

EXAMINATION OF THE GLENOHUMERAL JOINT AND ROTATOR CUFF CONDITION IN YOUTH KAYAK-CANOE ATHLETES

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OBJECTIVES

Our research focused on the stability of the U18 kayak-canoe athletes glenohumeral joint, the dynamic stability of the upper limbs, the movement speed of the upper limbs, the status of the rotator cuff and the strength of the core muscles.

METHODS

The research was at 'Pécsi Kajak-Kenu Club' in Pécs. It was conducted from November 2018 to March 2019. The design of the research is a quantitative, longitudinal prospective study. The exercise programme lasted 16 weeks, with a 45-minute-long session twice a week. The applied methods: shoulder pain assessment (VAS-scale), examination of the stability of the glenohumeral joint (measuring the range of motion, Apprehension test, Sulcus sign, Y-balance test), specific tests on the rotator cuff, assessment of the strength of the core muscles (plank test), speed of the upper limbs (Davies test).

RESULTS

In the sample (n=21; mean age: 14.33±2.01years;) (Table 1.) there was a significant (p<0.005) reduction in shoulder pain (pre:1.22±0.44; post:0.31±0.1). The Apprehension test became positive in 1 of 21 people at the beginning and end of the exercise program. In the case of Sulcus signal, 6 out of 21 people became positive at the beginning of the program, this value decreased at the end as only 1 out of 6 people became positive in the test. (Figure I.) The Y-balance test showed significant improvements. the right median values of the first measurement were 91.33±15.13, the superolateral were 61.90±7.49, the inferolateral were 69.05±12.06. The mean values of the second measurement were 96.62±15.32 medially, superolateral 68.38±6.48, and inferolateral 74.38±11.28. (Table 2. 3.) The Plank test p<0.001 and the Davies test p<0.001 (Figure II.) both showed significant improvement.

CONCLUSIONS

The program reduced the shoulder pain level of the young athletes, improved the stability of the glenohumeral joint, as well as the strength of the core muscles.

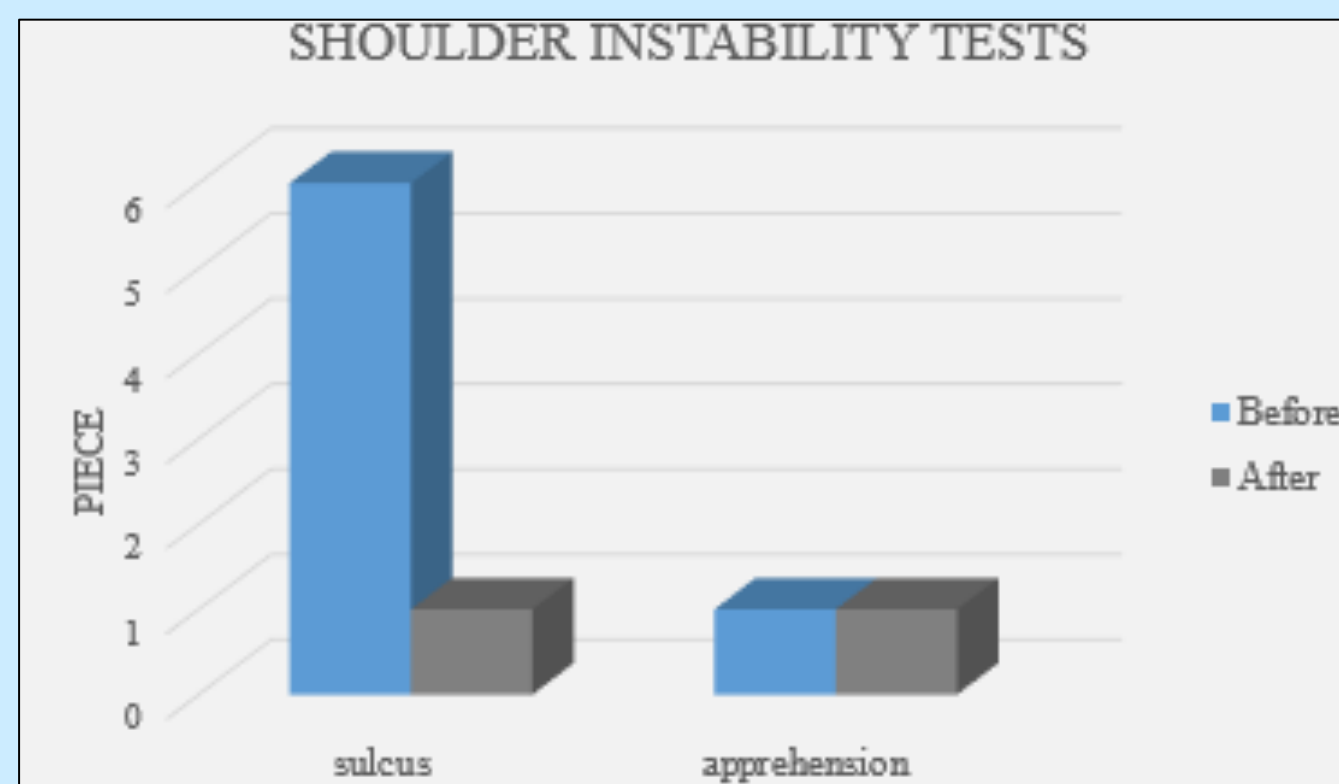


Figure 1.
Shoulder instability tests before and after training program

	Average	Deviation	Minimum	Maximum
Age	14.33	2.01	11	18
Weight (kg)	58.67	14.92	36	101
Height (cm)	167.95	11.62	148	186
BMI	20.50	2.99	16	30,80

