Fitness

Steven Capone

Rowan University

- **Background & Literature Review**

The purpose of my paper is to analyze and evaluate how a six-week resistance training program will affect a person's 1 rep max in deadlift and total distance in the vertical and standing long jump. During my research, I plan to study both males and females who are all around the same age group (mid-twenties). The study will include 15 females and 15 males, so I will have enough data acquired from both genders in order to accurately assess the results. I will obtain the data by having the subjects report to a fitness lab where all the required equipment will be available for use. Before beginning the study, the subjects will be measured for their height(in), weight(lbs.), and body mass index. After those measurements are recorded the subjects will perform their 1 rep max in the deadlift and distances in the vertical and standing long jump (ft). The results from the pre testing should allow us to properly assess the subject's strength and explosiveness prior to the six-week program.

In a study done from the University of Reims in France, authors Said El-Ashker, Amr Hassan, Redha Taiar, and Markus Tilp looked at long jump training emphasizing plyometric exercises versus traditional long jump training. The subjects were split into two different groups for this 8-week program. One group trained with plyometric exercises and the other group which is the control performed standard long jump training. Both groups were being measured for their 30m sprint, standing long jump, and vertical jump. At the end of the study, the experimental group showed better results when compared to the control group

in the physical and biomechanical parameters and they significantly improved their long jump records. These results mean that plyometric training can be used as another alternative method to improve jumping abilities in athletes.

In another study done at the university of South Florida, Ryan Colquhoun, et al., looked at the comparison of powerlifting performance in trained men using traditional and flexible daily undulating periodization. There were 25 men, who have extensive experience with resistance training, that were split into two groups. All subjects were required to have at least six months of resistance training. They were required to squat, bench press, and deadlift 125, 100, and 150% of their body mass. The variables that were measured before the 9-week program and after were 1 rep max in bench press, squat, and deadlift. At the end of the study both groups significantly improved their 1 rep max in all three lifts. The results showed that FDUP training offered similar adaptations when compared to traditional DUP resistance training in men.

In a study from the Journal of Australian Strength and Conditioning, Danny Lum looked at how short-term resistance training does not increase post activation potentiation in adolescents. There were 16 participants in this study evenly split with 8 males and 8 females. The subjects were required to complete 2 pre and 2 post tests and 16 training sessions and 1 rep max squat and baseline vertical jump height were the focus in the pretests. For 8 weeks the subjects underwent resistance training at least twice a week. At the conclusion of the study, 1 rep max in squat and baseline vertical jump height were significantly

improved, but no PAP was discovered in pre and post training in both the males and females.

