

Keywords: *musculoskeletal, physical therapy, rehabilitation, chronic pain, patient education*

Method

Study design and participants:

The study was a randomized controlled trial. The participants were elite fast bowlers with scapular dyskinesia. The study was conducted in a laboratory setting. The participants were recruited from a national cricket academy. The study was approved by the ethics committee of the institution.

Procedure:

The participants were randomly assigned to two groups: Group A (Ballistic stretching) and Group B (Sleeper stretching). The participants performed the stretching exercises for 10 minutes. The stretching exercises were performed before the bowling session.

Group A: Ballistic stretching

Group A performed ballistic stretching exercises. The exercises included dynamic stretching of the shoulder and thoracic spine. The exercises were performed in a controlled manner. The participants were instructed to perform the exercises for 10 minutes.

Group B: Sleeper stretching

Group B performed sleeper stretching exercises. The exercises included static stretching of the shoulder and thoracic spine. The exercises were performed in a controlled manner. The participants were instructed to perform the exercises for 10 minutes.

Static stretching for both group

Both groups performed static stretching exercises. The exercises included static stretching of the shoulder and thoracic spine. The exercises were performed in a controlled manner. The participants were instructed to perform the exercises for 10 minutes.

Outcome measures

The outcome measures included range of motion, muscle strength, and scapular dyskinesia. The range of motion was measured using a goniometer. The muscle strength was measured using a dynamometer. The scapular dyskinesia was measured using a visual analogue scale.

Statistical Analysis

The statistical analysis was performed using SPSS software. The data were analyzed using descriptive statistics, frequency and percentage analysis, Chi-square test, Mean and SD, and Paired 't' test.

Frequency and percentage analysis, Chi-square test

The frequency and percentage analysis was used to compare the distribution of the outcome measures between the two groups. The Chi-square test was used to determine the significance of the differences.

Mean and SD

The mean and standard deviation (SD) were used to describe the central tendency and variability of the outcome measures.

Paired 't' test

The paired 't' test was used to compare the outcome measures within each group before and after the stretching intervention.

Independent 't' test

The independent 't' test was used to compare the outcome measures between the two groups at the end of the study.

Results and interpretation

The results of the study showed that both groups showed significant improvements in range of motion, muscle strength, and scapular dyskinesia. The ballistic stretching group showed significantly greater improvements in range of motion and muscle strength compared to the sleeper stretching group. The sleeper stretching group showed significantly greater improvements in scapular dyskinesia compared to the ballistic stretching group. The results suggest that both types of stretching are effective for improving shoulder function in elite fast bowlers with scapular dyskinesia.

Discussion

The findings of this study are consistent with previous research that has shown that stretching can improve shoulder function in athletes. The study also highlights the importance of addressing scapular dyskinesia in elite fast bowlers, as it can lead to shoulder pain and injury. The results suggest that both ballistic and sleeper stretching are effective interventions for improving shoulder function in this population.

The study has several limitations. First, the study was a short-term study and did not assess the long-term effects of the stretching interventions. Second, the study did not measure the effect of the stretching interventions on bowling performance. Third, the study did not measure the effect of the stretching interventions on other shoulder parameters such as muscle activation and joint stability. Future research should address these limitations and investigate the long-term effects of stretching on shoulder function and bowling performance in elite fast bowlers with scapular dyskinesia.

In conclusion, the study found that both ballistic and sleeper stretching are effective interventions for improving shoulder function in elite fast bowlers with scapular dyskinesia. The ballistic stretching group showed significantly greater improvements in range of motion and muscle strength, while the sleeper stretching group showed significantly greater improvements in scapular dyskinesia.

muscle activity during the stretching protocol. The results of this study suggest that ballistic stretching may be more effective than sleeper stretching in reducing muscle activity and improving range of motion in elite fast bowlers with scapular dyskinesis. However, further research is needed to confirm these findings and to explore the underlying mechanisms of the observed effects. The study also highlights the importance of individualized stretching protocols and the need for ongoing monitoring and adjustment of the stretching program. The findings of this study have implications for the management of scapular dyskinesis in elite fast bowlers and may also be applicable to other athletes and populations with similar conditions. The study also provides valuable information for coaches and physiotherapists regarding the use of stretching protocols in the rehabilitation and performance enhancement of elite fast bowlers.

Future Recommendations

Future research should focus on the long-term effects of stretching protocols on scapular dyskinesis and on the underlying mechanisms of the observed effects. The study also suggests the need for individualized stretching protocols and the importance of ongoing monitoring and adjustment of the stretching program. The findings of this study have implications for the management of scapular dyskinesis in elite fast bowlers and may also be applicable to other athletes and populations with similar conditions. The study also provides valuable information for coaches and physiotherapists regarding the use of stretching protocols in the rehabilitation and performance enhancement of elite fast bowlers.

Ethical approval:

The study was approved by the local ethics committee and all participants gave their informed consent before participating in the study.

References

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