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REVITALISE YOUR BODY AND MIND WITH HAND EXERCISES

Associate Professor Dr. Lim Boon Hooi

Ma Xiao, SUKD2200872

He Yao, SUKD2102301

Zhang Tingxiu, SUKD2000674

Faculty of Education, Languages, Psychology & Music

SEGi University, Kota Damansara

INTRODUCTION

In today's fast-paced, technology-driven world, many individuals spend extended periods in sedentary positions, often engaging in repetitive tasks such as typing, scrolling through social media, or working at a desk. The over-reliance on digital devices has become a defining feature of modern life, contributing to physical strain and psychological stress (Sajid, Ihsan, & Reba, 2021). These habits have sparked growing concerns among health professionals, as they not only lead to physical discomfort but also contribute to mental fatigue, anxiety, and reduced overall well-being (Hilty et al., 2022).

One of the most common physical issues associated with prolonged sedentary behaviour is Upper Crossed Syndrome (UCS), a condition characterised by muscle imbalances in the shoulders, neck, and upper back, typically caused by poor posture and long periods of static arm positioning. UCS can result in a range of symptoms, including muscle tightness, restricted range of motion, and poor circulation in the upper body (Mol, Ashok, & KU, 2021). This condition reflects the impact of modern sedentary lifestyles and highlights the need for accessible, preventive interventions (de Araújo et al., 2023).

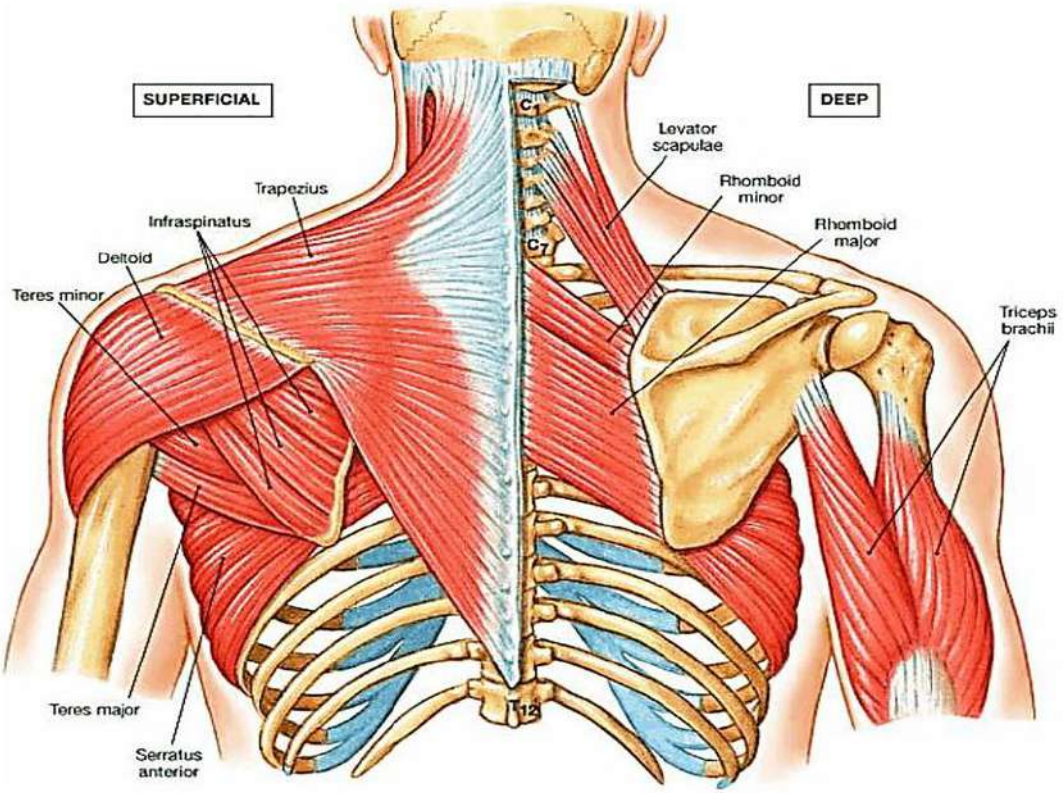
The term "Upper Crossed Syndrome" refers to the imbalanced muscle activation in which certain muscles, such as the trapezius and pectoralis major, become tight and overactive, while others, like the deep neck flexors and rhomboids, weaken and elongate. This imbalance results from prolonged sitting and forward head postures, common in people who frequently use digital devices or work at desks for long periods (Ranđelović et al., 2020). Sustained arm positioning, combined with poor posture, often exacerbates tension in the shoulders, neck, and upper back (Mol, Ashok, & KU, 2021).

When the upper body is held in static or repetitive positions, such as typing or using a mouse, the muscles in the shoulders, neck, and upper back experience overuse, leading to discomfort and pain (Kwon et al., 2018). The discomfort often radiates to the upper arms and may manifest as numbness, tingling, or even shooting pain due to restricted blood flow and nerve compression (Antle et al., 2018). Research has shown that individuals suffering from UCS are also prone to psychological symptoms such as mental fatigue and irritability, as physical tension exacerbates stress (Ranđelović et al., 2020).

Moreover, studies have demonstrated a clear link between prolonged static postures and poor blood circulation in the upper body, particularly in the shoulders, neck, and arms (Antle et al., 2018). Restricted circulation can prevent adequate oxygen and nutrients from reaching the muscles, leading to an accumulation of metabolic waste products and contributing to chronic discomfort (Wilhelmsson, 2020). If left untreated, UCS can lead to long-term musculoskeletal disorders, significantly affecting an individual's quality of life (Ranđelović et al., 2020).

Given these widespread physical and psychological consequences, it is crucial to find solutions that counteract the effects of poor posture and prolonged static upper body usage. The Hand Swing Exercise, a series of dynamic movements targeting the arms, shoulders, and neck, provides a simple, yet effective, way to revitalise both the body and mind. By improving circulation, enhancing flexibility, and alleviating muscular tension, this exercise offers a holistic approach to countering the negative effects of modern sedentary lifestyles and UCS.

Pain Area Caused by Upper Body Tension Syndrome



Treatment to the Upper Back Pain

Most cases of discomfort in the shoulders, neck, and upper back can be effectively managed without the need for surgery through non-invasive treatments such as home-based remedies and professional medical advice. Unless the pain is severe or the result of trauma, many instances of upper body pain can be alleviated by addressing mobility, reducing stiffness, and promoting circulation (Coates, 2018).

Conservative treatments such as massage therapy and myofascial release are widely recognised for their effectiveness in relieving upper body pain. These methods help by relaxing tight muscles, improving blood flow, and reducing the buildup of metabolic waste products that contribute to discomfort. Myofascial release, in particular, is beneficial for addressing long-term tension in the shoulders, neck, and upper back, often exacerbated by poor posture and repetitive motions (Laimi et al., 2018).

Additionally, heat therapy can be highly effective in improving circulation and relaxing tight muscles. Applying heat to the affected areas increases blood flow, delivering essential nutrients to the muscles and aiding in their recovery. This method is commonly used alongside massage or stretching to enhance the therapeutic effects (Behm et al., 2021).

In addition to these established treatments, hand swing exercises provide a simple and accessible way to relieve tension and improve circulation in the upper body. These exercises involve dynamic movements that engage the shoulders, neck, and upper back, helping to prevent stiffness and promote blood flow. Hand swing exercises are particularly beneficial because they can be easily incorporated into daily routines, require no special equipment, and are suitable for individuals of all fitness levels. By regularly practicing these movements, individuals can alleviate discomfort and reduce the risk of long-term musculoskeletal issues related to poor posture or repetitive strain (McCall, 2019).

In summary, while conventional treatments such as massage, heat therapy, and stretching remain essential for managing upper body pain, hand swing exercises offer an effective complementary approach. These exercises not only target key areas of tension but also provide a practical solution that can be practiced anytime and anywhere, making them a valuable tool for improving upper body health and well-being.

Creative Solutions

We propose a sequence of Revitalising Hand Exercises to Improve Upper Body Mobility and Circulation. The exercises consist of a series of arm swing movements that are suitable for individuals of all ages and physical abilities, including those with limited lower body mobility. These exercises are

particularly effective for improving blood circulation, alleviating shoulder tension, and promoting flexibility in the upper body. Below is a table illustrating the proposed exercises.

Table 1: Exercise Photos and Description of Revitalising Hand Exercises for Upper Body Mobility

Exercise Photos	**Description**
1. Arm Swing with Heel Raise 	● Stand with your feet together. ● Raise both arms straight upward with palms facing outward. ● At the same time, lift your heels and stand on your toes. ● Swing your arms downward, passing your hips, and extend them fully behind your back. ● Lower your heels as you swing your arms. ● Perform 20 repetitions.
2. Alternating Arm Swings 	● Stand with your feet together. ● Alternately swing one arm up and the other arm down. Raise one arm vertically while simultaneously lowering the other behind your body. ● Alternate arm movements while lifting your heels as each arm reaches up. ● Perform 20 repetitions on each side.
3. Arm Wrap Swing 	● Stand with your feet together. ● Swing both arms backward, keeping them at a 30-degree angle from your body. ● Swing your arms forward and cross them in front of your chest as if wrapping yourself in a hug. ● Alternate which arm crosses on top. ● Perform 20 repetitions.
4. Side-to-Side Arm Swing	● Stand with legs about twice shoulder-width apart. ● Bend one knee and shift your weight to

	the side while swinging both arms upward. ● Your opposite foot should lightly touch the ground while keeping the body balanced. ● Then, shift to the right side and repeat the swing with the opposite leg. ● Perform 15 repetitions, alternating sides.
5. Double Clap Arm Swing 	● Stand with feet together, arms relaxed by your sides. ● Swing your arms behind your body and clap your hands together. ● Swing your arms forward and clap them again at chest height. ● Bend your knees slightly when clapping in front. ● Perform 20 repetitions.
6. Cross-Arm Swing 	● Stand with feet shoulder-width apart. ● Raise your arms flat to the sides of your body to shoulder height. ● Fling them in the opposite direction and use the inertia to cross your arms and swing them to chest height. ● Alternate which arm crosses over the other with each repetition. ● Perform 20 repetitions.

7. Chest Opening Arm Swing 	● Stand with feet shoulder-width apart. ● Open your shoulders and open your arms outward in a chest-expanding motion. ● Swing your arms forward and clap at chest height ● Perform 20 repetitions.
8. Overhead Clap Arm Swing 	● Stand with feet shoulder-width apart. ● Swing both arms outward and up, bringing them above your head to clap your hands. ● Throw your arms down and cross them in front of your chest ● Perform 20 repetitions.
9. Folding Arm Swing  (Front) (Back)	● Stand with feet shoulder-width apart. ● Swing one arm in front of your body to clap the opposite shoulder while the other arm swings behind to touch the opposite side of the waist. ● Alternate arms with each repetition. ● Perform 20 repetitions.

Advantages of this New Invention

1. Regular practice of these exercises helps correct posture by opening the chest, stretching the upper body, and reducing slouching. This can be especially beneficial for individuals who spend long periods seated or looking down at devices.

2. The dynamic arm movements involved in the exercise strengthen the muscles of the upper arms, shoulders, and upper back. These areas are often prone to weakness and tension from poor posture or prolonged inactivity.

3. The coordination of arm swings with heel raises or gentle movement engages the core and lower body muscles, promoting better balance and stability. This is particularly helpful for improving overall body coordination and preventing falls.

4. The arm swing exercises promote increased flexibility in the shoulder joints and upper back, preventing stiffness and maintaining mobility. This allows for a greater range of motion, reducing the risk of injury.

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5. These exercises stimulate blood flow to the upper body, shoulders, and neck, addressing poor circulation caused by static postures. Improved circulation can help alleviate discomfort and fatigue in these areas, promoting overall health.

6. The exercises require no special tools or equipment, making them easy to perform anywhere, whether at home, in the office, or outdoors.

7. The movements are simple, low-impact, and can be modified to suit people of all fitness levels, including those with limited mobility or who are recovering from injuries.

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IMPACT OF WALKING EXERCISE FOLLOWED BY SURYANAMASKAR ON ANXIETY SELF-CONFIDENCE AND DEPRESSION AMONG POST MENOPAUSAL WOMEN

Dr. P. Balaji

Associate Professor, Department of Physical Medicine & Rehabilitation,

Medical College & Hospital, Annamalainagar, Cuddalore District, Tamilnadu.

Dr. S. Chidambara Raja*

Principal, St. John's College of Physical Education,

Veeravanallur, Tirunelveli Dist., Tamilnadu

Corresponding author:

Email. Address: rajadi42@gmail.com

Abstract:
The purpose of the present study was to find the impact of walking exercise followed by suryanamaskar on anxiety, self-confidence and depression**.** Materials and Methods**:** 30 postmenopausal women were selected and the age of the subjects was ranged from 50 to 60 years. They were classified into two equal groups, each group consisted of fifteen subjects, group – I underwent walking exercise followed by suryanamaskar and group – II acted as control who did not participate in any special training. The training period for the study was six days (Monday to Saturday) in a week (twice a day) for twelve weeks. Prior to and after the training period, the subjects were tested for anxiety, self-confidence and depression. Anxiety was measured by using Taylor's Manifest Anxiety Scale, self-confidence was assessed by using Agnihotri Self-confidence Inventory (ASCI) and depression was assessed by using Hamilton Depression Rating Scale (HDRS) respectively. Statistical Technique Applied**:** Independent sample 't' – test, the Levene's test and the analysis of covariance (ANCOVA) was used to find out the significant difference if any, between the experimental group and control group on selected criterion variables separately.The result of the study indicated that there was a significant improvement in self-confidence and a significant reduction in anxiety and depression.It was concluded from the result of the study that the walking exercise combined with suryanamaskar has positively altered the criterion variables, such as, anxiety, self-confidence and depression.
Key Words: walking exercise, suryanamaskar, anxiety, self-confidence and depression.

Introduction

Menopause is described as the end of a woman's menstrual cycle followed by a 12-month phase of amenorrhea. Menopausal symptoms may have a substantial negative impact on menopausal women's subjective well-being[1] by influencing mental health outcomes such anxiety, loneliness, sadness, and low self-esteem. Studies on menopausal women, both qualitative[2] and quantitative[3,4], indicate that physical activity improves subjective well-being. Nevertheless, despite their associations with menopausal symptoms, physical activity, and subjective well-being[3,5], research examining the link between physical activity and subjective well-being have been hampered by their exclusion of other mental health characteristics (e.g., depression, anxiety, physical self-esteem).

Menopause is the most noticeable event that occurs in women during middle age as it marks the end of a woman's reproductive life. Natural Menopause occurs between the ages of 45 and 55 years old over the world[6]. While delayed menopause has been associated with an increased risk of endometrial and breast cancer, early menopause has been connected to an increased risk of cardiovascular disease and osteoporosis[7]. According to reports, women who lead sedentary lifestyles may face both physical and emotional health issues as they approach menopause[8,9].

The quantity and quality of oocytes diminish, the levels of oestrogen and progesterone constantly decline, and the amount of progesterone drops in a cliff-like fashion at this time due to the loss in ovarian function[10]. In addition to being more likely to experience menstrual problems, hot flashes, sweating, sleeplessness, palpitations, vertigo, exhaustion, headaches, frequent urination, and body aches from muscles, bones, and joints, as well as emotional instability and other physiological symptoms, some women during this time may also be more susceptible to anxiety, depression, and other mental health issues[11]. Numerous studies have demonstrated that when women approach the perimenopausal stage, their chance of developing anxiety and depression increases noticeably[12]. Additionally, psychological discomfort and mood disorders have a substantial negative impact on the physical and mental health of perimenopausal women[13].

The term "post menopause" refers to the time after the last menstrual period[14]. Postmenopause can significantly lower satisfaction with life[15], a crucial aspect of subjective well-being, since it is linked to enduring menopausal symptoms and an elevated risk of certain health conditions[16]. Exercise has been associated with improved health outcomes for postmenopausal women, however there have been methodological flaws and conflicting results. Firstly, prior empirical research has demonstrated beneficial effects of physical activity on menopausal symptoms[17] and satisfaction of life[2].

India's urban population has increased rapidly in the last several decades. Group exercise is common in densely populated neighbor-hoods, where most metropolitan postmenopausal women live. As the most popular form of exercise and one that confers several physical advantages on menopausal women[30].

Research has demonstrated that physical activity can effectively alleviate menopausal symptoms and boost muscular strength[18-21], as well as reduce stress during menopause[22], tension and anger to lessen sadness[23], anxiety[24,25], and help people recover from poor self-esteem[26]. The majority of the research that has been done on anxiety in menopausal women focuses on anxiety in general, such as social anxiety, panic disorder, or excessive and uncontrolled worrying or irritation[27]. Many treatments, including oestrogen hormone therapy, have been tried to treat menopausal women's depression; however, this treatment has drawbacks[28]. Long-term physical activity has been linked to menopausal women's reduced anxiety[29].

It has been demonstrated that physical activity helps women avoid and manage a number of harmful health disorders, including heart disease, type 2 diabetes, osteoporosis, depression, and anxiety[31-34]. According to current standards, individuals should participate in moderate-intensity aerobic physical activity for at least 150 minutes a week, such as walking. Even 10-minute sessions may have positive health effects[35]. However, older persons still don't get enough physical activity, with older women being the most inactive demographic[36] despite the overwhelming evidence in favour of regular physical activity.

One of the best low-cost, generally available, readily administered, and moderately intense types of physical activity is walking, which is also one of the most effective therapies for lowering rates of chronic illness[37-39,2]. Moreover, people may be able to continue being active into old age due to the minimal risk of damage[40]. Walking programmes only work when they are in line with women's primary motivators and impediments[41]. Prior studies on walking levels in women in their midlife indicate that the main obstacle is a lack of time[40]. For many women, walking becomes a low daily priority due to these factors as well as their duties to their families and their careers[42]. It might be difficult to create a walking programme that is appealing and interesting for postmenopausal or menopause ladies. Walking group dynamics, programme frequency, time, location, and environmental and climate problems are just a few of the factors that need to be taken into account. The design of a city and its overall walkability may have a significant impact on whether or not people choose to walk [43,44].

The Sun Salutation, also known as Suryanamaskar, is a strong sequence of twelve yoga positions. Suryanamaskar is renowned for its exceptional cardiovascular benefits and for having a very upbeat impact on both the body and the psyche. Because of its benefits, Surya, which means "the sun," and Namaskar, which means "to bend down in with appropriate structures also," have been hailed as the ideal exercise for all of the modern-day problems associated with an assumption-based way of life[45]. Pranamasan, hasta utthanasan, padahastasan, ashwasanchalanasan, ashtanga namaskar, bhujangasan, and parvatasan are among the asanas that make up Suryanamaskar[46]. There is little data-based study on the effects of suryanamaskar, an ancient practice and kind of yogic exercise, on physiological changes[47, 48].

The suryanamaskar is an activity that is advised to be performed often as part of a fitness regimen for older people[49]. By stretching the body forward and backward alternately, the series of movements stretches the spine and the upper and lower bodies across the aged person's whole range of motion, massaging, conditioning, and energising essential organs[50]. Strength and endurance in the triceps, pectoral, and trunk muscles may be enhanced by the suryanamaskar's duplicated push-up progression and upper body weight bearing positions[51, 52]. Since the sequence stretches the body so deeply, it is regarded as a stand-alone yoga practice[53]. We randomised a 12-week combined walking exercise with suryanamaskar on a sample of postmenopausal women of Tamilnadu State, India, who lived in communities. Our goal is to investigate how walking exercise combined with suryanamaskar affects psychological factors, such as anxiety, self-concept, and depression.

Methodology

For this study, thirty-two postmenopausal women at Anbagam Old Age Home in Chidambaram were contacted. The individuals were between the ages of 50 and 60, with a mean age of 55.8 ± 1.5 years. After examining the subjects, a doctor from Cuddalore District Medical College and Hospital, Annamalainagar determined that all of them qualified for the current investigation. The volunteers completed an information consent form after being advised of any potential risks and discomforts related to the study's design and experiment.

Only thirty sedentary postmenopausal women were chosen as subjects from a total of thirty-two participants. They were split into two equal groups, each with fifteen individuals. Group I (n = 15) experienced combined walking exercise followed by suryanamaskar, while group II (n = 15) served as the control group and did not take part in any special activities outside their normal daily routines. In the initial weeks of the practice sessions, the participants were instructed to walk normally and practice the suryanamaskar in order to thoroughly master the poses. This allowed the subjects walk easily and to do the poses with ease since their body muscles and joints were active and flexible.

The individuals were instructed to consistently practice walking exercise followed by suryanamaskar poses twice a day, in the morning and evening, after rehearsing them in the evening. For twelve weeks, walking and suryanamaskar was performed six days a week (Monday through Saturday) and two sessions per day (morning and evening). For this study, a yoga specialist from Annamalai University's Centre for Yoga Studies in Annamalainagar was designated.

Table – 1: Training Schedule for Combined Walking Exercise and Suryanamaskar

Weeks	**(Duration in minutes : Recovery)**
1 – 4	Normal Walking for 5 minutes : 5 minutes recovery (1:1 recovery): Suryanamaskar – 1 cycle
5 – 8	Brisk Walking for 10 minutes : 10 minutes recovery (1:1 recovery): Suryanamaskar– 2 cycles (5 minutes recovery between cycles)
9 – 12	Brisk Walking for 15 minutes : 15 minutes recovery (1:1 recovery): Suryanamaskar– 3 cycles (5 minutes recovery between cycles)

Procedure

The researcher consulted with the yoga experts and doctors to select the following variables as criterion variables: 1. anxiety, 2. self-confidence and 2. depression. Anxiety was measured by using Taylor's Manifest Anxiety Scale, self-confidence was assessed by using Agnihotri Self-Confidence Inventory (ASCI) and depression was assessed by using Hamilton Depression Rating Scale (HDRS) respectively. For the purpose of collection of the data, the subjects were asked to report at early morning, one day prior and one day after the experimental period.

Data Analysis

The independent sample 't' - test was used to determine the difference between pre and post test means within the groups. Levene's test was utilised to measure the equality of error variances. Analysis of covariance (ANCOVA) was used to determine whether there was a significant difference between the experimental group and control group on specific criteria variables. It was deemed reasonable to assess the significance in each case with a.05 level of confidence. The computer programme was used to assemble and analyse the data.

Results

The data collected on anxiety, self-confidence and depression among combined walking exercise and suryanamaskar practice group and control group were analyses and the results were presented in Table – 2.

Table – 2: Independent Sample 't' - test of Combined Walking Exercise and Suryanamakaskar Practice Group and Control Group on Selected Dependent Variables

Variable Name	Group Name	Experimental Group	Control Group
Anxiety (in points)	**Pre-test Mean**	11.67 ± 1.04	11.40 ± 1.18
	Post-test Mean	8.00 ± 9.25	11.76 ± 1.30
't' – ratio		10.16*	0.59
Self-confidence (in points)	**Pre-test Mean**	29.20 ± 1.01	28.60 ± 1.24
	Post-test Mean	26.13 ± 1.41	28.53 ± 1.51
't' – ratio		6.85*	0.13
Depression (in points)	**Pre-test Mean**	18.00 ± 0.93	17.47 ± 1.25
	Post-test Mean	14.67 ± 1.12	17.93 ± 1.58
't' - ratio		8.33*	0.90

* Significant at .05 level of confidence. The table value required for significant at .05 level of confidence with df 28 is 1.313.

Table – 1 shows that the paired sample 't' – test on anxiety, self-confidence and depression, the result shows that combined walking exercise and suryanamaskar practice group was significantly decreased the anxiety ($p<0.05$) and depression ($p<0.05$) and improves the self-confidence ($p<0.05$). A preliminary analysis was conducted to determine whether the prerequisite assumptions of ANCOVA were met before preceding the Univariate analysis. Thus, the assumption of equality of variance (Levene's test homogeneity), the linear regression relationship between the covariates and the dependent variables and the homogeneity of regression slopes were examined and the result was presented in Table-3.

Table – 3: Levene's Test for Equality of Error Variances of Selected Variables among Groups

Levene's Test on Anxiety			
'F'	**df1**	**df2**	**Sig.**
0.716	1	28	0.405
Levene's Test on Self-confidence			
'F'	**df1**	**df2**	**Sig.**
1.22	1	28	0.278
Levene's Test on Depression			
'F'	**df1**	**df2**	**Sig.**
2.240	1	28	0.148

(The table values required for significance at .05 level of confidence with df 1 and 28 was 4.20.)

The idea that groups have comparable variations is known as homogeneity of variances. The resultant F-values of the chosen dependent variables were therefore less than the confidence interval value of 0.05 in Leven's test of equality of the error variance table, indicating that the variance of one group was not substantially different from the other. Consequently, even while the ability level for each of the dependent variables indicates that homogeneity of variance has been satisfied for two dependent variables at a significant 0.05 level of confidence, the homogeneity of variance still distinguishes the two groups. As a result, it was determined that the univariate ANCOVA computation satisfied the homogeneity of variance assumption.

Table – 4: Analysis of Covariance on Selected Criterion Variables of Combined Walking Exercise and Surynamaskar Group and Control Group

Variable Name	Group Name	Combined Walking Exercise and Suryanamaskar Practice Group	Control Group	'F' Ratio
Anxiety (in Points)	Pre-test Mean ± S.D	11.67 ± 1.04	11.40 ± 1.18	0.43
	Post-test Mean ± S.D.	8.00 ± 0.925	11.76 ± 1.30	22.02*
	Adj. Post-test Mean	7.938	11.728	102.24*
Self-confidence (Points)	Pre-test Mean ± S.D	29.20 ± 1.01	28.60 ± 1.24	2.10
	Post-test Mean ± S.D.	26.13 ± 1.41	28.53 ± 1.51	25.79*
	Adj. Post-test Mean	25.852	28.815	58.65*
Depression (in Points)	Pre-test Mean ± S.D	18.00 ± 0.93	17.47 ± 1.25	1.77
	Post-test Mean ± S.D.	14.67 ± 1.12	17.93 ± 1.58	37.50*
	Adj. Post-test Mean	14.610	8.190	113.96*

*Significant .05 level of confidence. (The table values required for significance at .05 level of confidence with df 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively).

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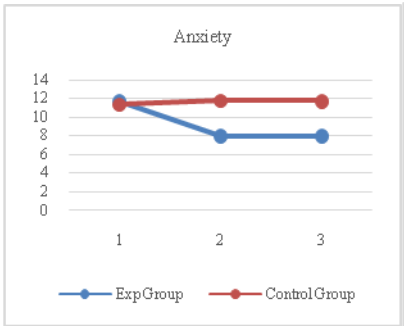

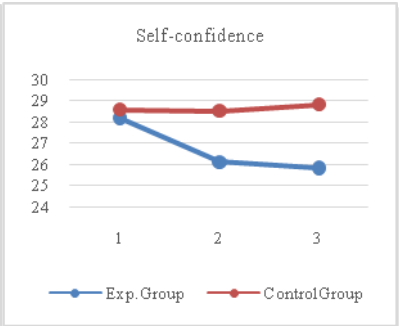

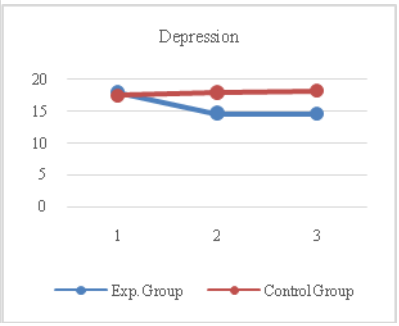

Figure – 1: Mean values of Experimental group and control group on Anxiety

Figure – 2: Mean values of Experimental group and control group on Self-confidence

Figure – 3: Mean values of Experimental group and control group on Depression

Results

Table – 4 shows that pre-test mean 'f' - ratio of combined walking exercise and suryanamaskar practice group and control group on anxiey was 0.43, insignificant at 0.05 level of confidence. The post-test and adjusted post-test mean 'f' - ratio value was 22.02 and 102.24, significant at 0.05 level of confidence. The pre-test means 'f' - ratio of combined walking exercise and suryanamaskar practice group and control group on self-confidence was 2.10, which was insignificant at 0.05 level of confidence. The post and adjusted post test mean 'f' - ratio value of experimental group and control group were, 25.79 and 58.65, which was significant at 0.05 level of confidence. Moreover, the pre-test means 'f' - ratio of combined walking exercise and suryanamaskar practice group and control group on depression was 1.77, which was insignificant at 0.05 level of confidence. The post and adjusted post test mean 'f' - ratio value of experimental group and control group were, 37.50 and 113.96, which was significant at 0.05 level of confidence. After applying the analysis of covariance, the result of this study shows that there was a significant difference between the experimental group and control group on anxiety and depression and an increase in self-confidence among postmenopausal women.

Discussion

Suryanamaskar is acknowledged as one of the many yoga practices and strategies that helps practitioners effectively manage anxiety, self-confidence and depression. Determining if the combined walking exercise and of Suryanamaskar would have any impact on postmenopausal women's psychological levels was one of the study's objectives. Regarding anxiety, there seems to be agreement among the included research. When becoming physically active as a result of interventions[54-56], when comparing different physical activity levels in cross-sectional cohort studies[67-70], and when maintaining physical activity throughout longitudinal cohort studies[61], regular physical activity has a significant and decreasing impact on anxiety among midlife women around the menopausal transition.

Reaching objective targets, like doing a lot of steps, might also benefit menopausal women psychologically and result in favourable outcomes[71]. Walking programmes that are followed lead to higher levels of neurotransmitters including serotonin and

dopamine, greater synaptic connection, and increased release of endorphins, which in turn promote mental health and self-esteem[72]. Walking and yoga can, over time, enhance several components of physical self-esteem[62,63], even in the absence of a decrease in BMI. After participating in a dance intervention, postmenopausal women with poor self-esteem and self-image report notable changes in these areas[64]. According to two research on the subject, physically active women—regardless of menopausal status—report better levels of physical self-worth than less active women, which improves their quality of life[65]. Suryanamaskar practice is a better intervention tool to reduce the depression and dramatically increased trunk flexibility[73]. Due to social connection and mental diversion during physical activity, menopausal women who exercise exhibit reduced depression[66,67]. Menopausal women nevertheless have psychological benefits and comfort because of depression[68]. Furthermore, engaging in physical activity reduces their stress levels[69,70], which results reducing the depression.

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GENDER-SPECIFIC MOTOR SKILL DEVELOPMENT AMONG PRESCHOOL GIRLS: A PILOT STUDY

Jayasinghe M.R.M.A.[1]*,

[1]Department of Sports Sciences and Physical Education,

Faculty of Applied Sciences, Sabaragamuwa

University of Sri Lanka

Joniton S.[1] and Sabaanath S.[2]

[2]Sports Science Unit,

University of Jaffna, Sri Lanka

ABSTRACT:

Motor skills are pivotal in the holistic development of preschool children, particularly in building a foundation for physical, cognitive, and social growth. This study examines the gross motor skill proficiency of 60 preschool girls, aged 3-5 years, in the Ratnapura District, Sri Lanka. Using the Test of Gross Motor Development, Second Edition (TGMD-2), locomotor skills namely running, galloping, hopping, leaping, horizontal jumping, and sliding. Object control skills namely striking, dribbling, catching, kicking, throwing, and underhand rolling were assessed. Findings revealed that 76% of the participants performed within the "Above Average" or "Average" categories in locomotor skills, indicating strength in movement-related activities. Conversely, object control skills demonstrated variability, with 42% rated as "Below Average." Height and weight were found to correlate with skill proficiency moderately, highlighting the need for tailored interventions. This study underscores the importance of gender-sensitive physical education programs, emphasizing the need to enhance object control capabilities while leveraging strengths in locomotor skills. It provides evidence-based insights to guide curriculum development and policy recommendations for inclusive motor skill training in preschool settings.

Keywords: Gross Motor Skills, Preschool Girls, TGMD-2, Physical Attributes, Physical Education

INTRODUCTION

Motor skills are essential for early childhood development, contributing to physical activity, cognitive functions, and social interaction. While boys and girls exhibit distinct motor skill patterns, gender-specific studies are scarce in Sri Lanka. Locomotor skills typically develop faster in girls, whereas boys often excel in object control skills (Gallahue et al., 2012). This study focuses on preschool girls in the Ratnapura District, aiming to fill this research gap.

PURPOSE OF THE STUDY

The purpose of this study is to explore and evaluate the gross motor skill proficiency of preschool girls aged 3-5 years in the Ratnapura District, Sri Lanka, with a focus on identifying both strengths and developmental gaps. Recognizing the significance of early childhood as a critical period for motor skill development, the study emphasizes understanding gender-specific trends and challenges.

KEY OBJECTIVES:

1. **Assessing Locomotor and Object Control Skills**:
   The study evaluates locomotor skills and object control skills using the TGMD-2 assessment tool.
2. **Highlighting Developmental Gaps:**
   By analyzing motor skill performance levels, the study aims to pinpoint specific deficiencies, particularly in object control skills, which often receive less emphasis in traditional preschool activities.
3. **Understanding the Role of Physical Attributes**
4. **Informing Curriculum Development:**
5. **Providing Evidence-Based Recommendations:**

The study seeks to contribute to educational policies and practices by offering actionable insights into motor skill development for preschool girls. This will support early interventions and structured physical activities to ensure balanced development.

