FLEXIBILITY IN WATER AND ON LAND OVER 50 YEARS

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OBJECTIVES

The adaptations of the human body resulting from the aging process especially loss of flexibility can increase the risk of falls and the risk of developing other health conditions. The purpose of this study was to give task-oriented trainig to over 50 years patients in water and land compare their flexibility.

METHODS

Our study was performed in Zala county (Hungary) in 2019. A total of 20 patients received progressive training for 60 minutes, three times a week, for 12 weeks. They were randomly divided into an in-water training group (avarage age:64.7±6.15, 90% woman) and an on-land training group (avarage age:64.7±3.02, 100% woman). Individuals were recruited from the local community via open invitations. At study entry, none of them had limited mobility (walking requiring the use of walkers or canes). Exclusion criteria were severe vestibular, auditory, and visual impairment; unstable cardiopulmonary disease; operation over the past six months. Upper (Back Scratch Test) and lower limb (Chair sit and Reach) flexibility assessment tests were measured. Using the IBM SPSS Statistics Version 22 program, descriptive and mathematical statistics (two-sample paired t test) were calculated ($p<0.05$).

RESULTS

In the right side Back Scratch Test, there was a significant growth in-water training group ($p<0.0062$), and the on-land group ($p=0.0055$), while the left side did not have a significant change ($p>0.05$). Based on the results of the Chair Sit and Reach test, the lower extremity flexibility only improved within the in-water training group significantly, with the right leg ($p=0.003$) and left leg ($p=0.004$). Although the flexibility test showed a greater improvement in the in-water trainig group, this can not be justified ($p>0.05$).

CONCLUSIONS

The training had a significant effect on flexibility, regardless of whether it was performed in water or land. Exercise can minimize the harmful effects of aging and improve the functionality, which reduces the likelihood of accidents.

		WATER GROUP (N=10)	LAND GROUP (N=10)
AGE (SD)		64.7 (6.14)	64.7 (3.02)
MARITAL STATUS (%)	MARRIED	50	40
	RELATIONSHIP	0	20
	DIVORCED	20	20
	WIDOW	30	20
EDUCATION (%)	8 GENERAL	0	20
	INTERMEDIATE	90	60
	HIGHER	10	20
PROFESSION (%)	PENSIONER	70	80
	ACTIVE WORKER	30	20
PAIN (%)		90	80

Table 1.
Charachteristics of participants

	Back Scratch Test (cm)				Chair sit and reach test (cm)			
	Before		After		Before		After	
	Left	Right	Left	Right	Left	Right	Left	Right
Water group	-11.5	-6.85	-8.7	-2.5*	2.85	2	9.3*	9.8*
Land group	-17.65	-9.7	-15.8	-5.8*	4	3.4	7.1	6.7

*$p<0.05$

Table 2.
Flexibility results in the two groups (N=20)

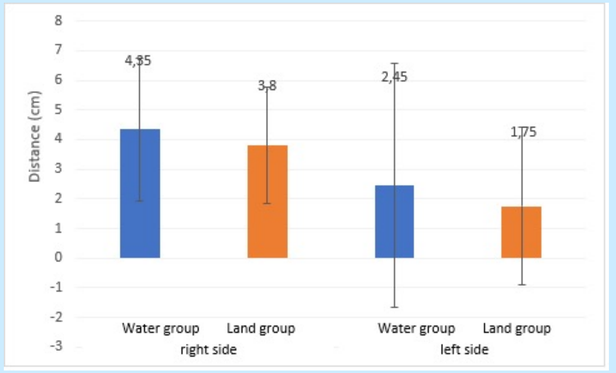


Figure 1.
Change in means of the Back Scratch Test between the two groups (N=20)

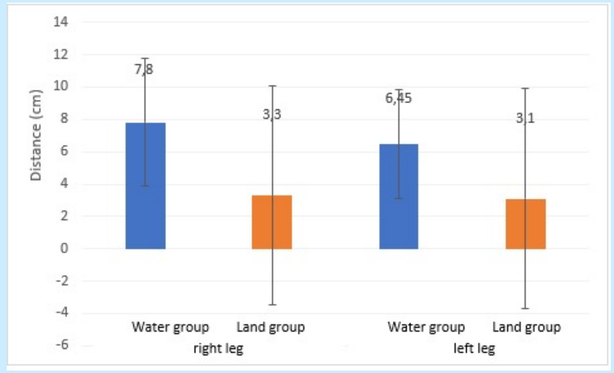


Figure 2.
Change in chair Sit and Reach test means between the two groups (N = 20)

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