

Investigation of the Effect of Life Kinetic Exercises on Shooting Performance in Women Doing Floor Curling

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Received: May 16, 2022 Accepted: June 17, 2022 Published: June 30, 2022

doi:10.5296/jei.v8i1.19871

URL: <https://doi.org/10.5296/jei.v8i1.19871>

Abstract

The aim of this study is to examine the effects of life kinetic exercises on the performance of floor curling athletes. A total of 40 volunteer women, 20 in the experimental group and 20 in the control group, residing in the city center of Gaziantep, aged between 14 and 16 and doing floor curling, participated in the study. Life kinetic exercise was applied to the experimental group for 8 weeks along with floor curling training. On the other hand, only floor curling training was applied to the control group. The data were analyzed in the SPSS package program. The normality analysis of the obtained data was done with the Shapiro-Wilk test. Paired Sample T-Test was used for the comparison of normally distributed data within groups. At the end of the study, statistically significant differences were found in the comparison of the pre-test and post-test values of the experimental group. No significant difference was found in the comparison of the pretest and posttest values of the control group. As a result, it can be said that life kinetic exercises have positive effects on individuals' quick decision making and also on sportive performance depending on this decision.

Keywords: Floor curling, Life kinetic exercise, Performance

1. Introduction

In today's developing sportive activities, individuals' being physically sufficient is not sufficient alone in displaying optimum performance in sportive activities. It should be taken into account that the psychological performance of the athletes is important as well as their physical performance. When the psychological performance of the athletes is ignored, it causes not to get enough efficiency (Mazlumdar, 2006). Exercise minimizes the risk of heart disease and, in addition, the risk of stroke in adults. If the positive effects of exercise are mentioned, it is known that resistance exercises also reduce blood pressure. In particular, exercise increases $VO_2\max$ and decreases plasma triglycerides. Examples of parameters that exercise positively affect are: obesity, hypertension, blood fat, chronic pain, depression and dementia. In addition to this, exercise positively affects the cardiovascular endurance system, flexibility parameter and muscle strength. Again, from a different point of view, exercise also positively affects the level of anxiety. Finally, when examining the studies, it was seen that exercise positively affects blood pressure, as well as lipid level and bone density. It is also known that exercise positively affects insulin secretion, and in addition, it is seen when studies are examined that it positively affects glucose tolerance. Life kinetic exercise, a new exercise method; It is a type of exercise in which the athletes learn how to use their intelligence continuously throughout the competition by increasing their psychological capacities and making them realize that it is a quick and right decision. Life kinetic training, at its best, connects providing unity, harmony and order. Thanks to Life kinetic training, athletes can understand quickly and reach the level of quick decision-making (Lutz, 2010). In this way, it increases human bioenergy and gives vitality. It keeps the weight at a certain level and reduces the load added to the body. It prevents negative emotions such as depression, stress and anxiety and provides a balanced sleep pattern. Floor Curling game, one of the developing branches of the modern world, is played on a specially prepared track made of PVC material. In Floor Curling, which is similar to the Ice Curling game but differs in terms

of the playing floor, it is a house consisting of interlocking rings and the aim is to collect stones closer to the center of the house than the opposing team. Players can be successful against their opponents in one move by thinking and strategizing well. Quick and logical thinking is the main aim of the game. This game, which is enjoyable and mind-opening; Based on the idea that life kinetic exercises will be an important type of exercise for individuals to perform harmoniously with their mental and physical skills, this study aimed to examine the effect of life kinetic exercises on shooting performance in floor curling athletes.

2. Method

2.1 Participants

A total of 40 women, 20 in the experimental group and 20 in the control group, residing in the city center of Gaziantep and aged between 14 and 16 participated in the study. It was noted that the subjects participating in the study did not have any discomfort. In addition to floor curling exercises, life kinetic exercises were applied to the experimental group participating in the study for 8 weeks. Only floor curling training was applied to the control group. In order to measure the floor curling performance of the subjects, before and after the 8-week training, hammer, take out, guard, split and ends throws used in floor curling were made. Each throw was repeated 10 times by the subjects, and each successful throw was evaluated over 10 points and unsuccessful throws 0 points in take out, guard, split and end throws. In the hammer throw, the value obtained by measuring the distance with meters was recorded in cm in the performance measurement.