METHODOLOGY

The study was conducted over two weeks. During the first week, baseline assessments were performed for each participant. Trained researchers administered the TGMD-2 in controlled environments to ensure consistency and accuracy. Each child's performance was observed and scored according to standardized criteria. In the second week, a structured observation was conducted to validate findings and address variability.

Data Analysis

Quantitative data were analyzed using descriptive and inferential statistics. Frequencies and percentages were calculated to categorize performance levels (Very Superior, Superior, Above Average, Average, and Below Average, Poor). Pearson correlation coefficients were used to explore the relationship between physical attributes and motor skill proficiency.

RESULTS

The study assessed the gross motor skills of 60 preschool girls aged 3-5 years using TGMD-2, focusing on locomotor and object control skills. The findings are presented in the table below:

Table 1: Summary of Gross Motor Skill Performance

Skill Type	Above Average (%)	Average (%)	Below Average (%)
Locomotor Skills	46%	30%	24%
Object Control Skills	25%	33%	42%

Locomotor Skills

A significant majority (76%) of participants performed within the "Above Average" or "Average" categories in locomotor skills. Girls exhibited strengths in running, hopping, and jumping, reflecting natural coordination and movement efficiency. However, 24% scored "Below Average," indicating a need for interventions to improve specific skills like galloping and sliding.

Object Control Skills

Performance in object control skills was more variable. Only 25% achieved "Above Average" ratings, while 42% were classified as "Below Average." Skills such as catching and throwing posed particular challenges, likely due to limited exposure to structured physical activities focusing on these tasks.

Correlation with Physical Attributes

Pearson correlation analysis revealed moderate positive correlations between height, weight, and motor skill performance ($r = 0.45$ for locomotor skills; $r = 0.37$ for object control skills). Taller and heavier children showed slightly better proficiency, suggesting that physical growth supports motor skill acquisition.

The results highlight a clear strength in locomotor skills among preschool girls, aligning with existing research that girls often excel in movement-based tasks during early childhood. Object control skills, however, represent an area needing significant attention. Limited opportunities for structured training in preschool settings may contribute to these gaps

DISCUSSION

Results align with existing literature emphasizing locomotor dominance in girls. However, challenges in object control skills suggest the need for targeted interventions. Tailored physical education programs focusing on skill-specific training can bridge this gap.

CONCLUSION

This study highlights strengths in locomotor skills and challenges in object control among preschool girls in Ratnapura. Evidence-based recommendations include gender-sensitive curricula and resources to enhance motor skill training.

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AN ANALYTICAL IMPACT OF SELECTED YOGA ON STRESS LEVEL OF KABADDI PLAYERS

Dr. CHITTIRAJU JYOTHI

Dept of Physical Education,

Rishi MS Institute of Engineering & Technology for Women,

Kukatpally, Hyderabad, Telanagana

INTRODUCTION

In today's fast-paced world, stress impacts both our body and mind, leading to various health issues. Yoga, an ancient practice from India, combines postures, breathing, and meditation to promote balance, reduce stress, and improve flexibility and overall health. Kabaddi, another traditional Indian sport, enhances physical fitness and mental sharpness. It requires breath control, strength, agility, and quick thinking, fostering teamwork, discipline, and resilience.

Chronic stress from daily pressures can lead to health problems like headaches and heart disease. Practices like yoga and sports offer effective ways to manage stress, improve health, and create inner peace, helping us build resilience and navigate life's challenges with greater ease.

OBJECTIVES

1. To discuss the problem of stress among Women kabaddi players.
2. To analyze the effect of yoga practice on stress of selected women kabaddi players.
3. To study the different level of stress and its effect on performance of kabaddi players.

HYPOTHESIS

Our study has following main hypothesis: -

- There would be no significant difference in the effect of yoga with regard demographic variables on the stress levels of women in occupational area.
- There would be no significant difference in the effect of yoga with regard to demographic variables on the stress levels of women in the area of economic factors and physical factors.

LIMITATIONS OF THE STUDY

- The study is done only on the sample who attended the training during study period.
- This study is limited to only women kabaddi players.

DELIMITATIONS OF THE STUDY

- This study is delimited to selected respondents.
- This study focus on yoga intervention is of short duration, it may not capture the long-term effects of yoga on stress levels. Stress reduction through yoga often requires consistent and prolonged practice.

OPERATIONAL DEFINITIONS

Stress:

Stress is a feeling of internal pressure that may be brought on by the strains of one's emotions, thoughts, and physical well-being in the course of one's daily life.

Yoga:

Yoga is a way of life, not just a practice. As an ancient Indian tradition, yoga is a mental, philosophical, and cultural way of life that promotes well-being by reducing stress, increasing relaxation, and promoting a host of other positive physiological effects.

SIGNIFICANCE OF THE STUDY

The study on the "Impact of Selected Yoga Practices on Stress Levels of Women Kabaddi Players" is important as it addresses stress management in sports. It explores how yoga, a mind-body practice, affects stress levels among women Kabaddi players. Since stress can impact performance and health, the findings could improve training and competition experiences, helping athletes build better physical and mental resilience.

REVIEW OF LITERATURE

1. Mahalakshmi & Kumar (2023)

This study examined psychological factors like anxiety and aggression in novice and experienced Kabaddi players. Results showed that experienced players had better control over anxiety, while both groups had similar levels of aggression.

2. Saraboji et al. (2022)

Yoga was found to improve overall well-being, helping with stress management, mental health, weight loss, and pain relief. It also boosts strength, balance, and flexibility through slow movements and deep breathing, which enhance blood flow and muscle warm-up.

3. Sumitra Das (2020)

Yoga, which connects physical and emotional health, is essential for overall well-being. The word "yoga" comes from the Sanskrit root meaning "to connect" or "balance." Kabaddi, an Indian team sport, is widely known and played across South Asia.

4. Dr. Anurodh Singh Sisodia (2017)

This study explored the effects of Suryanamaskar on flexibility. After six weeks of practice, participants showed significant improvements in flexibility, demonstrating the benefits of this yoga practice.

RESEARCH METHODOLOGY

THERORETICAL FRAMEWORK

Yoga offers numerous benefits to Kabaddi players by addressing both physical and psychological stress. It enhances flexibility, strength, and balance, which are crucial for performance and injury prevention. Additionally, yoga promotes quicker recovery by reducing muscle tension and improving circulation.

On the psychological side, yoga helps players manage stress and anxiety, using techniques like controlled breathing and meditation to improve mental clarity, focus, and emotional regulation, enabling them to stay calm under pressure. Rooted in ancient Indian philosophy, yoga fosters self-awareness and concentration, aligning with modern stress management methods to improve both physical health and overall performance.

THE RESEARCH TOOL

Yoga Training Package

- Prayer, Yoga asanas, Pranayama, Meditation (Dhyana), Yogic diet and, Philosophical discourses

Description	Duration	Frequency
Prayer	15 min	daily
Yoga asanas	20 min	daily
Pranayama	15min	daily
Meditation	15 min	daily
Yogic diet		daily
Philosophical Discourses	15 min	daily

SAMPLE

75 women Kabaddi players make up the study's sample.

APPROPRIATENESS OF DESIGN

The research design is crucial for ensuring the study's credibility and validity. A mixed-methods approach is ideal, combining quantitative methods, like surveys or physiological assessments, to measure stress objectively, with qualitative methods, such as interviews, to capture participants' personal experiences. This approach provides a comprehensive understanding of how yoga impacts stress, combining measurable data with personal insights, ensuring the study is both thorough and reliable.

POPULATION AND SAMPLING

All women kabbadi players of selected area constitute the population of the study.

PHYSICAL VARIABLES

- Speed (50 Meters)
- Strength (Push Ups)
- Endurance (12 Mins Run/Walk)
- Explosive Power (Sargent Vertical Jump Test)

PSYCHOLOGICAL VARIABLES

- Aggression, Anxiety

YOGIC PRACTICES

- Padmasana, Dhanurasana, Bhujangasana, Vrikshasana, Shalabhasana, Janusirasasana, Trikonasana, Pachimottasana, Gomukasana, Pawanmuktasana, Veerasana, Naukasana, Matsyasana, Meditation, Pranayama

DATA ANALYSIS AND INTERPRETATION

There would be no significant effect of yoga on the stress levels of women Kabaddi players. We can see that the crucial ratio -value is 14.440 from the That's why women Kabaddi players stress levels may be reduced significantly by practicing yoga. Among 75 women Kabaddi players, 13 members had a 71-92 preceding table. The null hypothesis is rejected since the Critical Ratio-value is greater than the table value at 0.05 (2.00) and 0.01(2.65) levels of significance. percent impact, 45 had a 41-70 percent effect, seven had a 31-40 percent effect, and ten had a 2-30 percent effect

Hypothesis 2.5: Women Kabaddi players stress levels would not be affected by yoga in terms of external variables.

Hypothesis 3.2: When it comes to the effects of yoga on women Kabaddi players stress levels, marital status is not a major factor.

Table 1: Significance of Women Kabaddi Players Gains & Losses Between Pre and Post Test Scores On Selected Variables of Specific Yogic Practices Group

S. No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev. σ	DM	't' Ratio
1	Speed	7.61	7.35	0.26	0.23	0.05	4.84*
2	Strength	8.05	12.00	3.95	0.88	0.19	19.91*
3	Endurance	1608.50	1740.00	131.50	83.87	18.75	7.01*
4	Explosive power	34.00	39.05	5.05	1.35	0.30	16.65*
5	Aggression	15.20	7.25	7.95	2.54	0.56	13.97*
6	Anxiety	60.95	29.70	31.25	5.13	1.14	27.19*

Table 1 shows that the speed, strength, endurance, explosive power, aggressiveness, and anxiety 't' ratios were 4.84, 19.91, 7.01, 16.65, 13.97, and 27.19, respectively. For 19 degrees of freedom, the 't' ratios were determined to be more than the needed table value of 2.09 at the 0.05 level of significance. As a result, its importance was discovered. The findings of this research were statistically significant and favorably correlated with the impact it had on the subjects studied.

CONCLUSION

In conclusion, the study on the analytical impact of selected yoga practice on stress levels of women Kabaddi players offers valuable insights into an area that holds immense significance for both the world of sports and holistic well-being. Through rigorous analysis and research, this study has shed light on the potential benefits of integrating yoga into the training and lifestyle of women Kabaddi players.

The following conclusions have been made in the light of the findings of the present study,

1. Impact of Yoga on Stress and Performance
2. Comparative Results of Yoga vs. Resistance Training
3. Mental and Physical Benefits of Yoga

DISCUSSION

1. Yoga's Holistic Effect on Stress Management

2. Benefits Across Different Demographics

3. Yoga's Universal Impact on Stress for Both Men and Women

4. Yoga as a Stress Relief Tool for Modern Women

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COMPARISON OF ENDURANCE AND AGILITY AMONG SOFTBALL AND CRICKET PLAYERS OF HYDERABAD DISTRICT.

A. SANTHOSH KUMAR

Physical Director, JBIET College,

Moinabad, Hyderabad TS, India

ABSTRACT:

Soft Ball Players and Cricketers need to perform in multiple busts of speed. Agility being the key component of cricket is a collective coordinative ability that includes speed, balance and coordination and plays an important role in determining a player's performance. The purpose of the present study to find out the Endurance and Agility among Softball and Cricket players of Hyderabad District. The sample for the present study consists of 30 Male Soft Ball Players and 30 Male Cricket players of Hyderabad. The age of subjects were ranged from 19 to 21 years. The selected physical fitness variables such as:(i) Endurance and (ii)Agility. The test conducted for Endurance :(i) Cooper 12 – minute Run test and for Agility :(ii) Agility T-teat. The subjects of the two Games were tested on selected variables prior. The data were selected to the t-ratio test of analysis for significance. The collected data were analyzed statistically through analysis of Mean, Standard deviation and t-ratio test to find out the significance difference, if any between the Softball and Cricket players. The 0.05 level of confidence was fixed to test the level of significance difference. Key words: soft ball Players, cricketers, endurance, agility etc.

INTRODUCTION

The physical fitness plays a vital role in the performance. We need physical fitness to carry out daily task, with vigorously and alertly without undue fatigue and most unforeseen emergencies. The aim of sports and physical fitness is to develop the muscular coordination by the worthy use of leisure time through physical activity. It focuses at personality development and good citizenship.

SOFTBALL

Softball is a variant of baseball played with a larger ball on a smaller field. It was invented in 1887 in Chicago as an indoor game. It was at various times called indoor baseball, mush ball, playground, soft bund ball, kitten ball, and, because it was also played by women, ladies baseball. The name softball was given to the game in 1926. A tournament held in 1933 at the Fairs purred interest in the game.

CRICKET

Cricket is a bat-and-ball game played between two teams of 11 players each on a field at the centre of which is a rectangular 22-yard long pitch. The game is played by 120 million players in many countries, making it the world's second most popular sport. Each team takes its turn to bat, attempting to score runs, while the other team fields. Each turn is known as an innings. The bowler delivers the ball to the batsman who attempts to hit the ball with his bat away from the fielders so he can run to the other end of the pitch and score a run. Each batsman continues batting until he is out. The batting team continues batting until ten batsmen are out, or a specified number of over's of six balls have been bowled, at which point the teams switch roles and the fielding team comes in to bat.

STATEMENT OF THE PROBLEM

The purpose of the study was to investigate the "Comparison of Endurance and Agility among Softball and Cricket players of Hyderabad District."

SIGNIFICANCE OF THE STUDY:

The findings of the study may be helpful for the physical education teachers and coaches, in assessment of the players ability to take part in different activities and to identify the suitable packages of physical training for the athletes to improve their performance.

HYPOTHESIS

1) It was hypothesized that there would be any significant difference between Softball and Cricket Players in relation to their Physical Fitness variables such as Endurance and Agility.
2) They may not be any significant difference between Softball and CricketPlayers in relation to their Physical Fitness variables such as Endurance and Agility.

DELIMITATIONS

The study was delimited to 60 male (30 from each group) from Hyderabad district in the state of Telangana, India.

LIMITATIONS

The following factors like food habits, life style, daily routine works, the changes in the climatic conditions like temperature, atmospheric pressure, humidity, were not taken into consideration.

METHODOLOGY

The purpose of the study was to investigate the "Comparison of Endurance and Agility among Softball and Cricket players of Hyderabad District." To achieve the purpose of this study 60 male players from Hyderabad district in the state of Telangana. Were randomly selected as subjects and their age ranged between 19 to 21 years.

EXPERIMENTAL DESIGN

For this study, the subject is selected at random, independently drawn from Hyderabad district in the state of Telangang. who actively participated in the Inter-college tournament in their respective Game. Hence, the design of the subjects chosen for this study was based on independently random group design.

CRITERION VARIABLES AND TEST:

S.NO	Dependent Variables	Testes/ Instruments	Unit of Measurement
1.	Endurance	Cooper 12 – minute Run test	Mtr
2.	Agility	Agility T-test	Sec

ANALAYSIS OF DATA

The test conducted by selecting Thirty Softball players from Hyderabad dist and Thirty Cricket players from Hyderabad district in the state of Telangana. The data was collected by concocting Cooper 12 – minute Run test and Agility T-test. The collected data were subjected to the t-ratio test of analysis for significance.

RESULTS AND DISCUSSION

TABLE-1 ENDURANCE: THE MEAN, STANDARD DEVIATION, AND t –RATIO VALUES BETWEEN SOFTBALL AND CRICKET PLAYERS OF HYDERABAD DISTRICT.

TEAM	VARIABLE	NUMBER OF STUDENT	MEAN	STANDERD DEVIATION	T-RATIO
SOFTBALL PLAYERS	Cooper 12 – minute Run test	30	2525.20	140.91	9.157
CRICKET PLAYERS	Cooper 12 – minute Run test	30	2845.85	159.70	

Level of significance 0.05

Table shows the Mean, Standard deviation and ‘t’ value of Softball and Cricket players in relation to their Endurance test (Cooper 12 – minute Run test) The obtained mean value of Softball players was 2525.20 and Cricket players was 2845.85 and the SD values are 140.91 and 159.70 respectively. The obtained ‘t’ value of 9.157 is significant at 0.05 level of confidence among Softball and Cricket Players of Hyderabad district.

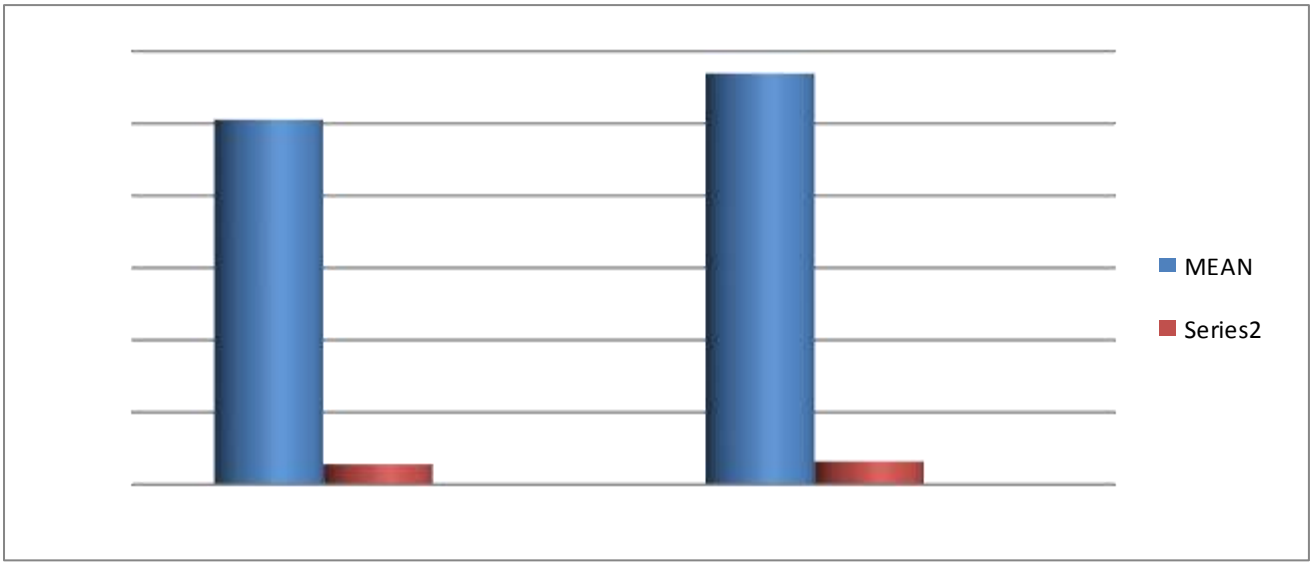
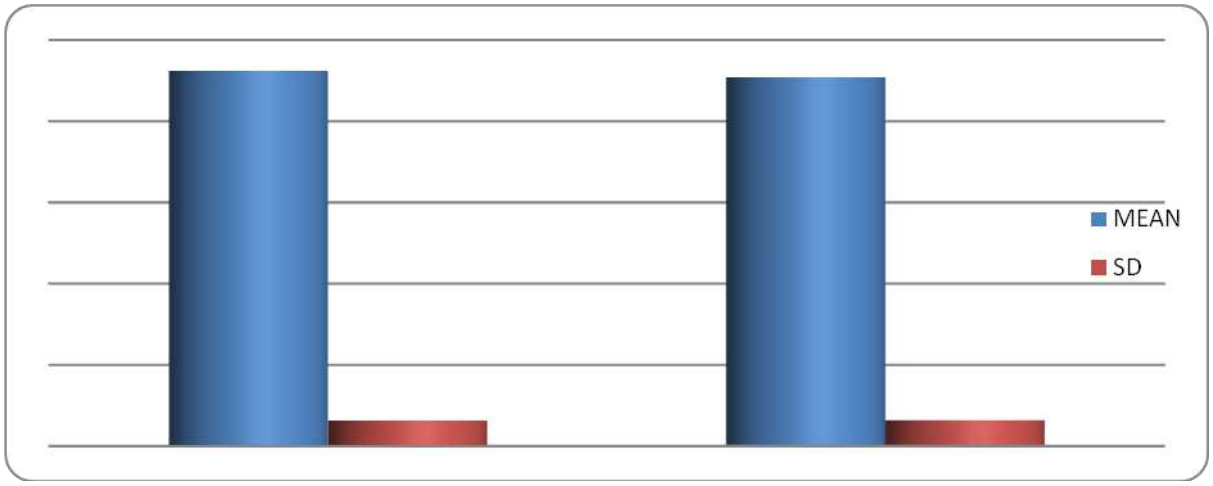


TABLE-2 AGILITY: THE MEAN, STANDARD DEVIATION, AND t –RATIO VALUES BETWEEN SOFTBALL AND CRICKET PLAYERS OF HYDEARBAD DISTRICT

TEAM	VARIABLE	NUMBER OF STUDENTS	MEAN	STANDARD DEVIATION	T-RATIO
SOFTBALL PLAYERS	Agility T-test	30	2.31	0.157	3.55
CRICKET PLAYERS	Agility T-test	30	2.27	0.159	

Level of significance 0.05

Table shows the Mean, Standard deviation and 't' value of Softball and Cricket players in relation to their Agility test (Agility T-test) The obtained mean value of Softball players was 2.31 and Cricket players was 2.27 and the SD values are 0.157 and 0.159 respectively. The obtained 't' value of 3.55 is significant at 0.05 level of confidence among Softball and Cricket Players of Hyderabad district.



DISCUSSION OF FINDINGS

- It was found that there is significant difference among Softball and CricketPlayers in respect of Endurance test (Cooper 12 – minute Run test)".
- It was found that there is no significant difference between Softball and CricketPlayers in respect of Agility test (Agility T-test)" is REJECTED.

CONCLUSIONS

The following conclusion were made on Comparing Endurance and Agility among Softball and Cricket players of Hyderabad district it was found out that cricket players had better Endurance than Softball players.

Cricket Players and Softball players both are having Good Agility. Soft ball players run fast between bases and Cricket players run fast between the wickets for the runs.

RECOMMENDATIONS:

1. Similar studies can be conducted on other Events and among females.
2. This study also helps the physical educators and coaches to improve their training regime to excel in Soft Ball and Cricketers.

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EFFECT OF CIRCUIT TRAINING AND PLYOMETRIC TRAINING ON DEVELOPMENT OF CARDIOVASCULAR FITNESS AMONG UNIVERSITY FEMALE TAEKWONDO PLAYERS IN TELANGANA REGION

Dr ANITHA SRAVAN
Physical Director, MJPTBCW RDC (W),
Medchal

ABSTRACT:

The aim of this study was to find out The Development of Cardiovascular fitness among University Female Taekwondo Players in Telangana Region. To achieve the purpose of the study Thirty female Taekwondo players have been randomly selected from Osmania University. The age of subjects were ranged from 19 to 23 years. The researcher has chosen the experimental method to carry-out the research work for collecting the data and to arrive at conclusion. The test conducted for Cardiovascular fitness :(i) Fitness Index Harvard Step Test. The subjects were tested on selected variables prior. The data were selected to the t-ratio test of analysis for significance. The collected data were analyzed statistically through analysis of Mean, Standard deviation and t-ratio test to find out the significance difference, if any between the Taekwondo players. The 0.05 level of confidence was fixed to test the level of significance difference.

INTRODUCTION

Sports provide an education of body which develops health, strength, ability and qualities of sportsmanship, leadership and better international understanding. A combat sport or fighting sport is a competitive contact sport where two combatants fight against each other to gain enough points or a condition to declare a single winner by means of using certain rules of direct engagement. These engagements rules and conditions are significantly different from the rules in simulated contact or combat meant for technical based challenges, practice, or demonstration in martial arts, typically with the aim of simulating parts of real hand to hand combat through kata and self-defense training. Boxing, kickboxing, amateur wrestling, judo, mixed martial arts,Muay Thai and Swordsmanship are examples of combat sports.

TAEKWONDO

Taekwondo into a modern international amateur and Olympic sport, while maintaining its proud tradition as a martial art spirit. However, its popularity is mainly due to its spectacular techniques and its being fun for all ages to learn and perform (Tedeschi, 2013). Taekwondo aims to teach students how to develop their full human potential through tried and tested methods. This is combined with effective tools that reinforce this potential with courage and confidence though rigorous training; while using your feet and fists, you achieve a way of self – fulfillment.

STATEMENT OF THE PROBLEM

The Purpose of the present study to find out the "Effect of Circuit Training and Plyometric Training on Development of Cardiovascular fitness among University Female Taekwondo Players in Telangana Region."

SIGNIFICANCE OF THE STUDY:

The findings of the study may be helpful for the physical education teachers and coaches, in assessment of the players ability to take part in different activities and to identify the suitable packages of physical training for the Taekwondo players to improve their performance.

HYPOTHESIS

It was hypothesized that there would be a significant improvement on Cardiovascular fitness due to the Effect of Circuit Training and Plyometric Training among university female taekwondo players.

DELIMITATIONS

The study was delimited to 30female (10 from each group) from Osmania University, Telangana, India.

LIMITATIONS

The following factors like food habits, life style, daily routine works, the changes in the climatic conditions like temperature, atmospheric pressure, humidity, were not taken into consideration.

METHODOLOGY

The purpose of the study was to find the "Effect of Circuit Training and Plyometric Training on Development of Cardiovascular fitness among University Female Taekwondo Players in Telangana Region."To achieve the purpose of this study 30 female players taken from Osmania University, Telangana, India.Were randomly selected as subjects and their age ranged between 19 to 23 years.

EXPERIMENTAL DESIGN

For this study, the subject are selected at random, independently drawn from Osmania University, Telangana, India. who actively participated in the District, State, South-Zone and National tournament in their respective Game. Hence, the design of the subjects chosen for this study was based on independently random group design.

1. Experimental Group -I acted as Circuit Training group (n=10).

2. Experimental Group -II acted as Plyometric Training group (n=10).

3. Control group (n=10) did not participate any specific training programme.

CRITERION VARIABLES AND TEST:

S.NO	Dependent Variables	Testes/ Instruments	Unit of Measurement
1.	Cardiovascular fitness	Fitness Index Harvard Step Test	Plus rate

ANALAYSIS OF DATA

The test conducted by selecting Thirty Taekwondo players from Osmania University, Telangana, India. The data was collected by conducting Fitness Index Harvard Step Test. The collected data were subjected to the t-ratio test of analysis for significance.

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RESULTS AND DISCUSSION

TABLE-1

CIRCUIT TRAINING AND PLYOMETRIC TRAINING - COMPUTATION OF 'T'VALUE

DUE TO CIRCUIT TRAINING				
Test	**Mean**	**MD**	**SD**	**t'**
Pre	**70.73**			
Post	**73.60**	**2.87**	**3.08**	**5.09***
DUE TO PLYOMETRIC TRAINING				
Pre	**69.80**			
Post	**72.37**	**2.57**	**3.23**	**4.35***
CONTROL GROUP				
Pre	**70.60**			
Post	**70.00**	**-0.60**	**0.89**	**-3.67***

SIGNIFICANT

From the above table it was observed that the calculated 't' values of Cardiovascular fitness, of Circuit training were 5.09 respectively and Plyometric training were 4.35 respectively and CG were -3.67 respectively. Since the obtained 't'values of Circuit training and Plyometric training are more than the required 't' values, therefore it was found that there is a significant difference between the mean values of preand post training for the Circuit training and Plyometric training. It was found that there is nosignificant difference between the mean values of pre and post training for the Control Groupas the calculated value is less than the required 't' value.

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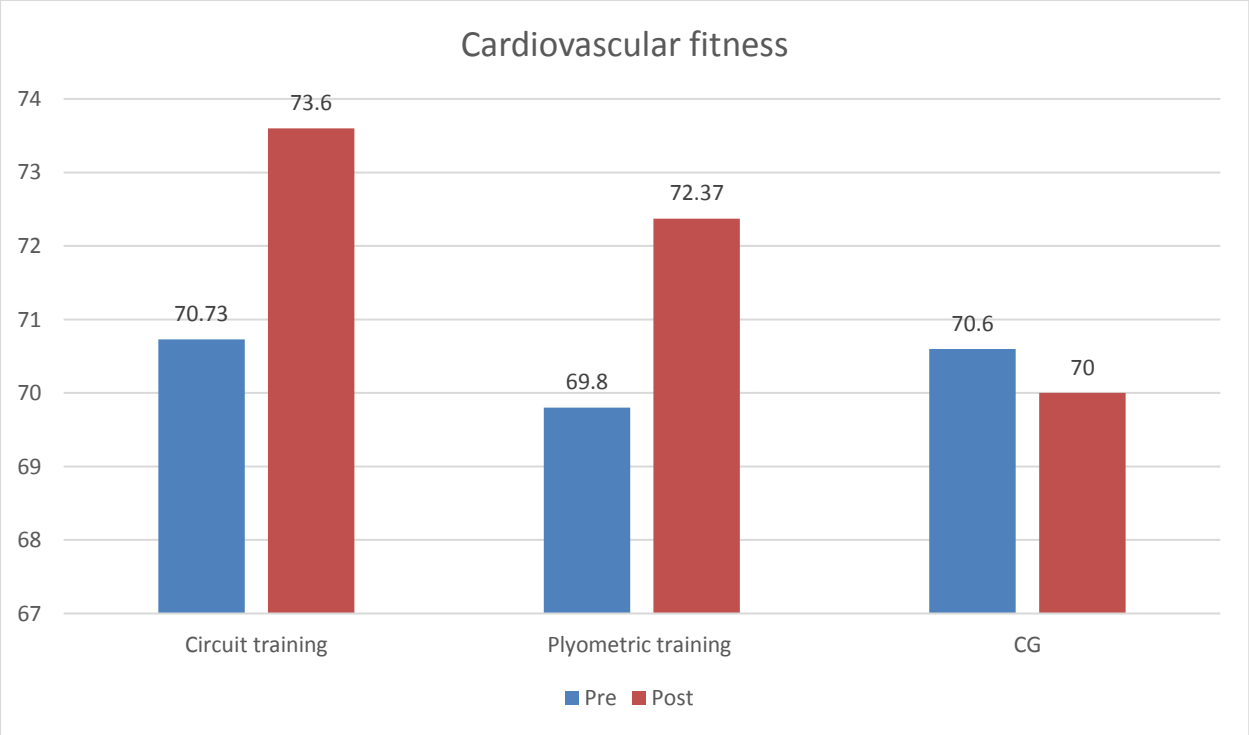

DISCUSSION OF FINDINGS

The study found that circuit training and plyometric training significantly altered selected physical fitness variables Cardiovascular fitness of taekwondo players.

CONCLUSIONS

It was concluded that 12 weeks circuit training and plyometric training significantly improved physiological variable, Cardiovascular Fitness of taekwondo players compared to control group. However, comparison between the treatment groups proved that there was no significant difference between the experimental treatments on Cardiovascular Fitness of taekwondo players.

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EFFECT OF MODERATE ALTITUDE TRAINING ON SHOULDER MUSCULAR STRENGTH AND CARDIO-RESPIRATORY ENDURANCE

Mr.R. Rohin Kumar Reddy[1]

[1]**Ph.D., Research Scholar, Department of Physical Education,**

Annamalai University.

Dr. M. Kalimuthu[2]

[2] **Associate Professor, Department of Physical Education,**

Annamalai University.

ABSTRACT

The purpose of the study was to find out the effect of moderate altitude training on shoulder muscular strength and cardio-respiratory endurance. Thirty male middle distance runners studying in various colleges around Kodaikanal Town, Dindigul District, were selected and divided into two equal groups (n = 15), in which group - I underwent moderate altitude training, five days per week for twelve weeks and group II acted as control which did not participate any special training apart from their regular activities. The subjects were tested on selected criterion variables such as shoulder muscular strength and cardio-respiratory endurance at prior to and immediately after the training. For testing the shoulder muscular strength, push-ups test was administrated, and for cardio-respiratory endurance, Cooper's 12 minutes run/walk test was conducted. The analysis of covariance (ANCOVA) was used as statistical tool. The result of the study shows that the selected criterion variables were improved significantly for the training group when compared with the control group.

Key Words: moderate altitude training, shoulder muscular strength, and cardio-respiratory endurance.

INTRODUCTION

The impact of altitude on the human body, particularly as it relates to exercise, is more well-known than ever. More research is being done on the multiple physiological impacts of altitude on the body than has previously been done, especially in athletes who train and compete at altitude [2,3,4,5,6,7,8,9].

Acclimatization to environmental hypoxia sets off a cascade of metabolic and musculocardio-respiratory adaptations that affect oxygen transport and utilisation. Better yet, being born

and raised at altitude is required to achieve peak levels of physical performance at altitude; however, there is currently conflicting scientific evidence to support these effects after returning to sea level [1].

Elite athletes frequently use altitude training (for 2-4 weeks) to benefit from explosive movements and aerobic and anaerobic metabolism [10]. Elite athletes generally employ a variety of training techniques, the most popular of which is the time-tested prolonged exposure to natural or artificial altitude, sometimes known as "live high-train high," in which athletes reside and exercise at a terrestrial altitude (i.e., 1800-3300 m.a.s.l.) [11]. The improvement of anaerobic abilities, such as maximal or explosive strength, is still hotly contested. While the effectiveness of various altitude training regimens on aerobic capacities is commonly acknowledged [12] due to a hypoxia erythropoietin impact, there is still much discussion surrounding how to best maximise anaerobic qualities like maximal or explosive strength.Competitive endurance athletes frequently employ altitude training to enhance their performance at sea level [13].

