

Weight Training Program on Motor Fitness Components and Skill Performance of Softball Players

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Abstract

The study shows that there is different techniques and method of training; therefore the research scholar was keen to find out whether certain exercise can enhance the performance of some of the aspects in softball. The pre test –post test control group design was used for this experimental study. 60 softball male players belonging for the present studies were randomly selected. The data is analyzed by using paired sample 't' test and independent 't' test. Since there were two groups for this experimental study viz. Control and Experimental group, where in the researcher has decided to compare within group and between groups. Mean gain in order to see efficacy of experimental treatment. 't' test was appropriately used for the data analysis of the study. On the basis of result it was found that there is a significant improvement in motor fitness components i.e. Muscular strength, Muscular endurance, Cardiac endurance, Speed due to weight training exercise program as well as significant improvement in motor fitness & softball skill performance i.e. Batting accuracy, Throwing accuracy and Throwing explosive strength.

Key words: Exercise Training, Fitness Measurement, Performance status & Players ability

Introduction

Motor fitness has direct relevance to performance in sports. It enables an individual to participate in game and sports with greater speed, muscular strength, muscular endurance, cardiac endurance and other capabilities and make him capable of attaining good performance in a sports continuously confronted with task of improving the performance of the player with the help of socialized training & conditioning of player plays a vital role to make up of high level of performance. New techniques, methods and styles of exercise training program in different games and sports has proved in improving different aspects performance such as physical fitness, motor fitness and skill abilities. Same is true in all the combative sports and game. The study shows that there is different techniques and method of training; therefore the research scholar was keen to find out whether certain exercise can enhance the performance of some of the aspects in softball. But motor fitness includes more and more detail component. The researcher was therefore, keeping finding out whether weight training exercises improve motor fitness components and skill performance. Thus the research problem "Weight Training Program on Motor Fitness Components and Skill Performance of Softball Players". The study was go through this objectives like, to study the effect of Specific Weight Training on Muscular Strength, Muscular Endurance, Cardiac Endurance, Speed & Skill Performance of Soft Ball player's boys aged 17 to 19 years. The study has formulated hypothesis that, There is no significant difference in mean gain score of muscular strength, Muscular endurance, cardio vascular endurance, speed, skill performance of batting accuracy, throwing

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accuracy & skill performance of maximum distance throw between control and experimental group.

Methods & Materials

The analysis of the data collected by the researcher before and after the weight exercise intervention The data is analyzed by using paired sample 't' test and independent 't' test. Within group comparison was done by paired sample 't' test, while between group comparison was done by independent 't' test.

Results & Discussion

Table 1:Result of The Selected Variables of The Control Group (within group)

Comparison mean between the pre-test and post-test of the control group (Within group n=30)								
Variables	Pre test		Post test		Mean Diff.	Std. Error mean	't'	Signi.
	Mean	SD	Mean	SD				
Strength SBJ	2.0173	.29263	2.0113	.29177	.00600	.00406	1.479	.150 p>0.05
Mus. Endu. Push-ups	23.0333	6.63056	22.8000	6.37560	.23333	.18988	1.229	.229 p>0.05
Cardi. Endu. 600yard R/W	2.6730	.52821	2.6743	.52977	-0.0013	.01848	-5.28	.601 p>0.05
Speed 50yard dash	7.5943	.55050	7.5973	.54812	-.00300	.00855	-.645	.524 p>0.05
Softball Batt. Accu.	16.4333	5.88794	16.2667	5.61361	.16667	.52409	.571	.573 p>0.05
Softball Thro. skill Repeated throw	48.9667	6.95544	48.6333	6.64615	.33333	.43769	.762	.452 p>0.05
Softball Thro. Dist. Throw	146.7333	16.73475	146.5333	16.78452	.20000	.10317	1.939	.062 p>0.05

It is seen from Table -1, that in case of Muscular Endurance as measured by Push- ups the mean score of the pre and post tests of the Control group are 23.0333 (6.63056) and 22.8000 (6.37560) respectively, whereas the mean difference is .23333 and 't' value is 1.229 which is not significant at .229 level (P>0.05).

