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"EFFECT OF PHYSICAL ACTIVITY PROGRAMME ON HEALTH RELATED PHYSICAL FITNESS AMONG ADOLESCENT GIRLS"

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ABSTRACTS

The aim of this study is to find out the effect of physical activity programme on health related physical fitness among adolescent girls. Sixty girls between the age group of 12-14 years from Mary Madhava vilasam higher secondary School, Thundathil Trivandrum. The subjects were randomly be assigned to an experimental (N=30) and control group (N=30). Experimental groups were given 12 weeks training and control groups were not allowed to participate in any of the training programmes.The result reveals that the experimental group has significant effect on health related physical fitness among adolescent girls when compared to control group".

KEY WORDS : *ADOLESCENT GIRLS , PHYSICAL ACTIVITY PROGRAMME, PHYSICAL FITNESS.*

INTRODUCTION

It is well accepted that regular physical activity is associated with numerous physical and psychological health benefits. Physical activity can effectively reduce the risk for developing disorders such as cardiovascular disease, osteoporosis, some forms of cancer, and type 2 diabetes. Being active during childhood and adolescence is especially important as physical activity is essential for the healthy development of musculoskeletal tissues, cardiovascular systems, social and mental well-being, and for the maintenance of healthy body composition. Physical fitness is generally achieved through correct nutrition, exercise, and enough rest. There is evidence that this decrease in physical activity in adolescence could continue into adulthood. The female adolescents who participated in sports once a week or more continued to be active in adulthood. School based physical education programs are well-situated to help children and youth realize many of the health benefits associated with physical activity. Physical education can help students develop necessary skills for lifetime physical activity, as well as an overall awareness of the importance of physical activity.

METHODOLOGY

"The study was designed to find out the effect of physical activity programme on health related physical fitness among adolescent girls. Sixty girls between the age group of 12-14 years from Mary Madhava vilasam higher secondary School, Thundathil Trivandrum. The subjects were randomly be

assigned to an experimental (N=30) and control group (N=30).The subject were equally divided into two groups namely experimental and control groups with 30 subjects in each group.Control group did not undergo any training programme rather than their daily routine work.The experimental group was treated with physical activities three times a week for a period of 12 weeks. The health related physical fitness variables are cardio-respiratory endurance (1 mile walk test), muscular strength endurance (sit-ups, push-ups), flexibility and body composition. The training programme was included warm-up with stretching and rotational exercise and cool down with stretching and loosening exercises for the duration of 50 minutes. The results of pre-test and post-test were compared by using analysis of Covariance(ANCOVA)".

RESULTS & DISCUSSIONS

Figure: 1 The comparative bar chart of pretest and posttest mean 1 mile score in the control and experimental groups

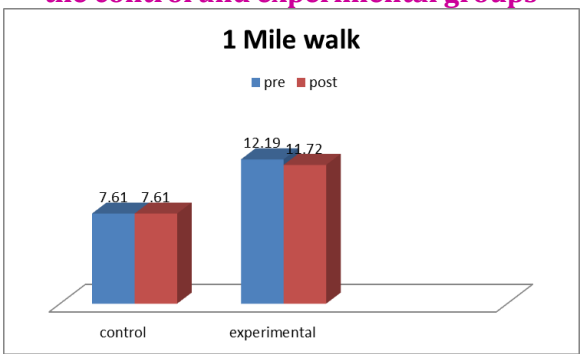


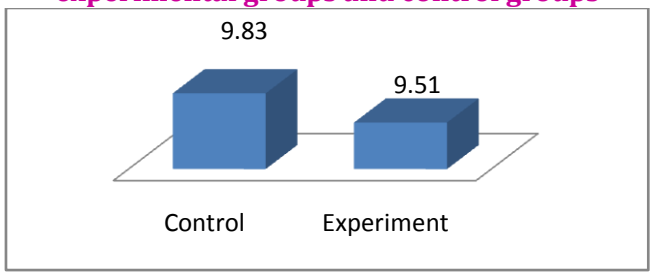
Table 2: Data and test of significance of posttest scores on1 mile run between experimental and control groups

1 mile run	Group	Mean	SD	SV	SS	df	MS	F	P
Adjusted posttest	Control	9.83	0.16	BG	0.25	1	0.25	3.67	0.049*
	Experiment	9.51	0.16	WG	3.85	57	0.06		
				T	4.10	58			

**: significant at 5% level(P<0.05)*

From Table 2, it can be inferred that, if the effect due to initial pretest scores were eliminated, the adjusted posttest mean 1 mile run scores showed significant difference among control and experimental groups(F=3.67, P<0.05). The adjusted posttest mean 1 mile run score in the control group is 9.83 with SD of 0.16 and that the adjusted posttest mean1 mile run score in the experimental group is 9.51 with SD of 0.16. Thus the level of 1 mile run in experimental group is significantly higher than the control group as a result of 12 weeks physical activity training programme.

