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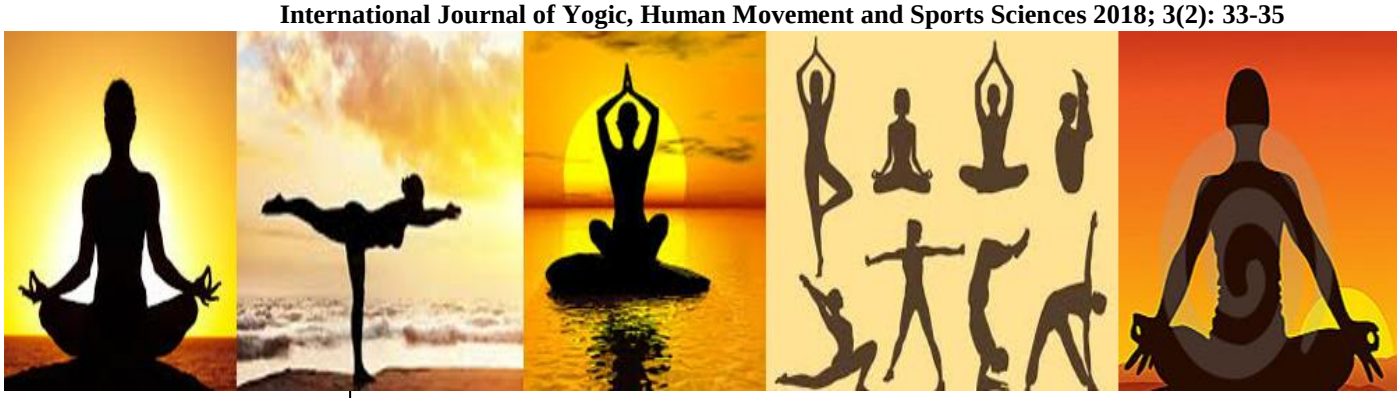

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Effects of low and moderate intensity physical activity on selected physical variables among sedentary individuals

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Abstract
Aim of the study is to find out the effects of low vs moderate intensity physical activity on selected physical variables among sedentary individuals. To achieve the purpose of the study, 36 sedentary students were selected from Scott Christian College, Nagercoil, Tamil Nadu, India and their age ranged 18 to 22 years. The selected subjects were randomly assigned into three groups of (n=12) each, such as experimental and control groups. Group I (n=12) underwent low intensity physical activity training, Group II (n=12) underwent moderate intensity physical activity training and Group III (n=12) acted as control group for a duration of 12 weeks and the number of sessions per week was confined to three alternative days. Speed and explosive power were selected as dependent variables. To measure the dependent variable 50 metre run and Vertical jump test were used. Pre and post tests randomized control group design was used as experimental design. The collected data from the subjects were analysed with paired sample t-test and analysis of covariance (ANCOVA) at.05 level of significance. It was concluded that the speed and explosive power had significant improved due to low and moderate intensity physical activity and moderate intensity physical activity group had better performance than low intensity physical activity on speed and explosive power.

Keywords: Low and moderate intensity physical activity, speed and explosive power

Introduction
Physical Activity is a conduct that happens in an assortment of structures and settings, including free play, house errands, work out, school Physical Education, and association sport. It alludes to anyone development delivered by the skeletal muscles and that outcomes in a considerable increment over the resting vitality use, are troublesome undertakings (Malina, Bouchard, & Bar-Or, 2004) [4].

Physically inactive lifestyles increase the risk of several diseases. Physical inactivity is prevalent among young adults and is more prevalent in older age groups and among the socially disadvantaged (Owen, Leslie, Salmon, & Fotheringham, 2000) [5]. Since the early 1990s, public health strategy and associated research has sharpened its focus on regular, moderate-intensity physical activity. Physical activity now has a central role in health system and societal efforts that are directed at the prevention of disease (Owen, Leslie, Salmon, & Fotheringham, 2000) [5]. In a public health policy context, this includes the need to increase physical activity, not only through changes to individual-level variables such as preferences, knowledge, beliefs, and attitudes, but also through changes to the physical environment that can directly affect behavioural choice (King, Jeffery, Fridinger, Dusenbury, Provence, Hedlund, & Spangler, 1995) [3].

Purpose of the study
Purpose of the present study was to find out the find out the effects of low vs moderate intensity physical activity on selected physical variables among sedentary individuals.

Methodology
To achieve the purpose of the study, 36 sedentary students were selected from Scott Christian College, Nagercoil, Tamil Nadu, India and their age ranged 18 to 22 years.

