

CHAPTER 5

DISCUSSION

The effects of back school program on pain intensity, back knowledge, lumbopelvic stability, quality of life and quality of lifting in seven weightlifters with low back pain were evaluated in this study.

5.1 Pain intensity

Pain intensity is used to express the amount of pain experienced by weightlifters. According to the results of current study, pain intensity at baseline varied from 2 to 8 on the NRS. Two subjects had mild pain (NRS=2), three subjects had moderate pain (NRS=4-5) and two subjects had severe pain (NRS=8). Therefore, a wide range of pain intensity was covered by this group of subjects.

No statistically significant difference in pain intensity was found between three time intervals. However, at the end of 8 weeks of back school program, pain intensity decreased to zero in 6 of 7 weightlifters (85%). The average pain changed from 4.93 at baseline to 1.00 after the back school program ceased. The difference between two measures was greater than 2.5. This value represents the minimal clinically important change in CLBP patients. In other word, it is the smallest difference in score in the domain of interest which patients perceived as beneficial from treatment. Therefore, clinical instead of statistical significant results of back school was found in this study.

In contrast, one weightlifter had an increased pain throughout the back school program and at one month follow-up. The pain intensity was 5 on a NRS at baseline, increased to 7 on a NRS at posttest 1 and 8 on a NRS at posttest 2. This weightlifter also had pain in both knees (Appendix E). Poor progression of back pain may be due to multiple musculoskeletal problems.

Most weightlifters from this study had an improvement in pain intensity while only one subject had negative result. The mechanism of back school program that improves the pain intensity in majority of subjects is still unclear. Inconclusive results may be due to small number of subjects. Therefore, it can not be concluded that the back school is effective in this population.

Previous research related to the effect of back school on pain intensity also provides inconclusive results. This may be due to difference in content and length of the program, type of participant and outcome measures (68).

5.2 Back care knowledge

Back care knowledge was delivered to weightlifters in 2 phases: the knowledge and pain management. The knowledge phase in the first week consisted of a one hour lecture on anatomy and back function, biomechanics, ergonomic, pathology of back pain plus stretching exercise demonstration. While the pain management phase was a one-hour class composed of discussion of awareness, pain perceptions, coping skill and demonstration of the coping strategies. Both phases

were designed to improve back care knowledge, promote correct postural habit and relieve back pain.

The result of this study indicated that knowledge of weightlifter did not improve significantly after attending these two phases of back school program. Scores of knowledge test at baseline ranged from 14 to 18 out of 20. The average score of the group was 15.57 or approximately 75% indicating moderately good knowledge at baseline. Knowledge test was repeated at posttest 1 and posttest 2. No improvement in knowledge score was found. Weightlifters scored less in the questions related to biomechanics and healing process and this finding was repeated at posttest1 and 2. Poor results implied that teaching method may not be appropriate for these two topics.

This study used the traditional lecture method in knowledge phase. This teaching method is commonly used to present a framework of what is to be learned. However, the lecture method may have some limitation in health teaching. As the ability to process information and absorb new details are different in individuals therefore, some people may learn very little. It is suggested that 20 minutes for the initial talk with opportunity for questions or three of 10 minutes sessions interspersed with opportunities for the group to ask question and discuss helps the teacher to appraise the level of knowledge and make immediate adjustments to the learners' need. Finally, constant teaching, repetition, and correction are important points for effective teaching (73).

5.3 Lumbopelvic stability

During the third phase of back school program, weightlifters received stabilization training exercise programs. These exercise programs were divided into 4 stages: local segmental control (2 weeks), closed chain segmental control (1 week), open chain segmental control (1 week), and work simulation (2 weeks). Weightlifters participated in the exercise class for 30 minutes one day per week and were asked to continue these exercise programs at home everyday.

Weightlifters were asked to keep their records on the frequency of exercise they did at home. Only one weightlifter did full program of exercise every day (36 days), while the rest of the group performed full program of exercise for some days, ranging from 10 to 33 days and one weightlifter never did full program of exercise even a day (Appendix E).

The results of this study revealed that eight weeks of back school program did not significantly change the level of lumbopelvic stability in weightlifters. The limited supervision of exercises during training may be the major limitation of this study. Weightlifters made their own choices on practicing stabilization exercise during the rest of the week. The regular weightlifting training program consisted of one hour of cardiovascular and strength training and three hours of skill training per day, 6 days per week. This may make weightlifters to fatigue to do extra stabilization program. As a result, only one weightlifter performed full exercise program and most of weightlifters performed only some parts of lumbopelvic exercise program.