Figure 2: Comparative bar diagram of adjusted posttest scores on 1 mile run in the experimental groups and control groups



COMPARISON OF SITUP IN THE EXPERIMENTAL GROUPS AND CONTROL GROUP

Table 3: Data and test of significance of effectiveness of training on pretest to posttest scores on sit up in the experimental and control groups

	Pretest		Posttest		MD	t	DF	P
Group	AM	SD	AM	SD				
Control	6.60	2.37	6.56	2.40	0.03	1.00	29	0.326ns
Experiment	8.63	2.90	11.87	2.84	3.23	22.89	29	0.000**

***: significant at 1% level (P<0.01), ns: not significant (P>0.05*

From Table 3, in the control group the average pretest sit up is 6.60 with SD 2.37 and the pretest to posttest mean difference is 0.03. The paired t-value is 1.00 with P value 0.326>0.05. The inference is that there is no significant pretest to posttest difference in the sit-up scores of control group. In the experiment group the average pretest sit-up score is 8.63 with SD 2.90 and the pretest to posttest mean difference is 3.23. The paired t-value is 22.89 with P value 0.000<0.01. The inference is that there is significant pretest to posttest difference in the sit-up scores of experimental group.

Figure 3: The comparative bar chart of pretest and posttest mean sit-up score in the control and experimental groups

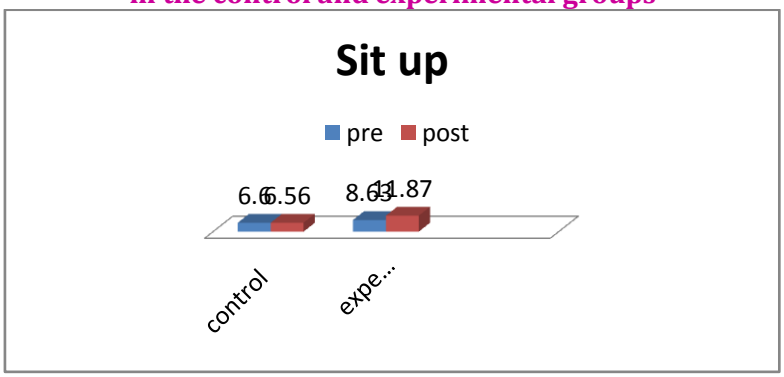


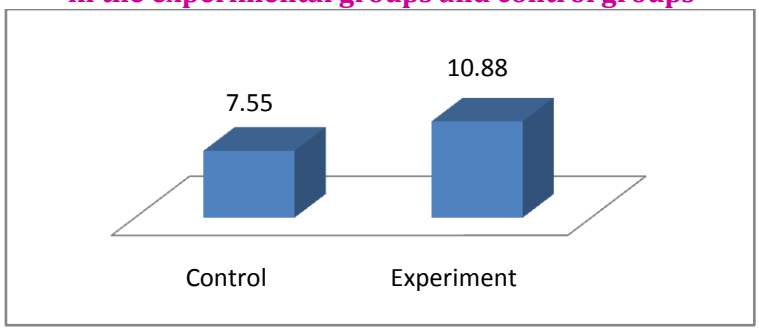
Table 4: Data and test of significance of posttest scores on sit up between experimental and control groups

Sit-up	Group	Mean	SD	SV	SS	Df	MS	F	P
Adjusted posttest	Control	7.55	0.019	BG	144.44	1	144.44	459.20	0.000**
	Experiment	10.88	0.019	WG	17.93	57	0.315		
				T	162.37	58			-

***: significant at 1% level(P<0.01)*

From Table 4, it can be inferred that, if the effect due to initial pretest scores were eliminated, the adjusted posttest mean situp scores showed significant difference among control and experimental groups(F=459.20, P<0.01). The adjusted posttest mean situp score in the control group is 7.55 with SD of 0.019 and that the adjusted posttest mean situp score in the experimental group is 10.88 with SD of 0.019. Thus the level of sit-up in experimental group is significantly higher than the control group as a result of 12 weeks physical activity training programme.

