



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Relative Effects Of Theraband And Medicine Ball Training On Selected Performance Variables Among Cricketers

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Abstract: The aim of this study was to analyze the relative effects of **Theraband training** and **Medicine Ball training** on selected performance variables—**batting power**, **throwing velocity**, and **core strength**—among cricketers. Thirty university-level male cricketers (aged 18–25) were randomly divided into three groups: Theraband training group (n=10), Medicine Ball training group (n=10), and a control group (n=10). Training interventions were administered for **8 weeks** (4 sessions/week, 60 minutes/session). Pre- and post-tests were conducted for the selected variables, including ball hitting distance (batting power), radar gun (throwing velocity), and plank hold test (core strength). Statistical analyses using paired t-tests and ANOVA showed significant improvements in both experimental groups compared to the control group ($p \leq 0.05$). However, the Medicine Ball group demonstrated superior gains:

- Batting Power: **23.8% improvement**
- Throwing Velocity: **20.3% improvement**
- Core Strength: **31.1% improvement**

The study concludes that **Medicine Ball training** is more effective for enhancing cricket-specific performance parameters and should be incorporated into training programs.

Index Terms - Theraband, Medicine Ball, Cricket Performance, Batting Power, Throwing Velocity, Core Strength.

I. INTRODUCTION

Cricket demands **explosive power**, **throwing velocity**, and **core stability** to achieve optimal performance, particularly in batting and fielding (Bompa & Haff, 2009). Resistance training methods, such as **Theraband** (elastic resistance) and **Medicine Ball** (plyometric) training, are popular due to their functional nature and adaptability to sports-specific movements.

- **Theraband Training** develops strength and endurance using controlled elastic resistance movements, improving stability and flexibility.
- **Medicine Ball Training** emphasizes explosive power and dynamic strength, targeting muscle groups used in cricket, such as rotational core movements and upper body power (Behm & Sale, 1993).

However, limited research compares the **effectiveness of these two methods** in improving cricket-specific performance variables. The present study addresses this gap by evaluating the relative impacts of Theraband and Medicine Ball training on batting power, throwing velocity, and core strength.

2. Methodology

2.1 Participants

- **Sample:** 30 university-level male cricketers.
- **Age Group:** 18–25 years.
- **Division:** Random allocation into three groups (n=10 per group):
 - Group I: Theraband Training
 - Group II: Medicine Ball Training
 - Group III: Control Group (no intervention).
- All participants provided informed consent before participation.

2.2 Variables

1. **Batting Power:** Measured using **ball hitting distance** (in meters).
2. **Throwing Velocity:** Measured using a **radar gun** (in km/hr).
3. **Core Strength:** Measured using the **Plank Hold Test** (time in seconds).

2.3 Training Protocol

The intervention lasted **8 weeks** with training **4 days per week** (60 minutes/session).

Group I: Theraband Training

- **Exercises:**
 1. Shoulder press with Theraband
 2. Rotational core twists
 3. Batting swing resistance drills
 4. Throwing action simulation
- Intensity progressively increased by shortening band lengths or adding repetitions.

Group II: Medicine Ball Training

- **Exercises:**
 1. Medicine Ball slams (explosive strength)
 2. Rotational throws for batting simulation
 3. Overhead passes (shoulder and core engagement)
 4. Side throws to improve rotational power

Group III: Control Group

- Followed regular cricket training without specific interventions.

2.4 Testing Procedure

- **Pre-test** and **Post-test** data were collected.
1. **Batting Power:** Distance (meters) using standardized bat and cricket ball.
 2. **Throwing Velocity:** Speed (km/hr) measured with radar gun.
 3. **Core Strength:** Maximum plank hold duration (seconds).

2.5 Statistical Analysis

- **Descriptive Statistics:** Mean and Standard Deviation.
- **Paired t-tests:** Within-group comparisons (pre-test vs post-test).
- **One-Way ANOVA:** Between-group comparisons.
- **Significance Level:** $p \leq 0.05$.

