EFFECT OF SPECIFIC CORE AND STATIC STRETCHING TRAINING PROGRAMME ON MUSKULOSKELETAL FLEXIBILITY AND BALANCE OF TRIPURA CRICKETERS

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ABSTRACT

To determine the effectiveness of 12 weeks specific core and static stretching training programme on musculoskeletal flexibility and balance among selected Tripura cricketers. Pre test – post test randomized group design were undertaken for the present study which consist of an experimental group and control group. Equal number of subjects (n= 30) were assigned randomly to both the groups. The experimental group was exposed to 12 weeks specific core and static stretching training programme whereas, no treatment was given to control group. For the purpose of the present research work a total of 60 Cricketers were randomly selected for the present research work. Musculoskeletal flexibility and balance was selected as a dependent variable and 12 weeks specific core and static stretching training programme was considered as an independent variable. The data was analyzed by applying one tailed t-test was applied to draw appropriate conclusions and to find out the effect of 12 weeks specific core and static stretching training programme on musculoskeletal flexibility and balance variables among selected Tripura cricketers. The significance level was set at 0.05. The results indicated that there was significant difference found in experimental group selected Tripura state cricketers on musculoskeletal flexibility and balance variables in comparison to control group. The findings of this study showed that 12 weeks specific core and static stretching training programme was an effective training technique to improve cricketers’ musculoskeletal flexibility and balance abilities.

Keywords: Specific, Core, Static Stretching, Muskuloskeletal Flexibility, and Balance.
INTRODUCTION

Aspect of conditioning the young cricketer is the principle of specificity, basically this means that the best form of conditioning for cricket is actually playing or practicing cricket and it is obviously important for any cricketer to have good specific levels of fitness as these will compliment his performance. However, fitness training can never make an average cricketer into an excellent one, but it will definitely make a good cricketer even better. Some of the drills that we use to specifically condition the batters involve various forms of shuttle runs. This is specific to the type of running activity that batters undergo whilst batting. Segmental stability and mobility control of the core body (i.e., lumbo-pelvic control) as well as flexibility of the body parts accentuate peak performance and prevent musculoskeletal injury Punjabi, (2003). Improper activation and poor control of deep trunk muscles (i.e., Transverse Abdominus, Multi Fidus) exist in asymptomatic individuals showing inability to control lumbo-pelvic stability, which is the early detecting sign for the back problems (Harrington et. al. 2005 & Standaert et. al. 2008). Remarkably, the dysfunction and delayed onset of Transverse Abdominus (Hodges, 2001) and atrophy of Multi Fidus (Yoshihara et. al. 2001) appear in most with low back pain. Consequently, CNS is not able to control these muscles in feed-forward manner. These changes cause instability of the spine. In addition to repetitive contraction, muscles will generate pulling stress upon the proximal attachments during movement which affects directly joints and soft tissues surrounding the spine as a result of strain and degeneration (Hodges, 2003). Forward bending is a combination of lumbar flexion and pelvic tilting (Nordin, 2001). Tightness of hamstring muscles may restrict pelvic tilting due to their attachment to the ischial tuberosity on pelvis (Gajdosik et. al. 1994). Hamstrings tightness and low back flexibility are also associated with low back pain (Jones et. al. 2002 & Battie et. al. 1990). However, flexibility and balance are crucial elements of fitness to gain optimal musculoskeletal function enhancing peak performance (ACSM, 2010).

Hence, the purpose of the present study was to identify the effects of 12 weeks specific core and static flexibility training programme on musculoskeletal flexibility and balance among selected Tripura cricketers in order to develop more efficient training tools.