There are many anecdotal tales revealing a wide range in performance following a conventional altitude training camp, despite multiple controlled studies showing no group improvement in sea-level performance after living and exercising at altitude [14,15]. In the past, we have shown that a high prevalence of iron deficiency among trained athletes can account for some of the variability in performance at sea level after altitude training [16].

After 2 to 3 weeks of continuous elevation, athletes, the military, climbers, and others who engage in high-intensity physical exercise experience better muscle function [17]. While staying at altitude may cause losses like isolation from lack of safety assistance and accommodations [18], an increase in stress or oxidative stress [19], disruption of sleep [20], and overall discomfort or boredom. IAE (Intermittent Altitude Exposure), in contrast, eliminates or reduces these losses daily, indicating that a different exposure to altitude or hypoxic circumstances may be more tolerable [21].

Motor fitness components are crucial in athletic performance because they encompass the physical qualities that enable athletes to execute sport-specific skills efficiently and effectively. These components include muscular strength, endurance, flexibility, speed, agility, and power, all of which contribute to enhanced performance and reduced injury risk[22].

The strength training also refers as a type of physical exercise, uses of resistance which enhance the muscular contraction which contributes the strength, increase the size of skeletal muscle and anaerobic endurance. It can improve the overall health and well-being, including the size of muscle, tendon, strengthen and improves the toughness of ligament and joint function, reduced for injury, increased the bone density, fitness, metabolism and cardiac function [23,24].

Shoulder muscular strength is critical for both athletic performance and daily activities, offering stability, mobility, and injury prevention. Training at high altitudes can enhance shoulder strength and overall muscular endurance due to the body's physiological adaptations to hypoxia. Studies have shown that altitude training can improve muscle oxygenation and metabolic efficiency, thereby increasing muscle strength and endurance [25].

Training the aerobic system is called as endurance training which is opposed to the anaerobic system, which is divided into two categories, general and specific endurance [26]. Endurance fitness which sustain the necessary activity level for a specific competitive sport, which includes both cardiovascular and muscular endurance required for the sport [27]. In physiological aspect, it requires the circulatory and respiratory systems to supply energy to the working muscles to support sustained physical activity. Endurance requires the circulatory and respiratory systems to supply energy to the working muscles in order to support sustained physical activity [28]. Indeed, high levels of muscular strength and aerobic endurance are key determinants of success in many sports [29,30].

The critical function of cardio-respiratory endurance and clarifies how it affects oxygen supply, energy use, and the delay of exhaustion during exercise. Furthermore, how the cardiovascular system can adapt to training stimuli, demonstrating the possibility of significant gains in endurance capacity through focused training interventions. [31,32].

MATERIAL AND METHODS

In this study it was aimed to find out the effect of moderate altitude training on shoulder muscular strengthand cardio-respiratory endurance. To achieve the purpose thirtymale middle distance runners studying in various collegesKodaikanal aroundDindigul District, Tamilnadu were selected as subjects. They were divided into two equal groups of fifteen each and such as one experimental group and one control group, in which the group I (n=15) underwent moderate altitude trainingand group II (n = 15) acted as control which did not participate in any special training apart from the regular curricular activities.

For every training programme there would be a change in various structure and systems in human body. So, the researchers consulted with the experts and then selected the following criterion variables: 1. Shoulder muscular strength and 2. Cardio-respiratory endurance. For testing the shoulder muscular strength, push-ups test was administrated, and for cardio-respiratory endurance, Cooper's 12 minutes run/walk test was conducted

ANALYSIS OF THE DATA

Analysis of Covariance was used to determine the differences, if any, among the adjusted post-test means on selected criterion variables separately. The level of significance was fixed at .05 level of confidence to test the 'F' ratio obtained by analysis of covariance.

Table – 1

Analysis of Covariance and 'F' ratio for Shoulder Muscular Strength and Cardio-respiratory Endurance of Moderate Altitude Training Group and Control Group

Variable Name	Group Name	Experimental Group	Control Group	'F' Ratio
Shoulder Muscular Strength (in Kgs.)	Pre-test Mean±S.D.	34.80 ± 1.32	34.63 ± 1.85	0.09
	Post-test Mean±S.D.	36.00 ± 1.41	33.80 ± 1.34	8.23*
	Adj. Post-test Mean	35.859	33.871	42.30*
Cardio-respiratory Endurance (in Meters)	Pre-test Mean±S.D.	2442.67 ± 26.85	2435.33 ± 18.47	0.52
	Post-test Mean±S.D.	2489.33 ± 35.95	2422.67 ± 44.32	18.30*
	Adj. Post-test Mean	2486.05	2424.80	20.04*

* Significant at .05 level of confidence. (The table value required for significance at .05 level of confidence with df 2 and 42 and 2 and 41were 3.21 and 3.23 respectively).

Table – 1 shows that pre-test means 'f' ratio of moderate altitude training group and control group on shoulder muscular strength was 0.09, which is insignificant at 0.05 level of confidence. The post- and adjusted post-test mean 'f' ratio value of experimental group and control group was 8.23 and 42.30 which was significant at 0.05 level of confidence. The pre-test means 'f' ratio of moderate altitude training group and control group on cardio-respiratory endurance was0.52, which is insignificant at 0.05 level of confidence. The post- and adjusted post-test mean 'f' ratio value of experimental groups and control group was 18.30 and 20.04, which was significant at 0.05 level of confidence.

CONCLUSIONS

The aim of the study is to find out the effect of moderate altitude training on shoulder muscular strength and cardio-respiratory endurance in middle distance runners. The twelve weeks training programme improves the leg strength and cardio-respiratory endurance significantly when compared with the control group. Findings of Garcia-Ramos, *et al* (2014)[33] and García-Ramos, *etal*(2016) [34] supports the results of the present study. The cardio-respiratory endurance significantly improved after different altitude training was in accordance with Kumar and Sivakumar (2018)[35] and Subramaniand Chelladurai(2016) [36].

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SPORTS SCIENCE STUDENTS' PHYSICAL ACTIVITY AND SPORTS PARTICIPATION: A COMPARATIVE STUDY OF PATTERNS AND TRENDS

Dr. Mehwish Manzoor

Assistant Professor, Department of physical education & sport science,

Muslim Youth University Islamabad, Pakistan.

Corresponding Author: Dr. Mehwish Manzoor,

mehwishmanzoor233@yahoo.com

ABSTRACT:

The regular performance of physical activities has lots of benefits in our lives. Exercise and physical activity during adolescence may positively affect on the physical fitness levels and body composition. If a person engages him/herself in physical activities will remain physically fit and can maintain healthy body composition which is the key of life. This research is based on male colleges of northern Punjab. There is total 112 male colleges in the northern Punjab from which 21 colleges were selected and 210 participants and non-participants were collected. Four physical activities were compared like flexibility, general endurance, long jump and speed. This research revealed that the participants have more stamina as compare to non-participants. This study also found that the flexibility, general endurance, long jump and speed was good in participants as compare to non-participants. Total number of participants were 210 and non-participants were 210.The mean score percentage of participants is 11.04 with standard deviation 10.582 and mean score percentage of non-participants is 6.92 with standard deviation 10.235.

Keywords: Physical Activities, Sports, Exercise, Participant

INTRODUCTION:

The main objective of the study Sports Science Students' Physical Activity and Sports Participation: A Comparative Study of Patterns and Trends". Any healthy lifestyle must include physical activity, and this applies to more than just physical well-being. Making a good connection between physical exercise and raising student accomplishment in the classroom could be the only way to demonstrate the value of exercise and physical education in our academic communities. Studies have discovered beneficial relationships between academic success. The academic success of students should demonstrate their readiness to begin post-compulsory education. However, it is unknown how much academic success

affects starting post-compulsory education. When students started in post-compulsory education, we looked at the relationships between academic achievement and physical exercise. The union contract for New York City (NYC) states that the maximum number of pupils in the gym at one time for physical education in high school is 50, but there is currently no such restriction for younger grades. (NYC Teacher contract, 2018).

Tomporowski, P.D.; McCullick, B.; Pendleton, D.M.; Pesce, C. (2015), Understanding the effects of PA on students' mental activity, classroom behavior, and academic performance has received a lot of scholarly attention due to the significant negative effects on educational practices at the population level.

Exercise and physical activity during adolescence may positively effect on the physical fitness levels and body composition. If a person engages him/herself in physical activities will remain physically fit and can maintain healthy body composition which is the key of life (Ruiz et al., 2010).

Physical activity sort of motion that quickens your respiration and pulse rate is considered to be physically active. Your general well-being and health will benefit from physical activity. It provides advantages for people of all ages, such as lowering the chance of developing long-term illnesses, enhancing sleep, boosting power, and enhancing both one's physical and mental health.

According to WHO in 2018, any physical activity based on skeletal muscles that uses energy is considered to be intense exercise. Physical exercise includes all forms of movement, whether they are performed for fun, as a means of transit to and from destinations, or as part of work. Intense and moderate physical activity are both good for your health. The act of running, cycling, swimming, sports, physical recreation, and playing are all popular activities that everyone may undertake for enjoyment regardless of skill.

The following major elements, according to Martin (2010), were revealed by reviewing the research on "physical activity, fitness, and academic success" The overwhelming mostly of school-based, widely

disseminated research in this area has discovered a beneficial relationship between kids' engagement in physical exercise and academic success. Caspersen's definition was somewhat modified I n 2017 for the World Health Organization's (WHO) Global Strategy on Increasing Physical Activity. The WHO refers to a bodily movement that "requires energy spending" as opposed to activity that uses up energy.

Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2015). Regular physical activity, such as riding a bike, participating in sports, or taking part in active leisure, has a favorable effect on well-being. It is better to exercise some than none.

People may simply increase their daily activity using simple approaches, which will help them attain the essential exercise levels. Lack of exercise is one of the key indicators of risk for illnesses that are not communicable death. Those who are not sufficiently or insufficiently active have a 22% to 32% greater risk of passing away than those who are suitably active.

Physical exercise categories:

Aerobic exercise, bone and muscle repairing, stretching, and strengthening bones are among the five basic categories of physical activity.

Aerobic Exercise:

Tinazci, C., EAlrefai, S., & Musa, O. (2019), Your legs and arms, as well as other big muscles, are moved during aerobic exercise. Aerobic exercise includes things like running, swimming, walking, biking, dancing, and performing jumping jacks. The term "endurance activity" also applies to aerobic exercise.

According to Tomporowski, P.D., Davis, C.L., Miller, P.H., & Naglieri, J.A. (2008), Your heart beats more quickly during aerobic exercise. Furthermore, this kind of exercise makes you breathe more heavily. Regular aerobic exercise strengthens and improves the function of both your lungs and your heart over time.

Muscles-strengthening:

According to the American College of Sports Medicine 2019, Exercise for muscle development is a voluntary endeavor that uses resistance bands, Troiano RP, Berrigan D, Dodd KW (2017) described that, the developing field of muscle-strengthening exercise epidemiology is described in this current point of view. The worldwide physical activity recommendations, which previously prioritized machines for weightlifting, hand-held dumbbells, or the weight of one's own body (such as push-ups or sit-ups).

aerobic physical activity (running, jogging, playing indoor games, etc.), have recently included a muscle-strengthening exercise to their list of recommended activities. First, we define this term and examine this inclusion.

Presses with a standing dumbbell above:

Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2015), Compound workouts, which employ several muscles and joints, are the best type of exercise for those with busy schedules since they work on different areas of the body simultaneously. Freestanding overhead presses, which also strengthen your upper back as well as your core, are one of the best exercises for shoulders.

RESEARCH METHODOLOGY:

This research is based on male colleges of northern Punjab. There is total 112 male colleges in the northern Punjab from which 21 colleges were selected according to equal proportion from each district. Data were gathered from physical education department of each college. The equal sample size of participants and non-participant (Ten students) were selected from each physical education department.

Table No:01 Total and Selected colleges from each tehsil according to number of colleges

Division	Districts	Total colleges	Total male colleges	Selected male colleges
Nankana	Sanglahill	12	1	1
	Nankana	8	2	0
	Shahkot	24	12	1
Sargodha	Sargodha	33	15	3
	Mianwali	15	6	1
Sahiwal	Okara	15	7	1
	Pakpattan	5	3	1
Rawalpindi	Rawalpindi	53	21	4
	Jhelum	12	6	1

Gujranwala	Sialkot	25	8	1
	Narowal	9	3	1
Faisalabad	Faisalabad	40	15	3
	Chiniot	9	4	1
	Jang	9		2
Total		288	112	21

Selected sample size for this study:

This study is based Bachelors in Art (B. A) and Bachelors in Science (B. Sc) colleges were considered. 21 male colleges were selected. 210 male participant and 210 male non-participants of physical education students at college level. The difficulty and complexities to the respondents were removed, prior to actual data collection. Ten participants and ten non- participants were selected from each college.

VARIABLES

The physical activities have various shapes in modern world. In the research four physical activities were selected like flexibility, general endurance, power and speed. The measurement for all activities were performed and their data were collected. Those tests tool and units are given below.

Test	Tool	Unit
Flexibility	Sit & reach box	Cm
Endurance	Jogging	F
Long jump	Standing Long Jump	F
Speed	200 m Running	Sec

Statistical analysis for the data:

Present study had utilized the descriptive as well as inferential statistics. T-test was used for the comparison of physical activities data of participants and non-participants. The data was analyzed by using the (SPSS-23 version).

RESULTS OF ANALYSIS:

The results of statistical tool t- tests are obtained and presented in table form. Their interpretation also provided below.

Table No: 2: Group statistics of flexibility participants and non-participants

Group Statistics				
Group	N	Mean	Std. Deviation	Std. Error Mean
Participants	210	11.04	10.582	.730
Non-participants	210	6.92	10.235	.706

Total number of participants were 210 and non-participants were 210.The mean score percentage of participants is 11.04 with standard deviation 10.582 and mean score percentage of non-participants is 6.92 with standard deviation 10.235.

Table No: 3: Comparison of speed between participants and non-participants

Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.418	.519	4.054	418	.000	4.119	1.016	2.122	6.116
Equal variances not assumed			4.054	417.535	.000	4.119	1.016	2.122	6.116

It is evident that the t- value is 417.5, which is significant at the value of degree of freedom 998. P-value is less than specified level of significance (α = 0.05). It reflects that mean flexibility of participants and non-participants differ significantly.

Table No: 4: Group statistics of speed participants and non-participants

Group Statistics				
Group	N	Mean	Std. Deviation	Std. Error Mean
Participants	210	38.00	8.978	.620
Non-participants	210	18.38	4.684	.323

Total number of participants were 210 and non-participants were 210.The mean of general endurance of participants is 38 with standard deviation 8.978 and non-participants is 18.38 with standard deviation 4.684.

Table No: 5: Comparison of general endurance between participants and non-participants

Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	145.460	.000	28.083	418	.000	19.624	.699	18.250	20.997
Equal variances not assumed			28.083	314.927	.000	19.624	.699	18.249	20.999

It is evident that the t value is 28.083, which is significant at the value of degree of freedom 418. P-value is less than specified level of significance (α = 0.05). It reflects that mean general endurance of participants and non-participants is not same.

Table No:06: Group statistics of long jump participants and non-participants

Group Statistics				
Group	N	Mean	Std. Deviation	Std. Error Mean
Participants	210	2.2695	.42424	.02928
Non-participants	210	1.8812	.20129	.01389

Total numbers of participants were 210 and non-participants were 210.The mean of long jump of participants is 2.2695 with standard deviation 0.42424 and non-participants is 1.8812with standard deviation 0.1389.

Table No:07: Comparison of long jump between participants and non-participants

Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	140.855	.000	11.981	418	.000	.38824	.03240	.32454	.45193
Equal variances not assumed			11.981	298.560	.000	.38824	.03240	.32447	.45201

It is evident that the t value is 11.981, which is significant at the value of degree of freedom 418. P-value is less than specified level of significance (α = 0.05). It reflects that mean long jump of participants and non-participants is different.

Table No:08: Group statistics of speed participants and non-participants

Group Statistics				
Group	N	Mean	Std. Deviation	Std. Error Mean
Participants	210	30.7364	3.35526	.23153
Non-participants	210	33.8021	4.81255	.33210

Total numbers of participants were 210 and non-participants were 210.The mean of speed of participants is 30.7364 with standard deviation 3.35526 and non-participants is 33.8021 with standard deviation 4.81255.

Table No:09: Comparison of speed between participants and non-participants

Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	41.330	.000	-7.573	418	.000	-3.06571	.40484	-3.86149	-2.26993
Equal variances not assumed			-7.573	373.348	.000	-3.06571	.40484	-3.86177	-2.26966

It is evident that the t value is 7.573, which is significant at the value of degree of freedom 418. P-value is less than specified level of significance (α = 0.05). It reflects that mean speed of participants and non-participants differ significantly.

CONCLUSION:

The study is conducted to test the levels of performing physical activities between the participant and non-participants of male students of physical education department. This research revealed that the participants have more stamina as compare to non-participants. This study also found that the flexibility, general endurance, long jump and speed was good in participants as compare to non-participants. The flexibility level of the participators was extremely better than non-participators. Participators were found efficient as compare to non-participators. Power of the both groups was not different, their power strength was same. Sports participation reported in a positive relationship with health and academic achievement.

Sports participation may improve cognitive health leading to improved academic achievement. Total number of participants were 210 and non-participants were 210.The mean score percentage of participants is 11.04 with standard deviation 10.582 and mean

score percentage of non-participants is 6.92 with standard deviation 10.235.

Previous studies have provided evidence that sports participation has a positive association with cognitive and physical health. This study has examined the relationship between the sports and academic achievement.

RECOMMENDATIONS:

Many future studies are recommended based on this study's limitations and findings. For instance, a qualitative study is recommended to profoundly understand the physical activity phenomenon among academic achievement. The qualitative part is essential in addition to the quantitative section. Future qualitative studies that focus on understanding the weak association between attitude and subjective norms with intention toward physical activity are also recommended. Furthermore, conducting this study at an international level to compare different Physical activity & sports would be beneficial to a better understanding of this phenomenon.

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YOGA ROLE FOR SPORTSMANSHIP, PSYCHOLOGICAL SKILLS AND PERFORMANCE EFFICIENCY FOR BADMINTON PLAYERS

[1]Murali Mohan.C
Physical Director, Aditya Polytechnic College, Surampalem,
East Godavari, A.P.
Email:chitturimm@gmail.com

ABSTRACT:
The present study was designed to find out relationship between yoga role of sportsmanship, Psychological skills and performance efficacy for Badminton Players. It was a correlation research employing cross sectional research design in which the sample of 150 Universities Badminton Players was recruited via purposive sampling. The assessment measures included Psychological Skills Scale for Badminton Players (Solomon, Malik & Kausar)**,** Youth Sports Value Questionnaire-2 (Lee, Whitehead, & Ntoumanis) and Collective Efficacy for Sports Questionnaire (Short, Sullivan, & Feltz). Results showed a significant relationship between Psychological skills, sportsmanship and performance efficacy in Badminton Players, however, perceived Psychological support was found to be significant positive predictor of sportsmanship and sportsmanship coined as a significant positive predictor of performance efficacy. Furthermore, sportsmanship was found to be significant mediator between perceived Psychological support and performance efficacy. This research will work as an empirical proof for AIU to conduct Psychological skills training for Badminton Players for the enhancement of their performance efficacy by signifying the importance of sportsmanship.
Key Words: Yoga, Psychological training, performance efficiency, University Badminton Players.

INTRODUCTION:

Yoga is sometimes referred to as the science of religion with the view that the human body is a vehicle for the spirit and soul. It offers a number of tools with which to tune and rebalance the „vehicle", so that it is able to attract the appropriate level and quantity of prana, and fulfill the human function. Asana and Pranayama techniques "cleanse the body of tensions, toxins and impurities and release energy blocks, which impede the harmonious flow of energy in the body." (Sunder, 2009) Meditation techniques have several benefits. For example, not only do they allow a deeper connection to the inner life, which can lead to greater understanding of the actual causes of a person's „disease", they also allow an increase in the connection to, and sharing of, the higher levels of the life force, which are themselves healing and enlightening to the body, mind, soul and spirit. Yoga, it is believed, has been evolving and practiced for at least 3 thousand years, and inevitably many schools and disciplines have emerged differing in detail but with the central themes remaining intact. These understandings have arrived during states of deep meditation and resultant „in tuition". This has come about through connection to what Tara Patel

describes as the "vast mind realm" and which in yoga literature is referred to as the "watershed of knowledge" within the ultimate state of meditation, samadhi. In psychological terminology this might be described as the higher end of the bar of Jung"s collective unconscious, or the super conscious. In some ancient writings this can be referred to as the "astral light" of which there are said to be 7 levels, from high to low. It is perhaps difficult for western minds schooled in the scientific disciplines of bio medicine to accept this yoga view of human physiology (Swami Sivanadha, 2001).

Sport is a physical game involving Badminton Players or athletes in competitive physical activities and exercises. Generally, a multitude of people get involved into sporting activities for some notable reasons. These people can be categorized into two sets. The first set of people utilizes the sporting activities for relaxation, fun, pleasure, enjoyment, and most importantly to reduce stress. The second set of people is named as elite athletes who engage themselves in sport with utmost dedication and commitment along with intensive hours of training and practice. The motive behind these two sets of people completely contradicts, but, something binds them together is the Psychological skills aspects of the game. Mia Hamm, former American soccer player, quoted that "the most important attribute a player must have is Psychological toughness" (Hamm, n.d.). Though sport seems to have interconnected with physical attributes, the result that leads to success in any sport is determined by the Badminton Players' power of focus, concentration and commitment. Thus, sport is highly related to Psychological fitness than physical fitness (Afremow, 2014). This paper focuses on the importance of Psychological fitness, considering Indian mythological warriors and the contemporary Badminton Players.

The main focus of sports psychology has always been to emphasis the importance of psychology in sports settings. The heightened competition stress lead towards a sudden diminished performance both physically and psychologically by influencing on performance abilities of Badminton Players (Dweck, 2009). Sports psychology enables Badminton Players and coaches to concentrate on psychological skills of Badminton Players by controlling negative emotions and optimizing performance and assist Badminton Players in focusing positively on their respective games. Sports have been more refined and coaches who had been unable to utilize the Mental aspect of their Badminton Players had faced disgrace in their

respective fields due to their poor performance (Marshall & Harrison, 2015). The end of 1990s was marked as the era of fitness revolution, the 2000s named as the sports science and analysis period and now the next era will be marked as dealing psychological aspects of sports (Gucciardi, 2016). The role of coaches in team sports is vital and oblivious as coaches flourish their Badminton Players physically, psychologically, technically and tactically and enable them for accomplishing optimal goals. Coaches play a critical role in the lives of young athletes and have the potential to influence, positively or negatively, their sporting experiences.

Psychological skills significantly negatively correlated with Psychological distracters and choking and Psychological distracters emerged as significant predictors of choking. Thus, in a nut shell, sports are metaphor for life that guarantees one's success by distinguishing oneself from others due to one's skills, determination and hard work by connecting between one's sportsmanship as good sportsmanship encompasses different aspects of a sportsman's life such as equal respect for teammates and opponents, integrity and above all unselfish sport participation for being a great sportsman.

OBJECTIVE OF STUDY:

The objectives of this study were:

1. To find out relationship between Psychological skills (psycho-performance skills, perceived psychological support and psycho-competitiveness), sportsmanship (moral values, competence, values and status values) and performance efficacy (ability, effort, persistence, preparation and unity) in University Badminton Players.
2. To determine the Yoga (asanas and mediate) role of sportsmanship between Psychological skills and performance efficacy.

HYPOTHESES:

1. There is likely to be relationship between psychological skills (psycho performance skills, perceived psychological support and psycho competitiveness), sportsmanship (moral values, competence values and status values) and performance efficacy (ability, effort, persistence, preparation and unity) in university Badminton Players.

2. Sportsmanship will yoga (asanas and mediate) the relationship between Psychological skills and performance efficacy in university Badminton Players.

METHOD:

The sample consisted of 150 discipline Badminton Players (N= 150) as calculated by G-Power 3.0 sample calculator collected from different discipline sports and games of Andhra University, Visakhapatnam via non-probability purposive sampling technique. It was hypothesized that there would be significant differences on selected Psychological variables due to the yoga role of sportsmanship in university.

Inclusion/ Exclusion criteria:

1. University Badminton Players currently playing at different clubs and departments under the plat form of Andhra university inter collegiate tournaments were approached.
2. University Badminton Players who have minimum one year of experience of playing Sports and games at region, district or depart Psychological level were included.
3. University Badminton Players facing any kind of ban for playing their respective sport by University tournaments/ Inter Collegiate tournaments / club/ academy due to some disciplinary actions were excluded.
4. University Badminton Players having any kind of disability and physical injury didn't take part in this research.

Psychological Skills Scale for University Badminton Players different disciplines (Solomon, Malik & Kausar, 2019) that consisted of 84 items with three sub-scales: Psycho-Performance Skills, Perceived Psychological Support and Psycho- Competitiveness included 38, 24 and 22 items respectively. The overall score range on was 84 (minimum) to 336 (maximum), however, the score range on psycho-performance skills is from 38 (minimum) to 152 (maximum), whereas, scoring range for perceived psychological support and psycho competitiveness is 24 (minimum) to 96 (maximum) and 22 (minimum) to 88 (maximum) respectively with internal consistency for overall scale .94 determined by using Cronbach's alpha and .92, .90 and .87 reliability respectively for each sub-scale.

Youth Sport Values Questionnaire-2 (YSVQ-2)

Youth Sport Value Questionnaire-2 (YSVQ-2) developed by Lee et al., is 13-item questionnaire having three sub-scales to measure moral, competence and status values with four or five items.

Collective Efficacy for Sports Questionnaire (CESQ)

Collective Efficacy for Sport Questionnaire is a 20-item questionnaire that measures collective team collapse on a 9-point scale with low scores indicating greater collapse. The 20 items measure five different elements of collective efficacy. The five elements that are measured are ability, effort, persistence, preparation and unity.

Demographic Information Sheet

Demographic information of the participants were obtained by using a demographic information sheet including playing level, playing position, duration of playing a specific game, marital status, education, residence and monthly income.

RESULTS:

At first, descriptive statistics i.e. means, standard deviations, frequencies and percentages were computed to provide a preliminary profile of the sample characteristics. The mean, standard deviation, and reliability coefficients of assessment measures were computed. Pearson Product Moment Correlation was used to investigate relationship between Psychological skills, sportsmanship and performance efficacy in university Badminton Players. Structural Equation Modeling (SEM) through AMOS was used to find out yoga role of sportsmanship between the relationship of Psychological skills and performance efficacy.

Table 1: Demographic Characteristics of Sample (N=150)

Demographic Characteristics of Sample (N=150)		
Variables	Badminton Players N=150 f %	
Age (18 – 20 , 20- 22 , 23 -25 years)	M(SD)	16.08 (4.58)
Experience in Years	M(SD)	6.59 (3.16)
Playing Level (University Players)		150 (100)
Have you ever faced any psychological problem during game?		

yes	92 (61.33)
No	58(38.67)
If yes, then whom did you consult?	
Captain	82(54.66)
Coach	35(23.34)
Any other	28(18.66)
No One	5(0.034)
Required Psychological Consultancy in future?	
yes	98 (65.33)
No	52(34.67)

Note: f= frequency, *%= percentage, M* = Mean, *SD* = Standard Deviation

Table 2:

Descriptive Statistics of Psychological Skills (Psycho- Performance Efficacy Skills, Perceived Psychological Support and Psycho Competitiveness), Sportsmanship (Moral Values, Competence Values and Status Values) and Performance Efficacy (Ability, Effort, Persistence, Preparation and Unity) in Badminton Players (N=150)

S.No	Variables	N	M(SD)	Range		α
				Actual	Potential	
1	Psychological Skills	33	157(26.12)	201	220	.91
2	Psycho- Performance Efficacy Skills	21	98.43(15.71)	96	99	.89
3	Perceived Psychological Support	17	72.15(10.45)	73	73	.87
4	Psycho-Competitiveness	15	40.83 (7.45)	51	51	.83
5	Sportsmanship	14	15.41(10.15)	24	24	.51
6	Moral Values	11	13.96 (3.84)	21	21	. 63
7	Competence Values	06	10.45(3.12)	18	18	.64
8	Status Values	04	9.56(4.52)	15	15	.69
9	Performance Efficacy	10	101.84(25.98)	145	145	.91
10	Ability	03	30.21(6.12)	12	12	.51
11	Effort	03	29.81(6.82)	12	12	.49
12	Persistence	05	29.45(6.12)	12	12	.39
13	Preparation	04	29.12(5.89)	12	12	.38
14	Unity	03	30.45(5.45)	12	12	.38

Note: k = Number. of items, M = Mean, SD = Standard Deviation, α = Cronbach's alpha

Table 2 contained descriptive statistics of the study and showing number of items for scales and sub-scales, mean, standard deviation, and Cronbach alpha reliability.

Structural equation modeling using IBM AMOS SPSS was conducted to evaluate the mediating role of sportsmanship between psychological skills and performance Efficacy in Badminton players. Model fit presented in table 3.

Table: 3 Fit University players for Psychological Skills, Sportsmanship and Performance Efficacy in Badminton Players

Model	Fit	χ^2	df	χ^2/df	GFI	CFI	NFI	RMSEA	SRMR
Model		95.7	75	1.27	0.91	0.96	0.94	0.02	0.02

***Note*: N=150, GFI= Goodness of fit index, CFI=comparative fit index, NFI = -normed fit index; RMSEA=root mean square error of approximation, SRMR=Standardized root mean square.**

Model fit indices indicated for psychological skills, sportsmanship and performance efficacy in Badminton players. The chi-square test of absolute model fit is sensitive to sample size and number of parameters estimate, investigators often turn to various descriptive fit indices to assess the overall model fit (Kenny 2003). Hence model fit was analyzed by using relative fit (GFI, CFI, NFI, RMSEA, SRMR) of model. Hu, Li-Tze, Bentler and Peter (1999) recommend χ^2/df in between 0 and 3, RMSEA and SRMR values .08 or lesser and Comparative Fit Index (CFI), Normedfit Index (NFI) and Goodness of fit Index (GFI) values of .9 or higher are considered as good while .9 $\leq$ .8 is consider permissible sometimes. However indices of model fit indicated the best fit for the proposed model accruing to given criteria.

Table 4: Standardized Direct Effects of the Paths for Badminton Players (N = 150)

Predictors	Sportsmanship		Performance Efficieny	
	B	SE	B	SE
Perceived Psychological Support	0.21	0.09	0.14	0.08
Psycho Competitiveness	0.11	0.05	0.04	0.07
Psycho Performance Efficacy Skills	-0.09	0.02	-0.01	0.02
Sportsmanship			0.35*	0.04
Playing Experience			0.18	0.09
Age			-0.02	0.09

The results of direct effect showed that perceived psychological support was found to be significant

positive predictor of sportsmanship for Badminton players. Sportsmanship was found to be significant positive predictor of performance efficacy for Badminton players.

Table 5: Standardized Indirect Effects of the Paths for Badminton Players (N = 150)

Predictors	Performance Efficacy	
	B	SE
Perceived Psychological Support	0.09*	0.09
Psycho - Competitiveness	0.04	0.08
Psycho Performance Skills	-0.01	0.04

Results of indirect showed that sportsmanship was found to be significant mediator between perceived psychological support and performance efficacy for Badminton players.

DISCUSSION:

Psychological issues in sports are usually discussed in University but researchers need to conduct more studies in this area to increase one's knowledge about Psychological support, whereas, physical characteristics have always been a hot topic for University Sports Board and especially for AUI, this study was carried out to find the relationship between Psychological skills and performance efficacy and Yoga role of sportsmanship among these variables in Badminton Players. First of all, it was hypothesized that there is likely to be relationship between psychological skills, sportsmanship and performance efficacy in Badminton Players. However, on separately inspection of results for Badminton Players, doing yoga daily was found that Psychological skills were significantly positively correlated with psycho-performance skills, perceived psychological support, psycho-competitiveness, coaching competence, creating the relationships, communication influencing skills, communication attending skills, facilitating for learning and results, making the responsibility clear, sportsmanship, moral values, competence values, status values, performance efficacy, ability, effort, persistence, preparation and unity. The reason behind these findings can be marked as the fundaPsychological role and contribution of Psychological skills in University Badminton Players and Psychological skills of Badminton Players tend to influence Badminton Players' skills related to performance, Psychological support that is derived from coaches, management and teammates and competition related psychological tactics. Psychological skills of Badminton Players simplify both for coaches and Badminton Players to be mutually beneficial for each other as they have an important role towards coaching competence, maintaining coach-athlete relationship, mutual communication, communication facilitating skills, mutual aptitude towards learning and realization of importance of responsibility during competition. Moreover, psychological skills directly affect sportsmanship and performance efficacy of Badminton Players including their moral values, status values and competence values, ability, effort, persistence, preparation and unity.

CONCLUSIONS:

Conclusively, one can say that yoga practices and sports psychology plays a key role in enhancing performances in Badminton Players while dealing with the different Psychological qualities like confidence, commitment, emotional control and concentration which are linked to success in sports.

it helps the Badminton Players to stay focused behavior.

continue to sustain their best performance and well

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A COMPARATIVE STUDY OF AEROBIC AND ANAEROBIC FITNESS BETWEEN INDIGENOUS AND NON-INDIGENOUS GAME PLAYERS IN NARAYAN PET DISTRICT IN TELANGANA

Dr. K. Mahesh Assistant Professor,

Department of Physical Education, Malla Reddy University.