2.2 Data Collection Tools

Height and Weight Measurement: The subjects' height measurements were made in shorts and bare feet. Weight measurements were taken on a scale with an accuracy of 0.01 kg, and the values were written in centimeters and kilograms.

Determination of Body Mass Index: Calculation of the subjects' body mass indexes was determined by the formula below. $BMI = \text{Weight (kg)}/\text{Height (m)}^2$

Life Kinetic Exercise Program: In life kinetic exercises, which were performed 3 days a week for 8 weeks, the experimental group preferred easy movements in the first weeks and more difficult movements in the following weeks.

2.3 Statistical Analysis

SPSS statistical package program was used in the analysis of the obtained values. Whether the data showed normal distribution was tested with the Shapiro-Wilk test. Paired sample t-test was used to compare the normally distributed data within the group. The error level was accepted as 0.05 in the study.

Ethics committee approval was obtained for this study with the decision dated 12/04/2022 and numbered 2022/07 by Kilis 7 Aralık University Rectorate Ethics Committee.

In Table 1, there are 8-week life kinetic exercises applied to the students from easy to difficult.

Table 1. Life kinetic exercise program

Week	Exercise Type	Duration and Repetition	Tools and Materials
Week 1	Throwing the ball diagonally and keeping it straight, Throwing the target ball with eyes closed	5 min × 5 times Rest 2-3 min	Small and big balls
Week 2	Counting out loud while bouncing a ball (in twos, threes etc.)	5 min × 5 times Rest 2-3 min	Basketballs
Week 3	Catching the ball with one color left among the balls with even colors	5 min × 5 times Rest 2-3 min	Small coloured balls
Week 4	One-handed and two-handed throwing while walking	5 min × 5 times Rest 2-3 min	Small balls
Week 5	Bouncing the ball while throwing and holding the ball in the air	5 min × 5 times Rest 2-3 min	Small and big balls
Week 6	Funnel tipping exercise while bouncing a basketball	5 min × 5 times Rest 2-3 min	Funnels and basketballs
Week 7	Receiving the thrown volleyball in the same row while working on the floor ladder	5 min × 5 times Rest 2-3 min	Floor ladder and volleyballs
Week 8	Bouncing the ball in the same rhythm as you do footwork on the floor ladder	5 min × 5 times Rest 2-3 min	Floor ladder and basketballs

3. Results

Table 2. Descriptive statistical values for the subjects

Variables	Experimental Group Average±S.S.	Control Group Average±S.S.
Age (year)	15.8±1.09	15.5±1.21
Height (cm)	160.9±3.18	162.9±3.01
Weight (kg)	49.19±1.99	49.77±2.12
BMI (kg/m ²)	19.05±1.73	18.83±1.34

Note. Mean values of age, height, weight, and body mass index of the control and experimental groups.

Table 3. Pre-test and post-test values of the experimental group

Variables	Experimental Group	Mean±SD	T	P
Hammer throw (cm)	Pre test	53.61±7.12	6.372	0.000*
	Final test	33.53±6.87		
Take out throw	Pre-test	1.62±0.99	-14.609	0.000*
	Final test	6.75±1.43		
Guard throw	Pre-test	5.75±1.78	-13.578	0.000*
	Final test	20.87±2.98		
Split throw	Pre-test	0.87±0.56	-15.398	0.000*
	Final test	3.51±1.09		
Final throw	Pre-test	0.75±0.67	-12.991	0.000*
	Final test	2.72±1.03		

Note. * $p < 0.05$.

When Table 3 was examined, it was determined that there were statistically significant increases in the pre-test and final test performance values of the experimental group's hammer throw, take out throw, guard throw, split throw and final throw. ($p < 0.0$).