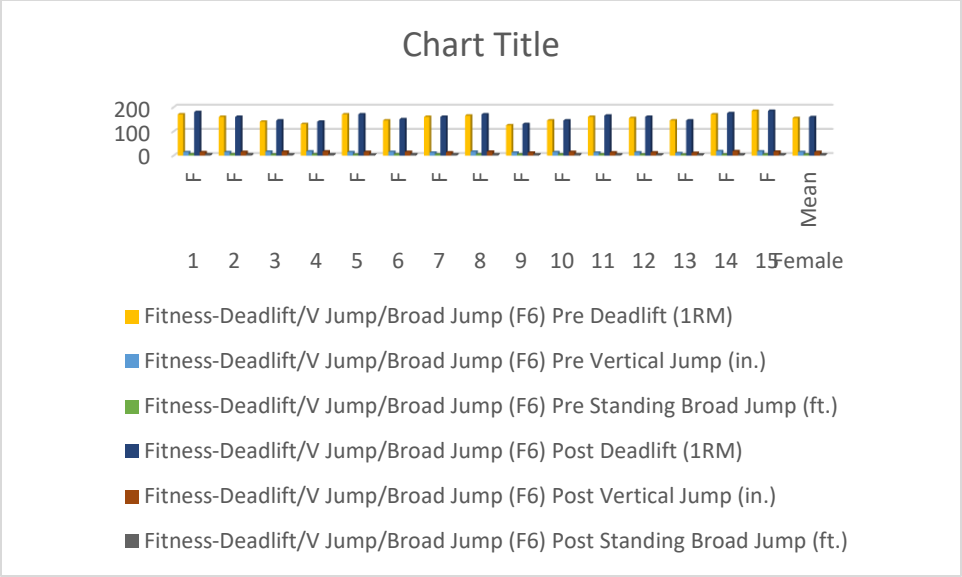
- **Method**

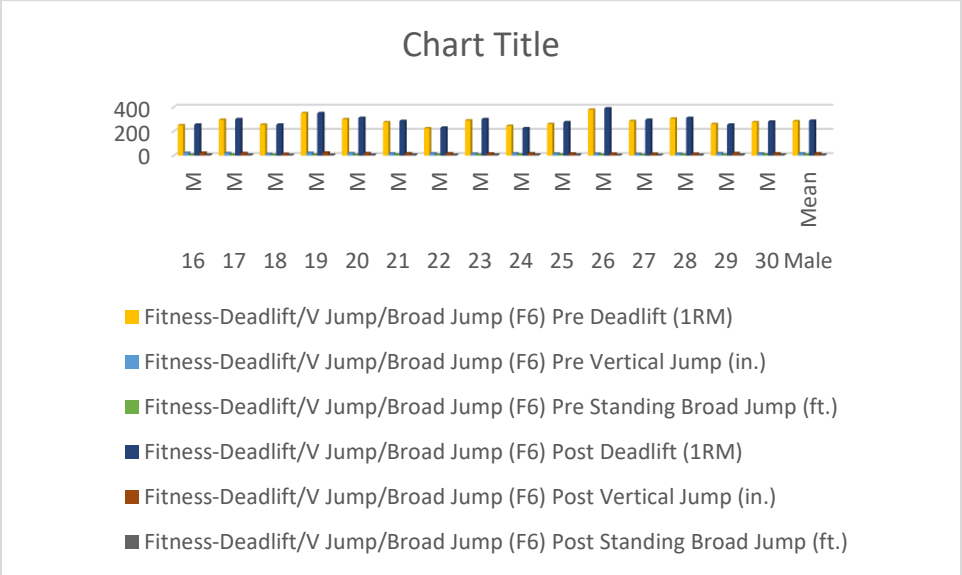
For athlete's strength and explosiveness are key parts to being successful in whatever sport it may be. In this study, I have taken 30 former athletes who are now in their mid-twenties. All the subjects haven't participated in any kind of training since their playing days have ended. The subjects will be asked to undergo a pre and post test before and after the 6-week resistance training program. The pre test will have the subjects record their 1 rep max in deadlift and their baseline vertical and standing long jump scores. Deadlift is a good measure of pure raw strength and it should give the researcher an accurate assessment. Meanwhile, vertical and standing long jump are two movements that accurately translate to explosiveness. After the 6-week training program the subjects will perform the 3 baseline tests again to assess whether they have made significant improvements. Prior to the start of testing each subject will be required to have at least a month off from any kind of resistance training and they will be required to follow a strict nutritional plan over the duration of the study. The subjects will be required to report to the fitness lab 4 times a week. 2 days will be focused on lower body resistance training and the other 2 days will be focused on upper body resistance training. The males and females will report at separate times so they can remain with their respective groups. The fitness lab will have 4 Olympic platforms, a complete dumbbell set, and cable machines. The subjects will be

weighing themselves at the beginning of each week to make sure their weight stays within a healthy range.