Although change in lumbopelvic stability was not found after the back school program, pain and quality of lifting showed a tendency toward positive results. This may imply that lumbopelvic stability test may not be used alone in detecting functional improvement.

5.4 Quality of life

CLBP patients suffer from the difficulties experiencing condition on physical and mental health in their life (71). Health related quality of life in low back pain patients depended on functional and psychological status (62). Quality of life is coming to be accepted as one of the most important outcome domains to be measured in any therapy or health related intervention (74). This study utilized back school program based on a health education approach to empower participants through a process of assessment, education and skill building, leading to improve quality of life in weightlifters with low back pain (72). Nevertheless, this study found that quality of life of weightlifters with low back pain did not change significantly after attending the back school program.

Quality of life is a more subtle indicator of both patient satisfaction and willingness to adhere to treatment (42). SF-36 is sensitive to changes in evaluating the health of the general health and valid to be used to objectively identify the patients at risk for delayed recovery (48, 49, 67, 71). However, it is important to remember that SF-36 scores represent self-reported, and not objective, data of the patients. The results of this study are opposite to a dose-response relationship between pain and quality of life: as one increase, the other proportionately decrease (75). The lower SF-

36 scores most likely reflect psychological factor and not ill health per se and may imply that the participants need a specific assessment (49).

In chronic low back pain, compensation involve may adversely affect self-reported pain, depression and disability before and after rehabilitation (76). The domains of psychological functioning (including feeling less at ease), physical status (including an increase in incidence of other somatic complaints), and functional status (defined as greater impediments to leisure and daily activities) were particularly affected. Recovery from various spinal conditions depends not only on physical factors, but also on psychological factors (77). Psychological factors may have a profound influence on self-perceived general well-being and disability from back pain (78). Poor treatment outcomes may result from initial lower perceived health-related quality of life in these patients (49). The presence of comorbidity in spine patients may add to be burden of spinal condition on functional status, leading to lower PCS score.

Active rehabilitation intervention strategies designed to improve physical and mental well-being should be promoted, because they could have an impact on enhancing positive health outcome (78). Stress management, psychological counseling and group therapy may help to improve the mental health of these patients. Perceived physical factors are just as important in the overall functional status and well-being (49).

Previous study reported that back school program can help to improve quality of life especially on the bodily pain, vitality and mental health subscales scores (71, 72). Two factors might be related to improve quality of life: bodily pain reduction which eased the performance of daily activities and reduced the risk of disability due to learning to have more health body mechanic (71). Both factors related with the goal of back school program aim to restore the highest possible level of functioning, increase functioning and lower disability. Diminishing the risk of disability indicates a positive impact on this complex and resistant phenomenon (71). Nonetheless, this study showed only a positive trend in bodily pain, which eased the performance of daily activity (6).

5.5 Quality of lifting

Quality of lifting is a self-report questionnaire (79) designed to evaluate the amount of pain experienced during snatch and clean and jerk lifting in elite weightlifters with low back pain (79, 80). The intensity of pain at baseline varied from 2 to 8 on a NRS. All but one weightlifter experienced no pain at posttest 1 and posttest 2 when lifting in snatch and clean and jerk positions. Pain on lifting did not improve in one weightlifter. The intensity of pain at baseline was 5 on a NRS which was moderately high and increased to 7 and 8 on a NRS at posttest 1 and posttest 2.

Impairment of trunk muscle strength, flexibility and endurance were commonly reported in CLBP patients. The impairment may contribute to long term inhibition of movement and physical inactivity resulting in neurological and physical change of the spine (80). Patients who suffered from daily pain were more likely to

have impairment in activities of daily living, mood disorder and decreased involvement in activities (42).

5.6 Limitation of the study

The limitation of this study was the lack of a LBP control group. This was not possible in the present study due to small sample size conducted in elite weightlifters.

5.7 Conclusion

Application of an eight-week of back school program tends to decrease the intensity of pain and improve the quality of lifting in weightlifters with low back pain, while progression on lumbopelvic stability, quality of life and back care knowledge were not found.