In case of Muscular Endurance as measured by Push- ups the mean score of the pre and post tests of the Control group are 23.0333 (6.63056) and 22.8000 (6.37560) respectively, whereas the mean difference is .23333 and 't' value is 1.229 which is not significant at .229 level (P>0.05). In case of Cardio Vascular Endurance as measured by 600yard run/walk the mean score of the pre and post tests of the Control group are 2.6730 (.52821) and 2.6743 (.52977) respectively, whereas the mean difference is -0.0013 and 't' value is -5.28 which is not significant at .601 level (P>0.05). in case of Speed as measured by 50 yard dash run the mean score of the pre and post tests of the Control group are 7.5943 (.55050) and 7.5973 (.54812) respectively, whereas the mean difference is -.00300 and 't' value is -.645 which is not significant at.524 level (P>0.05). In case of, Batting accuracy as measured by repeated throw the mean score of the pre and post tests of the Control group are 16.4333 (5.88794) and 16.2667 (5.61361) respectively, whereas the mean difference is .16667 and 't' value is .571 which is

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not significant at .573 level ($P>0.05$). in case of Throwing accuracy as measured by repeated throw the mean score of the pre and post tests of the Control group are 48.9667 (6.95544) and 48.6333 (6.64615) respectively, whereas the mean difference is .33333 and 't' value is .762 which is not significant at .452 level ($P>0.05$) and Softball Distance Throw as measured by maximum distance throw the mean score of the pre and post tests of the Control group are 146.7333 (17.73475) and 146.5333 (16.78452) respectively, whereas the mean difference is .20000 and 't' value is 1.939 which is not significant at .062 level ($P>0.05$).

Table 2: Result of the Selected Variables of The Experimental Group (within group)

Comparison mean between the pre-test and post-test of the experimental group (within group n=30)								
Variables	Pre test		Post test		Mean Diff.	Std. Error mean	't'	Signi.
	Mean	SD	Mean	SD				
Strength SBJ	1.9450	.32546	1.9843	.32478	-.03833	.00369	-10.401	.000 $p<0.05$
Mus. Endu. Push-ups	23.0333	6.63056	24.7333	6.88293	-1.70000	.19268	-8.823	.000 $p<0.05$
Cardi. Endu. 600yard R/W	2.2860	.35795	2.2310	.35406	.00500	.01831	3.004	.005 $p<0.05$
Speed 50yard dash	7.5150	.69658	7.4897	.70726	.02533	.00717	3.532	.001 $p<0.05$
Softball Batt. Accu.	20.4667	7.49590	21.6667	6.27163	-1.20000	.43523	-2.757	.010 $p<0.05$
Softball Thro. skill Repeated throw	45.6333	8.63626	48.3000	8.17966	-2.6667	.30070	-8.868	.000 $p<0.05$
Softball Thro. Dist. Throw	137.9043	22.60142	141.3157	22.44369	-3.41133	.24725	-13.797	.000 $p<0.05$

It is seem from Table -2, that in case of Strength as measured by Standing Broad Jump the mean score of the pre and post tests of the Experimental group are 1.9450 (.32546) and 1.9843 (.32478) respectively, whereas the mean difference is -.03833 and 't' value is -10.401 which is significant at .000 level ($P<0.05$). In case of Muscular Endurance as measured by Push- ups the mean score of the pre and post tests of the Experimental group are 23.0333 (6.63056) and 24.7333 (6.88293) respectively, whereas the mean difference is -1.70000 and 't' value is -8.823 which is significant at .000 level ($P<0.05$). In case of Cardio Vascular Endurance as measured by 600yard run/walk the mean score of the pre and post tests of the Experimental group are 2.2860 (.35795) and 2.2310 (.35406) respectively, whereas the mean difference is .00500 and 't' value is 3.004 which is significant at .005 level ($P<0.05$). In case of Speed as measured by 50 yard dash run the mean score of the pre and post tests of the Experimental group are 7.5150 (.69658) and 7.4897 (.70726) respectively, whereas the mean difference is .02533 and 't' value is 3.532 which is significant at .001 level ($P<0.05$). In case of Batting accuracy as measured by repeated throw the mean score of the pre and post tests of the Experimental group are 20.4667 (7.49590) and 21.6667 (6.27163) respectively, whereas the mean difference is -1.20000 and 't' value is which is significant at .010 level ($P<0.05$). In case of Throwing accuracy as measured by repeated throw the

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mean score of the pre and post tests of the Experimental group are 45.6333 (8.63626) and 48.3000 (8.17966) respectively, whereas the mean difference is -2.6667 and 't' value is -8.868 which is significant at .000 level ($P<0.05$) and Softball Distance Throwing as measured by maximum distance throw the mean score of the pre and post tests of the Experimental group are 137.9043 (22.60142) and 141.3157 (22.44369) respectively, whereas the mean difference is -3.41133 and 't' value is -13.797 which is significant at .000 level ($P<0.05$).