Table 4. Pre-test and final test values of the control group

Variables	Experimental Group	Mean±SD	T	P
Hammer throw (cm)	Pre-test	50.81±6.23	0.433	0.545
	Final test	49.46±6.14		
Take out throw	Pre-test	1.49±0.78	-0.427	0.568
	Final test	1.65±0.88		
Guard throw	Pre-test	6.13±1.67	-0.599	0.451
	Final test	7.08±1.99		
Split throw	Pre-test	1.11±0.87	-0.493	0.501
	Final test	1.23±0.95		
Final throw	Pre-test	1.88±0.89	-0.603	0.411
	Final test	2.01±1.01		

Note. * $p < 0.05$.

When Table 4 was examined, it was noticed that there were increases in the pre-test and final test performance values of the experimental group's hammer throw, take out throw, guard throw, split throw and finish throw, but these increases were not statistically significant ($p > 0.05$).

4. Discussion and Conclusion

Life kinetic exercise method is an exercise model that constantly enables athletes to think actively. Basic components of life kinetic exercises are movement and training science, functional anatomy and modern brain research. Life Kinetic exercises include a system that provides brain training through physical activity, using exercises that create new connections between brain cells, combining visual tasks, movement and cognitive tasks. The exercises are about concentration, problem solving skills, reflexes, balance, coordination and also the ability to cope with stress for performance athletes (FIFA, 2019). When the general effects of life kinetic exercises are examined, it is seen that besides improving cognitive features such as relaxation, concentration and attention, it also improves athletic performance elements and it also positively affects psychological (stress, self-confidence, anxiety) factors (US Youth Soccer, 2017). In particular, the gradual difficulty of life kinetic exercises and the constant change of movements support this training process to be more effective. In this study on athletes who do floor curling, in which it is important to analyse and react accordingly; It was seen that there was no statistically significant difference between the pre-test and final test values of the control group's hammer throw, take out throw, guard throw, split throw and finish throw. It was determined that there were statistically significant increases in the pre-test and final test values of the experimental group's hammer throw, take-out throw, guard throw, split throw and final throw.

When we examine the studies in the literature, in a study examining the effect of life kinetic training on parameters such as the ability of handball players, making the right decision and speed of decision making, a significant difference was found in terms of experimental and control groups (Lutz, 2011). Traute et al. (2016) stated that life kinetic training applied on healthy individuals increased the neuron connections of individuals. In another study, Hamzei et al. (2012) found that life kinetic training applied to healthy individuals increased functional communication between brain neurons. It increases healthy alpha production, mental skills, relaxation and also helps mental adaptation. This situation allows to understand the existing problems calmly and to solve them effectively and quickly. Healthy beta production, on the other hand, reduces the attention deficit of the individual and increases his focus and problem-solving skills (Sürmeli, 2010). In the study conducted by Taşkın and Biçer (2015), it was determined that 8-week proprioception training provided increases in quickness, agility and acceleration performances. In other studies; Lutz, 2014, found that Life kinetic training improves the reactions of athletes. In another study conducted by Lutz (2011), he found that life kinetic exercises improve the speed of correct decision making and decision making in handball players. In the study conducted to investigate the effect of life kinetic training on lunge speed and some kinematic parameters in 12-14 year old fencers, significant improvements were found in lunge movement speed (Mugan, 2019). It has been determined that life kinetic trainings increase the hockey skills of the athletes, and psychological skill

training has a positive effect on the psychological performance of the athletes such as self-confidence and attention levels (Yıldırım, 2021).

Yarım et al. (2019) investigated the effects of Life Kinetics on performance athletes and mentioned that Life kinetic training affects the cognitive process, as well as having effects on motor skills and different physiological parameters. When we evaluated them in terms of contributing to the performance development of the athletes, they deduced that life kinetic training would have a positive effect. Looking at the results of other studies, we can say that the results of the study show parallelism with the results of our study. In addition, we can say that life kinetic training is an important type of exercise for athletes to make quick decisions and to increase sportive performance depending on this decision.

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