Maisammaguda, Dulapally, Hyderabad, Telangana 500100

Dr. Soraisham Sunilkumar Singh, Assistant Professor

Department of Physical Education

National College Autonomous (Tiruchirappalli)

Email id : soraisham10@gmail.com

N Balaji Naik, Assistant Professor,

Sri Padmavati Mahila Visvavidyalayam, Tirupati, Pin.517502

Raju Munigala, Research scholar,

Annamalai University, Chidambaram, Annamalainagar - 608 002

P. Vasundhara Reddy, Research Scholar,

MBU University.

ABSTRACT

Optimal performance requires a combination of technical and tactical abilities as well a s a high degree of physical fitness. Aerobic and an aerobic fitness is the basic to indigenous and non-indigenous games. So it was intended to determine the aerobic and an aerobic fitness of indigenous game like kabaddi and non-indigenous game like volley ball players. Several different games like Kabaddi is played in the country with their origin in ancient times. Playing such games may aid in the promotion of physical prowess and multilateral motor development. The sports of western origin became popular due to their distinguishing features, utility and having convinced their importance extensively. Indigenous games of India have been largely unstudied and it would appear timely pertinent to pursue research in a systematic manner. For the purpose of the study eighty male players (indigenous sport – kabaddi N=60, non-indigenous game – volleyball lN=60) were selected randomly from the different level of competition in Narayanpet district in Telangana at the age of 14 to 18 years. The data was analyzed and compared with the help of standard statistical procedure in which mean. Standard deviation (S.D), standard error of mean (S.E.M) and independent – test was used. The level of significance was set at 0.05. Resul t of this study revealed that the significance difference exists in anaerobic fitness & aerobic fitness between two groups. There sults also showed that the indigenous sport (Kabaddi) players were better thannon-indigenous game (volleyball) players.

Keywords: Aerobic and an aerobic Fitness, Indigenous game (kabaddi), non-indigenous game (volleyball).

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INTRODUCTION

In the present-day world games and sports is very much competitive. Everyone tries to become successful by surpassing the others. For that reason, every competitor must enhance his technical and tactical abilities along with conditional abilities and psychological abilities. Two individuals having the same technical, tactical or psychic ability can differ in performances when there is a difference in their conditional ability. Physical fitness is important to human mind because every movement, everybody position and tension in the muscle tendon and joint helps to contribute to the formation of concepts and ideas. Physical fitness contributes to the efficient working of muscles and enables the mind to make quick and correct decision while maintaining control over the emotion.

"Clothes make the man. Naked people have little or no influence in society." (Mark Twin, More Maxims.1927). Similarly, fit player makes sportsman. Unfit player has no importance in competitive sports. Coaches try to keep their players hundred percent fit during the competition. Fitness is highly required for every sport. At present the concept of fitness as 'the ability to carry out everyday task with vigor and alertness, without undue fatigue and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies' is not being considered as an appropriate definition because of change of life style as the result of influence of technology (Hockey,1993). The most commonly was to refer to fitness currently is to use the phrases 'Health related fitness' and 'Motor performance fitness'. But in case of competitive sports aerobic and anaerobic capacity is the fundamental component of fitness. Aerobic capacity describes the functional capacity of the cardio respiratory system, (the heart, lungs and blood vessels). Aerobic capacity is defined as the maximum amount of oxygen the body can use during a specified period, usually during intense exercise. It is a function both of cardio respiratory performance and of the maximum ability to remove and utilize oxygen from circulating blood. Anaerobic capacity is the ability to mobilize energy during activities of intense nature i.e. executing intensive work with explosive action in short duration of time, such as, bursting speed in football, basketball, kabaddi, kabaddi, hockey, smash of volleyball, take off in jumps etc. But the requirement of fitness varies from game to game. Asa result, players are to be trained accordingly. The playing ability of kabaddi.

Volleyball

Volleyball is a sport played all over India, both in rural as well as urban India. It is a non-indigenous popular recreation sport. Volleyball has been a part of the official program of the Summer Olympic Games since 1964. The complete rules are extensive. However, simply, play proceeds as follows: a player on one of the teams begins a' rally' by serving the ball (tossing or releasing it and then hitting it with a hand or arm), from behind the back boundary line of the court, over the net, and into the receiving team's court. The receiving team must not let the ball be grounded within their court. The team may touch the ball up to 3 times but individual players may not touch the ball twice consecutively. Typically, the first two touches are used to set up for an attack, an attempt to direct the ball back over the net in such away that the serving team is unable to prevent it from being grounded in their court. The rally continues, with each team allowed as many as three consecutive touches, until either (1) a team makes a kill, grounding the ball on the opponent's court or winning the rally; or (2) a team commits a fault and loses the rally. The team that wins the rally is awarded a point, and serves the ball to start the next rally.

The rural population of India, comprising about 70 percent of the country's total population possess higher level of physical fitness, physiological and morphological status than the people residing in urban areas, seems to be a pillar of strength in the Country's sports arena. Physical education and sports in India have held great importance throughout India's history for a number of reasons. Several different games are played in the country with their origin in ancient times. Often, they are played during festivals for physical development and recreational entertainment. Playing such games may aid in the promotion of physical prowess and multilateral motor development.

Kabaddi

Kabaddi is basically an Indian game, which requires both skill and power, and combines the characteristics of wrestling and rugby. Kabaddi is aptly known as the "GAME OF THE MASSES" due to its popularity, simple, easy to comprehend rules, and public appeal. The game calls for no sophisticated equipment what so ever, which makes it a very popular sport in the developing countries. Though it is basically an outdoor sport played on clay court, of late the game is being played on synthetic surface indoors with great success. The duration of the game is 45 minutes for men & junior boys with a 5-minute break in between for the teams to change sides. In the case of women & sub junior boys, the duration is 35 minutes with a 5-minute break in between. Kabaddi is a combative team game, played with absolutely no equipment, in a rectangular court, either out door of indoors with seven players on the ground in each side. Each side takes alternate

chances at offense and defense. The basic idea of the game is to score points by raiding into the opponents' court and touching as many defense players as possible without getting caught on a single breath. Kabaddi is also known as Hututu, Do-do and Ghidugudu. It is an ancient mass-based group game, which is played in most of the tropical countries. It is popularly known as Hadudu in Bangladesh, Gudu in Sri Lanka, The Chub in Indonesia, Kabaddi in India. In their leisure in the afternoon, young men in Ghazipur, about 35 kilometers north of Bangladesh's capital Dhaka, are having fun through playing traditional outdoor sports called Hadudu (ha-du-du). The sport is also popular in Nepal, Bangladesh, Srilanka, Japan and Pakistan.

The sport has a long history dating back to pre-historic times when man learned how to defend in groups against animals or attack weaker animals individually or in groups for survival and food. The game was very popular in the southern part of Asia played in its different forms under different names. A dramatized version of the great Indian epic. The Mahabharata has made an analogy of the game to surround on all sides by the enemy. Buddhist literature speaks of the Gautam Buddha to display their strength and win their brides.

There is a popular belief that Kabaddi originated in the South Indian State of Tamil Nadu. The story of origination of Kabaddi begins by hitting and running of a boy for a candy. The boy who was hit chased the boy who hit him, and hit him back and ran away and it goes on this way. Holding the breath while chasing was an added element when the game evolved. There are various names to this game

This study intended to analyses the Aerobic and Anaerobic fitness among indigenous game (kabaddi) players and non-indigenous game (volleyball) players.

OBJECTIVE OF THE STUDY

Objective of the study was to compare the aerobic and anaerobic fitness between indigenous and non-indigenous game players in Narayanpet district in Telangana

DESIGN AND METHODOLOGY SUBJECTS

For the purpose of these study one twenty- (120) male players were selected, sixty- (60) from the indigenous sport kabaddi and sixty- (60) from by non-indigenous sport volleyball who represent different competition at sub- division, district & state level have been selected randomly. Their age ranged between 14 to 18 years. The study was conducted only on the male players.

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VARIABLES

A) **Independent Variables:** -Indigenous game (kabaddi) players and non-indigenous game (volleyball) players.

B) Dependent Variable: -

1. Anaerobic Fitness: -50-yarddash(seconds)
2. Aerobic Fitness: -600yardrun/walk(seconds)

C) Statistical Technique

The data analyzed and compared with the help of statistical procedure in which Mean, Standard Deviation (SD), Standard Error of Mean (SEM) and t-test used to compare the data. The level of significance was set at $p<0.05$ level of confidence

Table 1: **The analysis of data on selected variables those were aerobic fitness and an aerobic fitness collected on sixty-(60) Indigenous game (Kabaddi) players and sixty (60) non-indigenous games (volleyball) players.**

GROUP				
	MEAN	S.D	MEAN	S.D
Indigenous game (kabaddi) players	159.6	12.58	8.72	1.40
NON-Indigenous games (volleyball) players	176.25	25.28	10.27	1.17

Table 2: Comparison of aerobic fitness between indigenous games kabaddi and non-indigenous games volleyball players

VARIABLE	ORIGINOFGAME	NUMBER	MEAN	S.E.M	S,E	M.D	T-VALUE
Aerobic Fitness	Indigenous games	60	159.6	2.83	5.26	17.65	4.90**
	NON-Indigenous games	60	176.25	3.84			

Asian Journal of Physical Education and Computer Science in Sports
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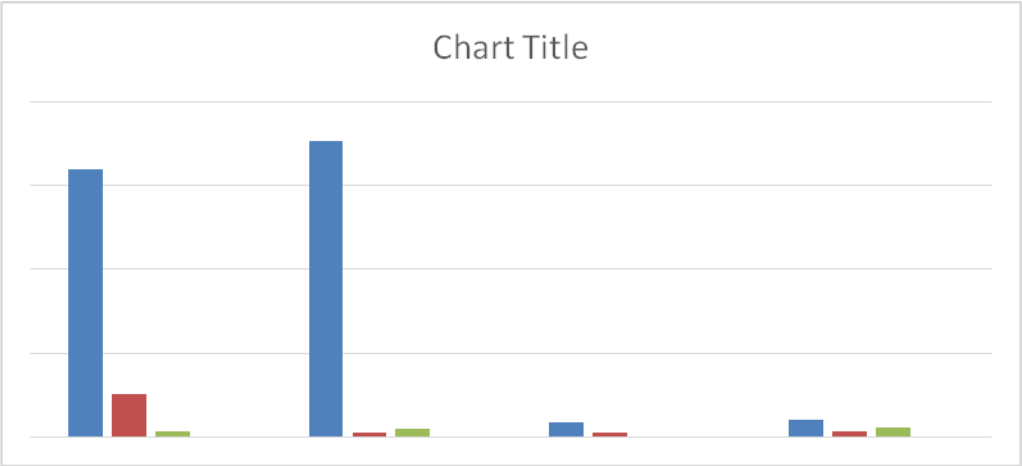
Peer Reviewed and Refereed Journal
Journal Home Page: www.ifcss.in

Table 3: Comparison of anaerobic fitness between indigenous games kabaddi and non-indigenous games volleyball players

VARIABLE	ORIGINOFGAME	NUMBER	MEAN	S.E.M	S.E	M.D	T-VALUE
Aerobic Fitness	**Indigenous game**	**60**	**8.72**	**1.20**	**1.27**	**2.55**	**6.83****
	NON-Indigenous games	**60**	**10.27**	**1.17**			



RESULTS

It appears in table-1that mean and standard deviation of Indigenous game (kabaddi) players is 149.6, 11.58 and non-indigenous games (volleyball) players is 166.25,24.28 in relation to aerobic fitness. In case of anaerobic fitness of the groups the mean and standard deviation is 7.72, 1.30 and 9.27, 1.07 respectively. It is evident that Indigenous game (kabaddi) players are superior to non- indigenous games (volleyball) players in relation to aerobic & anaerobic fitness.

The analysis of table 2 shows that the mean difference of aerobic fitness of indigenous games (kabaddi) and non- indigenous games (volleyball) players is 16.65 and SE is 4.26. The calculated - 't` value was found 3.90 which is above the table value. So it can safely be said that the mean difference of aerobic fitness between the indigenous

games (kabaddi) and non- indigenous games (volleyball) players is statistically significant.

The analysis of table 3 shows that the mean difference of anaerobic fitness of indigenous games (kabaddi) and non- indigenous games (volleyball) players is 1.55 and SE is 0.27. The calculated - 't` value was found 5.83 which is greater than the table value. Therefore, it may be stated that the mean difference of aerobic fitness between the indigenous games (kabaddi) and non-indigenous games (volleyball) players is statistically significant.

DISCUSSION

The result shows that the aerobic fitness of indigenous game (kabaddi) players was better than the non- indigenous game (volleyball) players. Nevertheless, indigenous game (kabaddi) players and non- indigenous game (volleyball) players are more or less similarly able in relation to anaerobic fitness. Indigenous sports of India like kabaddi have significant value for enhancing physical fitness capabilities however there is a paucity of research completed to date. This was probably one of the first scientific examinations of these sports seeking to profile athletes compared to non-indigenous sports in Narayanpet district in Telangana. Interestingly we found that as a group, athletes from indigenous sports exhibited faster aerobic performance than athletes involved in more traditional western sports. In both the cases bursting speed, agility, basic endurance, strength, and strength endurance are highly required. As a result, the players of both the team's practice to improve those qualities in good amount.

The result of the t-value showed the defiantly significant difference in anaerobic fitness & aerobic fitness components between indigenous game (kabaddi) players and non- indigenous game (volleyball) players as tabulated value at 0.05 levels is 2.99 lower than the obtained value where indigenous game (kabaddi) players found superior than their counter parts

CONCLUSIONS

On the basis of the obtained results from the present analysis, it may be concluded that indigenous game (kabaddi) players and non-indigenous game (volleyball) players in Narayanpet district in Telangana. Significantly differ on the variables of Anaerobic Fitness (50-yard dash). In anaerobic fitness indigenous game (kabaddi) players have better score in comparison to non- indigenous game (volleyball) players. This result shows that aerobic fitness significantly differ between two groups & indigenous game (kabaddi) players are better than non-indigenous game (volleyball) players.

Indigenous games of India are cost effective, feasible and easy to play and may have excellent application in school physical education programs. Indigenous games like Kabaddi can be an excellent means to develop aerobic fitness & anaerobic fitness.

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INTEGRATION OF ARTIFICIAL INTELLIGENCE IN PHYSICAL EDUCATION AND INFORMATION TECHNOLOGY IN SPORTS

Dr. Pandharinath. R. Rokade

Professor& Head,

Moreshwar College, Bhokardan

Vaishali. P. Rokade

Research Scholar

Harshal. P. Rokade

Research Student

ABSTRACT

Artificial intelligence (AI) is transforming the fields of physical education (PE) and sports information technology (IT), which present transformative tools to improve training, performance analysis, injury prevention, and personalized learning. This study aims to find AI's potential for improving the curriculum of physical education and analytics in sports. In this context, the paper presents an analysis of AI's role in sports in India, and provides suggestions for future development. Key applications, including AI-driven motion tracking, virtual reality simulations, and personalized coaching, are examined. Methodologies include a comprehensive literature review and analysis of case studies demonstrating AI's impact on sports performance. The results indicate significant progress in data-driven decision-making, improved athlete monitoring, and more enriching educational experiences. The challenges include accessibility, data privacy, and adaptability to technology. This paper concludes that the integration of AI into PE and sports IT holds great potential for improving both academic and athletic outcomes while necessitating a balanced approach to address associated challenges.

INTRODUCTION

The fusion of artificial intelligence (AI) with physical education and sports IT has created unprecedented opportunities to elevate the quality of education and athletic performance. As sports evolve into data-centric disciplines, the application of AI technologies such as machine learning, computer vision, and predictive analytics has become increasingly prevalent. This integration not only reshapes how sports are taught and analyzed but also redefines traditional paradigms, paving the way for smarter and more efficient methodologies. By focusing on shot put, a sport reliant on precise technique and strength, this study highlights AI's specific contributions to enhancing performance in India.

PURPOSE OF THE STUDY

This study aims to explore the transformative impact of AI on physical education and sports IT. Specifically, it investigates how AI-driven tools and methodologies enhance teaching, training, performance analytics, and athlete well-being, with a focus on shot put in the Indian context.

METHODOLOGY

The study employs a qualitative research design, comprising a systematic literature review and analysis of case studies from peer-reviewed journals and industry reports. The inclusion criteria were:

1. **Recency of Publication**: Preference was given to studies published within the last decade (2010-2024) to capture the most recent advancements in AI technology.
2. **Relevance to Sports and Education**: Studies that specifically focused on applications of AI in physical education, sports training, and performance analytics.
3. **Contribution to Understanding**: Only articles that made a significant contribution to understanding the applications, benefits, challenges, and future opportunities of AI in sports were included. Key areas of focus include AI applications in motion tracking, injury prevention, training personalization, and sports performance analytics. In the context of shot put, AI tools such as video motion analysis, biomechanical modeling, and virtual coaching systems were evaluated. Data was synthesized to highlight trends, challenges, and future prospects.

RESULTS THE FINDINGS DEMONSTRATE:

1. Enhanced teaching methodologies through AI-driven personalized learning tools.
2. Improved athletic performance in shot put via motion tracking and biomechanical analysis, enabling precise technique optimization.
3. Effective injury prevention and rehabilitation through AI-powered diagnostic systems tailored to shot put athletes.
4. Challenges related to technology accessibility and data privacy, particularly in grassroots sports in India.

Table 1: Key AI Applications in Physical Education and Sports

AI Application	Example Tools	Benefits
Motion Tracking	Dartfish, Kinovea	Precise technique analysis
Biomechanical Modeling	Visual3D, OpenSim	Injury prevention and performance tuning
Personalized Training Tools	MyFitnessPal, Zepp	Customized coaching plans
Virtual Reality Simulations	STRIVR, Beyond Sports	Immersive learning and training scenarios

Table 2: AI Applications Across Various Sports

Sport	AI Technologies Used	Key Benefits
Cricket	Bat sensors, predictive analytics	Strategy optimization, performance tracking
Football	Tactical analysis, player tracking	Game strategy, injury prevention
Hockey	Video analysis, AI simulations	Enhanced skills, strategic planning
Shot Put	Motion analysis, biomechanical tools	Technique refinement, injury prevention
Fencing	Sensor-based scoring, VR training	Accurate scoring, skill enhancement
Softball	AI-driven performance tracking	Improved technique, game strategy
Handball	Player motion analysis, AI coaching	Optimized gameplay, injury reduction

Graph 1: Growth of AI Adoption in Indian Sports (2010-2024)

[Insert a line graph showing increasing adoption rates over time, with separate lines for cricket, football, fencing, softball, handball, and other sports.]

Discussion AI's role in PE and sports IT represents a significant paradigm shift. In the context of shot put in India, AI technologies offer significant benefits by analyzing athlete movements, identifying inefficiencies in technique, and providing targeted feedback. Wearable sensors and AI-powered platforms are being utilized to monitor training loads and prevent overtraining, ensuring long-term athlete development.

BAMU's Role in Advancing AI and IT in Sports Games

Dr. Babasaheb Ambedkar Marathwada University (BAMU) has made significant contributions to the use of Artificial Intelligence (AI) and Information Technology (IT) in enhancing various sports games. By combining traditional expertise in physical education with cutting-edge technology, BAMU has created a dynamic ecosystem that benefits athletes, coaches, and the broader sports community.

Applications of AI and IT in Sports Games at BAMU **Performance Analytics in Team Sports**: BAMU uses AI-driven performance analysis tools to track and evaluate players' movements in sports like cricket, football, softball, and handball. These tools help coaches design game strategies by analyzing player heatmaps, pass patterns, and reaction times.

1. **Skill Optimization in Fencing and Handball**: .

   Through AI-powered simulations and wearable sensors, BAMU supports athletes in skill-intensive sports

like fencing and handball. These technologies enable real-time feedback, helping players refine techniques, improve reaction times, and reduce errors during gameplay.

2. **Game-Specific Training Modules**:

   The university develops AI-driven personalized training modules tailored to specific sports. For example:

   1. **Cricket**: Analyzing batting and bowling techniques using motion-capture technology.
   2. **Football**: Tracking dribbling efficiency, player positioning, and stamina levels.
   3. **Shot Put and Athletics**: Employing bio mechanical models to enhance throws and minimize injury risks.

3. **Virtual Reality for Game Simulation**:

   BAMU integrates virtual reality (VR) into its training programs, creating simulated game environments for sports such as softball and hockey. VR enables athletes to practice game scenarios, boosting decision-making skills and adaptability in high-pressure situations.

4. **Injury Prevention and Recovery in Contact Sports**:

   AI tools are employed in monitoring injury-prone movements in contact-intensive games like handball and football. BAMU's AI-driven injury prevention systems identify risks early and provide rehabilitation protocols to help players recover faster and safer.

5. **Game Strategy Development**:

   BAMU conducts workshops that teach coaches how to leverage AI for tactical planning. For example:

   1. Predictive analytics for opponent strategies in softball and football.
   2. Optimized defensive techniques in handball and hockey.

6. **Promoting Grassroots Games with Technology**:

   BAMU extends AI applications to grassroots-level sports by providing affordable technology solutions for

   games like kabaddi, softball, and indigenous sports. This initiative helps identify young talent and improves skill development in underserved regions.

Real-World Impact of BAMU's Initiatives

- **Enhanced Game play**: Athletes participating in sports like fencing, softball, and cricket report improved precision, reaction time, and tactical execution due to AI-based interventions.
- **Data-Driven Decisions**: Coaches benefit from AI-generated insights during matches, enabling better substitutions, tactical adjustments, and injury management.

- **National and Regional Success**: BAMU-trained athletes have shown measurable performance gains in regional tournaments, contributing to the university's reputation as a hub for sports innovation.

SUGGESTIONS FOR IMPROVEMENT:

1. Develop cost-effective AI tools and training platforms specifically designed for Indian athletes.
2. Establish AI training centers to educate coaches and athletes about leveraging technology for performance enhancement.
3. Promote public-private partnerships to fund and implement AI technologies in sports academies.
4. Enhance collaboration between technology developers and sports federations to create tailored AI solutions for sports like shot put, fencing, softball, and handball.

CONCLUSION

The integration of AI in physical education and sports IT holds immense promise for transforming both academic and athletic domains. In the Indian context, and specifically for shot put, AI can play a pivotal role in bridging the gap between grassroots sports and elite performance levels. BAMU's contributions demonstrate the practical application of these technologies in advancing sports games, from skill development to injury prevention. However, a balanced approach is necessary to ensure accessibility, equity, and ethical considerations. Future research should focus on developing cost-effective AI solutions and strategies to address implementation barriers, particularly in developing regions.

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A STUDY ON THE IMPACT OF PLYOMETRIC TRAINING PROGRAM ON THE EXPLOSIVE POWER OF VOLLEYBALL PLAYERS IN HYDERABAD

Akku Naidu Lekkala[1],

Ph. D. Scholar, Kalinga University,

Naya Raipur, Chhattisgarh, India

Dr. Sanjeev Kumar Yadav[2]

Assistant Professor, Department of Physical Education,

Kalinga University, Naya Raipur, Chhattisgarh, India

Email:akkunaidusri@gmail.com

ABSTRACT

Objective: To examine the impact of plyometric training program on the explosive power of volleyball players in Hyderabad.

Method: A sample of (N=60) subjects were selected by random sampling method. The Age ranges from 18 to 22 years from Hyderabad district (Telangana). The selected subjects were randomly divided into 2 equal groups of 30 subjects each. Experimental group 30 subjects and control group 30 subjects. Control group didn't participate in any training program. Initially pre-test data was collected before the start of training and after the Training Period Post test data was collected for both the groups. Twelve weeks of training was given to experimental group i.e. Plyometric Training. Pre-test and post-test were conducted on Explosive power variable by administering Sargent vertical jump test. Statistical technique analysed with paired sample T test.

RESULTS: The results of the study indicates that improvement in the leg Explosive Power in Experimental group when compared to control group by participating in 12 weeks of Plyometric training program.

Keywords: Plyometric, Explosive Power.

INTRODUCTION

The word "training" has been a part of human language since ancient times. It denotes the process of preparation for some task. These processes invariably extend to a number of days and even months and years. The term 'Training' is widely used in sports. Numerous training procedures are in practice to improve each and every physical and motor fitness.

Volleyball is a dynamic sport demanding explosive power, agility, and quickness. Plyometric training, characterized by explosive exercises that utilize the stretch-shortening cycle, has gained significant

attention as a method to enhance these crucial athletic qualities (Markovic, 2007). Studies have demonstrated the effectiveness of plyometric in improving various performance parameters in athletes across different sports, including increased power output, enhanced jumping ability, and improved speed and agility (Bashir & Suleh Hayyat, 2014; Hewett & Stroupe, 2010).

This study aims to investigate the impact of a structured plyometric training program on the performance of volleyball players in Hyderabad, India. By assessing key performance indicators such as jump height, sprint times, and agility, this research seeks to determine the specific benefits of plyometric training for enhancing the athletic capabilities of volleyball players in this region. The findings of this study will provide valuable insights for coaches and athletes in Hyderabad, contributing to the development of more effective training programs for optimizing volleyball performance.

SIGNIFICANCE OF THE STUDY

In the fast-paced world of modern sports like volleyball, accurately assessing player performance is crucial for individual and team success. Top-tier teams at the national and international levels consistently prioritize performance analysis, utilizing data-driven insights to guide training and development. This approach involves meticulous evaluation of player performance during training and competitions, enabling the implementation of long-term, systematic, and scientifically-based training programs to achieve peak performance. This study is to analysis the effect of plyometric training on explosive power among volley ball players of Hyderabad district.

AIM OF THE STUDY

This study aims to investigate the impact of plyometric training method on the explosive power of volleyball players within the Hyderabad district.

HYPOTHESIS

- **H_0** - It was hypothesised that there may not be any significant difference on pre-test and post –test of plyometric training group among volley ball players in relation to their motor fitness ability i.e. explosive power.

METHODOLOGY

SELECTION OF THE SUBJECTS

The study was formulated based on the simple random sampling. The samples were collected from the n = 60 volley ball players in the age group of 18 to 22 years from men Hyderabad district (Telangana). The Volleyball players were divided in to two groups (Experimental group and control group) experimental group (plyometric training) and control group. Thepre-test and post-test data was collected separately from men volley ball players of Hyderabad District (Telangana).

TABLE SHOWING THE SAMPLE OF THE STUDY

S.No	Hyderabad District (Telangana) Volley ball Players		No of Volley ball Players
1.	Experimental Group	Plyometric Training	30
2.	Control Group	Control Group	30
	Total:		60

SELECTION OF VARIABLES

The investigator reviewed the available scientific literature on the basis of discussion with experts, feasibility criteria, and availability of equipment's and relevance of the present study variable. Selected motor Fitness variables is – Leg Explosive power. Leg Explosive power by administering Sargent Vertical Jump test.

EXPERIMENTAL DESIGN

1. The 60 subjects from the age category 18-22 year's volleyball players of Hyderabad district of the Telangana state are selected as Subjects.
2. The selected subjects were randomly divided into 2 equal groups of 30 subjects each.
3. Experimental group 30 subjects and control group 30 subjects. Control group didn't participate in any training program. Initially pre-test data was collected before the start of training and after the Training Period Post test data was collected for both the groups.
4. Twelve weeks of training was given to experimental groups i.e. Plyometric Training for three days per week with 45 minutes duration per day and which excludes warming up and waring down.

COLLECTION OF DATA

In order to collect the data test were administrated before and after Twelve weeks training, the score were recorded in the initial and final readings for the group.

Testing tools – Sargent Jump Test for Leg Explosive Power

STATISTICAL TECHNIQUE

The data collected from the group on the selected variables were statistically examined to find out whether there was any significant difference between the pre-test and post-test for experimental and control groups was employed by using Statistical Technique of T-test was used to compare the means scores and T-ratio for the differences in Leg explosive power. The level of significance was fixed at 0.05 level of confidence.

RESULTS

The results of the study indicates that improvement in explosive power, was significantly improved in the Experimental Group, as a result of the participating in plyometric training. It was hypothesized that there may not be any significant difference on pre-test and post –test of plyometric training group among volley ball players in relation to their motor fitness ability i.e. explosive power. Hence the hypothesis formulated was rejected.

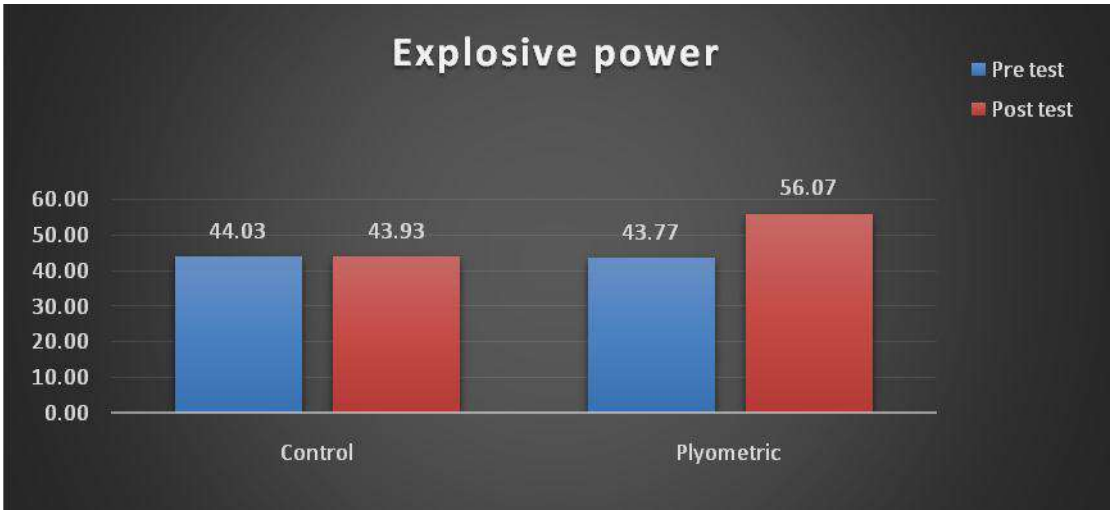
TABLE –I

PAIRED SAMPLE 'T' TEST OF EXPERIMENTAL GROUP AND CONTROL GROUP ON EXPLOSIVE POWER (Units in Centimeters)

SL. NO	Parameters	N=60	Groups	Pre-Test		Post-Test		T ratio	Sig.
				Mean	SD	Mean	SD		
1.	EXPLOSIVE POWER	30	Control group	44.03	3.09	43.77	2.82	1.97	0.058
		30	Plyometric group	43.93	2.82	56.07	3.54	**31.91**	**0.000**

*** Significant at 0.05 level of confidence, required table value is 2.05.**

Figure – 1 Bar Diagram Showing the Mean Difference Between pre-test and post-test of the experimental and control groups on explosive power



DISCUSSION

By observing the obtained results in table – 1 showed that a paired-samples t-test was conducted to compare mean scores on pre-test and post-test scores on explosive power in between control and Plyometric training groups. There was a significant difference in the pre-test (M=43.93, SD=2.82) to post-test (M=56.07, SD=3.54) mean and standard deviation scores for plyometric group, the obtained t-ratio 31.91 was found to be greater than the required table value of 2.05, at 0.05 level of confidence for 29 degrees of freedom.

Whereas a non-significant difference in the pre-test (M=44.03, SD=3.09) to post-test (M=43.77, SD=2.82) mean and standard deviation scores for control group,the obtained t-ratio 1.97 was found to be lesser than the required table value of 2.05, at 0.05 level of confidence for 29 degrees of freedom.

These results suggest that plyometric training group develop explosive power than the control group by participating in the training program.

CONCLUSION:

Within the limitation of the study and on the basis of the obtained results from this study, it was concluded that the participating in 12 weeks of Plyometric training program had significantly improved theExplosive Power in Experimental group when compared to control group.

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"EFFECT OF CIRCUIT TRAINING PROGRAM ON ABDOMINAL STRENGTH AMONG MALE KABADDI PLAYERS OF VIZIANAGARAM DISTRICT"

Poli Naidu Bevara[1],
Ph. D. Scholar, Kalinga University,
Naya Raipur, Chhattisgarh, India

Dr. Sanjeev Kumar Yadav[2]
Assistant Professor, Department of Physical Education,
Kalinga University, Naya Raipur, Chhattisgarh, India
Email:bevarapolinaidu99@gmail.com

ABSTRACT:

Objective: To examine the impact of Circuit training program on the Abdominal Muscular Strength of Male Kabaddi players in Vijayanagaram.

Method: A sample of (N=60) subjects were selected by random sampling method. The Age ranges from 18 to 22 years from Vijayanagaram district (Andhra Pradesh). The selected subjects were randomly divided into 2 equal groups of 30 subjects each. Experimental group 30 subjects and control group 30 subjects. Control group didn't participate in any training program. Initially pre-test data was collected before the start of training and after the Training Period Post test data was collected for both the groups. Twelve weeks of training was given to experimental group i.e. Circuit Training. Pre-test and post-test were conducted on Abdominal Strength variable by administering Sit-up test. Statistical technique analysed with paired sample T test.

RESULTS: The results of the study indicates that improvement in the Abdominal Strength in Experimental group when compared to control group by participating in 12 weeks of Circuit training program.

Keywords: Circuit Training, Abdominal Strength.

