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NOTES

The School of Posture as a Postural Training Method for Paraíba Telecommunications Operators

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This work proposes to show the experience of posture training accomplished in the Paraíba State Telecommunication Company, using the knowledge of the Back School. The sample was composed of 12 operators, employees of the company, representing 31% of this population. The model applied in TELPA (Paraíba Telecommunication Company, Brazil) was based on the models of Sherbrooke, Canada, and of the School of Posture of Paraíba Federal University.

Fifty-eight point four percent of participants showed a reduction of column pain, 25% improved the quality of the rest and the received training was considered enough for the learning of correct postures at work in 75% of the cases. The whole population approved of the training, and 83.3% of the cases considered that this training influenced their lives very positively.

school of posture training methodology
telecommunication workers

1. INTRODUCTION

The School of Posture is a method of training composed of theoretical information, practice of therapeutic exercises, and relaxation training, whose objective is to educate people. This method, originally called the Back

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School, was developed in Sweden in 1969 by Zachrisson-Forsell (1981) with the purpose of educating workers so that they took care of their posture, avoiding problems with their spine. The method was quickly diffused in the Scandinavian countries. It is known in French as *École du Dos*, in English as *Back School*, whereas in Brazil it has received several names: *School of Posture* (Cardia, Duarte, & Almeida, 1998; Knoplich, 1986), *School of Column* (Hirota, 1995), and *Back School* (Casarotto & Murakami, 1995).

In 1972 Knoplich developed the *School of Posture in the Work Medicine Department* in the Hospital of the Public Server of São Paulo, Brazil, with the objective of decreasing work absenteeism caused by column pain. He developed several projects directly in companies with specific didactic material (Knoplich, 1994). In 1974 the method was introduced in Canada and in 1975 in several parts of the USA; nowadays it very common outside the country (Hall & Icton, 1983). In Paraíba, Brazil, it was introduced in UFPB (Paraíba Federal University) in 1990 by Cardia, Duarte, and Almeida (1998) with the purpose of stimulating posture education and the understanding of the etiological factors of column pain seeking solemnity education.

Differences exist in the form of the method: The precursory Swedish model accomplishes the training in just four 45-min sessions, over 2 weeks, for a group of 6 to 8 individuals, with the classes conducted by a physiotherapist. Many authors follow this model with small variations, like Bergquist-Ullman and Larsson (1977); Hall and Icton (1983); Lankhorst, Van De Stadt, and Vogelarr (1983); Mattmiller (1980); Moffet, Chase, Portek, and Ennis (1986).

Other authors maintain the same objective, even though they modify the form with regard to the number of sessions (between 6 and 16 sessions), the duration of the session (between 45 min and 3 hrs), and the size of the group (between 8 and 50 people).

The structure of the method can also be altered, with bigger or smaller focus on one of the parts of the method: education, exercise, and control of stress.

The expanded methods (with a larger number of sessions) have demonstrated a greater practice of exercises and a multidisciplinary action with the participation of orthopaedists, psychologists, occupational therapists, ergonomists, besides physiotherapists.

The clientele can consist even of people with sharp pain or of workers with chronic pains or even of people without any pain symptoms, with the objective of preventing bad posture or decreasing the absenteeism index in a company caused by pain complaints.

2. PURPOSE

The purpose of the study was to show the applicability of the School of Posture in the prevention of the impairments of the spine through the results obtained in practice with operators of the section of customer service of TELPA (Paraíba Telecommunication Company, Brazil).

3. METHODOLOGY

3.1. Population

A section of customer service of TELPA, the Paraíba Telecommunication Company: 39 operators.

3.2. Sample

Twelve operators, representing 31% of the population.

3.3. Materials

The training was accomplished in the period of December 1998—February 1999, in a very comfortable, small room, which is close to the amphitheatre (TELPA's training room). Mattresses were used, cervical pillows, ambient sound equipment, a prerecorded relaxation cassette with the therapist's voice, and didactic material (overhead transparencies and the Manual of the School of Posture of Cardia and colleagues, 1998).

The operators (telephonists) answered two questionnaires (before and after the training), describing pertinent subjects about column pain, psychosomatic disturbances, and postural habits.