METHODOLOGY

For the purpose of the present research work a total of 60 cricketers were randomly selected. These subjects had represented Tripura Cricket Association (Affiliation to BCCI) in tournaments. The age of the subjects were ranging from 19 years to 31 years. The average age was being 25 years. Musculoskeletal flexibility and balance were selected as a dependent variable and 12 weeks of specific core and static stretching training programme was considered as an independent variable. Musculoskeletal flexibility was measured in centimeters rounded off 0.01 centimeter by using measuring steel tape. Whereas, balance was measured in seconds rounded off 0.01 second by using electronic digital stop watch (Casio 100-lap). To test musculoskeletal flexibility sit and reach test was administrated for Tripura cricketers. However, for balance lengthwise and crosswise brass stick test were administrated. Specific core and static stretching training programme including upper and lower body were administered three times a week on experimental group subjects at M.B.B. Stadium in Agartala for a period of 12 weeks (84 days) while the control group underwent only their regular practice schedule. Before the administration of training programme, sit and reach and brass stick lengthwise & crosswise test were respectively administrated at same venue on both the group’s namely experimental group and control group respectively to collect pre test data. After the completion of 12 weeks training programme again the same musculoskeletal flexibility and balance tests were conducted to collect the post training data. To analyze the data t-test was computed and the significance level was set at 0.05.
FINDINGS

The findings of the study are given below:

**Table 1.0:** Analysis of One tailed t-test on the Data of Musculoskeletal flexibility and balance among Selected Groups

<table>
<thead>
<tr>
<th>Variables</th>
<th>Groups</th>
<th>Df</th>
<th>Pre-test Mean</th>
<th>Post-test Mean</th>
<th>DM</th>
<th>‘t’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musculoskeletal Flexibility (Centimeters)</td>
<td>Control</td>
<td>29</td>
<td>18.59</td>
<td>18.37</td>
<td>-0.22</td>
<td>1.44</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>29</td>
<td>12.93</td>
<td>18.16</td>
<td>5.23</td>
<td>12.26*</td>
</tr>
<tr>
<td>Balance: Lengthwise (Seconds)</td>
<td>Control</td>
<td>29</td>
<td>118.28</td>
<td>118.08</td>
<td>-0.20</td>
<td>0.96</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>29</td>
<td>125.49</td>
<td>129.21</td>
<td>3.72</td>
<td>10.28*</td>
</tr>
<tr>
<td>Balance: Crosswise (Seconds)</td>
<td>Control</td>
<td>29</td>
<td>129.76</td>
<td>129.74</td>
<td>-0.02</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>29</td>
<td>134.08</td>
<td>137.53</td>
<td>3.44</td>
<td>9.24*</td>
</tr>
</tbody>
</table>

N = 30

* Significant at .05 level. ‘t’ 0.05 (29) =1.70

The graphical representation of pre and post test means of control and experimental group for musculoskeletal flexibility (sit and reach test) and balance (brass stick lengthwise and crosswise test) are presented in figure 1.0, 1.1 and 1.2 respectively.
DISCUSSION

The experimental group cricketers were outperformed in musculoskeletal flexibility and balance (i.e., lengthwise & crosswise) variables respectively and found significant as compared to control group. This could be due to the fact that the experimental group subjects hence underwent a with rigorous and regimented fitness regime as prescribed by the researcher 12 weeks specific core and static stretching training programme in a structured modern infrastructure i.e., indoor stadium and ultra – modern fitness facilities than their counterparts belonging different districts of the state. Despite the wide-spread promotion of core exercises as being sports specific. Few studies (Boyle, 2004; Versteegen, 2004; Santana, 2001; Chek, 1999; & Gambetta, 1999) had actually examined the effectiveness of such exercises on performance measures and the findings of these studies strongly recommended their specific use for sports conditional abilities. However, Sekendiz et. al. (2012) also investigated the effects of swiss-ball core training on trunk extensor (abdominal)/flexor (lower back) and lower limb extensor (quadriceps)/flexor (hamstring) muscular strength, abdominal, lower back and leg endurance, flexibility and balance in sedentary women and the results of this study supported the similar fact that swiss-ball core training exercises improve muscular strength, abdominal, lower back and leg endurance, flexibility and balance.

CONCLUSION

The results indicated that there was a significant improvement had exhibited by experimental group cricketers on musculoskeletal flexibility and balance after exposed to 12 weeks specific core and static stretching training programme in comparison to control group subjects. Hence, it is concluded that specific core and static stretching training programme was an effective training technique to improve a cricketers’ musculoskeletal flexibility and balance.

REFERENCES


