Original Article

Educational Program (Back School) to Improve Quality of Life among Dentists

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Abstract

Objective: The low back pain is the most common and most costly occupational diseases. There are several interventions that can reduce low back pain. Program of back school is a short-term intervention and it is composed training programs, assesses and improved skills. The purpose of this study is to survey the impact of the program on the quality of life in dentists with low back pain. **Material and methods:** This clinical trial study consists of 32 dentists with chronic low back pain in the intervention group and 29 dentists in the control group. Control group were only under physical drug treatment and intervention group were trained in educational programs and physical drug treatment. Quality of life at baseline and after 6 months was assessed by the SF-36 questionnaire. Then, two groups were compared before and after the intervention. **Results:** The study shows that back school program is an effective treatment to improve the quality of life of dentistry. The dentists who were treated with this program within the indices of physical condition, physical performance and public health had higher scores ($p<0.05$). This represents a higher quality of life in these items in the patients. **Discussion:** According to the high prevalence of low back pain among dentists, back school program is a useful intervention for treatment of chronic low back pain and it can increase quality of life in dentists.

Keywords: Chronic low back pain; Ergonomics intervention; Back school; Quality of life; Dentists

Introduction

Low back pain is one of the most common and most costly diseases of musculoskeletal and it is a major cause of disability. [1,2] Also, the pain is one of the causes of absence from work and disability in industrialized societies and it causes occupational compensation. [3] About 2/3 of adults suffer from low back pain. [4] The pain is the second referred to the hospital after breathing problems. About 2% of workers claim occupational injuries are the main cause of pain back in America. [5] Approximately 13 percent of all cases of absence from work have low back pain in Sweden during 1960 and 1971. [6] It was shown that 59 to 84 percent of people have at least once back pain during their lifetimes. [7]

These researches show the importance of pain as one of the most challenging health problems in humans. The disease can cause stress, anxiety, physical mobility limitations, reduced physical activity and the lack of participation in group activities and social. [8,9] Chronic low back pain is defined as low back pain for more than 12 weeks. [10] About 10 to 20 percent of patients with low back pain getting chronic back pain. [11] Although chronic low back pain affected a small group of patients, however, social and economic harms are more than the cost of treatment. [12] About 80 percent of the resources and the cost of special treatment are assigned for treatment of back pain while the success rate of this treatment is also very low. [13] The commercial and industrial managers note the attention to the economic aspects so that led to multiple efforts to achieve a comprehensive approach in order to prevent of low back pain. [14] Educational interventions were noticed preventing the prevalence of low back. [15] An educational intervention program is back school that first conducted in Sweden in 1969. The program includes training program and awareness-raising in chronic low back pain of patients about the anatomy and function of the spine, discs between the inter-vertebral discs, ergonomic principles and ways of maintaining the good condition of the spine that is involved in four 45-minute sessions to be held within two weeks. [16] There is strong evidence on the effectiveness of programs in order to prevent low back pain. [17] It seem that with the implementation of a training program can prevent of low back pain and it can be reduced very high costs spent on back pain treatment techniques that are often without success. On the other hand, only 30% of costs include direct costs such as costs related to treatment and about 70 percent of costs are indirect costs such as reduced productivity. [18] Dentistry is an occupation that there is chronic low back pain. [19] Caballero et al. shows that more than 89 percent of participants changes your posture when they are working in alternating shifts. [20] Also, they show more than 80 percent of dentists are participating with chronic low back pain. [20] The effects of intervention on the Back School have not been studied on dental yet. The prevalence of

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musculoskeletal disorders is high in dental jobs and they are faced with risk factors for lumbar injury. [19] It seems that Back School program can be effective in preventing these injuries in this job. Also, it can help to prevent the direct or indirect costs resulting from them. Moreover, it can promote their quality of life and health improvement.

Materials and Methods

Participants included working dentists with chronic low back pain that they referred in the first half of 2016 due to back pain were referred to treatment centers in Tehran city. All participants were obtained informed consent form. Inclusion criteria included dentists between the ages of 20 to 55 years, have had chronic back pain for at least 3 months. [10] The excluding criteria are occupational low back pain, trauma, infection, tumors, inflammatory diseases, surgery and were pregnant in the last 6 months. [10] The sample size was chosen equal to 45 in each group considering the minimal difference between the scores of SF-36, the difference before and after intervention in both groups. After registering eligible patients, trained interviewers explain adequate description about the objectives, methods of research, the ethical in terms of confidentiality of information to those introduced by the doctor. If their full consent to participate in the study and signed a written informed consent were enrolled and they randomly divided into two groups, control or intervention. After this point, the data at first phase (before treatment) are taken from both groups. Data collection tools included two questionnaires. The first is demographic characteristics (self-made), and the second is a questionnaire SF-36. Demographic features are such as age, weight, level of education, duration of low back pain and some awkward postures. It is a comprehensive questionnaire to measure quality of life in all health-related problems. The questionnaire surveys eight aspects of quality of life with 36 options which will be completed by the individual or by interview. Also, it is applicable in different age groups and various diseases.

