high incidence of headache, shoulder, upper and lower back pain was found, in that order. Some lower leg pain was also found as many of the machinists used treadle machines not

powered by electricity. A list of the major problems of this group from assessment was as follows:

- Poor sitting posture (usual position stooped sitting).
- Height of chairs and tables inappropriate.
- Chairs provide little or no support for lumbar spine.
- Incorrect handling techniques (frequent flexion and rotation movements).
- Boredom.

Garment cleaners were found to have similar problems to the machinists, and when viewing their working situation this was not surprising, as all were found to be in much the same working posture as the machinists.

Packers and ironers were found to have one main complaint, *viz.* low back pain. On assessment their problems was summarised as:

- Standing most of the day.
- Incorrect handling techniques.

#### FURNITURE MANUFACTURERS (FACTORIES B AND C)

The other two factories co-operating in this study were furniture manufacturers and were found to have more or less the same complaints, except for one group of employees. There were three main occupations:

- Machine operators
- Hand sanders
- General labourers.

At these two factories the general atmosphere was not as pleasant as A, lighting was only fair, ventilation poor as the air was thick with sawdust. The staff/employee relationship was not as good as at A where all staff were known by name and appeared happy in their work. There was also found to be a more rapid turnover of staff at the pine factories.

The handsanders at C were found to have the highest incidence of complaint, shoulder, hand and lower back pain being the most common. Their problems are summarised as follows:

- No working surfaces provided.
- Employees were using arm muscles instead of body weight to sand objects.
- No seating available.
- No knowledge of kinetic handling.
- Frequent flexion/rotation and extension/rotation movement.

In comparison, the handsanders of B complained primarily of low back pain as did all general labourers and machinists of both factories. B also had a high incidence of headache and sore eyes. This factory had very long working hours and poor lighting in a small warehouse.

#### GENERAL RECOMMENDATIONS

- Employers should strive towards a better staff/employee relationship.
- Lighting should be adequate particularly in the warehouse of the pine factories.
- The length of the working week should not exceed forty-five hours and rest pauses are essential in every occupation. It has been found that increasing the working week seldom increases production.
- Pause gymnastics may be introduced to relieve monotony. Two five-minute sessions of exercise to taped music with instructions enable workers to change position and return to the job refreshed.
- Possible introduction of classes in larger companies, dealing with specific problems such as back injuries and cardio-vascular disorders.
- Introduction of background music for time periods throughout the day.

#### RECOMMENDATIONS ON POSTURE

- Staff should be advised on the use of cushions to support the lumbar spine.
- Where chairs are too high, the legs can be shortened to the correct height.
- All staff should be taught the basics of good standing and sitting posture.
- Instruction should be given on how to relax the muscles of the shoulders, neck, and upper back.
- Correct handling techniques should be taught to all staff.

In conclusion, physiotherapists are trained in the principles of anatomy, physiology and psychology. In addition the prevention of strain, stress, and overuse needs to be emphasized. A post-graduate course has been established at U.C.T. from 1983. Occupational physiotherapy will be the area of the future as populations and industries continue to grow.