3.4. Method

The training model proposed here was based on the model of the Back School of Sherbrooke, Que, Canada (Loisel et al., 1994), which consists of 20 sessions of 60 min, and on the School of Posture of UFPB (Paraíba

Federal University, Brazil) that consists of 16 sessions of 90 min. The Sherbrooke model takes place five times a week, and the UFBP one takes place twice a week.

Given the work conditions in TELPA, the sessions were just 30 min long and took place three times a week (each group consisted of 4 workers), at the beginning of the day for the morning shift and at the end of the work day for the afternoon shift. They took place on Mondays, Wednesdays, and Fridays, for 2 consecutive months. The workers' participation was totally voluntary. In the TELPA training program, lengthening exercises and invigoration were accomplished on Mondays and Wednesdays and the relaxing techniques were used on Fridays. The relaxing techniques used in this program originated from the School of Posture of UFPB. The postural orientations were accomplished in two long orientation sessions and informally in exercise sessions.

The theoretical information sought to provide greater knowledge on the body, focusing on some anatomical structures (skeleton, ligaments, and articulations; muscles and nerves); action mechanisms (physiology of movement, of breathing, of rest and pain) and biomechanics (body balance, static and dynamic posture, forces and lever). The necessary theoretical orientations were given for postural education and adoption of new posture habits adequate to the work.

The therapeutic exercises are intended to provide larger flexibility, balance, and body harmony. For that, lengthening of the shortened muscles, invigoration of the weakened muscles, and relaxing of the tensioned muscles were accomplished.

The School of Posture compensates for incorrect postures and prepares the body for healthy aging, minimising the traumatic effects that work carries out in the bone and joint structures.

The relaxing exercises were to decrease the muscular tension and the mental stress, to stimulate the solemnity knowledge, and to improve the control of the body and pain, or—even better—to eliminate pain.

Different types of relaxing techniques were applied. They were based on (a) the works of Jacobson (Sandor, 1982) that uses the beginning of maximum contraction followed by maximum relaxing; (b) the autogenous training of Schultz (1989), which works with the weight sensations, heat, and coolness, among others, seeking the control of emotions and of the body; (c) eutonia (Alexander, 1983), which uses a corporal inventory for the observation of spaces, curves, and volumes; and (d) sufrology (Masson, 1986), which works with images of the future, the past, or both.

4. RESULTS

The average of age of the operators was 38.4 years old, and 66.7% of the population had worked as operators for more than 15 years. Everybody worked in a seated position and most (58.3%) did not practice any physical activity on a regular basis, 50% had varix, and 25% had some kind of diseases of inferior members. Before the training, 91.7% of the population had felt some pain in the column, and the pain was intense for 50% of the cases.

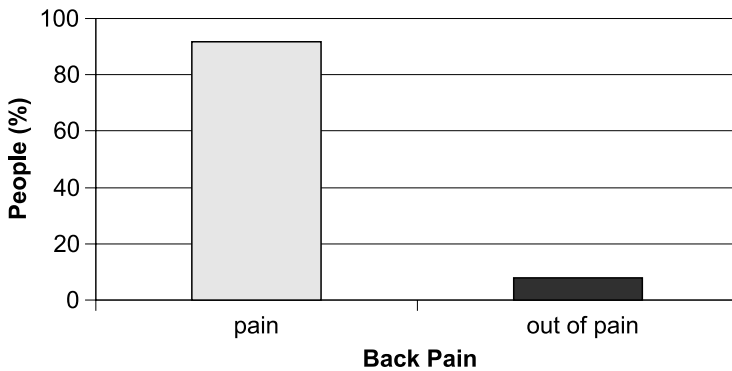


Figure 1. People with back pain before training.

After the training, 33.3% continued to manifest some kind of column pain, but it was intense for just 8.3%.