Figure 4: Comparative bar diagram of adjusted posttest scores on sit up in the experimental groups and control groups



COMPARISON OF PUSHUP IN THE EXPERIMENTAL GROUPS AND CONTROL GROUP

The significance of the effectiveness of pre to posttests difference in push up scores of the experimental and control groups were assessed using a paired t-test, the details are given in Table

	Pretest		Posttest		MD	t	DF	P
Group	AM	SD	AM	SD				
Control	3.4	1.22	3.43	1.19	0.03	1.00	29	0.326ns
Experiment	5.16	1.68	7.80	1.54	2.63	23.45	29	0.000**

***: significant at 1% level(P<0.01), ns: not significant(P>0.05*

From Table 5, in the control group the average pretest push up is 3.4 with SD 1.22 and the pretest to posttest mean difference is 0.03. The paired t-value is 1.00 with P value 0.326>0.05. The inference is that there is no significant pretest to posttest difference in the push up scores of control group. In the experiment group the average pretest push up score is 5.16 with SD 1.68 and the pretest to posttest mean difference is 2.63. The paired t-value is 23.45 with P value 0.00<0.01. The inference is that there is significant pretest to posttest difference in the quality of life scores of experimental group.

Figure 5: The comparative bar chart of pretest and posttest mean push-up score in the control and experimental groups

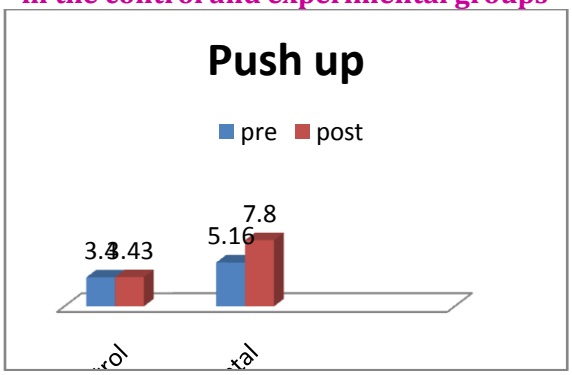


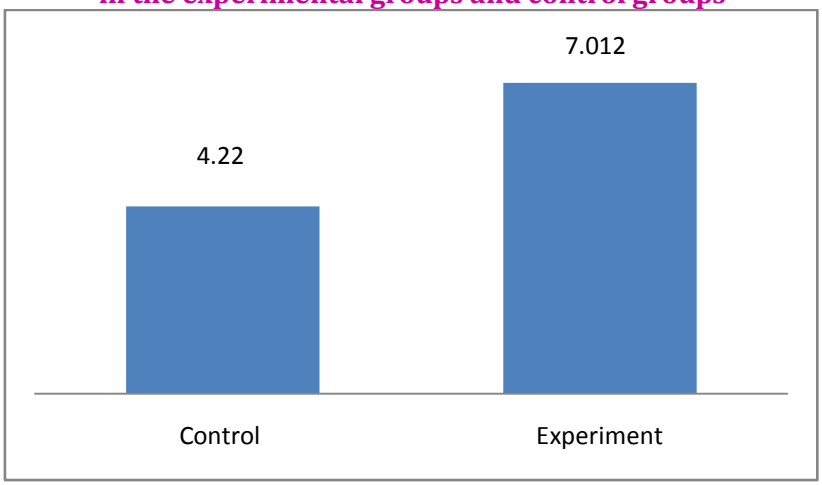
Table 6: Data and test of significance of posttest scores on push up between experimental and control groups

Push up	Group	Mean	SD	SV	SS	Df	MS	F	P
Adjusted posttest	Control	4.22	0.16	BG	85.09	1	85.09	463.43	0.000**
	Experiment	7.012	0.16	WG	10.46	57	0.184		
				T	95.55	58			

***: significant at 1% level(P<0.01)*

From Table 6 , it can be inferred that, if the effect due to initial pretest scores were eliminated, the adjusted posttest mean push up scores showed significant difference among control and experimental groups(F=463.43, P<0.00). The adjusted posttest mean push up score in the control group is 4.22 with SD of 0.16 and that the adjusted posttest means push up score in the experimental group is 7.012 with SD of 0.16. Thus the level of push up in experimental group is significantly higher than the control group as a result of 12 weeks physical activity training programme.