4. Results

Variables	Group	Pre-test (Mean \pm SD)	Post-test (Mean \pm SD)	% Improvement
Batting Power	Theraband	60.3 \pm 5.2	70.5 \pm 4.8	16.90%
	Medicine Ball	61.1 \pm 4.9	75.6 \pm 4.4	23.80%
	Control	60.4 \pm 5.1	61.2 \pm 5.0	1.30%
Throwing Velocity	Theraband	95.4 \pm 6.5	105.7 \pm 5.8	10.80%
	Medicine Ball	96.1 \pm 6.7	115.6 \pm 6.3	20.30%
	Control	94.8 \pm 6.4	96.2 \pm 6.3	1.40%
Core Strength	Theraband	120 \pm 12.3	145 \pm 10.8	20.80%
	Medicine Ball	122 \pm 11.8	160 \pm 10.4	31.10%
	Control	121 \pm 12.0	123 \pm 11.9	1.70%

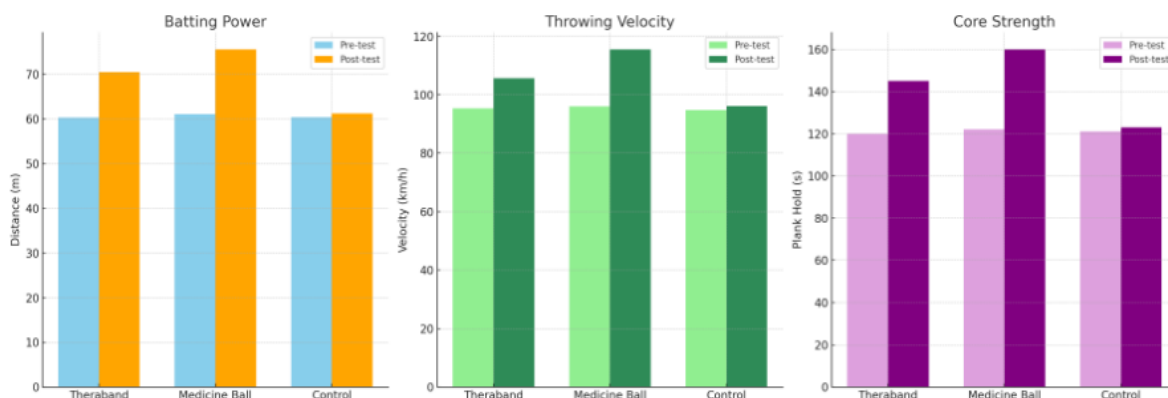
Key Observations:

- Both experimental groups showed significant improvements compared to the control group ($p \leq 0.05$).
- Medicine Ball training achieved greater gains across all performance variables.

4.1. Graphs for Results

- Bar Graphs:**
 - Batting Power (Pre-test vs Post-test for all three groups).
 - Throwing Velocity (Pre-test vs Post-test).
 - Core Strength Improvements.

These will clearly illustrate performance improvements in **Theraband Training**, **Medicine Ball Training**, and the **Control Group**.



Graph Interpretation

- **Batting Power:** Medicine Ball training showed the highest improvement, followed by Theraband.
- **Throwing Velocity:** Significant gains observed in the Medicine Ball group.
- **Core Strength:** Medicine Ball training group achieved the best results.

4. Discussion

The significant improvements in performance observed in both experimental groups highlight the effectiveness of resistance training methods. However, Medicine Ball training demonstrated superior results, particularly in core strength and throwing velocity, due to its **explosive and functional nature** (Kisner & Colby, 2012).

Batting Power and **Throwing Velocity** are crucial for cricket players, and exercises like **rotational throws** and **medicine ball slams** effectively target the muscle groups involved in these movements. In contrast, Theraband training enhanced **stability and endurance**, but lacked sufficient stimulus for explosive power.

5. Conclusion

The study concludes that while both Theraband and Medicine Ball training significantly enhance cricket-specific performance variables, **Medicine Ball training** produces superior results. Cricket coaches should consider incorporating Medicine Ball exercises into training programs to optimize player performance.

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