



Effects of athletes pitching exercise on Interval velocity and over run in high school baseball players

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INTRODUCTION

Among hitting factors in baseball, batters are reported to have strong hitting and base running as the most important factors. Base running is an important factor for a team's ability to perform operations, and it is reported that a team with strong play is likely to win. In this, base running, it is very important to acquire pitching and running steps based on strong physical strength based on basic fitness. This study aimed to provide fundamental data of athletes pitching exercise on Interval velocity and over run in high school baseball players.

METHODS

In order to achieve the purpose of this study, 48 high school baseball players at D and C city were selected at random and allocated 16 high school baseball players each for the Non Exercise group (NEG), Deficient Exercise group (DEG), Over Exercise group (OEG). The exercise program was applied to DEG and OEG, and the interval speed and over run were checked before and after the experiment. The data obtained from this study were analyzed using the SPSS 24.0 statistical program and two-way repeated ANOVA was used.

Table 1. Demographic data

	Age (yrs)	Height (cm)	Weight (kg)	BMI (kg/ m ²)	Body Fat (%)
NEG (n=16)	17.68 ±1.88	173.88 ±6.29	78.32 ±4.68	23.98 ±1.96	22.62 ±2.01
PCEG (n=16)	17.19 ±1.72	176.18 ±7.02	78.49 ±6.38	23.11 ±1.32	22.33 ±2.02
TPEG (n=16)	18.12 ±1.63	174.93 ±6.32	79.27 ±5.44	23.66 ±1.27	22.68 ±2.16

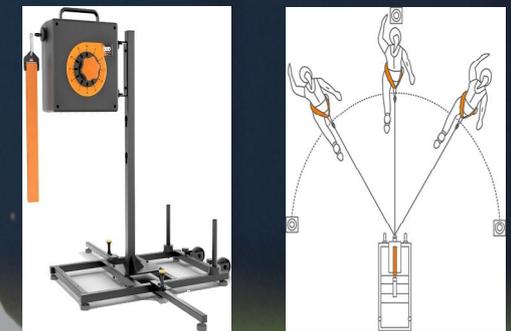
Table 2. Exercise program

Stage	Exercise Program	Rest			Motion Frequency
		1-4 Week (reps/set)	5-8 Week (reps/set)	9-12 Week (reps/set)	
Warm-up (10 min)	Stretching	10/3	10/3	10/3	RPE 8-10
	Basic pitching				
Work-out (40min)	Upper body pitching				RPE 11-13
	Lower body pitching				
	Functional pitching	10/5	10/10	10/15	
	Rotation pitching				
Cool-down (10min)	Balance pitching				RPE 8-10
	Stretching	10/3	10/3	10/3	

Figure 1. Interval velocity measurement methods



Figure 2. Over run measurement methods



RESULTS

Figure 3. Interval velocity

Interval velocity

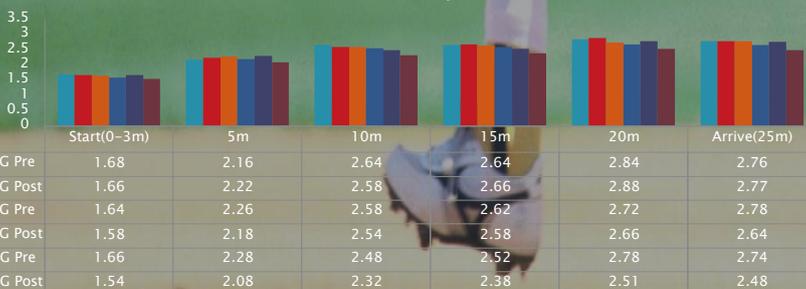
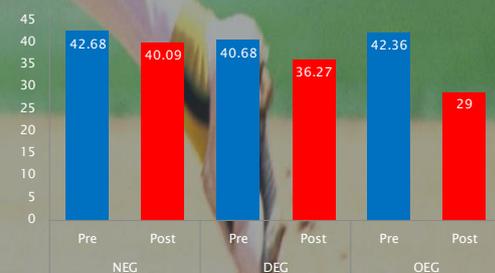


Figure 4. Over run curve

Curve (°)



CONCLUSION

The conclusions obtained through this study are as follows. First, as a result of analyzing the change of interval speed to athletes pitching exercise, OEG was significantly improved compared to NEG and DEG. Second, as a result of analyzing changes in over run according to athletes pitching exercise, OEG was significantly improved compared to NEG and DEG. As conclusions, this study confirmed that the athletes pitching exercise could improve the Interval velocity and over run in the high school baseball players.