Figure 6: Comparative bar diagram of adjusted posttest scores on push up in the experimental groups and control groups



COMPARISON OF FLEXBILITY IN THE EXPERIMENTAL GROUPS AND CONTROL GROUP

The significance of the effectiveness of pre to posttests difference in flexibility scores of the experimental and control groups were assessed using a paired t-test.

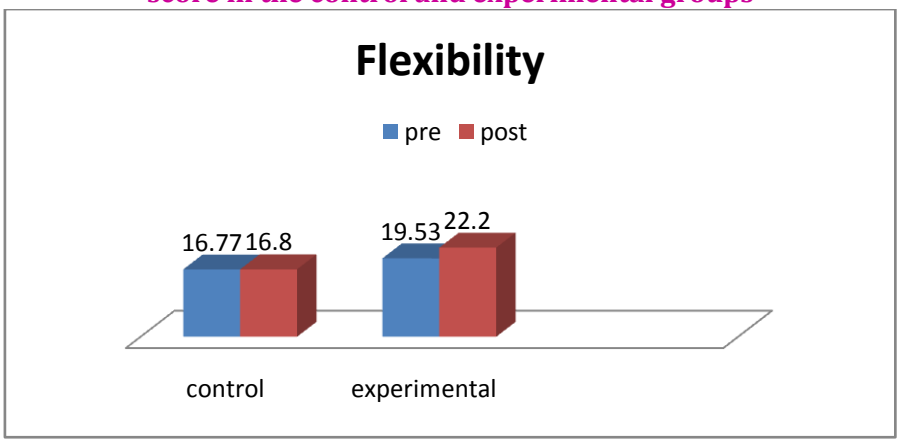
Table 7: Data and test of significance of effectiveness of training on pretest to posttest scores on flexibility in the experimental and control groups

	Pre-test		Post-test		MD	t	DF	P
Group	AM	SD	AM	SD				
Control	16.77	2.96	16.8	3.00	0.03	1.00	29	0.326ns
Experiment	19.53	2.84	22.2	2.49	2.66	15.83	29	0.000**

***: significant at 1% level(P<0.01), ns: not significant(P>0.05)*

From Table 7, in the control group the average pretest flexibility is 16.77 with SD 2.96 and the pretest to posttest mean difference is 0.03. The paired t-value is 1.00 with P value 0.326>0.05. The inference is that there is no significant pretest to posttest difference in the flexibility scores of control group. In the experiment group the average pretest flexibility score is 19.53 with SD 2.84 and the pretest to posttest mean difference is 2.66. The paired t-value is 15.83 with P value 0.00<0.01.

Figure:7 The comparative bar chart of pretest and posttest mean flexibility score in the control and experimental groups



The genuineness of the posttest mean differences were assessed using One-Way ANCOVA by taking pretest scores as the covariate. The details are given in Table 8.

Table 8: Data and test of significance of posttest scores on flexibility between experimental and control groups

Flexibility	Group	Mean	SD	SV	SS	df	MS	F	P
Adjusted post-test G	Control	18.08	0.02	BG	97.94	1	97.94	243.59	0.000**
	Experiment	20.92	0.02	WG	22.92	57	0.40		
				T	120.86	58			

***: significant at 1% level(P<0.01)*

Effect due to initial pretest scores were eliminated, the adjusted posttest mean flexibility scores showed significant difference among control and experimental groups(F=243.59, P<0.00). The adjusted posttest mean flexibility score in the control group is 18.08with SD of 0.02 and that the adjusted posttest mean flexibility score in the experimental group is 20.92 with SD of 0.02. Thus the level of flexibility in experimental group is significantly higher than the control group as a result of 12 weeks physical activity training programme.

CONCLUSION

On the basis of findings and within the limitations and delimitaions of the study the following conclusions were drawn:

1. The level of 1 mile run in experimental group is significantly higher than the control group as a result of 12 weeks physical activity training programme.
2. Thus the level of sit-up in experimental group is significantly higher than the control group as a result of 12 weeks physical activity training programme.
3. Thus the level of push up in experimental group is significantly higher than the control group as a result of 12 weeks physical activity training programme.
4. Thus the level of flexibility in experimental group is significantly higher than the control group as a result of 12 weeks physical activity training programme.

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