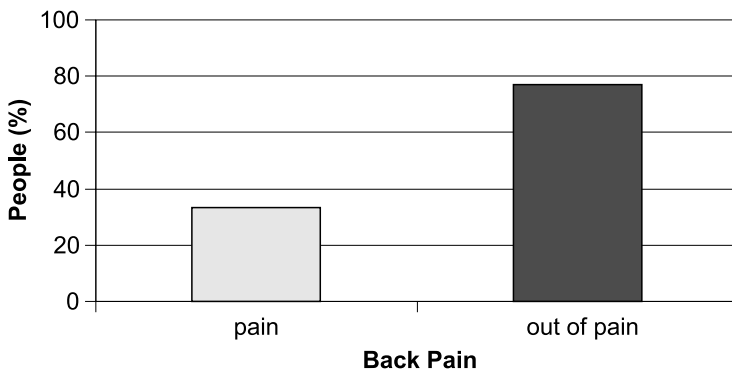


Figure 2. People with back pain after training.

Most of the population (83.3%) confirmed that they identified the factors that caused their column pain, and 33.3% considered themselves capable of controlling the pain before the training.

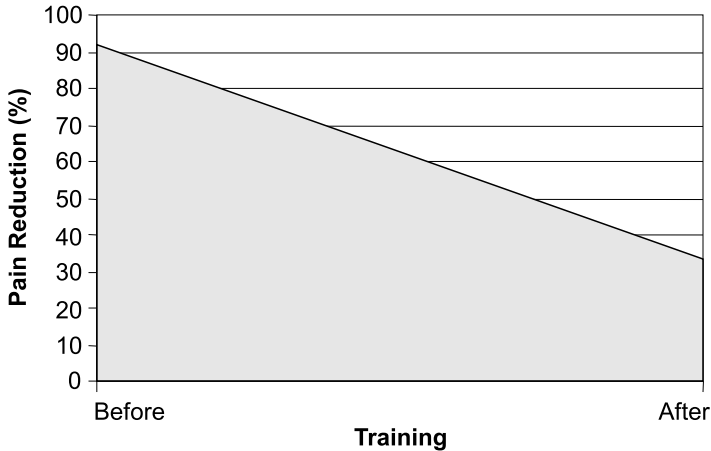


Figure 3. Pain reduction after training.

After the practice, all the operators identified the factors that caused the pain and 50% were capable of controlling their pain.

Before the training 50% indicated they slept well, and that index rose to 75% after the training. Only 25% of them slept in the sideways position initially, later 41.6% of the operators started to adopt that sleeping position. This position was referred to as a good position of sleeping just after the difficult supine position with 8.3% before and after the exercises.

The received training was considered enough to learn correct postures for work in 75% of the cases.

The whole population approved of the training, and in 83.3% of the cases they considered that this training influenced their lives in a very positive way, helping them to change their general attitude toward the problems related to the body and to stress found at work and in their daily life.

5. DISCUSSION

Mattmiller (1980) studied 300 workers of the industry sector and he obtained 75% of positive answers with respect to the prevention of the pain of the column, using the School of Posture.

In studies carried out in USP (São Paulo University, Brazil) with 18

individuals with chronic pain in the column Casarotto and Murakami verified the effectiveness of the Back School, where 93% of the patients submitted to the method reported absence pain after training (Casarotto & Murakami, 1995).

We have reached in our case an index of 66.7% of pain absence at the end of the training program in TELPA.

Linton and Kamwendo (1987) pointed out that the method stimulates solemnity care and Koes, van Tulder, van der Windt, and Bouter (1994) point to the importance of the method as a preventive resource.

We verified the workers' initial ignorance about corporal biomechanics and correct posture for good work and most said that at the end of the training they learned how to correctly sit down, sleep, lift weights, and so forth.

Studies of Dehlin and colleagues (in Hall & Icton, 1983) demonstrated the importance of physical training with 45 auxiliary nurses, divided into three groups, where group 1 just accomplished exercises, group 2 just accomplished educational theoretical classes, and group 3 (control group) did not receive any type of treatment. Group 1 obtained better results.

In TELPA, 60% of the training program was devoted to practicing exercises, 20% to relaxing training, and 20% to educational content.

In the UFPB School of Posture, Melo, Crispim, Cunha, Guedes, and Cardia (1997) verified an improvement in the quality of sleep, in the reduction of pain, and in the modification of postural habits. In TELPA we could confirm such results.

