

EXAMINATION OF THE EFFECTIVENESS OF A SHOULDER STABILIZATION PROGRAMME AMONG THROWING ATHLETES

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OBJECTIVES

Shoulder pain is common among overhead athletes, including throwing athletes and the occurrence rate of shoulder injuries is higher. The aim was examining an 8-week shoulder stabilization program to reduce the injuries and pain.

METHODS

Our research was a longitudinal, quantitative, prospective research. It includes (n=44) throwing athletes age between 14-20 years. The players were divided into examination group (EG, n=22) and control group (CG, n=22). EG participated an 8-week shoulder stabilization program, three times per week, while CG not participated in intervention. Before and after the program shoulder muscle strength (Seated Medicine Ball Throw-SMBT), stability (Y-Balance Test, Davies test, Switched arm's test), range of motion (ROM), and the functional status of their shoulder (Western Ontario Shoulder Instability Index-WOSI) were measured.

RESULTS

EG had significant (p=0.091) improvement in muscle strength (316.50±49.49 centimeter to 345.18±83.50 centimeter). The right shoulder flexion (163.45° to 180.00°), abduction (162.86° to 179.55°), internal rotation (50.32° to 76.59°), extension (46.59° to 62.95°), adduction (57.55° to 72.73°), while the left shoulder flexion (163.77° to 180.00°), abduction (162.50° to 175.64°), internal rotation (47.18° to 63.05°), extension (53.09° to 62.45°) (p=0.019), adduction (64.77° to 73.55°) significantly improved (p≤0.001). On the Davies test the left- (p≤0.001) and the right arm (p=0.003) and on the switched arm's test (p≤0.001) significant differences were found. The Y-Balance test in both arms in every direction (p≤0.001) showed significant differences between. The WOSI score (21.71point to 11.44point) (p≤0.001), physical symptoms (16.23point to 8.75point) (p≤0.001), sports/recreation/work (32.90point to 18.99point) (p≤0.001), lifestyle (15.74point to 6.86point) (p≤0.001), emotion (33.18point to 20.18point) (p=0.002) significantly improved. In the comparison of the groups significant differences were found after the program in ROM, stability, strength, and functional status (p≤0.05).

CONCLUSIONS

Based on the result we conclude that the shoulder stability program is effective in improving the shoulder joint function among throwing athletes.

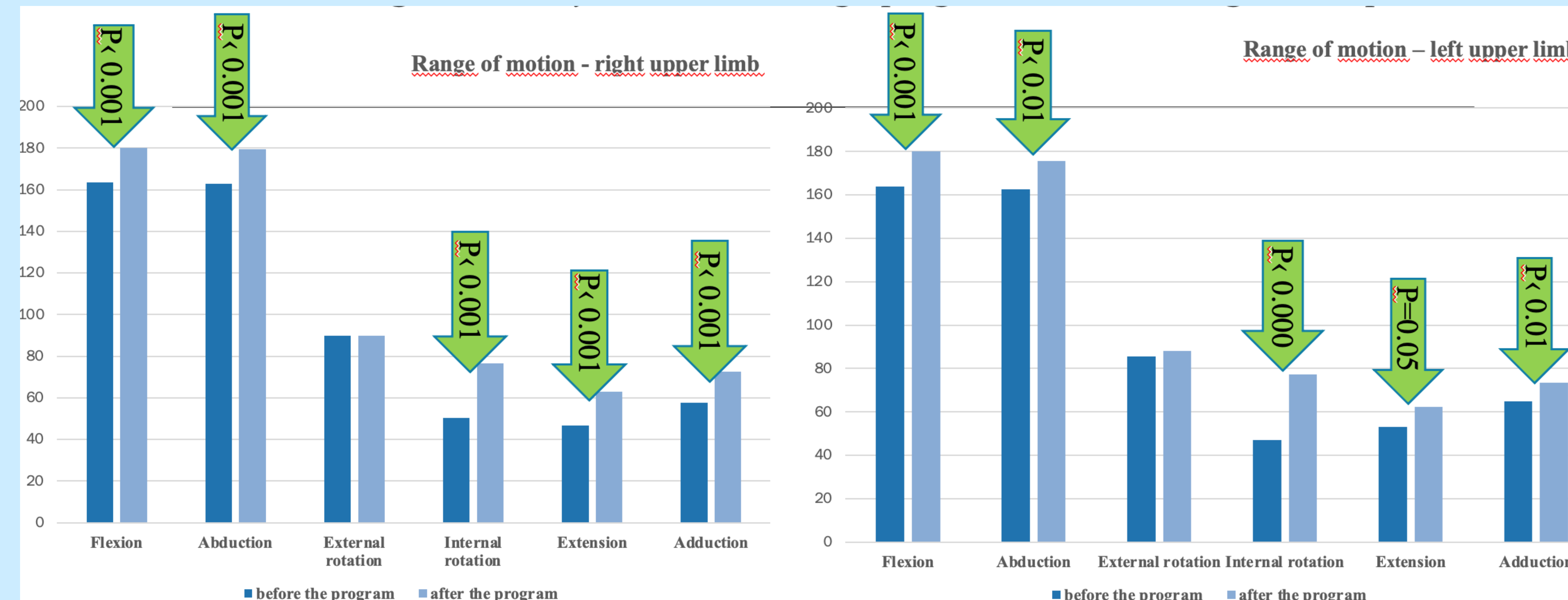


Figure 1. Range of motion before and after the program

EG/CG																		
	pre- test left upper limb		post test left upper limb		p	pre- test right upper limb		post test right upper limb		p	pre- test switched		post test switched		p			
Davies	26.41	30.59	32.18	28.41	0.000***	0.000***	26.64	27.23	29.91	25.36	0.003**	0.005**	23.91	26.32	28.27	24.18	0.000***	0.001**
	±	±	±	±			±	±	±	±			±	±				
	3.75	6.15	3.32	6.42			4.25	5.67	3.58	5.65			3.38	5.64	3.40	5.67		

Figure 2. Davies test before and after the program in EG and CG

EG/CG																			
WOSI pre		WOSI post		Physical symptoms pre		Physical symptoms post		Sport/recreation /work pre		Sport/recreation /work post		Lifestyle pre		Lifestyle post		Emotion pre		Emotion post	
0.000***				0.000***				0.000***				0.001**				0.002**			
27.71	29.61	11.44	38.43	16.23	29.90	8.75	37.62	32.90	24.54	18.99	34.84	15.74	26.02	6.86	33.96	33.18	40.18	20.18	51.88
±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±
10.39	14.40	8.71	15.35	8.99	12.69	8.93	15.27	17.96	17.13	12.24	19.37	11.30	16.48	7.75	15.80	22.29	26.26	21.95	24.50
0.000***				0.000***				0.001**				0.001**				0.000***			

Figure 3. WOSI scores before and after the program in EG and CG

ISPOR 2024
May 5-8, 2024 | Atlanta, GA, USA



Funding:

The research was financed by the Thematic Excellence Program 2021 Health Sub-programme of the Ministry for Innovation and Technology in Hungary, within the framework of the EGA-10 project of the University of Pécs.

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