Table 1.
Details of the participants

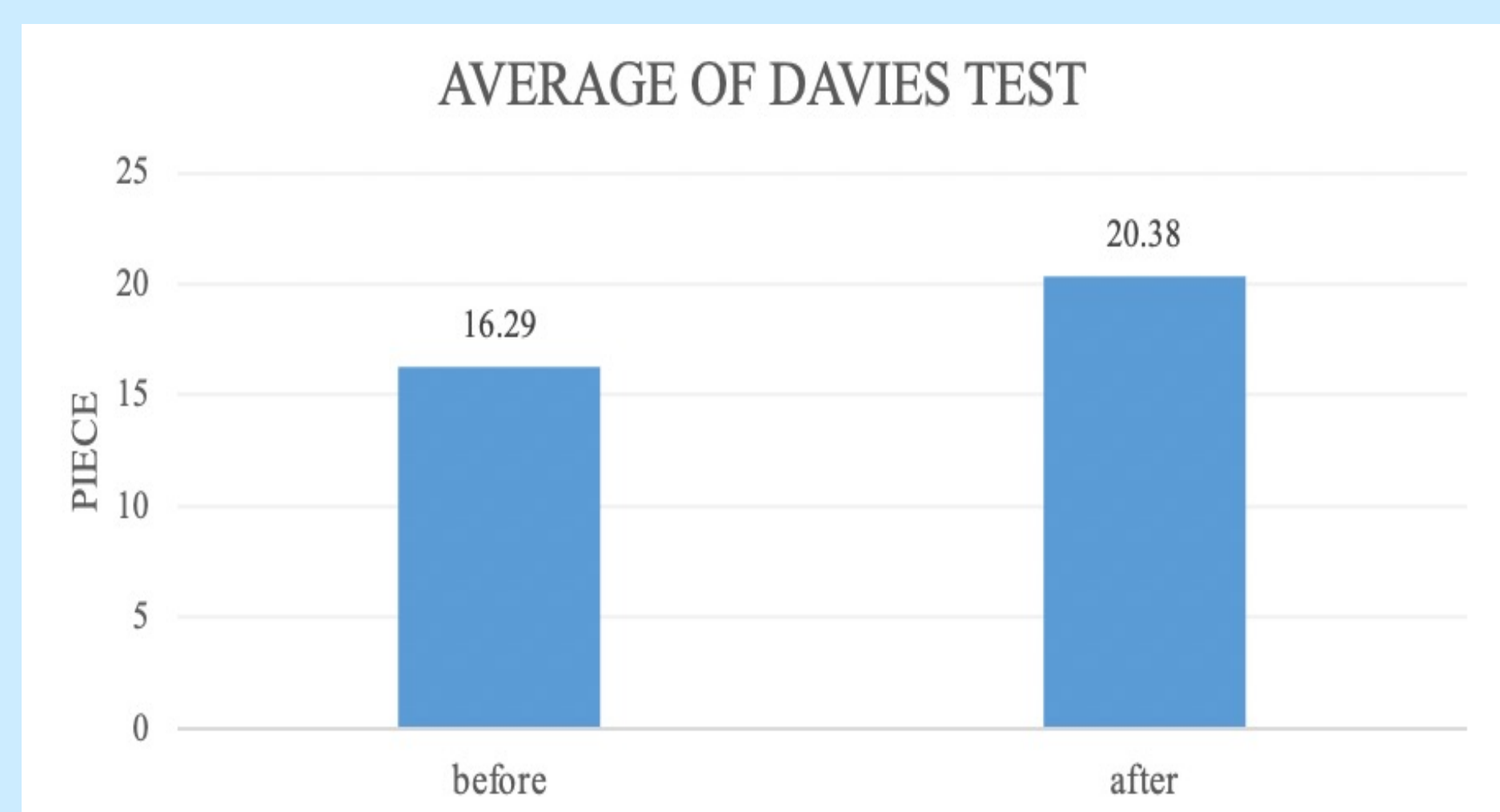


Figure II.
Speed of the upper limbs

Left arm before	Average	Deviation	Minimum	Maximum
Medial	93.24	12.97	70	130
Superolateral	64.33	7.34	56	87
Inferolateral	64.19	7.27	54	82
Left arm after	Average	Deviation	Minimum	Maximum
Medial	98.05	13.51	75	135
Superolateral	69.43	7.55	59	90
Inferolateral	69.48	7.69	56	85

Table 2.
Demonstrate the Y-balance improvements in the left side

Right arm before	Average	Devation	Minimum	Maximum
Medial	91.33	15.13	63	136
Superolateral	61.90	7.49	46	82
Inferolateral	69.05	12.06	42	96
Right arm after	Average	Devation	Minimum	Maximum
Medial	96.62	15.32	68	139
Superolateral	68.38	6.48	54	86
Inferolateral	74.38	11.28	51	101

Table 3.
Demonstrate the Y-balance improvements in the right side

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