Table 3: Comparison of The Results of Selected Variables Between Control and Experimental Group

Comparison of mean gain in selected variables between Control and Experimental group (Between Group comparison n=30)						
Variables	Group Compared	Mean Gain	Mean Diff.	Std. Error Mean Gain	't'	Significance
Strength SBJ	Control	.0060	.04433	.00548	8.088	.000
	V/S Experimental	-.0383				
Mus. Endu. Push-ups	Control	-.2333	1.93333	.27052	7.147	.000
	V/S Experimental	-1.7000				
Cardi. Endu. 600yard R/W	Control	-.0013	-.05633	.01848	-3.048	.003
	V/S Experimental	.0550				
Speed 50yard dash	Control	-.0030	-.02833	.00855	-3.314	.002
	V/S Experimental	.0253				
Softball Batt. Accu.	Control	.1667	1.36667	.52409	2.608	.012
	V/S Experimental	-1.20000				
Softball Thro. skill Repeated throw	Control	.3333	3.00000	.53103	5.649	.001
	V/S Experimental	-2.6667				
Softball Thro. Dist. Throw	Control	.2000	3.61133	.26791	13.480	.000
	V/S Experimental	-3.4113				

It is seen from Table -3, that in case of Muscular Strength as measured by Standing Broad Jump the mean gain score of the Control and Experimental group are .00600 and -.0383 respectively, whereas the mean difference is .04433 and 't' value is 8.088 which is significant at .000 level ($P<0.05$). In case of Muscular Endurance as measured by Push- ups the mean score of the pre and post tests of the Control and Experimental group are -.2333 and -1.7000 respectively, whereas the mean difference is 1.93333 and 't' value is 7.147 which is significant at .000 level ($P<0.05$). In case of Cardio Vascular Endurance as measured by 600yard run/walk the mean gain score of the Control and Experimental group are -.0013 and .0550 respectively, whereas the mean difference is -.05633 and 't'

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value is -3.048 which is significant at .003 level ($P < 0.05$). In case of Speed as measured by 50 yard dash run the mean gain score of the Control and Experimental group are -.0030 and .0253 respectively, whereas the mean difference is .00855 and 't' value is -3.314 which is significant at .002 level ($P < 0.05$). In case of Batting accuracy as measured by repeated throw, the mean gain score of the Control and Experimental group are .1667 and -1.20000 respectively, whereas the mean difference is 1.36667 and 't' value is 2.608 which is significant at .012 level ($P < 0.05$). In case of Throwing accuracy as measured by repeated throw the mean gain score Control and Experimental group are .3333 and -2.6667 respectively, whereas the mean difference is 3.0000 and 't' value is 5.649 which is significant at .001 level ($P < 0.05$) and Softball Distance Throw as measured by maximum distance throw, the mean gain score of the Control and Experimental group are .2000 and -3.4113 respectively, whereas the mean difference is 3.61133 and 't' value is 13.480 which is significant at .000 level ($P < 0.05$).

Discussion of Results

Influence of weight training program on Muscular Strength: The result reveals that the subject who practiced weight training exercise program could show higher score in Muscular strength measured by Standing Broad Jump then the control group.

Influence of weight training program on Muscular Endurance: The result reveals that the subject who practiced weight training exercise program could show higher score in Muscular endurance measured by Push-ups then the control group.

Influence of weight training program on Cardiac Endurance: The result reveals that the subject who practiced weight training exercise program could show higher score in Cardiac endurance measured by 600yard run/walk then the control group.

Influence of weight training program on Speed: The result reveals that the subject who practiced weight training exercise program could show higher score in Cardiac endurance measured by 50yard dash then the control group.

Influence of weight training program on Batting Accuracy: The result reveals that the subject who practiced weight training exercise program could show higher score in Batting accuracy measured by batting test then the control group.

Influence of weight training program on Throwing Accuracy: The result reveals that the subject who practiced weight training exercise program could show higher score in Throwing accuracy measured by repeated throw test then the control group.