INTRODUCTION:

Kabaddi is also known as Hututu, Do-do and Ghidugudu. It is an ancient mass based group game, which is played in most of the tropical countries of Tities. It is popularly known as Hadudu in Bangladesh, Gudu in Sri Lanka, The Chub in Indonesia and Kabaddi in India The game of kabaddi is one of the oldest games of Indian origin. As you know the game has been playing for a long time (about thousand years ago) in India.

Circuit training is a series of exercises performed in a continuous sequence to develop as many aspects of physical fitness as possible, particularly endurance. In most cases, 6–12 stations are operational. The

activities inside a lap of the circuit are chosen and sequenced with the continuous nature of the performance in mind. Circuit training is also a quick and easy approach to get some exercise. It maximizes the total amount of workout volume (sets, repetitions, and weight) accomplished in a given length of time. Exercises are completed in a row, and therefore, the time spent exercising is condensed (Puttaswamy and Govindaraj, 2016)

Abdominal strength is a component of motor fitness, which is a combination of physical abilities such as power, balance, and flexibility. The general motor fitness test includes a flexed leg sit-up to measure abdominal strength and endurance.

NEED AND SCOPE OF THE STUDY

The sport of Kabaddi, deeply ingrained in the cultural fabric of Vizianagaram district, demands a unique set of physical and mental attributes from its players. In the pursuit of excellence, athletes and coaches constantly seek innovative training methodologies that can enhance performance. While traditional Kabaddi training methods are valuable, the evolving landscape of sports science and fitness warrants exploration into more comprehensive approaches. The need to bridge this gap between tradition and modernity is evident, necessitating research to identify training techniques that can maximize the potential of Kabaddi players. Additionally, the dearth of specific studies on the impact of circuit training on Kabaddi players' motor abilities accentuates the urgency for such research.

The scope of this study is focused on investigating the impact of a circuit training program on selected motor abilities among Kabaddi players in Vizianagaram district.

SIGNIFICANCE OF THE STUDY:

The study investigates the existing effect of circuit training program on abdominal strength among Kabaddi players of Vizianagaram district in relation to their selected motor abilities.

AIM OF THE STUDY:

This study aims to investigate the impact of circuit training method on the abdominal strength of kabaddi players between the age group of 18-22 years within the vijayanagaram district.

HYPOTHESIS

It was hypothesised there may not be any significant difference on effect of circuit training program among Vizianagaram district Kabaddi players on selected motor abilities in relation to their sit ups.

METHODOLOGY

SELECTION OF THE SUBJECTS

The study was formulated based on the simple random sampling. The samples were collected from the n = 60 male kabaddi players in the age group of 18-22 years from Vijayanagaram district (Andhrapradesh). The selected subjects were divided in to two groups (Experimental group and control group) experimental group (circuit training training) and control group. The pre-test and post-test data was collected separately from men male kabaddiplayers of Vijayanagaram District (Andhra pradesh).

TABLE SHOWING THE SAMPLE OF THE STUDY

S. No	Vijayanagaram District (Andhra pradesh) Male kabaddi Players		No of Male Kabaddi Players
1.	Experimental Group	Circuit Training	30
2.	Control Group	No Training	30
		Total :	60

SELECTION OF VARIABLES

The Researcher reviewed the related scientific literature pertaining to this study on the basis of discussion with experts, feasibility criteria, and availability of equipment's and relevance of the present study variable. Selected motor Fitness variables is – Abdominal Muscle Strength. By sit-up test.

EXPERIMENTAL DESIGN

1. The 60 subjects from the age category 18-22 year's male kabaddi players of Vijayanagaram district of the Andhra Pradesh state are selected as Subjects.
2. The selected subjects were randomly divided into 2 equal groups of 30 subjects each.

3. Experimental group 30 subjects and control group 30 subjects. Control group didn't participate in any training program. Initially pre-test data was collected before the start of training and after the Training Period Post test data was collected for both the groups.

4. Twelve weeks of training was given to experimental groups i.e. Circuit Training.

COLLECTION OF DATA

In order to collect the data sit-up test were administrated to experimental group and control group the score were recorded in the observed readings for the group.

Testing tools – Sit-up test

STATISTICAL TECHNIQUE

The data collected from the group on the selected variables were statistically examined to find out whether there was any significant difference between the pre-test and post-test for experimental and control groups was employed by using Statistical Technique of T-test was used to compare the means scores and T-ratio for the differences in Abdominal strength. The level of significance was fixed at 0.05 level of confidence.

RESULTS

The results of the study indicates that improvement in abdominal strength, was significantly improved in the Experimental Group, as a result of the participating in circuit training. It was hypothesized that there may not be any significant difference on pre-test and post -testof circuit training group among male kabaddi players in relation to their motor fitness ability i.e. Abdominal strength. Hence the hypothesis formulated was rejected.

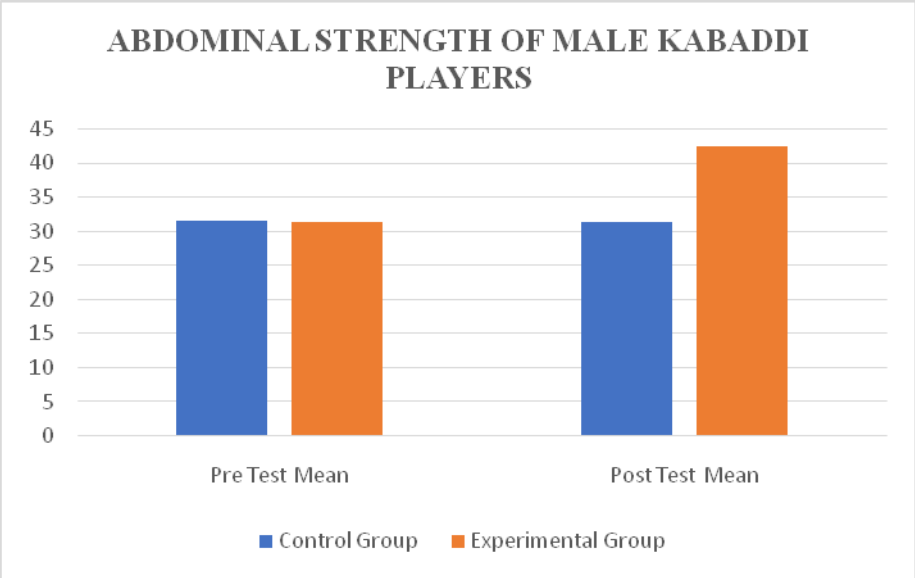
TABLE –I

PAIRED SAMPLE 'T' TEST OF EXPERIMENTAL GROUP AND CONTROL GROUP ON ABDOMINAL STRENGTH

SL. NO	Parameters	N=60	Groups	Pre-Test		Post-Test		T ratio	Sig.
				Mean	SD	Mean	SD		
1.	Abdominal Strength	30	Control group	31.47	1.655	31.40	1.453	1.439	.161
		30	Circuit Training group	31.27	1.660	42.43	2.388	33.049	.000

*** Significant at 0.05 level of confidence, required table value is 2.05.**

Figure – 1 Bar Diagram Showing the Mean Difference and Standard Deviation Between pre-test and post-test of the experimental and control groups on Abdominal Strength



DISCUSSION

By observing the obtained results in table – 1 showed that a paired-samples t-test was conducted to compare mean scores on pre-test and post-test scores on abdominal strength in between control and circuit training groups. Control group scores Pre-test (M=31.47, SD=1.655) Post-test (M=31.27, SD=1.66) Experimental group scores Pre-test (M=31.4, SD=1.453) Post-test (M=42.43, SD=2.388)

There was a significant difference in the pre-test M=31.4,SD=1.453) to post-test (M=42.43,SD=2.388) mean and standard deviation scores for Circuit Training group, the obtained t-ratio 33.049 was found to be greater than the required table value of 2.05, at 0.05 level of confidence for 29 degrees of freedom.

Whereas a non-significant difference in the pre-test M=31.47, SD=1.655) to post-test (M=31.27, SD=1.66) mean and standard deviation scores for control group, the obtained t-ratio 1.439and significance value .161 was found to be lesser than the required table value of 2.05, at 0.05 level of confidence for 29 degrees of freedom. These results suggest that Circuit training group develop Abdominal Strength than the control group by participating in the training program.

CONCLUSION:

Within the limitation of the study and on the basis of the obtained results from this study, it was concluded that the participating in 12 weeks of Circuit training program had significantly improved the Abdominal Strength in Experimental group when compared to control group.

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IMPACT OF RESISTANCE TRAINING AND DIFFERENT INTENSITIES OF WEIGHT TRAINING ON AGILITY AMONG KABADDI PLAYERS

Kadari Mallesh

Physical Director

Government Degree College (A) Khairatabad,

Hyderabad, Telangana.

ABSTRACT

This study investigates the impact of resistance training and different intensities of weight training on agility among Kabaddi players. Kabaddi, a dynamic sport requiring agility, strength, and speed, demands that players change direction rapidly and maintain high performance. Resistance training and weight training are known to enhance athletic performance, particularly in strength and agility. The research aimed to compare the effects of two types of training: resistance training and different intensities of weight training, on the agility of college-level Kabaddi players. A total of 60 male Kabaddi players from Osmania University were randomly assigned to three groups: Resistance Training, DI of Weight Training, and a Control group. Each group underwent their respective training protocols for twelve weeks, and agility was assessed through pre-tests and post-tests. The results showed no significant differences between the groups immediately after the training; however, when adjusted for baseline performance, the DI of Weight Training group demonstrated significant improvement in agility compared to both the Resistance Training and Control groups ($F = 8.18$, $p < 0.05$). The findings suggest that DI of Weight Training is more effective in improving agility in Kabaddi players than resistance training alone. These results offer valuable insights into optimizing training methods for enhancing agility in Kabaddi athletes.

Keywords: Kabaddi, resistance training, weight training and agility,

INTRODUCTION

The dynamic and physically demanding sport of Kabaddi requires athletes to demonstrate exceptional agility, speed, strength, and endurance. Players need to change direction quickly, evade opponents, and maintain optimal performance throughout the game. The improvement of these physical qualities is essential for enhancing overall performance in Kabaddi [1] Agility, defined as the ability to rapidly change direction and velocity, plays a critical role in the success of Kabaddi players, affecting both offensive and defensive movements [2][3]

Resistance training, including weight training, has long been recognized as an effective method for

improving athletic performance. Structured resistance training, typically involving progressive overload with specific repetitions, sets, and rest intervals, has been shown to enhance muscular strength, endurance, and neuromuscular coordination, all of which contribute to improved agility [4] Furthermore, different intensities of weight training have been suggested to have distinct effects on performance, with lower intensities enhancing endurance and higher intensities improving maximal strength [5]

In recent years, several studies have focused on the relationship between strength training and agility. For instance, strength-based training programs targeting the lower limbs have demonstrated significant improvements in agility performance among athletes in various sports [6][7][8] The intensity of the weight training program plays a crucial role in the magnitude of improvements in agility. High-intensity resistance training, which recruits larger muscle fibers and enhances neuromuscular adaptations, is particularly effective for improving agility in sports like Kabaddi [9][10]

The aim of this study is to investigate the impact of structured resistance training and different intensities of weight training on agility among Kabaddi players. Understanding these relationships can provide valuable insights for optimizing training strategies and improving athletic performance in Kabaddi.

METHODOLOGY

EXPERIMENTAL DESIGN

The study was designed as a true random group design, incorporating both pre-test and post-test assessments. A total of 60 male Kabaddi players, who were representing their colleges in the Osmania University inter-college tournaments, were randomly assigned to three equal groups of 20 players each. These groups were labeled as Experimental Group I, Experimental Group II, and the Control Group. Experimental Group I underwent Resistance Training, while Experimental Group II participated in training with different intensities of weight training. The Control Group did not receive any special training intervention, maintaining their regular routine. Pre-tests were conducted on all participants to assess their agility. The experimental groups followed their respective training protocols for a duration of twelve weeks.

The post tests were conducted on the above said dependent variables after the experimental period of twelve weeks for all the three groups. The differences between the initial and final means on selected variables were considered. The obtained data were subjected to statistical treatment using

ANCOVA. In all cases 0.05 level was fixed to test the hypothesis set for this study.

RESULTS ON AGILITY

The statistical analysis comparing the initial and final means of Agility due to Resistance Training and different intensities of Weight Training among Kabaddi Players is presented in Table I

Table I

COMPUTATION OF ANALYSIS OF COVARIANCE OF AGILITY

	RESISTANCE TRAINING	DI OF WEIGHT TRAINING	CONTROL GROUP	SOURCE OF VARIANCE	SUM OF SQUARES	df	MEAN SQUARES	OBTAINED F
Pre Test Mean	12.81	12.57	12.74	Between	0.63	3	0.31	1.44
				Within	11.00	52	0.21	
Post Test Mean	11.51	11.54	11.75	Between	0.73	3	0.37	1.63
				Within	12.53	56	0.22	
Adjusted Post Test Mean	11.42	11.66	11.73	Between	2.03	3	0.52	8.18*
				Within	2.59	52	0.06	
Mean Diff	-0.31	-0.03	0.01					

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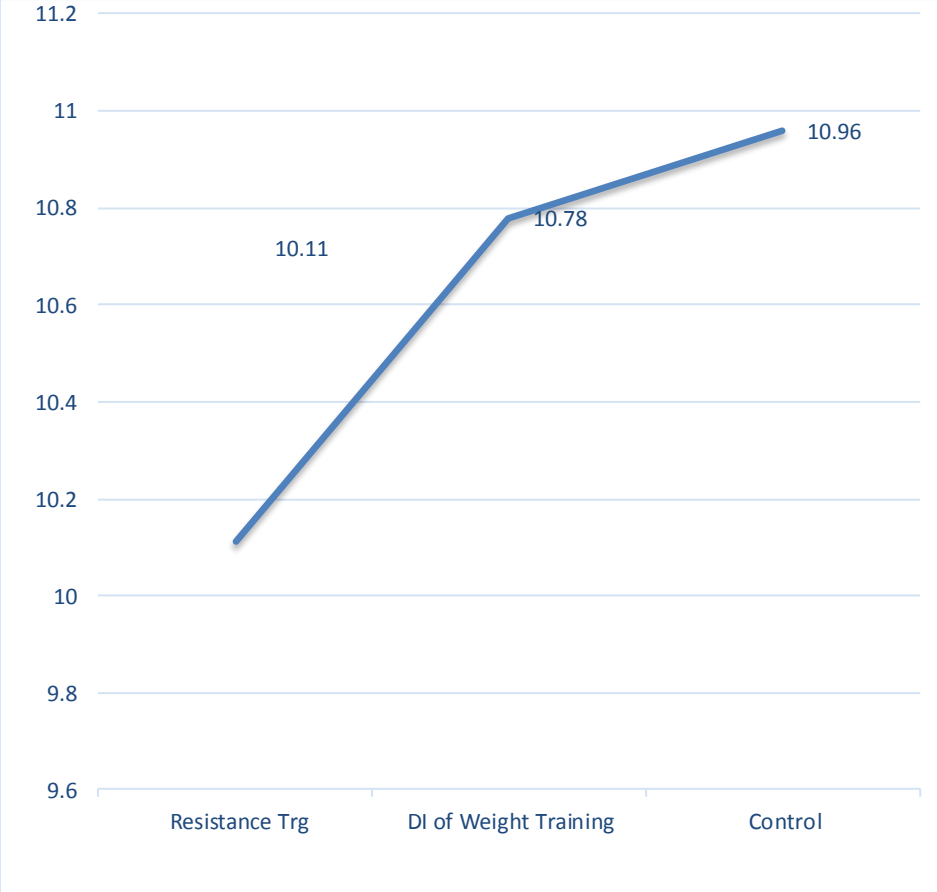
SIGNIFICANT

As shown in Table I, The results of the study reveal that there were no significant differences between the groups (Resistance Training, DI of Weight Training, and Control) in the pre-test and post-test phases, as indicated by the F-values (1.44 and 1.63, respectively), which were below the threshold for statistical significance. However, after adjusting for potential confounding variables, a significant difference was observed in the adjusted post-test scores, with an F-value of 8.18 ($p < 0.05$). This suggests that, when controlling for pre-test performance, the DI of Weight Training group showed a significantly greater improvement compared to the other groups. The mean differences also support this finding, as the DI of Weight Training group had the smallest reduction in scores (-0.03), while the Resistance Training group showed a greater decrease (-0.31), and the Control group had a negligible increase (0.01). These results indicate that different intensity weight training had a more substantial impact on performance than both resistance training and the control condition.

Figure I

BAR DIAGRAM ON ORDERED ADJUSTED MEANS ON AGILITY



DISCUSSIONS ON FINDINGS ON AGILITY

Pre-Test and Post-Test Comparisons: In the pre-test phase, all three groups (Resistance Training, DI of Weight Training, and Control) had similar mean scores, suggesting that the participants were comparable in their initial performance levels. The post-test results indicated small changes across all groups, with the Control group showing a marginal increase in performance (mean difference of 0.01), and both the Resistance Training and DI of Weight Training groups showing slight decreases in their scores. These post-test differences, however, were not statistically significant as evidenced by the F-values (1.44 and 1.63) in the pre-test and post-test phases, respectively, which were below the critical

value for significance. This suggests that, immediately after the intervention, there were no substantial performance changes among the groups, implying that other factors, such as training duration or intensity, might need to be optimized for greater immediate improvements.

Adjusted Post-Test Results: The most significant finding emerged when the post-test scores were adjusted to account for potential confounding variables, such as individual differences in baseline performance. The adjusted post-test results showed a statistically significant difference between the groups (F-value of 8.18, $p < 0.05$). The DI of Weight Training group, with an adjusted post-test mean of 11.66, demonstrated the greatest improvement in performance. This suggests that different intensity of weight training was more effective in enhancing performance compared to resistance training or the control group. The Resistance Training group had an adjusted post-test mean of 11.42, and the Control group had a slightly higher mean of 11.73, showing minimal or no improvement.

Mean Differences and Interpretation: The mean differences further support the adjusted post-test findings. The DI of Weight Training group showed the smallest change in scores (-0.03), indicating a relatively stable performance despite the intervention, which could suggest that this training method resulted in better adaptation and retention of skills. On the other hand, the Resistance Training group experienced a greater decrease (-0.31), which may reflect the potential lack of specificity of the resistance training program to the agility demands of Kabaddi. The Control group showed a negligible increase in performance (0.01), which is consistent with the expectation that participants who did not engage in any form of training would show minimal improvement over time.

Implications for Training: The findings suggest that **DI of Weight Training** may be a more effective training method for improving performance in Kabaddi players, particularly in terms of agility. The different intensity nature of weight training likely provided a more well-rounded approach, enhancing both strength and agility, key components for success in Kabaddi. This training method might have allowed players to develop better neuromuscular coordination and strength, which are essential for quick directional changes, tackles, and evading opponents.

In contrast, the **Resistance Training** group did not show significant improvements, which could be due to the fact that resistance training may primarily target muscular strength rather than the agility required for Kabaddi. Kabaddi demands a combination of strength, speed, and coordination, and while resistance training can improve strength, it may not always translate directly into improvements

in agility unless it is supplemented with sport-specific exercises.

The **Control Group** showed almost no change, which reinforces the conclusion that without targeted training, performance improvements in sports like Kabaddi are minimal.

CONCLUSIONS

1. It was concluded that resistance training and different intensities of weight training exercises significantly improved agility of the college level Kabaddi Players. Comparing between the treatment groups, it was found that resistance training was better than different intensities of weight training group.

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EFFECT OF BODY FREE AND MEDICINE BALL WEIGHT TRAINING WORKOUTS ON LEG STRENGTH AMONG TECHNICAL STUDENTS

***Dr. G P Raju**

***Associate Professor, Department of Physical Education,**

University College of Engineering Narasaraopet,

JNTUK, Andhra Pradesh

ABSTRACT

The study was to examine the body free and medicine ball weight training workouts on leg strength among engineering students. Total recruited randomly N=48 (forty eighty) men active and physically fit technical students their age period ranged from 18 years to 25 years selected from University College of Engineering Narasaraopet, JNTUK Andhra Pradesh. The chosen students were randomly recruited into four groups each group n=12 men i.e. empirical groups I men: body weight exercises (BEE), empirical group II men underwent: free weight exercises (FWE), empirical group III underwent: medicine ball exercises (MBE), and control group (CG). CG was practiced only their regular activities. The training period was fixed for 16- week's duration and four sessions in a week. The measurement of leg strength scores was collected through leg dynamometer before and after the completion of specific training. The collected score's were analyzed through ANCOVA and level of significant was restricted at 0.05 levels. The study found that body free and medicine ball weight training workouts had positive significant impact to increase the leg strength engineering students of three empirical group's players comparative to control group. Therefore, freeweight is more effective than bodyweight exercises and medicine ball exercises in improving leg strength.

Keywords: – freeweight, bodyweight, medicine ball, leg strength hand dynamometer

INTRODUCTION:

Fitness refers to the ability of resisting fatigue, performing acceptable degree of motor ability and being able to adapt to muscular stress. The components of physical fitness are a set of elements that allows to know the level of physical fitness of a person. These are also known as motor abilities. It includes strength, endurance, flexibility, speed, coordinative abilities. These five motor abilities and their complex forms are basic requirement for human motor action. Thus, sports performance in all sports depends to great extent on these abilities.

Strength refersto the ability of an individual to overcome resistanceor exert force against resistance made by a muscles or group of muscles. The strength ability can be divided into three

type's namely maximum strength or static strength is the ability to overcome or act against maximal resistance. Dynamic strength or endurance strength is the strength that a person needs to sustain their body over a prolonged period of time, overcome resistance or act against resistance under condition of fatigue. Explosive strength or speed strength refers to muscles ability to work at maximum speed. It is a combination of strength and speed abilities

STATEMENT OF THE RESEARCH PROBLEM:

- To analyze the "Influence of body free and medicine ball weight training workouts on legstrength among technical students".

RESEARCH HYPOTHESIS:

- There will be a significant increase in score of leg strength performance of empirical group's after the sixteen weeks impact of body free and medicine ball weight training work outs when compared with control group students.
- Thefreeweighttrainingwilbemoreeffectivethanbodyweightand medicineballexercises program.

METHODOLOGY:

The study was to measure the body free and medicine ball weight training workouts on leg strength among technical students. Total recruited randomly N=48 (forty eighty) men active and physically fit technical students their age period ranged from 18 years to 25 years selected from University College of Engineering Narasaraopet, JNTUK Andhra Pradesh. The chosen students were randomly recruited into four groups each groupeach group n=12 men i.e. empirical groups I men: body weight exercises (BEE), empirical group II men underwent: free weight exercises (FWE), empirical group III underwent: medicine ball exercises (MBE), and control group (CG). CG was practiced only their regular activities. The training period was fixed for 16- week's duration and four sessions in a week. The measurement of leg strength scores was collected through leg dynamometer before and after the completion of specific training. The collected score's were analyzed through ANCOVA and level of significant was restricted at 0.05 level.

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Table -I

THE LEGSTRENGTH – DYNAMO METER TEST AN COVA RESULTS OF BWE, FWE, MBE AND CG GROUPS OF STUDENTS

GROUPS	BWE	FEW	MBE	CG	SOURCE OF VARIANCE	SUM OF SQUARES	df	MEAN SQUARES	OBTAINED 'F'
PreTest Mean SD	68.91 3.58	64.75 4.54	67.08 4.66	68.41 4.27	Between	124.91	3	41.63	2.28
					Within	803.00	44	18.25	
PostTest Mean SD	79.75 6.60	89.50 4.31	87.33 4.33	66.25 4.41	Between	3973.75	3	1324.58	56.57*
					Within	1030.16	44	23.41	
AdjustedPost Test Mean	78.75	91.35	87.48	65.42	Between	4392.73	3	1464.24	104.41*
					Within	603.01	43	14.02	
Mean Diff	+10.84	+24.75	+20.25	-2.16	-	-	-	-	-

***Significant TableF -** ratio value at 0.05 level of confidence for 3 and 44 (df) =2.82,3 and 43 (df) = 2.82

BWE: Body weight exercises group FEW: Free weight exercises group MBE: Medicine ball exercises group CG: Control group.

The above table - I shows that there is a significant difference on leg strength performance among the four groups such as BWE: Body weight exercises group, FEW: Free weight exercises group, MBE: Medicine ball exercises group and CG: Control group. Since the 'F' value required being significant at 0.05 level for 3,44 d/f and 3,43 are 2.82, but the computation values of leg strength post and adjusted post test 'F' values are 56.57 and 104.41 respectively. Which are greater than the tabulated value, it shows that training is effective for positive changes in leg strength. Since the obtained 'F' ratio is found significant.

TABLE: 2

THE LEGSTRENGTH – DYNAMOMETER TEST RESULTS OF SCHEFFE'S METHOD TEST MEAN DIFFERENCES BETWEEN BWE, FWE, MBE AND CG GROUPS OF STUDENTS (ADJUSTED POST MEAN)

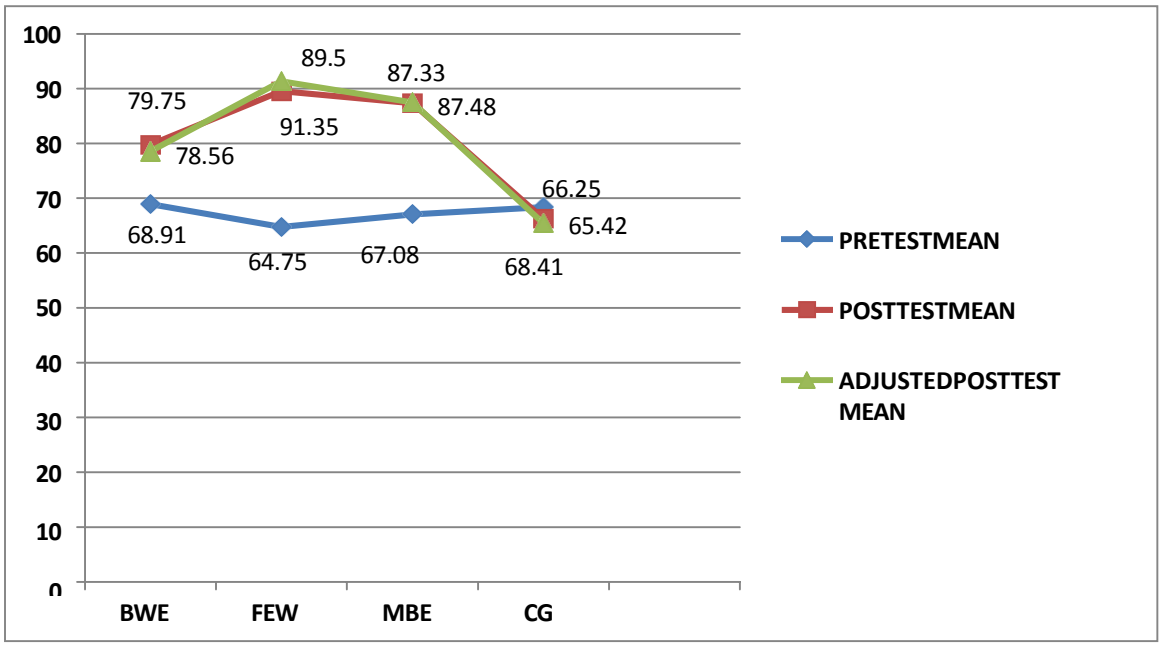
BWE	FWE	MBE	CG	MD	CI
78.75	91.35	-	-	12.60*	4.43
78.75	-	87.48	-	8.73*	
78.75	-	-	65.42	13.33*	
-	91.35	87.48	-	3.87*	
-	91.35	-	65.42	25.93*	
-	-	87.48	65.42	22.06*	

Significant

BWE: Body weight exercises group FEW: Free weight exercises group MBE: Medicine ball exercises Group CG: Control group.

In above table:2 display the mean differences between BWE: Body weight exercises group and FEW: Free weight exercises group, BWE: Body weight exercises group and MBE: Medicine ball exercises group, FEW: Free weight exercises group and CG: Control group, FEW: Freeweight exercises group and MBE: Medicine ball exercises group, FEW: Free weight exercises group and CG: Control group, MBE: Medicine ball exercises group and CG: Control group are 12.60, 8.73, 13.33, 3.87, 25.93 and 22.06. These means differences values are higher than CI value 4.43. Therefore, researcher noted significant differences present between training groups and control groups after Treatment period.

FIGURE-1 THE LEG STRENGTH - DYNAMOMETER PRE POST AND ADJUSTED POST TEST MEAN NUMBERS IN KILOGRAMS OF BWE, FWE, MBE AND CG GROUPS OF STUDENTS PRESENTED IN LINE GRAPH.



BWE: Body weight exercises group FEW: Free weight exercises group MBE: Medicineball exercises group

- There will be a significant increase in score of leg strength performance of empirical group's after the sixteen weeks impact of body free and medicine ball weight training work outs when compared with control group students.
- Thefreeweighttrainingwillbemoreeffectivethanbodyweightand medicineballexercises program.

Discussion on Hypothesis:

- The first hypotheses stated that there will be a significant increase in score of leg strength performance of empirical group's after the sixteen weeks impact of bodyfree and medicine ball weight training work outs when compared with control group students. The statistical analysis proved that body free and medicine ball weight training work outs significantly increased the leg strength performance. Hence research first hypothesis accepted.
- The second hypotheses stated that free weight training will be more effective than the body weight exercises and medicine ball exercises. The statistical analysis proved free weight training is superior to body weight exercises and medicine ball exercises. Hence research second hypotheses accepted.

DISCUSSION AND FINDINGS:

The implementation of 16-weeks of body weight exercises, free weight exercises and medicine ball weight training work outs positively increase the leg strength when compared with control group students. The various sports training effect on leg strength are Blakeyl and Southard (1987) concluded that influence of 8-weeks of weight and Plyometric training significantly increased the legsstrength of trained groups. Jothietal, (2010)

Result demonstrated that concurrent strength and Plyometric training with repeated bouts of a combination of physical exercise has significant positive impact on legstrength. Antonio et al., (2017) suggested that resistance multi joint exercises program is more effective than single joint exercises in increasing legs muscle strength. Muthu (2002) decalred that 8-weeks effect of strength training and combined training of strength and endurance positively increased the maximum leg strength of subjects. Shayinsha (2006) concluded that high intensity with low volume and low intensity with high volume of maximal power training has significant effect for gains in maximum leg strength.

CONCLUSIONS:

Investigator recorded that impact of 16-weeks body weight exercises, free weight exercises and medicine ball exercises had positive gain in muscular leg strength of students. Therefore, free weight exercises is more effective than body weight exercises and medicine ball exercises for increasing leg strength of technical students.

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A COMPARATIVE STUDY OF EMOTIONAL INTELLIGENCE MALE AND FEMALE KHO – KHO PLAYERS IN ANDHRA UNIVERSITY

[1]Dr. K. V. S. Naidu

[1]Physical Director, A.M.A.L College,

Anakapalli, Andhra Pradesh, India.

Email: venkataswamynaidu1234@gmail.com

ABSTRACT:

The present study has been designed to investigate emotional intelligence of male sports persons and female participated at Kho-Kho tournaments inter- Collegiate level. For accomplish the study total 40 male sports person and 40 female sports person were randomly selected as sample. The age of all samples was ranged 18-25 year. Sports person who participate at inter-Collegiate level were selected as samples. To accomplish the study Dr. Singh and Dr. Chanda (2001) emotional intelligence scale was used in the study. Purpose: To measure the orientation Ability. All samples were selected from the Andhra University, Visakhapatnam, Andhra pradesh, India. The obtained data were analyzed by applying t test in order to determine the Emotional Intelligence of male sports and female sports persons. The level of significance was set at 0.05. We find out that there is not much significantly difference between male sports person and female sports person in their emotional intelligence.

Keywords: Emotional, Kho-Kho players, Inter Collegiate tournaments.

INTRODUCTION:

The emotion is defined as ‘a strong mental or instinctive feeling such as love or fear’ (Oxford English Dictionary, 1996) involving many bodily processes, and mental states. An emotion combines cognition, bodily arousal and behaviour in a ready made formula for responding in line with the way the situation has been interpreted. There is a huge difference in the ways of feeling emotions by human beings and animals although both of them experience anger, fear, sadness, and joy. Emotion can be defined as the “feeling” aspect of consciousness, characterised by certain physical arousal, a certain behaviour that reveals the feeling to the outside world, and an inner awareness of feelings.

Emotion is associated with mood, temperament, personality and disposition and motivation. The English word ‘emotion’ is derived from the French word émouvoir. This is based on the Latin emovere, where e- (variant of ex-) means ‘out’ and movere means ‘move’. The related term “motivation” is also derived from movere. No aspect of our mental life is more important to the quality and meaning of our existence than emotions. They are what make life worth living, or sometimes ending. So it is not

surprising that most of the great classical philosophers— Plato, Aristotle, Spinoza, Descartes, Hobbes, Hume—had recognisable theories of emotion, conceived as responses to certain sorts of events of concern to a subject, triggering bodily changes and typically motivating characteristic behaviour.

Emotion is a moved or mixed up condition of a life form. It is exasperating strong and glandular action. Knowledge implies general mental capacity to fathom new problems and face general state of life. Emotional intelligence is the ability to know about, control, and express one's emotions, and to deal with relational connections sensibly and compassionately. Emotional intelligence is the capacity to distinguish and deal with your own emotions and the emotions of others. It is for the most part said to incorporate three aptitudes: passionate mindfulness; the capacity to bridle emotions and apply them to undertakings like reasoning and critical thinking; and the capacity to oversee emotions, which incorporates managing your own emotions and brightening up or quieting down other individuals.