The selected subjects were randomly assigned into three groups of (n=12) each, such as experimental and control groups. Group I (n=12) underwent low intensity physical activity training, Group II (n=12) underwent moderate intensity physical activity training and Group III (n=12) acted as control group for a duration of 12 weeks and the number of sessions per week was confined to three alternative days. Speed and explosive power were selected as dependent variables. To measure the dependent variable 50 metre run and Vertical jump test were used. Pre and post tests randomized control group design was used as experimental design. The collected data from the subjects were analysed with paired sample t-test and analysis of covariance (ANCOVA) at.05 level of significance.

Analysis of data

Table 1: The summary of mean and paired sample t-test on speed and explosive power between pre and post-tests of experimental and control groups

Variables	Test	Low intensity Physical activity		Moderate intensity Physical activity		Control group	
		Mean	SD	Mean	SD	Mean	SD
Speed	Pre test	7.93	0.07	7.92	0.05	7.97	0.03
	Post test	7.47	0.13	7.25	0.07	7.95	0.06
	t-test	24.71*		14.24*		0.32	
Explosive power	Pre test	45.30	1.85	45.25	1.88	45.27	2.05
	Post test	50.24	2.20	53.85	2.17	45.53	2.24
	t-test	18.30*		18.19*		0.86	

*Significant at.05 level. The table value required at.05 level with df t_{11} is 2.10.

Table 1 shows that the t-test values of low and moderate intensity physical activity training groups between pre and post tests on speed and explosive power are 24.71 and 14.24 respectively which are greater than the table t-value of 2.10 with df 11 at.05 level of significance. This means that the experimental groups had significant improvement on speed and explosive power. However, Control group had no significant improvement on selected dependent variables.

Table 2: Analysis of covariance on speed and explosive power among experimental and control groups

Variables	Adjusted Post Test Means			Source of Variance	Sum of Square	df	Mean Square	F-ratio
	Low intensity Physical activity	Moderate intensity Physical activity	Control group					
Speed	7.47	7.24	7.95	Between	3.08	2	1.54	154.00*
				Within	0.25	32	0.01	
Explosive power	50.22	53.86	45.52	Between	343.25	2	171.63	33.46*
				Within	164.27	32	5.13	

*Significant at.05 level. The table value required at.05 level with df $F_{2, 32}$ is 3.32.

Table 2 shows that the obtained F- ratio value on speed is 154 and explosive power is 33.46, which are greater than table value of 3.29 with df 2 and 32. It indicates that there was significance difference exists among experimental and control group. To find out the paired mean differences, the Scheffe's test was used as post hoc test and the results were presented in table 3.

Table 3: The Scheffe's test for the paired mean among the experimental and control groups on speed and explosive power

Variables	Adjusted Post Test Means			Mean Differences	Confidence Interval
	Low intensity Physical activity	Moderate intensity Physical activity	Control group		
Speed	50.22	53.86		0.23*	0.11
	50.22		45.52	0.48*	
		53.86	45.52	0.71*	
Explosive power	50.01	54.11		3.64*	2.38
	50.01		45.01	4.70*	
		54.11	45.01	8.34*	

*Significant at.05 level.

Table 3 shows that, the adjusted post-test mean difference on speed and explosive power between low and moderate intensity physical activity training groups; low intensity physical activity and control groups; moderate intensity physical activity and control groups are greater than the Confidence interval value, which shows that there was significance difference among low and moderate intensity physical activity training groups; low intensity physical activity and control groups; moderate intensity physical activity and control groups on speed and explosive power. However, it was found that moderate intensity physical activity training group improved the selected dependent variables such as speed and explosive power than low intensity physical activity.

Discussion on Findings

The result indicates that the control group does not show any significant improvement on any of the selected physical variables. The results of speed and explosive power had shown significant improvement due to low and moderate intensity physical activity training. However moderate intensity physical activity training group is better than low intensity physical activity and control group in improving speed and explosive power.

The results of this study are also supported by the following research studies conducted earlier with one and other

dependent and independent variables. According to Biddle, Gorely, & Stensel, (2004) [1]. Health-enhancing physical activity and sedentary behaviour in children and adolescents. Blair, S. N., & Connelly, J. C. (1996) [2] discussed how much physical activity should we do? The case for moderate amounts and intensities of physical activity. van Waart, H., Stuiver, M. M., van Harten, Geleijn, Kieffer, Buffart, & Meerum Terwogt, (2015) [6] evaluated the effectiveness of a low-intensity, home-based physical activity program and a moderate- to high-intensity, combined supervised resistance and aerobic exercise program versus usual care in maintaining or enhancing physical fitness.

Conclusions

1. The results of speed had shown significant improvement due to low and moderate intensity physical activity training.
2. The results of explosive power had shown significant improvement due to low and moderate intensity physical activity training.
3. The moderate intensity physical activity training group is better than low intensity physical activity and control group in improving speed and explosive power.

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