

Research/Study

A Controlled Trial of an Educational Program to Prevent Low Back Injuries

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Introduction : Widespread use of employee education programs to offset behavioral risk factors leading to low back injuries have received little rigorous evaluation. Control of LBP is of paramount importance, as it affects 70 to 80 percent of adults at some time in the United States and Canada. Low back injury accounts for 15 to 25 percent of injuries covered by worker's compensation and 30 to 40 percent of the payments made under that program. "Back school" type education programs teach safe lifting and handling. The authors of this study evaluated one such educational program in a randomized controlled trial involving about 4,000 postal workers over a 5 year period.

Method: Mail handlers, maintenance workers and clerks employed by the U.S. Postal Service were taught principles of back safety, correct lifting and handling, posture, exercise and pain management by physical therapists. Work stations were examined and modified, ie: shelf heights adjusted, lumbar supports and rollers added to chairs. Mechanized operations were paced by the therapist. Protective equipment such as back supports was not a part of the program. The unit of analysis was an administrative grouping of employees sharing a work environment and a common supervisor. A total of 34 work units were split between training and control in a random manner. Therapist provided additional reinforcement training 6 months after the first sessions and yearly thereafter.

Results: Over a period of five years (September 1985 - September 1990) 12 staff physical therapists and 2 senior therapists trained 2,534 workers and 134 supervisors in primary back injury prevention. A cross section of the worker population in 1990 showed the training on control groups to be similar in age, sex, craft category and duration of employment as it was at the onset of the study. A midpoint survey found significant increases in knowledge of safe behavior among workers in the intervention group when compared with the control group.

No significant improvement in actual behavior or reductions in the proportion of workers with tired backs were reported by subjects. Over 5 1/2 years, intervention group units (trained) had a higher rate of injury than control groups, but this difference was considered insignificant. Lifting and handling injuries in the intervention and control groups were also not significantly different, nor was there a significance between groups in other musculoskeletal injuries reported. There was little difference in the proportions of total injuries that resulted in lost work days: (61 percent for the intervention group versus 56 percent for the control group). The median total cost per

back injury, as accrued through the end of the study was \$103 in the control group versus \$309 in the intervention group.

Discussion: The results of this study randomized trial indicate that back schools, by themselves, are not an effective intervention for the primary prevention of industrial low back injury.

Quote: "The education program successfully imparted knowledge and skills related to safe lifting and handling, but despite this training and for most intervention group workers, its regular reinforcement, the increased practice of desirable behavior did not take place."

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