Emotions not only give colour but also meaning to our lives and experiences. The crimes and even inhuman acts are all because of emotions. Emotions play a very important role in human behaviour and life. In fact, even moral behaviour is based on emotion to some extent (Daniel Goleman 1995).

STATEMENT OF THE PROBLEM:

A study of "A Comparative Study of Emotional Intelligence Male and Female Kho-Kho Players in Andhra University"

OBJECTIVES OF THE STUDY:

To compare the emotional intelligence between male sports persons and female sports persons. The objective of the study is to compare the rhythmic ability of male and female Kho-Kho inter Collegiate level players.

METHODOLOGY & RESEARCH PROCESS:

Sample of the Study: The sample for the present study was 40 male sports person and 40 female sports persons from Inter Collegiate Kho-Kho players in Andhra Collegiate were randomly selected as samples. The age of all samples was ranged 18-25 year. Sports person who participate at inter-Collegiate level were selected as samples.

To accomplish the study Dr. Singh and Dr. Chanda (2001) emotional intelligence scale was used in the study. Purpose: To measure the orientation Ability.

Statistical Procedure/Method:

The obtained data were analyzed by applying t test in order to determine the emotional intelligence of male sports and female sports persons. The level of significance was set at 0.05 level.

Table – 1: Mean Difference between Male Sports and Female Sports Person in their Emotional Intelligence

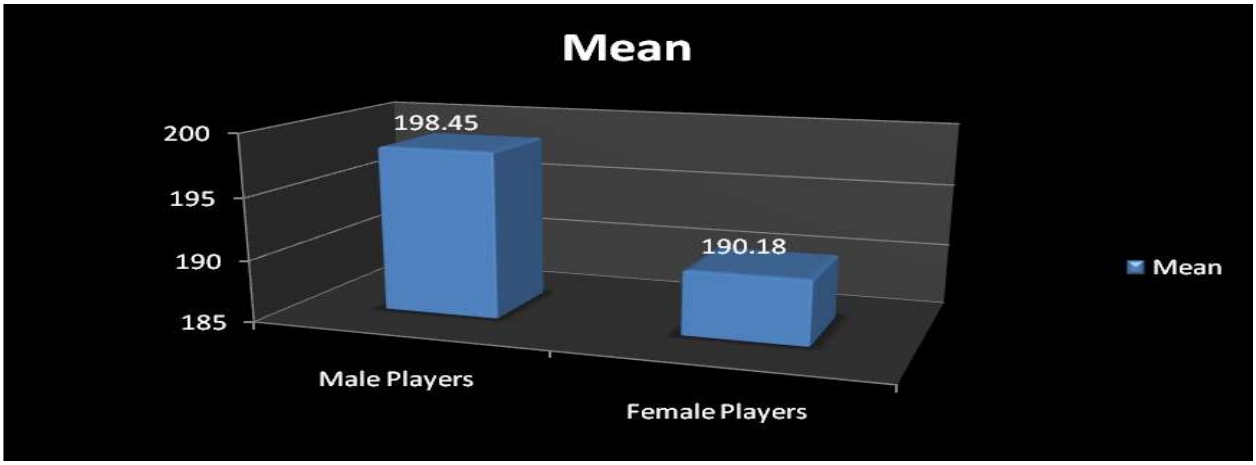
S.No	Variables	No of Subjects	Mean	SD	Df	t-Value
1	Male Players	40	198.5	23.16	87	1.68*
2	Female Players	40	190.2	22.45		

****Not significant at 0.05 level.**

Table 1.

Shows that 't' value (1.68). The mean score of male Kho-Kho players and female Kho-Kho Players is lower than the table value 0.05. The mean score of male Kho-Kho Players (198.5) is higher than the female sports person (190.2), which shows no significant difference. We find out that there is not much significantly difference between male Kho-Kho Players and female Kho-Kho Players in their emotional intelligence

Figure 1: Mean Difference between Male Kho-Kho Players and Female Kho-Kho Players Person in their Emotional Intelligence.



CONCLUSION:

No significant difference was observed between male Kho-Kho players and more than female Kho-Kho players in their emotional intelligence. That is why hypothesis-1 "There would be no significant difference between male Kho-Kho players and female Kho-Kho players in their emotional intelligence." which was formulated earlier was accepted.

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EFFECT OF PLYOMERIC TRAINING WITH AND WITHOUT PSYCHOLOGICAL PRACTICE ON SELECTED PHYSICAL FITNESS AND PHYSIOLOGICAL PERFORMANCE OF ATHLETES

[1]Dogga Suryanaryana,
[1]Physical Director, NSRIT Engineering College,
Sontyam, Visakhapatnam,
Andhra Pradesh, India

[2]Prof. PPS Paul Kumar
[2] University College of Physical Education and Sports Sciences,
Acharya Nagarjuna University, Guntur,
Andhra Pradesh, India.

ABSTRACT:

The purpose of the present was to find out the impact of Plyometric training with and with out mental practice on selected physical fitness and physiological performance of athletes. For this study thirty (N=75) inter collegiate Athletes affiliated colleges of Acharya Nagarjuna University were randomly selected as subjects and their age ranged between 18-25 years. They were further divided into three groups namely Plyometric training with mental practice group, Plyometric training with out mental practice group and control group on random basis. Training was given eight weeks and alternative three days per week. The pre and post test were conducted before and after training for eight weeks. The data collected from three groups before and after training period were statistically analyzed by using “t” test at 0.06 level of confidence was fixed to test the significant. The result of the study show there is a significant difference between three groups.

Keywords: Plyometric Training, Physical Fitness, Physiological performance, Athletes.

INTRODUCTION

Physical Education is "education through the physical". It aims to develop students’ physical competence and knowledge of movement and safety, and their ability to use these to perform in a wide range of activities associated with the development of an active and healthy lifestyle. It also develops students’ confidence and generic skills, especially those of collaboration, communication, creativity, critical thinking and aesthetic appreciation. These, together with the nurturing of positive values and attitudes in PE, provide a good foundation for students’ lifelong and life-wide learning

Sports are most often played just for fun or for the simple fact that people need exercise to stay in good physical condition. Although they do not always succeed, sports participants are expected to display good sportsmanship, standards of conduct such as being respectful of opponents and officials, and congratulating the winner when losing.

In general the word training is commonly used term in human language but in broad sense training may be define as an organised and systematic instructional process which aim is to improve the individual's physical, Physiological and intellectual performance capacity. In sports the term training is often used by the players, coaches and scientists but there are some disagreement among the coaches and scientists regarding the exact meaning of this term, because the experts those who belong to sports medicine are in the opinion that sports training is simply a doing of physical exercise, Where as some other experts understood the meaning of the word in the form of interval training, strength training, technical training and tactical training. In the light of the various concepts, meaning of the term and nature of the training, it is essential to study the some of the important definitions given by the various experts in the field of sports.

In sports attainment of the high performance is largely depend upon the systematic and scientific approach of training therefore planning finds its important place in sports training. Before organising any activity one has to plan well in advance. The process of sports training helps to develop personality and performance of a sportsman. Planning ensure development in the sports performance therefore it continues for so many years, months, days and even training session too. Planning of any event largely depend upon the nature of the competition in which sportsman has to participate.

Plyometrics for speed, which focus on the stretch shortening cycle, are an effective method for supplementing a speed training program. Anyone interested in improving speed must sprint as part of their training. Used by athletes to reach peak physical condition, plyometric exercises manipulate the elasticity and strength of muscles by increasing the speed and force of their contractions. This gives plyometric training the ability to produce fast and powerful movements that provide explosive power for a variety of sports. Used by athletes to reach peak physical condition, polymeric exercises manipulate the elasticity and strength of muscles by increasing the speed and force of their contractions. This gives plyometric training the ability to produce fast and powerful movements that provide explosive power for a variety of sports. Studies have shown that medicine ball training can be more effective than

conventional strength training at boosting performance.

The choice of training environment has a major impact on the effects of plyometrics exercise both in training specificity and injury prevention. The hardness of the surface can affect the amortization phase by increasing or decreasing the ground-contact time i.e., softer training surface causes higher contact time. On a softer surface the body stiffens whereas on a harder surface the body softens the connective tissue to absorb the impact and prevent injury. For athletes, It is advised to train on a relatively softer surface for major part of the training season to prevent soft tissue injury and maintain peak health during high-volume preparatory period.

Physiological Skills Training (PST) is an individually designed combination of methods selected to attain Physiological skill needs (Gill, 2000). There is no single idyllic PST package; each program is individualised based on the individual's Physiological state and the sport. It is important to distinguish between PST skills and PST methods to assemble a successful PST program. PST skills are the Physiological qualities or attributes that need to be developed (i.e. confidence, concentration). The PST method is used to help improve the PST skill (Calmels et al., 2003). Much of the early research utilizing prescriptive PST programs used single PST methods and examined their performance effectiveness (Martin, Moritz & Hall, 1999; Garza & Feltz, 1999). Thelwell and Greenlees (2001) argue that when implementing a PST program, it is improbable that a sports psychologist will employ a single method Thelwell and Greenlees (2001) highlight that it is more effective to use a combination of mental skills that relate to the specific sport.

STATEMENT OF THE PROBLEM:

The purpose of the study was to find out "the Impact of polymeric training with and with out Physiological on selected physical fitness and Physiological performance of athletes"

OBJECTIVES OF THE STUDY:

The aim of this study was to find out the physical fitness, Physiological performance levels of athletes and to find out the effect of plyometric training with Psychological practices and plyometric training without Psychological practices on selected physical fitness, Physiological performance of athletes. Further the study was also intended to make a comparative analysis to find out whether polymeric training with Physiological practice or plyometric training with out Psychological training contributes better for altering selected physical fitness, physiological performance of athletes.

METHDOLOGY:

To facilities the study 60 athletes from the different colleges in Acharya Nagarjuna University (ANU) who represent their colleges in inter collegiate level competitions. They were randomly selected as subjects and their age ranged between 18 to 25 years. They were further divided into three groups namely plyometric training with psychological practice group, plyometric training without psychological practice group and control group on random basis. Before the commencement of the training purpose of the study and method of performing polymeric training with and without psychological practice were explained to the subjects for their cooperation and to avoid injuries.

Dependent Variables and Tests:

1. Physical Fitness Variables

a) Speed – 60 Meters Run

b) Agility- T test

c) Explosive Strength – Vertical Jump

2. Physiological Variables

a) Resting Pulse Rate – Palpation Method

b) Breathing Holding time – Nose Clip Method

c) Anaerobic Power – Margaria Kulaman Anaerobic test

3. Athlete Performance

a) Running – Running ability

b) Jumping – Long jump ability

c) Throwing- Throwing ability

4. Independent Variable

a) Plyometric Training with Psychological Practice for 12 Weeks.

b) Plyometric Training without Psychological Practice for 12 Weeks.

The study was formulated as a true random group design consisting of a pre test and post test. The subjects (N=75) were randomly assigned to three equal groups of twenty-five athletes. The groups were designed as experimental group-1 plyomeric training with psychological practice group, plyomeric training without psychological practice group and control group respectively. Pre test was conducted for all the 75 subjects on selected physical fitness, physic logical variables performance of athletes. The experimental group participation in respective training for a period of 12 weeks. The

control group did not participate in any of the training programme. The post test was conducted on the above said dependent variables after a period 12 week for all the three groups. The difference between initial and final scores on selected variables was considered as the effect of respective training and the difference was statistically analyzed using ANCOVA.

Table:1 - ANCOVA result on impact of polymeric with psychological training and polymeric with out psychological training compared with controls on speed, agility and Explosive Power.

Variables		Plyomeric with Psychological Training	Plyomeric without Psychological Training	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	f ratio
SPEED	Pre - test	9.66	9.92	9.36	Between	0.63	2	0.09	1.99
					Within	2.03	69	0.01	
	Post - test	9.12	9.16	9.26	Between	0.94	2	0.23	6.49*
					Within	1.99	69	0.02	
	Control Group	9.36	9.36	9.31	Between	0.62	2	0.09	16.66*
					Within	0.99	69	0.01	
	Mean diff	-0.06	-0.06	0.04					
AGILITY	Pre - test	16.08	14.96	16.14	Between	0.96	2	0.16	1.96
					Within	1.96	69	0.13	
	Post - test	16	14.99	16.09	Between	0.66	2	0.62	6.46*
					Within	1.99	69	0.1	
	Control Group	16.06	14.99	16.16	Between	0.29	2	0.36	6.23*
					Within	0.63	69	0.13	
	Mean diff	-0.66	-0.93	-0.42					
EXPLOSIVE POWER	Pre - test	43.6	42.9	44.6	Between	32.63	2	16.39	1.09
					Within	984.3	69	16.44	
	Post - test	46.2	48.96	44.99	Between	91.93	2	46.96	3.22
					Within	936.9	69	14.96	

	Control Group	46.26	48.99	44.29	Between	186.99	2	98.99	23.60*
					Within	232.44	69	4.26	
	Mean diff	2.8	6.36	0.66					

***Significant at 0.06 level.**

As shown in table the obtained pre- test means on physical fitness variables (speed, agility and explosive power) on plyometric with psychological training group was 9.12 ,16.09 and 46.2, Plyometric without psychological training group was 9.92, 14.96 and 42.9. The obtained Pre Test F-value was 1.99 ,1.96 and 1.09 and the required table F- value was 3.16, which provide that there was no significant difference among initial scores of the subjects.

The obtained Post-Test means on physical fitness variables (speed, agility and Explosive Power) on plyometric with psychological training group was 9.12 ,16.06 and 46.20, Plyometric without psychological training group was 9.16,14.99 and 49.99. The obtained Post – Test F-value was 6.49* ,6.46* and 3.22. required table F-value was 3.16. which proved that there was significant difference among Post –Test scores of the subjects.

Taking into consideration of the Pre –Test means and Post –Test means adjusted Post –Test means were determined and analysis of covariance was done and the obtained F-value 16.66*,6.23* and 23.60* was grater than the required value of 3.16 and hence it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjects to post hoc analysis using scheffe's confidence interval test. The result were presented in above table.

Table:2- ANCOVA result on impact of polymeric with psychological training and polymeric with out psychological training compared with controls on Resting Pulse Rate, Breath Holding Time and Anaerobic Power.

Variables		Plyomeric with Psychological Trianing	Plyomeric without Psychological Trianing	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	f raito
RPR	Pre - test	96.16	96.26	96.4	Between	0.93	2	0.42	0.21
					Within	169.9	69	2.99	
	Post - test	94.26	94.1	96.99	Between	44.93	2	22.42	9.91*
					Within	132.46	69	2.42	
	Control Group	94.24	94	96.99	Between	46.36	2	22.93	9.96*
					Within	131.39	69	2.44	
	Mean diff	-1.96	-2.66	-0.62					
BHT	Pre - test	44.99	42.66	43.9	Between	69.93	2	29.92	2.6
					Within	694.2	69	12.1	
	Post - test	49.66	46.66	44.3	Between	103.93	2	61.92	3.66*
					Within	932.2	69	14.9	
	Control Group	46.39	49.69	44.43	Between	106.99	2	62.93	13.99*
					Within	212.13	69	3.99	
	Mean diff	2.6	3.99	90					
AP	Pre - test	1306.91	1296.99	1333.06	Between	13936.61	2	6969.92	1.19
					Within	366402.6	69	6410.69	
	Post - test	1390.12	1396.99	1301.12	Between	99919.29	2	49969.69	6.66*
					Within	609612	69	9940.66	
	Control Group	1369.99	139634	1302.06	Between	90900.46	2	46460.29	6.10*
					Within	609946.9	69	9096.63	
	Mean diff	63.32	101	-1.99					

*Significant at 0.06 level, RPR=Resting Pulse Rate, BHT= Breathing Holding Time, AP=Anaerobic Power

As shown in table the obtained pre- test means on Physiological variables (Resting Pulse Rate, Breath Holding Time and Anaerobic Power) on plyometric with psychological training group was 96.16 ,44.99 and 1306.91, Plyometric without psychological training group was 96.26, 49.66 and 1296.99. The obtained Pre Test F-value was 0.21 ,2.6 and 1.19 and the required table Fvalue was 3.16, which provide that there was no significant difference among initial scores of the subjects.

The obtained Post-Test means on Physiological variables (Resting Pulse Rate, Breath Holding Time and Anaerobic Power) on plyometric with psychological training group was 94.26 ,49.66 and 1390.22, Plyometric without psychological training group was 94.10,46.66 and1396.33. The obtained Post – Test F-value was 9.91* ,3.66* and 6.66*. required table F-value was 3.16. which proved that there was significant difference among Post –Test scores of the subjects.

Taking into consideration of the Pre –Test means and Post –Test means adjusted Post –Test means were determined and analysis of covariance was done and the obtained F-value 9.96*,13.99* and 6.10* was grater than the required value of 3.16 and hence it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjects to post hoc analysis using scheffe's confidence interval test. The result were presented in above table.

DISCUSSIONS:

This study was to find out the effect of plyometric with Psychological and Plyometric without Psychological training on selected Physical fitness, Physiological and performance of athletes. The result in above tables shows the impact of plyometric with psychological training and plyometric without psychological training on athletes' performance. The obtained pre -test and post –test means were subjects to ANCOVA analysis through scheffs' confidence interval test. The Impact of plyometric with psychological t raining and plyometric with out psychological training on athletes performance is presented in table. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F- value 9.66 was grater than the required table F-value to be significant at 0.06* level. Thus it was found that plyometric with and without psychological training was significantly better than control group in improving athletes performance of the events.

CONCLUSIONS:

It was concluded that physical fitness variable, such as speed, agility and Explosive Power was significantly improved by plyometric with and without psychological practices compared to control group. It was also found that there was no significant difference between plyometric with psychological training group and plyometric without psychological training groups on physical fitness variables speed ,agility and Explosive Power.

It was concluded that physiological variable such as Resting pulse rate, Breath Holding Time and Anaerobic Power was significantly improved by plyometric with and without psychological practices compared to control group. It was also found that there was no significant difference between plyometric with psychological training group and plyometric without psychological training groups on physical fitness variables Resting pulse rate, Breath Holding Time and Anaerobic Power.

It was concluded that athletes performance was significantly improved by plyometric with and without psychological practices compared to control group. It was also found that there was no significant difference between plyometric with psychological training group and plyometric without psychological training group on athlete performance.

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IMPACT OF PHYSICAL ACTIVITY AND YOGA ON SPECIFIC PHYSICAL AND PHYSIOLOGICAL CHARACTERISTICS IN COLLEGE LEVEL HANDBALL PLAYERS

[1]A. Sandhya Rani,
Research Scholar, Kalinga University,
Raipur, Chhattisgarh, India.

[2]Dr. D. Kalidoos
[2]Associate Professor, Department of Physical Education,
Kalinga University, Raipur, Chhattisgarh, India.

ABSTRACT

The study's goal was to determine how certain physical and physiological characteristics of College-level handball players were affected by yoga and exercise. In order to accomplish this goal, 45 Degree College students from Andhra University in Visakhapatnam, Andhra Pradesh, were chosen as subjects. The chosen participants ranged in age from 18 to 24. They were split up into three groups of equals of fifteen. Group I participated in a yoga exercise program, Group II in a physical exercise program, and Group III served as a control group, not taking part in any extracurricular activities or special training. time.

Key Words: Yogic practices, physical variables, explosive power, Breath holding time and handball players.

INTRODUCTION

A sport is a planned, competitive, enjoyable, and competent physical activity that calls for dedication, strategy, and fair play. The winner of a sport can be determined objectively. It is regulated by a set of laws or traditions. When it comes to sports, a competitor's physical prowess and abilities are crucial in determining whether they win or lose. Movement of people, animals, and/or a variety of objects, including balls, machines, and equipment, are all part of the physical activity. On the other hand, games like board and card games, which may be referred to as mind sports and a few of which are Olympic sports, simply involve mental and physical skills. The outcome of a sport is frequently determined by physical events like goals scored or first crossing a line. However, in certain sports, like dressage, figure skating, and diving, the level of performance and skill is evaluated based on clear standards. This contrasts with other activities that are evaluated, like bodybuilding and beauty pageants, where the standards are less clear and skill is not required. For the majority of sports, records are maintained and updated at the highest levels, and sport news extensively publicizes both successes and

failures. Training is a regimen of exercises intended to boost an athlete's energy level and skill set for a specific event. The term "training" is commonly used in sports to refer to engaging in physical activity. Training, in its strictest definition, refers to performing physical activities to increase overall fitness or performance. Sport training is a fundamental form of physical exercise preparation for improved performance. It is founded on scientific ideas and seeks to improve performance and education.

METHODOLOGY

Action and motor movement are key components of sports, and how well they are executed determines how well they perform. Training methods and tactical efficiency enhancement are essential components of a training process.

For general improved physical and mental fitness, a yoga practice incorporates postures that tone and strengthen muscles, deep breathing, relaxation methods, and concentrated meditation. Exercise has been shown to reduce stress and enhance physical appearance. Thus, Yogic promotes mental resilience and a positive body image, which raises confidence levels overall, while also reducing stress, which can deplete energy and breed negativity. Exercise is a physiological activity that promotes and preserves general health and physical fitness.

It is frequently done to improve athletic abilities and to strengthen the cardiovascular and muscular systems. Regular exercise strengthens the immune system and increases cardiovascular stamina. It also helps prevent depression and enhances mental health. In addition to its basic healing methodology, Yogic is regarded as one of the oldest holistic health care systems due to its numerous advantages for mental, physical, and spiritual well-being.

Independent variables

- Yogic practices
- Physical Fitness

Dependent variables

- Explosive power
- Breath holding time

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EXPLOSIVE POWER

Table 1 presents the analysis and presentation of the data gathered before and following the experimental period on the explosive power of the physical exercise group, the yoga practice group, and the control group.

RESULTS

Table – 1

Covariance Analysis on the Explosive Power of the Control Group, the Physical Exercise Group, and the Yogic Practices Group

	Yogic practice group	Physical exercise	Control group	SOV	Sum of square	Df	Mean square	'f' ratio
Pre-test	1.79	1.78	1.68	B	.211	2	0.11	1.47
				W	3.134	42	0.076	
Post test	1.92	2.21	1.74	B	3.288	2	1.65	32.17*
				W	2.160	42	0.50	
Adjusted post – test	1.90	2.18	1.78	B	2.417	2	1.22	33.61*
				W	1.49	41	0.37	

With df 2 and 42, the table value needed for significance at the 0.05 level of confidence was 3.23, and the same was true for df 2 and 41.

The pre-test means for the explosive power of the physical exercise group, the yoga practice group, and the control group were 1.7, 1.78, and 1.68, respectively, as Table 2 illustrates. For the pre-test scores of the yoga and physical exercise groups and the control group on explosive power, the obtained "F" ratio value of 1.47 was less than the necessary table value of 3.23 for significance with df 2 and 42 at the 0.05 level of confidence.

The post-test mean scores for the physical exercise, yoga, and control groups' explosive power were 1.92, 2.21, and 1.74, respectively. With df 2 and 42 at the 0.05 level of confidence, the obtained "F" ratio value of 32.16 for the post-test scores of the yoga practices group, the physical exercise group, and the Control Group was higher than the necessary table value of 3.23 for significance.

Yoga and physical exercise groups and the control group had adjusted post-test mean non explosive power values of 1.90, 2.18, and 1.78, respectively. With df 2 and 41 at the 0.05 level of confidence, the obtained "F" ratio value of 33.61 for the adjusted post-test scores of the yoga practices group, the physical exercise group, and the Control Group was greater than the necessary table value of 3.23 for significance.

According to the statistical analysis above, explosive power significantly increased following the training. Additionally, the Scheffe's test was used to identify the paired means that showed a significant difference. The test's outcome is displayed in Table 2.

Table – 2

Using Scheffe's Test to Compare Modified Post-Test Means on Explosive Power

Adjusted Post Means				
Yogic practices group	Physical exercise group	Control group	Mean difference	Confidence interval at .05 level
1.90		1.78	0.12*	0.0835
1.90	2.18		0.28*	0.0835
	2.78	1.78	0.40*	0.0835

*(With df 2 and 42, the table value needed for significance at the 0.05 level of confidence was 3.23, and with df 2 and 41, it was 3.23).

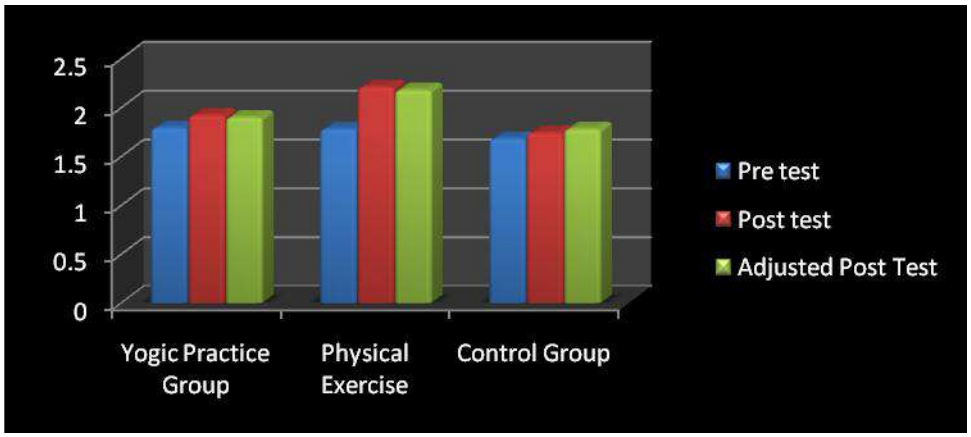
The differences in explosive power between the groups participating in yoga practices and the control group, as well as between the groups participating in physical exercise and the control group, were 0.12, 0.28, and 0.40, respectively, according to Table 2. These differences were significant at the 0.05 level of confidence. At the 0.05 level of confidence, the adjusted post-test means difference in explosive power between the groups that engaged in physical exercises and yoga and the Control Group was 0.28. The study's findings showed that both the physical exercise and yoga groups considerably enhanced the participants' explosive power. The study's findings also indicated that there was a significant difference

among the training groups and the group that engaged in physical exercises.

Figure 1 shows the mean values for the explosive power of the groups that engaged in physical exercises, yoga, and the control group.

Figure – 1

Pre-test, Post test and Adjusted Post-Test Means differences of Explosive Power



The mean values of the pre-test, post-test, and adjusted post-test for explosive power in centimeters for the groups engaged in yoga practices, physical exercise, and control

Table - 3

Covariance Analysis of Experimental and Control Groups' Breath Holding Times

	Yogic practice group	Physical exercise	Control group	SOV	Sum of square	Df	Mean square	'f' ratio
Pre-test	29.54	29.21	28.93	B	2.21	2	1.11	0.13
				W	400.81	42	9.55	
Post test	34.54	32.41	28.74	B	259.79	2	129.90	13.89*
				W	393.21	42	9.37	
Adjusted post –test	34.23	32.41	28.99	B	213.10	2	106.56	112.17*
				W	39.10	41	0.96	

With df 2 and 42, the table value needed for significance at the 0.05 level of confidence was 3.23, and the same was true for df 2 and 41.

According to Table 3, the pre-test means for the groups that engaged in physical exercises, yoga practices, and control were 29.54, 29.21, and 28.93 on the breath holding time, respectively. For the pre-test scores of the yoga practice group, the physical exercise group, and the control group on explosive power, the obtained "F" ratio value of 0.13 was less than the necessary table value of 3.23 for significance with df 2 and 42 at the 0.05 level of confidence.

The post-test mean values for the groups that engaged in physical exercises, yoga practices, and control were 34.54, 32.41, and 28.74 for breath holding time, respectively. With df 2 and 42 at the 0.05 level of confidence, the obtained "F" ratio value of 13.89 for the post-test scores of the yoga practices group, the physical exercise group, and the Control Group exceeded the necessary table value of 3.23 for significance.

When it came to breath holding time, the modified post-test mean values for the yoga practice group, the physical exercise group, and the control group were 34.23, 32.41, and 28.99, respectively. With df 2 and 42 at the 0.05 level of confidence, the obtained "F" ratio value of 112.17 for the adjusted post-test scores of the yoga practices group, the physical exercise group, and the Control Group was greater than the necessary table value of 3.23 for significance.

According to the statistical analysis above, breath holding time significantly increased following training.

Additionally, the Scheffe's test was used to identify the paired means that showed a significant difference. The test's outcome is displayed in Table 4.

Table – 4

Using Scheffe's Test to Compare Modified Post-Test Means on Breath Holding Time

Adjusted Post Means				
Yogic practices group	Physical exercise group	Control group	Mean difference	Confidence interval at .05 level
34.23		28.99	53.54*	1..835
34.23	32.41			1.835
	32.41	28.99	1.82*	1.8.35

*(With df 2 and 42, the table value needed for significance at the 0.05 level of confidence was 3.23, and with df 2 and 41, it was 3.23).

According to Table 4, there were significant differences in the adjusted post-test means on breath holding time between the groups that engaged in yogic practices and the control group, yogic practices and the physical exercise group, and physical exercise group and the control group of 5.54, 1.82, and 3.42, respectively, at the 0.05 test level. At the 0.05 level of confidence, the adjusted post-test means difference in breath holding time between the groups engaged in physical exercises, yoga, and the control group was 1.82. According to the study's findings, the breath-holding time was considerably reduced in the groups that engaged in physical exercise and yoga.

Figure 2 graphically depicts the mean values for breath holding time for the groups engaged in physical exercises, yoga practices, and the control group.

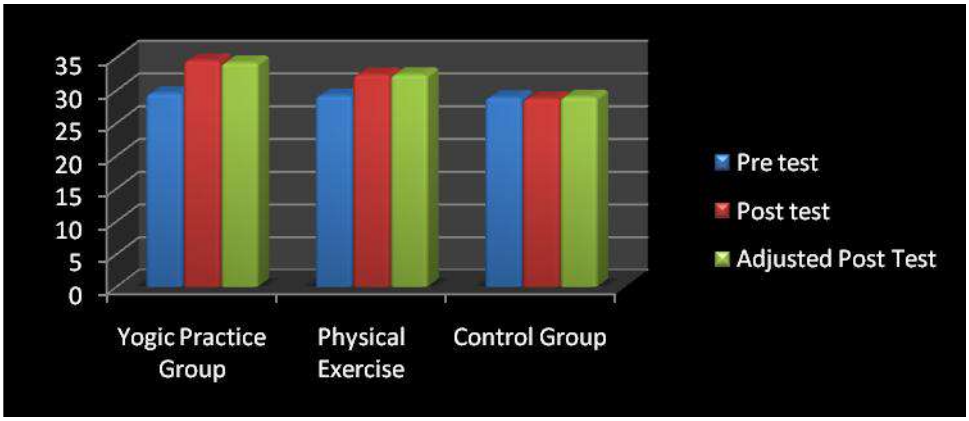


Figure 2: The Mean Pre-, Post-, and Adjusted Post-Test Results for the Groups Engaging in Yoga Practices, Physical Exercise, and Control on Breath Holding Time in Seconds

CONCLUSIONS

The following deductions are made from the data analysis.

- The study's findings also showed that there was a noteworthy increase in explosive power following the yoga and physical exercise groups. The physical exercise group showed a greater improvement in explosive power than the other training groups.
- Following the yogic practices and physical exercise group, there was a notable improvement in the duration of breath holding, with the yogic practices group showing the greatest improvement.

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IMPACT OF CIRCUIT TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES OF VOLLEYBALL PLAYERS

[1]Suresh Babu Nannapaneni,
[1]Research Scholar, Department of Physical Education and Sports Sciences,
Andhra University, Visakhapatnam,
Andhra Pradesh, India.

[2]Dr. A. Pallavi
[2]Associate Professor, Department of Physical Education and Sports Sciences,
Andhra University, Visakhapatnam,
Andhra Pradesh, India.

ABSTRACT

The purpose of the present study was to find out the effect of circuit training on selected Physical fitness variables among Inter-Collegiate Volleyball Players. For this study thirty (N=60) Volleyballmen players from Andhra University, Visakhapatnam were randomly selected as subjects. Their age category from 18-23 years, and they were divided into two groups, each group consisted of 30 subjects. Group I underwent circuit training Experimental group, and Group II underwent Control group. The control group did not participate in any special training, apart from their regular curricular activities. Eight weeks of training were provided on Six days per week. The pre-test and post-test were conducted before and after training for Eight weeks. The data collected from two groups before and after the training period were statistically analyzed by using the "t" test at 0.05 level of confidence to test the significance. Speed, Agility and Muscular strength endurance after regular practices Circuit training is beneficial for University Volleyball players. It was concluded that a Circuit training improved physical fitness Variables for Volleyball players. Therefore, Circuit training covered in this study are beneficial for the University Volleyball players. The results indicated that eight weeks of circuit training significantly improved the speed, Strength, agility and flexibility of the experimental group.

Keywords: -Endurance, Strength, Speed, Agility and Flexibility, Circuit training

INTRODUCTION:

The word training has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days and even months and year. The term "training" is widely used in sports. There is however some disagreements among sports coaches and also sports scientists regarding the exact meaning of the word. Some experts, especially belonging for sports medicine understood sports training as basically doing physical exercise, several terms used in training for example, strength training, interval training, bench step training, technical training and statistical training reflect the line of thinking.

