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Comparison of The Effectiveness Between Swedish Massage and Deep-Tissue Massage on Jumping and Sprinting Among Adolescent Football Athletes

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I. INTRODUCTION

Football is a high-intensity sport that requires repeated sprinting, jumping, tackling, and quick changes of direction. These movements place stress on the muscles and joints, especially among adolescent footballers who are still growing. Therefore, proper recovery is important to reduce soreness, manage fatigue, and maintain performance. Explosive performance is important in football because players need to sprint, jump, and react quickly during a match. Sprint, agility, and jump performance are important physical qualities for football players [1]. Jump performance is also commonly used to assess lower-body power in children and adolescents [2]. Massage therapy is a common recovery method in sport. It is often used to reduce muscle soreness, improve relaxation, and support recovery after exercise. Brummitt [3] explained that massage is widely used in sports performance and rehabilitation. Previous study [4] also reported that sports massage helps reduce delayed-onset muscle soreness and improve flexibility. Swedish massage and deep-tissue massage are two common massage techniques. Swedish massage uses lighter pressure and is often used for relaxation, while deep-tissue massage applies stronger pressure to deeper muscles. Previous studies showed that Swedish massage may reduce muscle soreness [5], while deep-tissue massage may improve flexibility [6]. Although massage is widely used in sport, limited research has compared Swedish massage and deep-tissue massage among adolescent footballers. Therefore, this study aimed to examine the effects of Swedish massage and deep-tissue massage on recovery and explosive performance among adolescent football players.

II. METHODS

This study used a crossover design in which each participant completed both the Swedish massage and deep-tissue massage conditions, separated by a 48-hour washout period. Four adolescent football athletes aged 15 to 16 years who participated in MSSJ 2025 and had no lower-limb injuries in the

previous three months were recruited through purposive sampling. Participants completed baseline tests for 20 m sprint time and standing broad jump distance. They then performed a standardised warm-up followed by the Yo-Yo Intermittent Recovery Test Level 1 to induce fatigue. After the fatigue protocol, participants received either a 15-minute lower-limb Swedish massage or deep-tissue massage before repeating the sprint and jump tests. Sprint time and jump distance were analysed using descriptive statistics and paired-samples t-tests to compare baseline and post-massage performance for each technique.

III. RESULTS AND DISCUSSION

Normality testing (Shapiro–Wilk) indicated no violation of normality for baseline variables in either condition ($p = 0.109–0.441$)

TABLE I
NORMALITY TEST (SHAPIRO-WILK)

Baseline	Massage	W	p
Standing	Swedish	0.911	0.441
Broad Jump	Massage		
Standing	Deep-tissue	0.831	0.109
Broad Jump	Massage		
20m Sprint	Swedish	0.889	0.315
	Massage		
20m Sprint	Deep-tissue	0.875	0.247
	Massage		

Standing broad jump distance improved from baseline after both massage techniques. Jump distance increased from 2.44 m ($SD = 0.126$) to 2.52 m ($SD = 0.103$) after Swedish massage and to 2.56 m ($SD = 0.143$) after deep-tissue massage. Paired-samples t-tests showed significant improvements for Swedish massage, $t(5) = -3.601$, $p = 0.016$, and deep-tissue massage, $t(5) = -6.102$, $p = 0.002$. Deep-tissue massage produced a larger mean improvement than Swedish massage, approximately 4.9% compared with 3.3%. For the 20 m sprint, time improved from 2.77 s ($SD = 0.108$) at baseline to 2.68 s ($SD = 0.098$) after Swedish massage and 2.73 s ($SD = 0.102$) after

deep-tissue massage. However, these changes were not statistically significant for Swedish massage, $t(5) = 2.362$, $p = 0.065$, or deep-tissue massage, $t(5) = 0.829$, $p = 0.445$.

TABLE II
DESCRIPTIVE

	N	Mean	SD
Baseline of Standing broad jump	6	2.44m	0.1261
Baseline of 20 m sprint	6	2.77s	0.1084
Standing broad jump (Swedish massage)	6	2.52m	0.1031
20 m sprint (Swedish massage)	6	2.68s	0.0983
Standing broad jump (Deep-tissue massage)	6	2.56m	0.1433
20 m sprint (Deep-tissue massage)	6	2.73s	0.1023

TABLE III
PAIRED SAMPLE T-TEST

		t	df	p
Baseline of Standing broad jump	Swedish massage	-3.601	5.00	0.016
	Deep-tissue massage	-6.102	5.00	0.002
Baseline of 20 m sprint	Swedish massage	2.362	5.00	0.065
	Deep-tissue massage	0.829	5.00	0.445

Overall, both massage techniques showed positive effects on lower-limb explosive power, with deep-tissue massage producing greater improvement in jump performance. However, effects on sprint performance were smaller and non-significant. These findings support previous evidence that massage may assist recovery, reduce soreness, and improve flexibility, although its direct effects on performance outcomes such as sprinting may be limited or inconsistent [3][4][5][6].

IV. CONCLUSIONS

This study concluded that both Swedish massage and deep-tissue massage significantly improved standing broad jump performance among adolescent football athletes after fatigue. Deep-tissue massage produced greater improvement and appeared to be more effective for enhancing explosive lower-limb power. However, neither massage technique significantly improved 20 m sprint performance, although Swedish massage showed a small positive trend. These findings suggest that massage may be

more beneficial for jump-related power recovery than for short sprint performance. From a practical perspective, deep-tissue massage may be prioritised after training when the goal is to support lower-limb power recovery, while Swedish massage may be used for general relaxation and recovery. Future research should involve larger samples, longer follow-up periods, and additional physiological measures to strengthen the evidence on massage-based recovery among adolescent athletes.

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