

Effectiveness of Impairment Specified Muscle Strengthening Programme in a Group of Disabled Athletes

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Abstract : Maintaining or improving the muscle strength of the injured body part is essential to optimize performance among disabled athletes. General conditioning and strengthening exercises might be ineffective if not sufficiently intense enough or targeted for each participant's specific impairment. Specific strengthening programme, targeted to the affected body part, are essential to improve the strength of impaired muscles and increase in strength will help reducing the impact of disability. **Methods:** The muscle strength of hip, knee and ankle joints was assessed in a group of randomly selected disabled athletes, using the Medical Research Council (MRC) grading. Those having muscle strength of grade 4 or less were selected for this study (24 in number) and were given and a custom made exercise program designed to strengthen their hip, knee or ankle joint musculature, according to the muscle or group of muscles affected. Effectiveness of the strengthening program was assessed after a period of 3 months. **Results:** Statistical analysis was done using the Minitab 16 statistical software. A Mann-Whitney U test was used to compare the strength of muscle group before and after exercise programme. A significant difference was observed after the three month strengthening program for knee flexors (Left and Right) ($P = 0.0889, 0.0312$) hip flexors (left and right) ($P = 0.0312, 0.0466$), hip extensors (Left and Right) ($P = 0.0478, 0.0513$), ankle plantar flexors (Left and Right) ($P = 0.0466, 0.0423$) and right ankle dorsiflexors ($P = 0.0337$). No significant difference of strength was observed after the strengthening program in the knee extensors (left and right), hip abductors (left and right) and left ankle dorsiflexors. **Conclusion:** Impairment specific exercise programme appear to be beneficial for disabled athletes to significantly improve the muscle strength of the affected joints.

Keywords : muscle strengthening programme, disabled athletes, physiotherapy, rehabilitation sciences

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