Training involves periodic assessment of the athlete's status and progress. Training usually varies regular increase in the difficulty of task performance. Training suggest some form of gradual increase in performance output over an extended period of time. Most kind of training needs regular repeated and collective repetition of some of the original movement. Any invariable training implies hard work. Training should result in a level of personal fitness and should be associated with good health. Training is the programme of exercise designed to improve the skills and increase the energy capacities of an athlete for a particular event.

Sport training is a subject of great importance in physical Education. It has developed to a high level in the western countries. Sports have become an important social and cultural activity of the modern world which is being given the rightful place it deserves by the nations and societies of the world. The contribution of sports towards the overall welfare of the human society. Training: means process of preparation for some task. This process invariably extends to a day, months or sometimes longer duration. Method: means manner of doing something in a Systematic i.e. organization of produce. Training is an education process. It is aims at improving the sports performance as well as education of the sports man. High sports performance though training can be achieved by a scientific use of training means. Training means are various physical exercise and other object, methods and procedures which are used for the improvement, maintenance and recovery of capacity and performance readiness. Each training method has its own specific on the performance capacity. The effect may be direct or indirect. Physical exercises have a direct on performance capacity. In training methods, the basic of classification of physical exercise is the comparison of load caused by the exercise with the actual load during the competition for this comparison two parameters are used i.e. load structure of exercise and performance structure of exercise. In training the sportsmen to improve the optimum level of performance the following methods are used.

Circuit training was invented in 1953 as an efficient way for coaches to train many athletics in a limited amount of time with limited equipment. The exerciser moved through a series of weight training or calisthenics arranged consecutively. It was a fast paced workout of 15-45 seconds per station with little (15-30 seconds) or no rest between stations. Today this is known as "circuit training." Research has shown that it can increase muscular strength and endurance. There is a mild improvement in aerobic stamina but only if the rest period are kept very short. Another variation is "aerobic circuit training". Aerobic stations like treadmill, rower, bike or stepper (one to five minutes for station) are interspersed with training stations. This protocol has been found to increase aerobic stamina and muscular endurance and endurance. A well designed circuit can be help to correct the imbalances that occur in any sport played at high level. It can also be one of the training for improving strength endurance be it for a sport such as soccer or a classic endurance event like the triathlon. If you haven't quit reached "elite athlete" status yet, circuit training is superb for general fitness and caters for a wide varieties of fitness levels. A great time saver, it can be refreshing and fun change from the more monotonous types of exercises. Circuit training in its self not a form of exercise per se, but the way of an exercise session is structured. Routines can be developed for strength developed or for improving endurance or some combination of two.

STATEMENT OF THE PROBLEM:

The purpose of the study "Impact of circuit training on selected Physical fitness variables of Volleyball players".

OBJECTIVE OF THE STUDY:

To study the effect of circuit training on selected Physical fitness variables of inter collegiate Volleyball players.

HYPOTHESIS

It was hypothesized that the circuit training will be significantly improve the selected Physical fitness variables of inter colligate Volleyball players.

METHODOLOGY:

Experimental design

The selected subjects (N=60) were divided in to two groups each group containing of Thirty. The

experimental group underwent the circuit training for the five days in a week and eight weeks in total and control group was in kept under the control of the investigator in which they were in as usual activates.

Selection of the subjects

The purpose of the present study was to find the effect of the circuit training on selected performance variables for inter-collegiate Volleyball players. To achieve the aim of the study the investigator had randomly selected thirty inter-collegiate level Volleyball players from Andhra University, Visakhapatnam. Their age was ranged from 18-23 years.

Selection of variables

The investigator reviewed the available scientific literature and had discussion with exports in the field of Volleyball to identify the components underlying the present problem. Based on these the following variables were considered for the present study as follows.

1. Cardiovascular endurance.
2. Speed
3. Strength
4. Agility
5. Flexibility

Criterion measures

The following criterion measures were chosen for this study.

1. Cardiovascular endurance was measure by using 12 minutes run or walk test and recorded in minutes and seconds.
2. Speed was measured by using 50-yard dash and record to the nearest one-tenth of a second.
3. Strength was measured by using Pushups record to number of pushups do correctly.
4. Agility was measured by using 10X10 yard shuttle run test and record to the nearest one-tenth of a second.
5. Flexibility was measured by using sit and reach test and recorded to the nearest centimeter.

CIRCUIT TRAINING PROGRAMME:

The following circuit training was adopted to develop the performance variables for inter-colligate VolleyballMen players.

S.No.	Name of the Station	Duration for one station (in seconds)	Rest between the station (in seconds)	Rest between the circuit (in minutes)
01	Jump and split legs	40	20	2
02	Shuttle run	40	20	2
03	Tuck Jumps	40	20	2
04	Plank	40	20	2
05	Change of direction	40	20	2
06	Diamond dips	40	20	2
07	T-run	40	20	2
08	High knee	40	20	2

Exercise duration for 1 circuit 5.20 minutes. (8 stations X 40 seconds)

Exercise duration for 3 circuit 15.60 minutes.

Rest between the stations 1 circuit (8 stations X 20 seconds)

Rest between the stations 3 circuit (3 circuit X 2 minutes)

STATISTICAL TECHNIQUE:

The present study paid its attention mainly on testing the effectiveness of circuit training selected performance variables for inter-collegiate Men Volleyball players. The statistical tool used for this present study is described here. The significance of the mean difference between the present and post test values of the variable by the experimental and control group during the treatment period of eight weeks were tested by applying' test.

TABLE 4.1: significance of mean gains/losses between pre and post test of experimental group selected performance variables.

S.NO	Variables	Initial test	Post test	Mean diff	't' ratio
01	Cardiovascular endurance.	2202.00	2239.00	91.33	3.67
02	Speed	8.70	8.43	0.27	5.20
03	Strength	24	18	0.82	4.59
03	Agility	15.89	15.24	0.65	5.89
04	Flexibility	20.53	22.13	1.60	3.11

*significant at 0.05 level, mean diff= mean difference/ σ Dm=standard error

An examination of table 4.1indicates that the obtained 't' values on selected fitness variables were cardiovascular endurance (3.67), speed (5.20), Strength (4.59) agility (5.89), flexibility (3.11). Since the obtain 't' ratios were greater than the required table value of the 2.14 for df 1, 14 and it was found that the mean difference between the initial and final test on selected variables were statistically significant at 0.05level. Therefore, it was concluded that the eight weeks practice of circuit training produce significant improvement on performance variables for inter-colligate Volleyball men players and the formulated hypothesis was accepted.

TABLE 4.2: significance of mean gains/losses between pre and post test of control group selected performance variables.

S.NO	Variables	Initial test	Post test	Mean diff	DM	't' ratio
01	Cardiovascular endurance.	2183.33	2184.33	1.00	314.81	.15
02	Speed	8.69	8.68	.008	.0035	1.49
03	Strength	18	17	2.03	0.25	1.89
03	Agility	16.24	16.22	.017	.018	1.04
04	Flexibility	20.20	20.40	.20	.26	1.00

Mean diff= mean differenced /ϭ DM=standard error of difference between mean

An examination of table 4.2 indicates that the obtained 't' values on selected fitness variables were cardiovascular endurance (.15), speed (1.49), Strength (1.89) agility (1.04), flexibility (1.00). Since the obtained 't' ratios were lesser than the required table value of 2.14 for df 1, 14 and it was found that the mean difference between initial and final test on selected variables were statistically significant at 0.05 level. Therefore it was concluded that the formulated hypothesis were rejected.

Fig1: Bar diagrams showing mean difference between Cardiovascular Endurance pre test and post test of Experimental and Control groups.

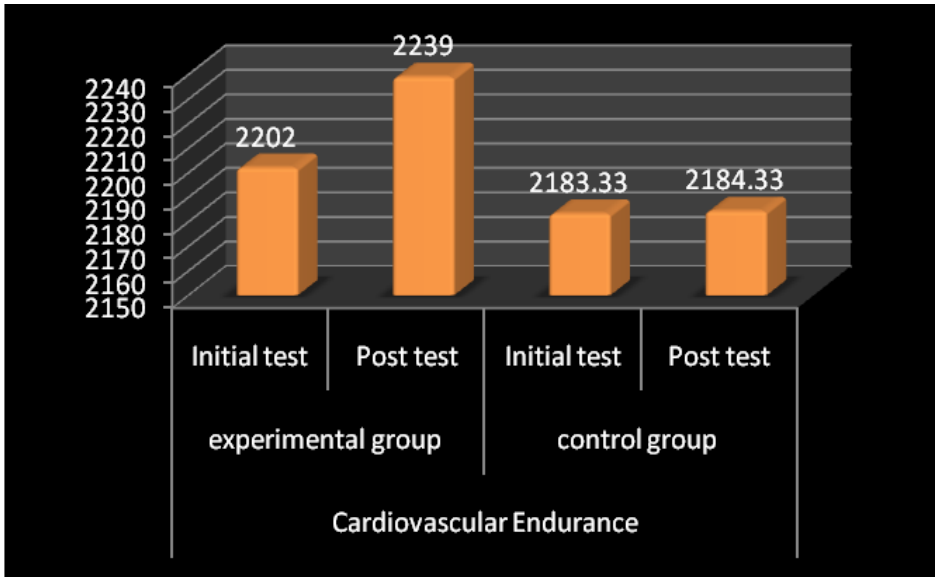


Fig 2: Bar diagrams showing mean difference between Speed pre test and post test of Experimental and Control groups.

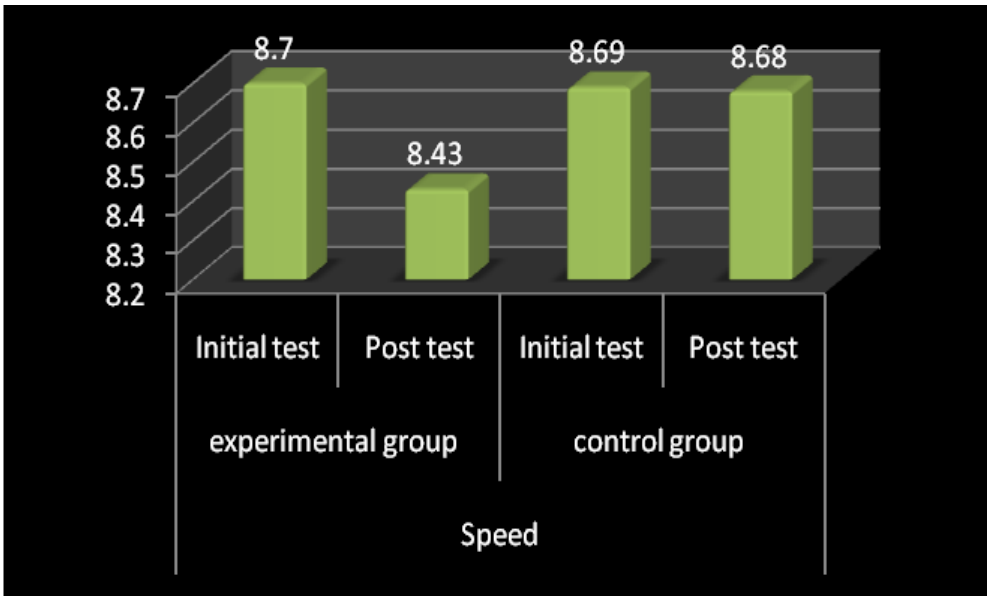


Fig3: Bar diagrams showing mean difference between Strength pre test and post test of Experimental and Control groups.

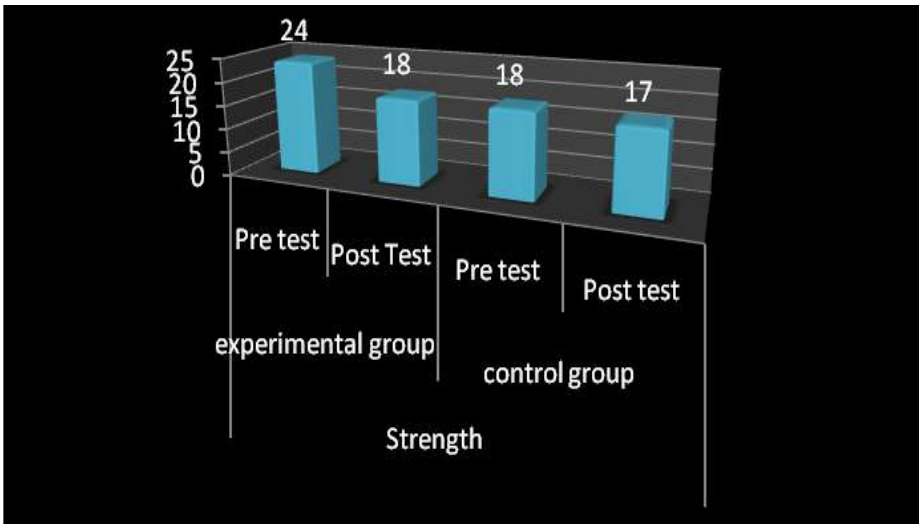


Fig 4: Bar diagrams showing mean difference between Agility pre test and post test of Experimental and Control groups.

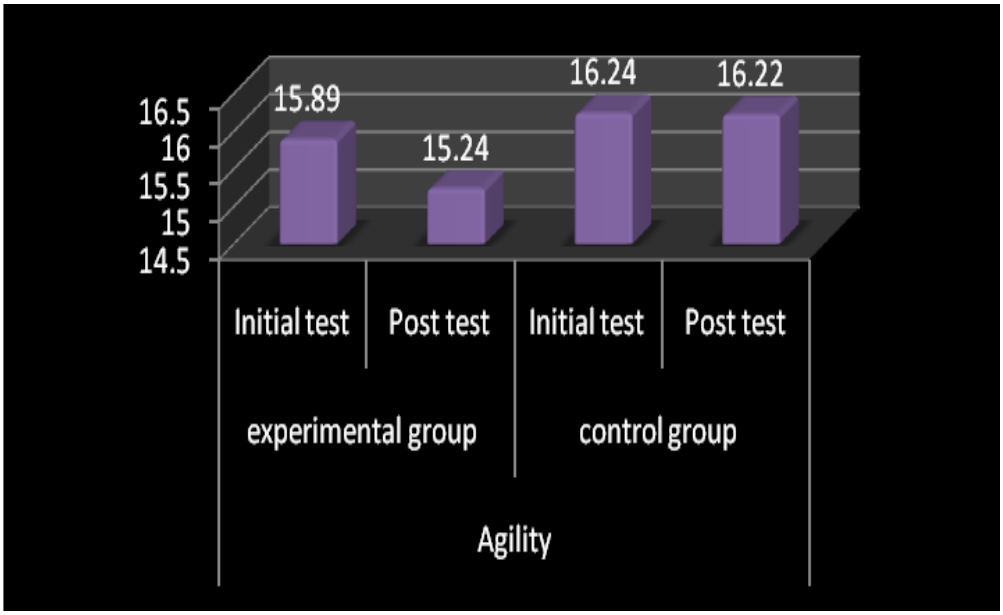
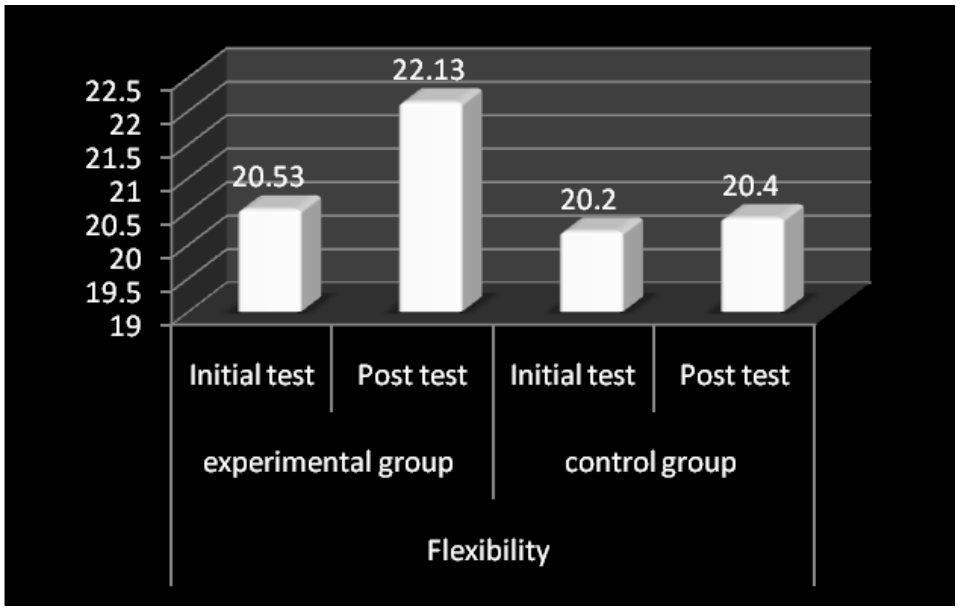


Fig 5: Bar diagrams showing mean difference between Flexibility pre test and post test of Experimental and Control groups.



DISCUSSION ON FINDINGS:

The results of the study showed that the end of the eight weeks of circuit training was a significant improvement on the selected performance variables were cardiovascular endurance, speed, strength, agility and flexibility. The improvement is due to the circuit training programme specially designed to develop the performance variables include this study. Generally cardiovascular endurance, speed, agility and flexibility were developed in an overload principles based on training even by investigator to the subjects. this was confirmed by the studies conducted by Wilmore et al., (1978), Gettman et al., (1982), Marcinik et al., (1985), Jocbs et al., (1987), Harnnel etal., (1989), Wood et al., (2001), Gotshalk et al, (2004), Takeshima et al., (2004), Izquierdo et al., (2005), Chtara et al., (2008), Alccaraz et al., (2008), Taskin et al., (2009), Paoli et al., (2010). The VOLLEYBALL is a very competitive game in nature to require a greater amount of excellence in performance variables. The same may be achieved by this present treatment to the Volleyball men players. These might be a cause of development of selected fitness variables attained by the subjects.

CONCLUSIONS:

Based on the results of the present study the following conclusions have been drawn.

1. It was concluded that the circuit training programme significantly improved the selected performance variables for experimental group.
2. Further it was concluded that the selected performance on control group.

RECOMMENDATIONS:

The following recommendations have been made from the results of the day.

1. The same study can be conducted with other variables such as physiological, socio-economic and psychological among the Volleyball Players.
2. Similar study can be conducted in inter-state and national level VolleyBall players.
3. The same study can be conducted with other games i.e. Volleyball, Volleyball, handball and kho-kho etc.
4. The same study can be conducted by increasing in terms of numbers of Volleyball players subjects.

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A CORRELATIONAL STUDY ON UPPER BODY STRENGTH (PUSH UPS) AND LOWER BODY POWER (STANDING BROAD JUMP) ON ANDHRA UNIVERSITY M.P. Ed (2023-2024) STUDENTS

Affiliation: -

Reddy Siva Kumar

Research Scholar Department of Physical Education and Sports Sciences,

Andhra University, Vishakapatnam, 530003, India

Kondapalli Uday Bhanu

Research Scholar Department of Physical Education and Sports Sciences,

Andhra University, Vishakapatnam, 530003, India

INTRODUCTION: -

An individual's performance and overall well-being are greatly influenced by their level of physical fitness. Among the many elements of fitness, upper body strength and power are essential for improving daily functional activities and athletic performance. In educational institutions, where physical education programs strive to cultivate a culture of health and well-rounded development among students, the emphasis on these qualities becomes even more crucial. This current correlational study aims to investigate the relationship between two critical parameters: lower body strength, measured by the standing broad jump, and upper body strength, measured by the traditional exercise of push-ups. Students enrolling in Andhra University's Master of Physical Education (M.P. Ed) program for the academic year 2022–2024 make up the selected population for this study. Knowing how strength and power relate to one another is very important when creating training plans that work for physical education programs. Moreover, investigating these correlations in a particular academic context, like Andhra University, might provide focused insights into the degree of fitness and possible areas for growth among M.P. Ed students. In addition to adding to the body of knowledge on physical fitness in academia, this study offers useful insights for instructors, and trainers, in shaping and developing physical education programs.

Keywords: - upper body strength, lower body power, well-rounded development, fitness in academics.

OBJECTIVES: -

1) To Find out the correlation of how Andhra University M.P. Ed students' upper body strength (push-ups) and lower body power (standing broad jump) relate to one another in the 2023–2024academic year.

2) Examine the potential consequences of offering guidelines for customized training plans and fitness programs in the field of physical education.

METHODOLOGY: -

SAMPLING: -

Using a purposive sampling technique, the study's participants were chosen from among Andhra University's M.P. Ed. in the academic year 2023–2024. improving the results' applicability to a wider range of students. The 30-person sample size (N=30) was found to be appropriate for the study's objectives and to take into account real-world factors. In an attempt to increase diversity, individuals of both genders were included, which resulted in a more accurate representation of the M.P. Ed student.

STATISTICAL DATA RESULT

Table 1. Correlation data

Correlations

		PUSH UP	STANDING BROAD JUMP
PUSH UP	Pearson Correlation	1	.358
	Sig. (2-tailed)		.052
	N	30	30
STANDING BROAD JUMP	Pearson Correlation	.358	1
	Sig. (2-tailed)	.052	
	N	30	30

Table. Statistical data

Descriptive Statistics

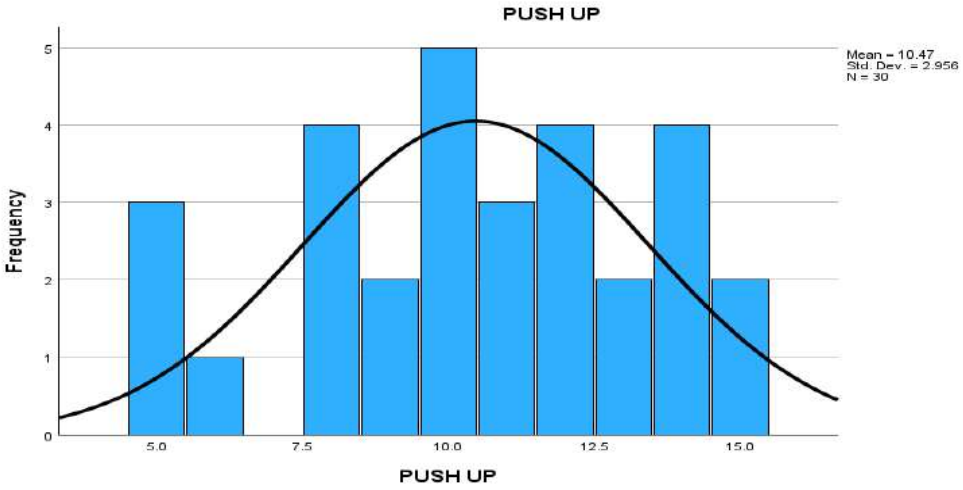
	N	Minimum	Maximum	Mean	Std. Deviation
PUSH UP	30	5	15	10.47	2.956
standing broad jump	30	1.67	2.70	2.2900	.22951

Descriptive Statistics: -

The relatively favorable link between push-ups and standing broad jumps, as indicated by the Pearson correlation value of 0.358, is evident in M.P. Ed students. According to this connection between them, there may be a relationship between upper body strength and power because there is a tendency for the standing broad jump distance to increase as the number of push-ups increases**.** It is imperative to recognize that the associated p-value of 0.052 is significantly more than the standard significance level of 0.05. The p-value of 0.052 indicates a significant tendency towards significance, although not meet the conventional level for statistical significance. This suggests that even though the results do not reach the traditional cut-off point, there might be significant correlations between standing broad jump distance and push-up performance. This highlights the significance of interpreting the results within the larger study context and calls for more research with larger sample sizes to validate the trend that has been observed.

Table 3.

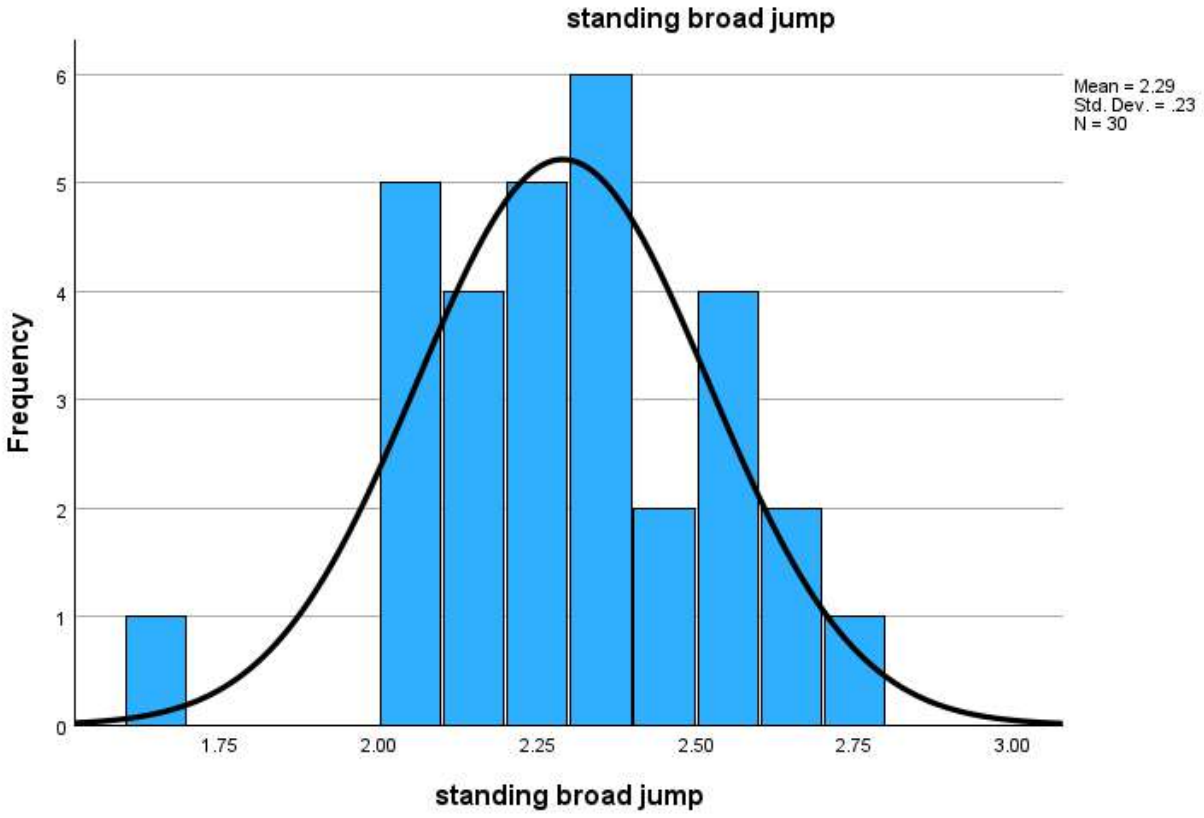
PUSHUPS data



Push-Up Performance:

The subjects completed 5 to 15 push-ups, with a mean of 10.47 on average (MEAN). The standard deviation of 2.956, which indicates variation in push-up performance, suggests that some people had more consistent results while the other subjects showed more variability.

Table 4. Standing Broad Jump Data



Standing Broad Jump Distance:

The subjects' average (mean) jump distance was 2.29, with a range of 1.67 to 2.70 units. The jump distances were relatively next to the mean, as indicated by the standard deviation of 0.22951, indicating some degree of participant consistency.

CONCLUSION: -

The correlational analysis of data collected from M.P. Ed students at Andhra University in 2023–2024 provides important new information on the relationship between upper body strength and lower body power represented by standing broad jump distance and push-up performance. The standing broad jump and push-ups have a somewhat positive link, as indicated by the obtained Pearson correlation coefficient of 0.358. This implies that there is a tendency for the standing broad jump distance to grow in proportion to the average number of push-ups performed. This is consistent with the natural hypothesis that those who possess higher levels of upper body strength are also likely to have higher levels of lower body power. These results might be useful for the instructors, trainers, and fitness experts to guide focused interventions meant to improve upper body strength and lower body power

at the same time. The outcomes also highlight the significance of a thorough approach to physical fitness programs in academic settings.

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"A COMPARATIVE ANALYSIS OF PSYCHOLOGICAL TRAITS IN RACKET SPORTS: INSIGHTS FROM TENNIS AND TABLE TENNIS"

Affiliation: -

V. Sai Venkata Naik

Research Scholar Department of Physical Education and Sports Sciences,

Andhra University, Vishakapatnam, 530003, India

K. Uday Bhanu

Research Scholar Department of Physical Education and Sports Sciences,

Andhra University, Vishakapatnam, 530003, India

Dr A. Pallavi

Associate Professor, Research Guide Scholar Department of Physical Education and Sports Sciences,

Andhra University, Vishakapatnam, 530003, India

ABSTRACT

Purpose: This study examines the psychological distinctions between tennis and table tennis players, focusing on cognitive anxiety, self-confidence, focus, and motivation. It aims to identify sport-specific psychological traits and develop tailored mental training strategies.

Methodology: The research involved 100 state-level athletes (50 tennis and 50 table tennis players), equally divided by gender. Standardized tools, including the Competitive State Anxiety Inventory-2 (CSAI-2), Concentration Grid Task, and Sport Motivation Scale (SMS), were employed. Data were analyzed using descriptive statistics, t-tests, and regression models to assess psychological variables and their impact on performance metrics.

Results: Tennis players exhibited lower cognitive and somatic anxiety and higher self-confidence, attributed to the sport's slower pace and strategic demands. Conversely, table tennis players demonstrated superior focus, required for the game's rapid reflexes, but higher cognitive anxiety due to its fast-paced nature. Both groups showed similar intrinsic and extrinsic motivation levels, with tennis players displaying slightly higher overall psychological drive.

Conclusions: The findings highlight the need for sport-specific mental conditioning programs. Tennis players would benefit from interventions to enhance self-confidence and intrinsic motivation, while table tennis players require strategies to improve focus and manage cognitive anxiety.

Implications: This research establishes a foundation for developing customized psychological training programs for racket sports athletes. Future studies should explore these variables in elite-level athletes and evaluate the efficacy of tailored mental training interventions.

INTRODUCTION

While tennis and table tennis share commonalities in their demand for agility, skill, and mental resilience, they differ considerably in their physical and cognitive requirements. Tennis played on more expansive courts with extended rally periods emphasizes stamina and tactical planning. In contrast, table tennis, characterized by quick reflexes and brief rally durations, necessitates intense concentration and rapid decision-making. This investigation examines how psychological factors like stress, self-assurance, concentration, and drive impact the performance of state-level athletes in tennis and table tennis. Through a comparative assessment, the study aims to identify sport-specific psychological traits, thereby contributing to the creation of tailored mental conditioning programs for competitors in both sports.

Review of literature

The literature review effectively identifies essential psychological dimensions such as mental toughness, personality qualities, and emotional responses in racket sports, but there is a lack of depth in comparisons between tennis and table tennis. It lacks a theoretical foundation for contextualizing variables such as anxiety and motivation and ignores societal influences, gender disparities, and skill-level variations. The relationship between performance measurements and psychological qualities is poorly understood, and no references to intervention-based or longitudinal studies are provided. Incorporating these components would result in a more thorough and concentrated knowledge, increasing the study's usefulness to mental training regimens specific to each activity.

OBJECTIVE

1. To compare psychological differences in cognitive anxiety, self-confidence, focus, and motivation between tennis
   and table tennis players.
2. Based on the data, recommend sport-specific mental training tactics for improving focus, managing anxiety, and increasing self-confidence.

METHODOLOGY

Participants

The study involved 100 participants, divided equally between tennis players and table tennis players (50 each). Each group included 25 males and 25 females, aged under 16+, with a minimum of two years of competitive experience. Stratified random sampling was used to ensure gender balance and sport-specific representation.

Instruments and Measures

Competitive State Anxiety Inventory-2 (CSAI-2): Measures cognitive anxiety, somatic anxiety, and self-confidence.
Concentration Grid Task: Assesses focus and attention.
Sport Motivation Scale (SMS): Evaluates intrinsic and extrinsic motivation.

DATA COLLECTION PROCEDURE

Participants completed the CSAI-2, Concentration Grid Task, and SMS before and after selected competitive matches. Performance metrics, including match outcomes, unforced errors, and serve accuracy, were recorded.

Data Analysis

Descriptive statistics summarized the psychological measures and performance metrics. Inferential analyses included t-tests to compare psychological variables between tennis and table tennis players and regression models to assess the predictive power of these variables on performance outcomes.