6. CONCLUSION

The study demonstrated that the School of Posture reduced the pain index, mainly intense pain. We attributed this fact to the amount of training exercises, even though we verified a percentile of 16.6% of individuals who did not consider the amount of training enough to learn adequate work postures. We expected all participants would consider it enough.

We believed that just 20% of the total program dedicated to ergonomics and education was insufficient. We propose a better distribution of the three components of the program with 40% of exercises, 30% of relaxing, and 30% of ergonomic orientation, maintaining a major percentile for exercises, considering that several studies have shown that the School of Posture had better results when associated with more intense practical exercises.

REFERENCES

- Alexander, G. (1983). *Eutonia, um caminho para percepção corporal* [Eutonia, a road to body perception]. São Paulo, Brazil: Martins Fontes.
- Bergquist-Ullman, M., & Larsson, U. (1977). Acute low back pain in industry: A controlled prospective study with special reference to therapy and confounding factors. *Acta Orthopaedica Scandinavica. Supplementum*, 170, 1–117.
- Cardia, M.C.G., Duarte, M., & Almeida, R.M. (1998). *Manual da Escola de Posturas* [Back School manual] (2nd ed.) João Pessoa, Brazil: Universitária/UFPB.
- Casarotto, R., & Murakami, S.C. (1995). Grupo de Coluna e Back-school [Column group and the Back School]. *Revista de Fisioterapia da USP*, 2(2), 65–71.
- Hall, H., & Icton, J.A. (1983). Back School, an overview with specific reference to the Canadian back education units. *Clinical Orthopaedics Magazine*, 179, 10–17.
- Hirota, C.T. (1995). Melhor qualidade de vida [Better life quality]. *Saúde Ocupacional e Segurança*, 183, 26–28.
- Knoplich, J. (1986). *Enfermidades da coluna vertebral* [Back injuries]. São Paulo, Brazil: Panamed.
- Knoplich, J. (1994). *Sistema músculo-esquelético: Coluna vertebral* [Musculoskeletal system]. In R. Mendes (Ed.) *Psicopatologia do trabalho*. Rio de Janeiro, Brazil: Atheneu.
- Köes, B.W., van Tulder, M.W., van der Windt, W.M., & Bouter, L.M. (1994). The efficacy of back schools: A review of randomized clinical trials. *Journal of Clinical Epidemiology*, 47(8), 851–862.
- Lankhorst, G.V., Van De Stadt, R.J., & Vogelarr, T.W. (1983). The effect of the Swedish Back School in chronic idiopathic low back pain: A prospective controlled study. *Scandinavian Journal of Rehabilitation Medicine*, 15, 141–145.
- Linton, S.J., & Kamwendo, K. (1987). Low Back School: A critical review. *Physical Therapy*, 67(9), 1375–1383.
- Loisel, P., Durand, P., Abenhaim, L., Gosselin, L., Simard, R., Turcotte, J., & Esdaile, J. (1994). Management of occupational back pain: The Sherbrooke model. Results of a pilot and feasibility study. *Occupational Environmental Medicine*, 51, 597–602.
- Mattmiller, A.W. (1980). The California Back School. *Physiotherapy*, 66(4), 118–122.
- Masson, S. (1986). *O relaxamento* [Relaxing]. São Paulo, Brazil: Manole.
- Melo, V., Crispim, E., Cunha, M., Guedes, T., & Cardia, M. (1997). *Impacto da Escola de Posturas no tratamento das algias da coluna vertebral* [Impact of Back School on back pain]. João Pessoa, Brazil: Encontro de Extensão Universitária.
- Moffet, J.A.K., Chase, S.M., Portek, I., & Ennis, J.R. (1986). A controlled prospective study to evaluate the effectiveness of Back School in the relief of chronic back pain. *Spine*, 11, 120–122.
- Sandor, P. (1982). *Técnicas de relaxamento* [Relaxing techniques] (4th ed.). São Paulo, Brazil: Vetor.
- Schultz, I.H. (1989). *Exercícios de treinamento autógeno* [Training exercises] (21st ed.). São Paulo, Brazil: Manole.
- Zachrisson-Forssell, M. (1981). The Back School. *Spine*, 6(104), 104–106.