- **Results**

Fitness-Deadlift/V Jump/Broad Jump (F6)										
					Pre			Post		
Subject	M/F	Height (in.)	Weight (lb	Body Mass Inde	Deadlift (1RM	Vertical Jump	Standing Broad Jump (ft	Deadlift (1RM	Vertical Jum	Standing Bro
1	F	61	123	18.2	170	14	5	180	14	5
2	F	63	130	19.3	160	14	5	160	15	5
3	F	65	120	17.8	140	16	4	145	16	4.25
4	F	60	112	18.2	130	17	4.75	140	17	5
5	F	66	134	19.2	170	14	3.5	170	15	3.5
6	F	62	110	17.8	145	15	5	150	15	5
7	F	61	126	18.8	160	12	4.5	160	13	4.75
8	F	64	130	19	165	16	5	170	16	5
9	F	59	108	17.2	125	12	4.5	130	12	4.5
10	F	68	135	19.3	145	14	4.5	145	15	4.75
11	F	64	128	23.7	160	12	4.25	165	13	4.25
12	F	62	130	24	155	13	4	160	13	3.75
13	F	63	125	19.4	145	10	3.5	145	11	4
14	F	65	129	23.3	170	18	4	175	18	4.25
15	F	64	134	25	185	17	4.25	185	16	4.25
16	M	70	190	18.7	250	22	6	255	23	6.25
17	M	72	205	23.2	295	20	6.5	300	20	6.5
18	M	69	178	18.8	255	12	4.5	255	13	4.75
19	M	74	225	30	350	22	6	350	24	6
20	M	73	217	27	300	19	5.25	310	19	5.5
21	M	68	170	18.1	275	17	6.6	285	18	6.6
22	M	72	185	19.3	225	18	5.5	230	18	5.5
23	M	71	192	23.6	290	15	6	300	16	6.25
24	M	69	165	26.3	245	17	6.75	225	18	6.75
25	M	72	170	18.4	260	16	6.25	275	16	6.25
26	M	74	230	32.8	380	15	5.25	390	15	5
27	M	71	180	21.3	285	12	4	295	14	4
28	M	73	198	22.7	305	14	5.5	310	14	5.75
29	M	70	176	18	260	19	6	255	20	6.25
30	M	69	172	17.8	275	16	6.75	280	17	6.75
Overall	Mean	67.13	157.57	21.21	219.17	15.6	5.09	223.17	16.13	5.18
	SD	4.59	36.71	3.96	71.93	3	0.98	73.04	3.03	0.96
	p value				0.001741413	0.000182746	0.005452376			
Female	Mean	63.13333	124.93333	20.01333333	155	14.26666667	4.383333333	158.6666667	14.6	4.48333333
	SD	2.38647	8.7624741	2.591157123	16.47508942	2.250925735	0.516397779	15.86400538	1.91982142	0.4952152
	p value				0.001226656	0.055178493	0.054069382			
Male	Mean	71.13333	190.2	22.4	283.3333333	16.93333333	5.79	287.6666667	17.6666667	5.87333333
	SD	1.9223	20.805906	4.758000781	40.29652	3.127451419	0.802273555	43.41932859	3.19970237	0.79594209
	p value				0.066193967	0.001226656	0.055178493			





The 30 subjects had a mean of 219.17lbs for the pre test of the 1 rep max deadlift, a standard deviation of 71.93, and a p-value of .0017. For the vertical jump the total mean was 15.6 in, a standard deviation of 3, and a p-value of .0002. For the standing long jump the mean for the 30 subjects was 5.09 ft, a standard deviation of 0.98, and a p-value of .0055. The posttest results showed a mean of 223.17lbs for the 1 rep max deadlift, a standard deviation of 73.04. The mean for the vertical jump was 16.13 in, a

standard deviation of 3.03. For the standing long jump the total mean was 5.18 ft, and a standard deviation of 0.96.

- **Discussion**

Overall, even though there weren't significant improvements across the board there were slight improvements, nonetheless. The males demonstrated greater improvement in three exercises when compared to the females which was to be expected. I believe the reason why the improvements from the pre test to the post test were slight because the program was only 6 weeks long. If the program projected over many months, I believe the results would have been significant. Also, the program consisted of traditional resistance training, but if it included more specific exercises geared towards improvements in explosiveness and improving the 1 rep max in deadlift the results could have achieved higher success. For future studies, researches can implement a more specific program that allows the former athletes to focus on their explosiveness and lower body strength to improve their deadlift, vertical jump, and standing long jump. I do believe the current program was effective. It just didn't have enough time to produce its full effects.

References

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