Influence of weight training program on Softball Distance Throw: The result reveals that the subject who practiced weight training exercise program could show higher score in Softball Distance Throw measured by maximum distance throw test then the control group.

Thus, specific weight exercise program warrants a statistically significant effect to increase the overall level of performance in muscular strength, Muscular endurance, cardio vascular endurance, speed, skill performance of batting accuracy, throwing accuracy & skill performance of maximum distance throw which rejects the null hypothesis

Findings

From the above analysis and interpretation of the data the following finding may be drawn.

There is a significant improvement in motor fitness components i.e. Muscular strength, Muscular endurance, Cardiac endurance, Speed due to weight training exercise program.

There is significant improvement in motor fitness & softball skill performance i.e. Batting accuracy, Throwing accuracy and Throwing explosive strength.

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Conclusion

On the basis of the result obtained the present study concludes the following-

The weight training exercises were found helpful to improve selected motor fitness components such as Muscular strength, Muscular endurance, Cardiac endurance, speed and skill abilities in Softball viz. Distance throw, Batting accuracy and Throwing accuracy.

References

- Eugene, Fincher Glen. (2005). Dissertation Abstracts International
 Tamrakar, Anita and Debnath, Manika (2007). Scientific journal in sports and exercise, P.40
 MadanBhavna, Sarika, Sandhu J.S. (2008). III International Congress on sports Medicine, Exercise science Physical Education and Yogic Science.
 Thomas Scott Marzilli, (Jan 2008) "The effect of preseason strength training program on a division 11 collegiate women's basketball team." International Journal of fitness.
 Nelson, V.R. Multer, C.E. and Snyder, A.R. (2004).The immediate effects of resistance training on athletic performance in softball players. Medicine and Sciences.
 Coachsci.sdsu.edu/csa/vol1111/nelson2.htm-unitedstates
- KM Sheehy (2007), Cronin, John, Hopkins, Will (2007)
 aut.researchgateway.ac.nz/handle/10292/259
 Shendkar S. (2008). Effect of training on skill performance of kabaddi players.Pune.p.119
 Moreira, (2008). The impact of a 17 days training period for an international championship on mucosal immune parameters in top level basketball players and staff members PMID: 18821985
 Jullien, H, Dies a short period of lower limb strength training improve performance in field based test of running and agility in young professional soccer players. France: MEDLINE, PMID: 1855095
 A.M. Blacmore (2003) "The circuit training programs for strength endurance."
<http://www.ncbi.nlm.nih.gov/sites/entrez?>
 Charta (2009), "Whether combining endurance training with CT impacted strength and power."
<http://www.ncbi.nlm.nih.gov/sites/entrez?>
 SandorDorgo, George A. King and Christopher A. Rice (2009)."The effects of manual resistance training on improving muscular strength and endurance."
<http://www.ncbi.nlm.nih.gov/sites/entrez?>
 Pamela A. Williams, Thomas F. (2000). "Cash effects of a circuit weight training program on the body images of college students."
<http://www.ncbi.nlm.nih.gov/sites/entrez?>
 Clarke, H.R. and Clarke, D.H. (1987)."Application of measurements to physical education". - 6th ed. Prentice-hall, Inc., Englewood cliffs, New Jersey.
 Barrow, H.M. and Mcgee, R. (1979)."A practical approach to measurement in physical education". - 3rd ed. Lea &Febiger - Philadelphia.
 Kansal, D.K. (1996)." Applied measurement evaluation & sports selection".Sports and spiritual science publication.
 Bartek, O. (1998). All around fitness.Konemann:
 Hockey, R.V. (1985). "Physical fitness: The pathway to healthful living. - 5th ed. Times mirror: mosby college publishing texas.
 Uppal, A.K. (1996). "Physical fitness: How to develop. New delhi: friends publication.
 Hoeger, W.K. and Hoeger, A.S. (1990)."Fitness and wellness". Colorado: Morton publishing company.

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Jacqueline Shick,(1964) Validity and Reliabilities of selected achievement skill tests in softball for use at university of Minnesota.

(www.escholarshare.drake.edu/bitstream/handle/2092/1517/Untitled.pdf?)

www.softballperformance.com/softball-histroy/en.wikipedia.org/wiki/softball

WWW.IGHRWS.IN