Dentists were divided into groups of 5 to 6 in the intervention group. They participated in 4 sessions and practical exercises in order to learn and monitor the implementation of physical activity. Each week was held a 2-hour meeting for this group. At first, it was trained 18 exercises, 4 the self-positioning (2 extension and 2 flexion), 8 twitch (lumbar spine, quadriceps, psoas hip adductor) and 4 move strengthens of the muscles (abdominal and trunk muscles) in three sessions. Of dentists was asked to do these exercises every day at home. In order to remind the people, a booklet was prepared to explain the sports. Exercises of the previous session were reviewed. At the end of month, exercise program of 30 minutes of physical activity (9 exercises per session) was done. The control group received therapy by dentist and intervention group received medication therapy and trained educational programs. Data analysis was performed by software SPSS version 22. We used ANOVA to compare between two groups in terms of the parameters of the SF-36. Paired t-test was used to evaluate differences in SF-36 parameters were taken before and after intervention. Level of 0.05 was considered as significant level.

Results

In this study, 32 dentists participated (24 women and 8 men) with chronic low back pain and 29 dentists in the control group (22 women and 7 men) in the intervention group. The mean age was 31/45 years and 37/12 and standard deviation was 31/40 and 48/11 respectively in the intervention group and the control group. There was no significant difference between the two groups in terms of demographic characteristics. Table 1 shows the demographic characteristics between the two groups.

Table 1: Demographic characteristics of dentists participating in the study in intervention and control groups.

Demographic characteristics	Intervention group (n=29)	Case group	P-value
Age	45.31 (12.37)	40.31 (11.48)	0.03>
Weight	65.43 (6.7)	66.21 (7.1)	<0.04
Sciatica pain	13 positive 16 negative	14 positive 18 negative	0.05>
Pain time (month)	7.6 (3.1)	8.44 (3.6)	0.01>
Cigarette situation	2 yes	3 yes	<0.03
Psychological aspect of quality of life	42.32 (26.81)	41.98 (24.35)	<0.04

There was significant difference between the mean scores of physical pain, general health and mental health items in the intervention group compared to the control group [Table 2]. This represents a higher quality of life dentist in the intervention group compared to the control group. There was no significant difference between mean of the two groups in other. There was significant difference between mean scores of physical pain, general health and mental health items in intervention group.

Table 2: Results of the evaluation of SF-36 in both intervention and control groups before and after intervention.

	Intervention group (n=29)		Control group (n=32)		Confidence interval (%95)	
Variables	Before intervention	After intervention	Before intervention	After intervention	(F between assessments)	P-value
Physical performance	63.77 (24.15)	73.28 (21.08)	65.5 (19.43)	70.42 (20.31)	(-6.58,3.44) (13.47)	0.21
Physical condition	24.38 (27.73)	55.36 (39.3)	34.9 (39.45)	52.6 (45.02)	(-17.26, 4.75) (26.76)	0.67
Physical pain	45.52 (18.76)	65.54 (23.45)	40.55 (19.54)	52.58 (25.2)	(1.17,12.48) (23.79)	0.03
General health	52.2 (21.49)	63.79 (18.45)	53.28 (19.54)	49.65 (20.3)	5.86,14.65) (23.44)	0.001
Vitality	56.25 (16.94)	68.41 (18.44)	52.08 (22.48)	50.62 (22.56)	(-1.17,8) (17.17)	0.09
Social Performance	68.1 (24.68)	71.43 (18.6)	57.03 (25.78)	62.11 (22.56)	(-3.4,7.84) (18.36)	0.17
Emotional role	39.88 (35.24)	59.26 (40.65)	56.99 (44.88)	50 (44.8)	-13.93,9.54) (33)	0.39

Discussion

The clinical trial shows the effect of health education to improve the quality of life of people with chronic low back pain lumbar spine after intervention than before the intervention. There is an increase in quality of life scores in the control than the intervention group of change. It can be said that intervention training program can improve quality of life of intervention group. These results are the same with previous studies. [21] In this study, we show that educational programs not only on the physical but also the mental aspect of quality of life impact. [22] Recent studies on this subject have shown that the quality of life of people with chronic low back pain more than it is related to physical problems are more related to their physical function and psychological. [23] This study showed that education program of back health can improve the physical and psychological situations.

An interesting finding of this study and group is intergroup interaction between time and group on each other that the effect of the intervention group is more than in control group. This effect was greater in the intervention group when time interactive effects, and drug education program was evaluated. On the other hand, only intergroup interaction the drug and time effect was measured in the control group. It can be said that what makes the difference in quality of life scores between the two groups was the effect of education program in back health. Also, the time and the drug have failed to improve in quality of life in the control group than intervention group. Educational programs of back health can be considered as an effective intervention in improving quality of life in patients with chronic low back pain. So that it can reduce pain, improve daily activities and promote the quality of life. On the other hand, taking the drug and educational program can improve of back health, reduce disability and increase in performance levels have had the effect of stretching exercise. The results of this study showed that there are increasing in the quality of life score in mental aspect of the control group. This result seems to be in effect sedation. Also, the mental aspect of quality of life scores in the intervention group was significantly lower than the control group. This result may be due to the role of educational program of back health. The program emphasis on reduce disability through the right exercise and psychological and social factors due to pain. Moreover, through appropriate recommendations to control of stress has been able to improving the quality of life score in mental aspect than the control group. Previous studies have shown that exercise can increase the ability of individuals and enhance the quality of life. [24] Also, the effect of the educational intervention or Back school has decreased over time. Moreover, previous studies have also been associated with short-term impact of Back school. [25] It can because the incentive of participants reduces to continue the exercise and maintain the correct position of the spine. [26, 27]

The difference in quality of life is due to the impact of back health program.

Conclusion

The results imply that the educational program of back health can improve the quality of life in dentists with back pain.

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Conflict of Interest

All authors disclose that there was no conflict of interest.

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