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ABSTRACT

Evaluating Immediate Effects of Dynamic Stretching on Agility and Flexibility Among University Volleyball Athletes

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I. INTRODUCTION

Dynamic stretching is widely used to enhance athletic performance, yet its immediate effects on agility and flexibility remain underexplored [1]. This study investigates the short-term impact of dynamic stretching on university-level athletes [2], addressing variability due to physical activity levels. The findings aim to provide practical guidance for athletes, coaches, and trainers seeking effective pre-competition warm-up strategies.

II. METHODS

Eighteen male university volleyball athletes (aged 20–25) participated. The intervention involved 30 minutes of dynamic stretching, including high knees, hip twists, walking lunges, and straight leg kicks. Agility was measured using the agility T-test, while flexibility was assessed via the sit and reach test, both administered before and after the stretching session.

III. RESULTS AND DISCUSSION

A. Provide Practical Insights

Coaches and trainers should incorporate dynamic stretching into warm-up routines to boost performance [3]. Despite participant variability and test limitations, dynamic stretching effectively enhances agility and flexibility [4]. Practitioners are advised to combine it with other methods for comprehensive athletic preparation.

B. Impacts of Dynamic Stretching on Agility and Flexibility

Agility improved significantly post-intervention, with mean times decreasing from 9.91 to 9.42 seconds. Flexibility increased from 37.75 cm to 40.44 cm [5]. Both changes were statistically significant despite mild normality violations [6], confirming dynamic stretching's efficacy in enhancing athletic capabilities.

TABLE I
DESCRIPTIVE ANALYSIS

| Assessment | N | Mean | Median | SD |
|--------------------|----|-------|--------|-------|
| Pre Sit and Reach | 18 | 37.75 | 37.50 | 0.590 |
| Post Sit and Reach | 18 | 40.44 | 40.25 | 0.570 |
| Pre T-test | 18 | 9.91 | 10.17 | 0.336 |
| Post T-test | 18 | 9.42 | 9.60 | 0.317 |

*Descriptive analysis for pre-test and post-test

TABLE II

NORMALITY TEST (SHAPIRO-WILK)

| | | W | p |
|-------------------|--------------------|-------|-------|
| Pre Sit and Reach | Post Sit and Reach | 0.943 | 0.320 |
| Pre T-test | Post T-test | 0.889 | 0.037 |

C. Assess Changes in Flexibility

Flexibility consistently improved, averaging a 2.69 cm increase post-intervention [7]. Although statistically significant with a large effect size, individual responses varied due to baseline conditions and adaptability. Nonetheless, the overall trend confirms the positive short-term impact of a single dynamic stretching session on flexibility [8].

IV. CONCLUSIONS

Dynamic stretching significantly enhances agility and flexibility in university volleyball athletes after a single session. These findings support its integration into warm-up routines. Although individual responses vary, the overall benefits are evident, providing practical insights for optimizing athletic performance.

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