RESULT AND ANALYSIS

Player Group	Cognitive Anxiety (Mean ± SD)	Somatic Anxiety (Mean ± SD)	Self-Confidence (Mean ± SD)	Focus (Mean ± SD)	Intrinsic Motivation (Mean ± SD)	Extrinsic Motivation (Mean ± SD)
Tennis Players	18.2 ± 4.5	17.8 ± 5.2	28.4 ± 6.1	19.5 ± 3.8	30.2 ± 5.3	27.4 ± 4.8
Table Tennis Players	22.1 ± 3.9	20.3 ± 4.7	25.6 ± 5.5	21.8 ± 3.2	28.6 ± 5.8	26.1 ± 5.0

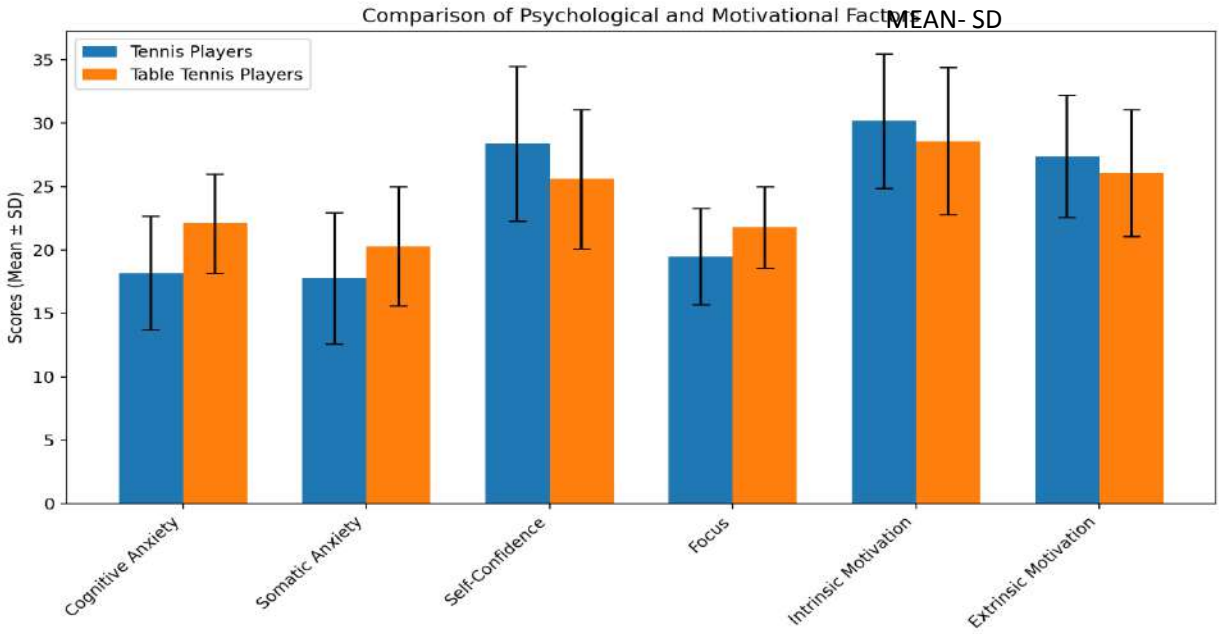
The Descriptive Analysis

Indicated that tennis players exhibited reduced cognitive and somatic anxiety levels but increased self-confidence. This may be due to the more leisurely pace of tennis, enabling players to better manage their emotions. Table tennis players, on the other hand, demonstrated superior focus and attention, likely because of the quick reflexes their sport demands. Regarding motivation, tennis playersshowed higher levels of both intrinsic and extrinsic motivation, suggesting a more robust overall psychological drive.

DISCUSSION

Aspect	Tennis	Table Tennis
Cognitive Anxiety	Lower levels of cognitive anxiety due to the slower pace, allow players time to plan and adapt.	Higher levels of cognitive anxiety are caused by the rapid pace and split-second decision-making demands.
Somatic Anxiety	Reduced somatic anxiety, likely linked to the longer rally durations and less immediate pressure.	Elevated somatic anxiety due to the high-speed gameplay and frequent intense exchanges.
Self-Confidence	Higher self-confidence as a result of extended play duration and greater opportunities for recovery.	Lower self-confidence, as mistakes in quick rallies leave little room for emotional regulation.
Focus and Attention	Moderate focus is sufficient due to the relatively longer response time during rallies.	Superior focus is essential because of the need for quick reflexes and precision in fast exchanges.
Intrinsic Motivation	Slightly higher intrinsic motivation, possibly influenced by the global recognition and prestige of the sport.	Moderate intrinsic motivation, reflecting the competitiveness and skill-based nature of the sport.
Extrinsic Motivation	Higher extrinsic motivation, often driven by external rewards such as rankings, fame, and sponsorships.	Slightly lower extrinsic motivation but still significant due to the competitive environment.
Psychological Interventions	Emphasis on building self-confidence and intrinsic motivation through relaxation and goal-setting techniques.	Focus on anxiety reduction and concentration enhancement using mindfulness and visualization drills.

Game Dynamics	Slower-paced, longer rallies with greater emphasis on tactical planning and endurance.	Rapid-paced, short rallies requiring quick reflexes, rapid decision-making, and sustained focus.
Performance Metrics	Relatively fewer unforced errors and longer rally durations influence overall performance.	Performance is highly dependent on serve accuracy, reflexive responses, and reduced unforced errors.
Athlete Development	Focus on building mental endurance and strategic thinking.	Prioritize sharpening reflexes, focus, and anxiety management techniques.
Coaching Recommendations	Use strategic exercises to enhance confidence and reduce residual anxiety.	Introduce reaction-based drills and relaxation techniques to handle pressure and improve focus.



Inferential Analysis

T-Test Outcomes: Notable disparities were found between tennis and table tennis players in cognitive anxiety ($\pi < 0.01$), somatic anxiety ($\pi < 0.01$), self-confidence ($\pi < 0.05$), and focus ($\pi < 0.05$). No substantial differences were detected in intrinsic and extrinsic motivation ($\pi > 0.05$). Regression Analysis: For tennis players, self-confidence ($\beta = 0.45$, $p < 0.01$) and intrinsic motivation ($\beta = 0.33$, $p < 0.05$) were key predictors of performance. For table tennis players, focus ($\beta = 0.48$, $p < 0.01$) and reduced

cognitive anxiety (β = -0.36, p < 0.05) were significant performance indicators.

Suggestions for Future Studies

1. Conduct a study on the combination of psychological qualities and biomechanics in tennis and table tennis to uncover overall performance predictors.
2. Examine how environmental elements, such as crowd pressure or playing conditions, affect psychological variables differently in each sport.
3. Evaluate the effectiveness of individualized mental training programs for tennis and table tennis, as well as their effects on performance and resilience.

CONCLUSION

The study indicates that, while tennis and table tennis players share psychological attributes such as motivation and resilience, the unique demands of each activity underscore the necessity for tailored mental training tactics. The psychological landscape of each sport is molded by its distinct nature, with tennis emphasizing strategic thinking and endurance and table tennis emphasizing quick reflexes and concentration.

Sport-specific therapies, particularly those addressing self-confidence, motivation, attention, and anxiety control, are critical for increasing athletes' psychological preparation. By finding these variations, this study sets the groundwork for the creation of individualized mental training regimens that can improve athletes' performance and resilience, ultimately contributing to their competitive success.

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IMPACT OF YOGA ON ANXIETY OF STUDENTS

Dr. Hanumanthayya Pujari
Professor and Research Guide
Department of Studies in Physical Education and Sports Sciences,
Karnataka State Akkamahadevi Women's University, Vijayapura.

Kum.Kavita Rathod
Research Scholar

ABSTRACT

The purpose of the present study was to find out the **"Impact of Yogic Practices on Anxiety of Secondary School Students"**. For this purpose, a total of 40 Secondary students in the age group from 14 to 16 years was agreed to take part as subject. Anxiety was considered as criterion in this study. The parameters were measured by the standard tools and procedures. Six weeks training was provided to the subjects and selection of Yogic Practice and training schedule was fixed by the consultation with the experts on Yoga. Descriptive and inferential statistics were used to analyze the data and 0.05 level of significance was considered. Results revealed that significant difference on selected parameters between pre-test and post-test value (P >0.05). It was concluded that the six weeks yogic practice did not have significant effects on control group of Secondary School students.

Keywords: Yogic Practices, Anxiety, Secondary School Girl Students

INTRODUCTION

Yoga is a generic term for the physical, mental, and spiritual practices or disciplines which originated in ancient India with a view to attain a state of permanent peace. Various traditions of yoga are found in Buddhism, Hinduism and Jainism. In Hinduism, yoga is one of the six astika schools of Hindu philosophy. Long term yoga practitioners in the United States have reported musculoskeletal and mental health improvements, as well as reduced symptoms of asthma in asthmatics.

Regular yoga practice increases brain GABA levels and has been shown to improve mood and anxiety more than some other metabolically matched exercises, such as walking. The three main focuses of Hatha yoga make it beneficial to those suffering from heart disease.

Yoga is a form of exercise that unites breath, mind, body, and spirit. The word and practice yoga

conjures up images of Eastern philosophy and ancient practices. Modern day yoga practice has been discovered in the Western world by many people want to strengthen their bodies in a new way. Yoga is not the fast pace cardiovascular workout like running, dance class, or a sport like tennis. Yoga is learning how to slow your thoughts way down, place all your attention on the present moment, and create an oasis of stillness in your movements. Hence it is very important and essential to impart yogic education to our children.

OBJECTIVE OF THE STUDY

To measure the Impact of Yoga practices on anxiety among School Girl Students.

HYPOTHESIS

There is a significant Impact of yoga on anxiety among School Girl Students

MATERIAL AND METHODS

The Subjects

A total of 40 School Girl Students were take part in this work as subjects. They All are regular students of Sri Gurudeva high School Girl Students, Vijayapura District of Karnataka and the age range of the student was in between 14 to 16 years.

Design of the study

Single group design was adopted for this study. The group participated six weeks of Yoga Practice. The group was tested before the treatment (pre-test) and again they were tested after six weeks of Yoga Practice (Post-test). For know the difference between Pre-test and Post-test mean were analyzed statistically by t-test to find out the impact of Yogic practices.

Criterion measure

Psychological Anxiety was measures in this study

Instruments and tools used

Anxiety - Questionnaire developed byDr.Harish Sharma and Dr. Rajeev Lochan Bharadwaj

TRAINING SCHEDULE

Yoga practice scheduled as three days in a week basis for a period of Six weeks continuously. The practice set was repeated two times for each asana in during Six weeks. Duration of the practice programmed was 45 minute per day in during the practice period. The Asanas are Padmasana, Sarvangasana, Halasana, Bhujangasana, Matsyasana, Chakarasana, Dhanurasana, Ardhamatsyenderasana, Vajrasana, Sirashasana and Savasana. The tests were carried out with standardized procedure. The pre and post test were conducted on selected variable of Anxiety. The Psychological parameters were assessed through standardized questionnaire.

Statistical procedure used

To conduct the present study single group design was adopted. Therefore, descriptive and inferential statistics were used for analyzed the data. Mean and standard deviation were used as descriptive statistics. The significance of difference between the pre-test score and post-test score was computed by using t-test. Only 0.05 level of significance was considered in this study.

RESULTS AND DISCUSSIONS

Table No.1. Shows the Mean, SD and't'- Value of Pre-test and Post–test for Yoga Experimental Group and Control Group on Anxiety.

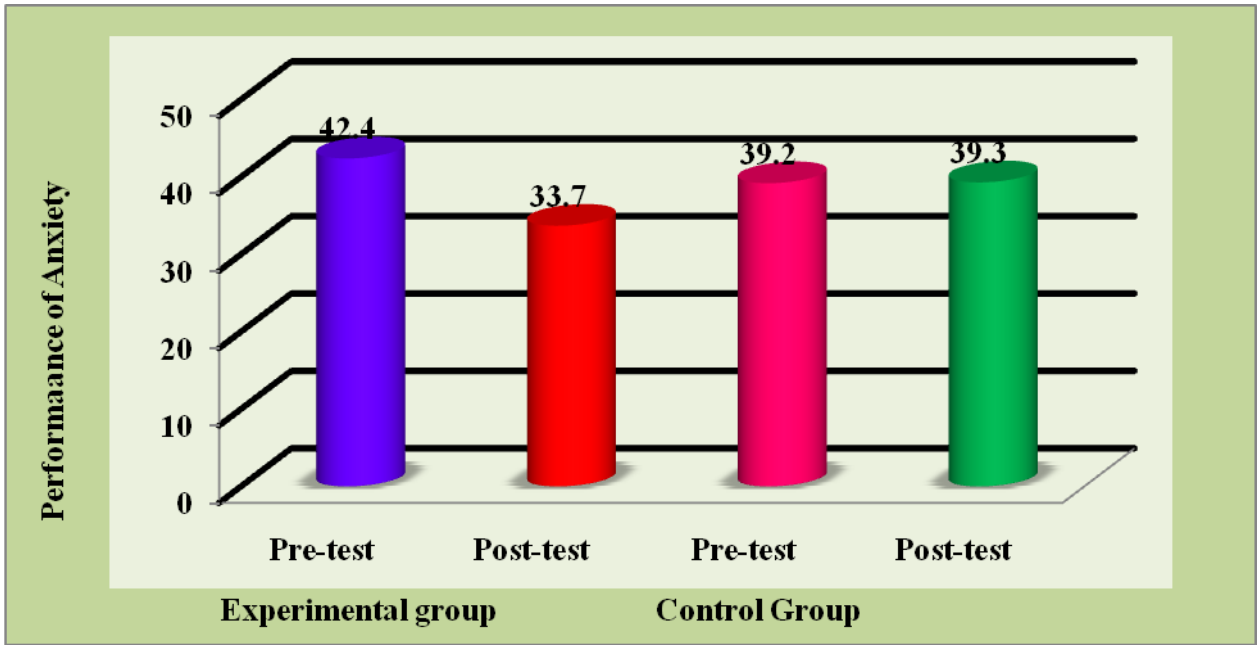
Variable	Group	Test	N	Mean	SD	t- Value
Anxiety	**Experimental Group**	**Pre-test**	**10**	**42.4000**	**3.53396**	**9.720***
		Post-test	**10**	**33.7000**	**4.24395**	
	Control Group	**Pre-test**	**10**	**39.2000**	**8.80404**	**1.000**
		Post-test	**10**	**39.3000**	**8.80719**	

The level of significant 0.05=Table value =2.000

Table No1. Explains that the t- value is more than the table value that is 2.000, hence it is significant. The pre-test mean value is 42.4000 and the post-test mean value 33.7000. The post-test mean value is less than pre-test mean value. It shows significant improvement in the Anxiety performance of College Students owing to the Six weeks yogic practice. The

pre-test Mean value is 39.2000 and the post-test mean value 39.3000. The post-test mean value is more than the pre-test mean value. It is shows no improvement in the Anxiety of School Girl subjects control group did not participate any kind of training Programme the same as displayed in the figure 1. (a)

Figure No.1.The Pre-test and Post–test for yogic practice Experimental Group and Control Group on



ANXIETY PERFORMANCE

The above figure 1. Shows that the post test values of Experimental group significantly improved the performance of Anxiety and also the post-test values of Anxiety were less than the pre-test values due to six weeks of yogic practice. The Control group pre-test and post- test performance of Anxiety shows no improvement.

SUMMARY

The Aim of the study was to investigate the "Impact of Yoga on Anxiety of School Students". The researcher selected Anxiety as psychological Variable. Six weeks of Yogic Practice were given to 40 subjects before training the scholar conducted pre-test performance on selected Variable. After the 6 weeks of Yoga training the post-test performance was recorded on Anxiety. The result of the post-test performance shows significant improvement.

CONCLUSIONS

Six weeks of Yoga training has shows significant improvement on Anxiety among School Students.

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SPORTS FOR PEACE: LEVERAGING THE POWER OF SPORT FOR GLOBAL UNITY AND CONFLICT RESOLUTION

Ms. Mrinalini Nehra
Asst.Director Sports
Guru Jambheshwar University of Science and Technology, Hisar
mrinalininehra@gmail.com

ABSTRACT

The concept of "Sports for Peace" is an example of the goal of sport that has the potential to be a transforming instrument for global harmony, settlement of disputes, and social solidarity. Live in this world where the walls that we create where identity, culture, and politics are concerned push back to the universality of sports being that it is a language without borders, it offers a neutral ground where dialogue and cooperation possibilities are limitless. This article is devoted to the exploration of the different roles of sports in peace-building and mainly on its role in diplomatic relations strengthening conflict solving, and social harmony promotion. Sports are personally utilized in the process to bridge the divide and patch up the scars caused by prior conflicts in such places as Rwanda, South Africa, and the Middle East which the article has also taken a look at. Furthermore, the benefits of sports for peace-building are discussed. There are quite a few problems that emerge when sport is used to promote peace. The political factor, the pressure of commercializing it, or the cultural differences are some of the issues that may opt to take the easy way out. Additionally, the paper will address what limited leverage this is and suggest ways for better options. At the end of the day, the case examples of this article serve as a good illustration of how sport is like a model representing constructive social transformation which is beside the point of world peace.

Keywords- resolution, peace, unity, conflict, commercialization

INTRODUCTION

To promote peace in a world that is becoming more divided, sport provides an important tool that can save the situation in addition to other traditional methods of diplomacy. The latter, even though inseparable, are not always able to cover the main causes of conflicts. From here, the sport has become a surprising and effective prosecutor of peace. Its message is in the universal language just to identify the separations of individuals, build mutual understanding, and unite people from various backgrounds.

"Sports for Peace" is an idea that is a reflection of the increasing recognition of the sport's

transformative factor in social changes. Whether at the Olympics or the World Cup, or in the context of local initiatives - the sport is the grassroots game that builds a field where people assemble, learn, and also practice human values such as cooperation, respect, and fair play. The essay aims to find out how sports can be a means of causing peace and the author focuses on its manifestations in diplomacy, conflict resolution, and social cohesion by itself. Additionally, it covers the issue of sport as the instrument of peace, offering solutions to the issue of its utilization as well as the need for the broadening of its impact. Sports for Peace is the idea that has arisen due to the increasing realization of the role of sport as a promotor of positive change in societies. Sport is not just an international sport such as the Olympics and World Cup, but also a local platform that gives people the opportunity to connect and at the same time, foster the qualities of good character such as team spirit, kindness, and fair play. This report explores the phenomenon of sport as a tool for achieving peace, emphasizing its role in diplomacy, conflict resolution, and social cohesion. Furthermore, it reveals the downsides of using sport as a channel for bringing about peace, proposing methods for eliminating the obstacles and thus maximizing its impact.

THE ROLE OF SPORT IN PEACE-BUILDING

The scope for sports as a tool for peace-building can be seen through three main frameworks: its role in diplomacy, conflict resolution, and the push for social cohesion within communities. Each of the three of these aspects depicts the fact that sporting activities are not merely a global phenomenon but also a grassroots-oriented enterprise. Within the negotiation sphere, the sporting event can be a medium for dialogue and can be a bridge between the warring nations. On a small scale, sports are instruments of conflict resolution and they can thus be abolished as barriers to the union and common ground. Lastly, sports are the most vital player in the process of community development by connecting youths and helping them stay clear of drugs and crime; by so doing, they act as agents of bringing various cultures, ethnicities, and social groups together. In the context of these three scenarios, we can thus understand the various sensitive ways that sports generate peace-building at the two levels - worldwide and grass-roots.

SPORT AS A TOOL FOR DIPLOMACY-

The role of sports in diplomacy is quite visible during international sports events, when countries take a break from their differences for friendly rivalry and mutual assistance. Events such as the Olympic games, the FIFA World Cup, and other global gatherings provide an excellent platform for the peaceful exchange of ideas between countries. These events are the space where conversations and

collaboration are presented, allowing leaders, athletes, and citizens from different countries to be together in a more comfortable social context and demonstrate mutual respect through sport.

One of the most famous examples of sport used in diplomacy was during the Cold War. The early 1970s had a prime example of the "Ping-Pong Diplomacy" when the United States and China talked, which explains how sport namely, table tennis conspired to make the two ongoing ideological enemies start to agree. The two of the world's nations swapping athletes led to an atmosphere of goodwill, which in turn broke down barriers of suspicion and mistrust. This kind of sporting exchange led to the coming back of diplomatic relations between the U.S. and China**.**

Equally significant, the 1995 Rugby World Cup, which was played in South Africa just a year after the fall of apartheid, was a very strong symbol of the transition of the country from a state of racial discrimination to a unity under democratic rule. The public support of the Springboks, a rugby team dominated by whites, by Nelson Mandela, sent a clear message about the healing of the rifts that had been dividing the nation. Mandela employed sport as an instrument for the promotion of social and political cohesion through the backing of the team, showcasing how this could serve as a redemptive remedy to racial disparities and create a unified sense of national character.

SPORT AS A CATALYST FOR CONFLICT RESOLUTION-

Sports is another area in which conflicts at the local and national levels can be avoided. Ethnic, religious, or political differences, that are responsible for the outbreak of mass conflicts and instability, can be gotten around through sports activities which create a neutral zone where opposing groups get indulged in joining hands and solving problems. By reinforcing the principles of cooperation and understanding of each other, the effects of sports initiatives on the tension of social groups and the building of bridges between the contested communities have been beneficial.

One example of such an approach is the application of sports in Rwanda after the genocide. Post the 1994 genocide, in which it was estimated that 800,000 people were killed, Rwanda confronted the enormous challenge of rebuilding a society that was torn apart by ethnic violence. Sport was a major component of the reconciliation movement in the country. Respective programs like Soccer for Peace brought Hutu and Tutsi youngsters together. They had been divided by the horrors of the genocide. The offspring were to intertwine, create friendships, and get rid of the prejudices that were established through despising decades of ethnic conflict. For these programs, were not only to give platforms for the citizens to speak but also to instigate the society to heal and build trust among them. In a similar vein,

in the post-conflict period of Bosnia and Herzegovina, sport has been used as a tool for reconciliation. However, the Bosnian War of the 1990s, which was the cause of sports programs such as "Football for Peace," joined children from different ethnic backgrounds Bosniaks, Croats, and Serbs. They built bridges between communities that had been deeply divided by war. Through the organization of football matches and tournaments, the program created a feeling of common purpose and enabled the young to forget about their ethnic differences, thus, showing the sport can be a healing agent and a rehabilitation tool as it may build the trust that has been lost.

SPORT FOR SOCIAL COHESION AND COMMUNITY DEVELOPMENT-

Sport, besides being an agent of conflict resolution, is a very important tool for promoting the local community's harmony and the advancement of the members of the community. In most societies, especially those with people who have been marginalized or are disabled, sport is the only way for individuals to unite, create an atmosphere of friendship, and enhance the social structure. It is through these structured sporting activities, that participants of these programs can acquire the much-needed soft skills like teamwork, leadership, discipline, and interpersonal communication skills that make the learners feel part of one common culture and identity.

The idea of "Sport for Development" emphasizes the use of sport as a tool to address broader social issues such as poverty, unemployment, education, and social exclusion. Football-based organizations like Street Football World have been taking football to fight issues of youth violence, discrimination, and lack of opportunity around the world. The approach is based on the understanding that when young people play sports, they develop positive attitudes and behaviors that make a profound contribution to community stability and peace.

In Kenya where youth unemployment and poverty have often occasioned social unrest, the Kenya Youth Football Development Program utilizes sports not just fitness but also mentorship and education- to change young lives. Young people are exposed to life skills training that helps them become responsible and active community citizens. This again goes on to show how sports can be used from a perspective of an activity yes but also as a way of addressing underlying issues causing instability in a community.

CASE STUDIES: LESSONS FROM REAL-WORLD APPLICATIONS -

To understand the impact of sport on promoting peace, it is useful to examine a few case studies of successful uses of sport for peace-building and reconciliation.

1.Rwanda's Post-Genocide Reconciliation

Rwanda convincingly endured intense ethnic violence after the genocide of 1994. The destruction of society's fabric left a tough job of reconstruction. There were political measures such as justice and accountability as well, while sport added impetus to the idea of national reconciliation. Young people were brought together by the "Peace through Soccer" program and other initiatives using sports to encourage cooperation and understanding between people from different ethnic backgrounds. The success of these programs was partially due to their emphasis on involving communities at the bottom of society and encouraging the participants to own the process and develop genuine ties.

2. South Africa's 1995 Rugby World Cup

South Africa's 1995 Rugby World Cup marked a pivotal moment in the nation's journey after apartheid. Led by Nelson Mandela, the event symbolized reconciliation and the effort to build a unified nation. Mandela's choice to back the national rugby team, which represented white South African identity, played a crucial role in bringing together the country's fractured communities. The World Cup emerged as a powerful metaphor for a new, inclusive South Africa, showcasing how sport can drive social and political transformation.

3. Peace Players International in the Middle East

The Middle East has historically been a region characterized by political and religious strife. Nevertheless, sports initiatives like "Peace Players International" aim to connect Israeli and Palestinian youth through basketball. This program fosters collaboration and understanding, encouraging dialogue among young people from different backgrounds. By emphasizing common interests and teamwork, Peace Players International illustrates how sports can serve as a significant catalyst for peace in one of the world's most unstable areas.

CHALLENGES TO USING SPORT FOR PEACE

Despite the potential benefits of sports for peace-building, several challenges must be addressed for sports to be most effective in promoting peace.

1.Political and Institutional Barriers

In certain situations, sports can become intertwined with politics, limiting their ability to promote peace. Governments and political figures might be hesitant to utilize sports as a means of communication, especially if they perceive it as politically charged or a possible challenge to their power. Moreover, in areas affected by conflict, the availability of sports facilities and resources can be restricted, impacting the effectiveness of program

implementation.

2. Commercialization of Sport

The growing commercialization of sports, especially in professional arenas, presents a significant challenge to utilizing sports as a means for promoting peace. When profit becomes the primary motivation, grassroots initiatives that could drive social change often get sidelined. The emphasis on television ratings, sponsorship agreements, and ticket sales can overshadow the fundamental values of sports, including fair play, inclusivity, and respect for all.

3. Cultural Sensitivity

Sports initiatives to promote peace must be culturally sensitive and inclusive. Various communities engage with various sports, and it is, therefore, important to select activities that relate to local culture/tradition/interest (e.g., and thus people can see the reference between the anomalous image in virtual and physical space with that particular different sport). Painting a sport not in synch with the local customs can drive away the participants and dilute the effect of the sports program.

RECOMMENDATIONS FOR MAXIMIZING THE IMPACT OF SPORT FOR PEACE

1. **Integrating Sport into Peace-building Frameworks-**
   Governments, international organisations, and NGOs should incorporate sport into wider peace-building structures. Sport should be viewed not only as an instrument of entertainment but also as part of a strategic instrument for diplomacy, mediation, and social development.
2. **Support for Grassroots Initiatives-**
   Grassroots sports programs, particularly those serving minority communities, need more support and investment. Such programs tend to be more successful in creating social cohesion and resolving local disputes.
3. **Promoting Inclusive and Diverse Sports-**
   Sports programs need to be accessible and provide sports that are attractive to diverse communities. Inclusivity can also be realized through equal sports opportunities for women, people with disabilities, and other marginalized groups.
4. **Monitoring and Evaluating Impact –**
   Sports programs need to be accessible and provide sports that are attractive to diverse communities. Inclusivity can also be realized through equal sports opportunities for women, people with disabilities, and other marginalized groups.

CONCLUSION

Sport holds the capacity to be a powerful instrument of peace. Across the spectrum of diplomacy and conflict resolution, social cohesion, and community development, sport provides a distinctive opportunity to construct bridges between segregated communities. Yet, to definitively exploit the capacity of sport on peace, action to address the issues to be brought about by its exploitation must be taken. When we promote grassroots programs, inclusion, and use of sport as part of wider peace-building strategies we provide sport with a vital leverage to promote global unity and reconciliation.

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EFFECT OF PLYOMETRIC TRAINING AND CIRCUIT TRAINING ON SELECTED MOTOR, PHYSIOLOGICAL AND SKILL RELATED PERFORMANCE VARIABLES AMONG MEN VOLLEYBALL PLAYERS OF MANUU

Dr. Rajesh Jajaari,
Assistant Director, Directorate of Physical Education & Sports,
Maulana Azad National Urdu University, Hyderabad, 500032, Telangana.

Dr. A. Kaleemulla,
Deputy Director, Directorate of Physical Education & Sports,
Maulana Azad National Urdu University, Hyderabad, 500032, Telangana.

Dr. Firdaus Tabassum,
Assistant Professor, Department of Education and Training
Maulana Azad National Urdu University, Hyderabad, 500032, Telangana.

PLYOMETRIC TRAINING

Plyometrics, also known as jump training or plyos, are exercises in which muscles exert maximum force in short intervals of time, with the goal of increasing power (speed-strength). This training focuses on learning to move from a muscle extension to a contraction in a rapid or "explosive" manner, such as in specialized repeated jumping. Plyometrics are primarily used by athletes, especially martialartists, sprinters and high jumpers, to improve performance, and are used in the fitness field to a much lesser degree.

The term "plyometrics" was coined by Fred Wilt after watching Soviet athletes prepare for their events in track and field. He began collaboration with trainer Michael Yessis to promote plyometrics. Since its introduction in the early 1980s, two forms of plyometrics have evolved. In the original version, created by Russian scientist Yuri Verkhoshansky, it was defined as the shock method. In this, the athlete would drop down from a height and experience a "shock" upon landing. This in turn would bring about a forced eccentric contraction which was then immediately switched to a concentric contraction as the athlete jumped upward. The landing and takeoff were executed in an extremely short period of time, in the range of 0.1–0.2 second. Explosive plyometrics describes the approach originally created

by Verkhoshansky. He experimented with many different exercises, but the depth jump appeared to be the best for duplicating the forces in the landing and takeoff.

CIRCUIT TRAINING

The circuit training is an excellent way to simultaneously improve mobility and build strength and stamina. The circuit training format utilizes a group of 6 to 10 strength exercises that are completed one exercise after another. Each exercise is performed for a specified number of repetitions or for a given time period before moving to the next exercise. The exercises within each circuit are separated by brief, timed rest intervals and each circuit is divided by a longer rest period. The total number of circuits performed during a training session may differ from two to six depending on your training level (Shyam Anand 2017)

OBJECTIVES OF THE STUDY

1. To measure the influence of plyometric training treatment on the selected motor physiological and volleyball skill related performance parameters of volleyball players.
2. To evaluate the impact of circuit training treatment on the selected motor physiological and volleyball skill related performance parameters of volleyball players.
3. To understand the changes between plyometric training and circuit training.

STATEMENT OF THE STUDY

The main purpose of this study was to investigate the impact of plyometric training and circuit training on selected motor physiological and volleyball skill related performance parameters of male volleyball players.

HYPOTHESIS

The investigator frames the following hypothesis after referring various literatures related to studies and opinion of physical education and sports experts.

1. The investigator first hypothesis was the selected motor physiological and volleyball skill related performance parameters would be improved significantly with the treatment of plyometric training when comparison with control group.

2. The investigator second hypothesis was the selected motor physiological and volleyball skill related performance parameters would be improved significantly with the treatment of circuit training when comparison with control group.
3. The investigator third hypothesis was the plyometric training would be more beneficial then circuit training on chosen motor and volleyball skill related performance parameters.
4. The investigator forth hypothesis was the circuit training would be more effective to improve chosen physiological
5. performance parameters comparative to plyometric training.

DELIMITATIONS

The following lists of delimitation were frame for this study mentioned below.

1. Total N=36 district, state, inter collegiate, inter university and national level participated male volleyball players chosen from deferent Schools of Maulana Azad National Urdu University, Hyderabad, India.
2. The chosen volleyball player's age ranged from 18-25 years.
3. The training period schedule plan fixed for 12-weeks.
4. The independent variables chosen for this study were plyometric training and circuit training.
5. The chosen motor fitness parameters were speed, agility, explosive power, flexibility and muscular endurance.
6. The chosen physiological parameters were resting pulse rate, cardiovascular endurance and breath holding time.
7. The chosen volleyball skill related performance parameters were fundamental abilities in volleyball.

LIMITATIONS

The investigator not controlled the following list of things during training period.

1. The past training experiences of volleyball players were not considered for this research.
2. The volleyball players were not restricted any types of food habits, daily routine of works and life style of the volleyball players
3. The changes in climatic condition [temperature, air etc] during training period and administration of test were not taken into consideration.

4. The investigator not had given any type motivation during training period and administration of test.
5. The economical condition and cultural backgrounds of the volleyball players were not considered.

SIGNIFICANCE OF THE STUDY

This study significance in the following ways

1. This study helps to understand to know the extent of improvement in selected parameters of volleyball players.
2. This study guide to choose the different type of exercises and training to enhance the specific performance of the volleyball players.
3. To find the qualities and potentiality of volleyball players.
4. It introduces the importance of plyometric training and circuit training to enhance the performance level of players.

SELECTION OF VOLLEYBALL PLAYERS

To achieve the purpose of this research the investigator chosen total N=36 district, state, inter collegiate, inter university and national level participated male volleyball players chosen from various schools in Maulana Azad National Urdu University, Hyderabad, India. The chosen volleyball player's age ranged from 18-25 years as per their School record.

Sample Design of Selected Volleyball Players

The selected men volleyball players N=36 randomly distributed into 3-groups equally n=12. Treatment group 'A' treated with Plyometric training [PTG =12 volleyball players], treatment group 'B' treated with circuit training [CTG=12 volleyball players] and control group [CONG=12 volleyball players] participated only their regular activities.

The selected volleyball players feel any uncomfortable and injuries were free to withdraw during Plyometric training and circuit training sessions.

Selection of Independent and Dependent Parameters

The investigator chosen the independent and dependent parameters after consulting the experts of physical education, supervisor, and Physical Directors, reviewing of literature related to plyometric training, and circuit training are given below.

Table -1

INDEPENDENT AND DEPENDENT PARAMETERS

INDEPENDENT PARAMETERS		
Plyometric training	Circuit training	
DEPENDENT PARAMETERS		
Motor fitness parameters	**Physiological parameters**	**Volleyball skill related performance parameters**
speed agility (change of directions) explosive power flexibility Muscular endurance.	Resting pulse rate Cardiovascular endurance Breathe holding time.	Brady Volleyball skill test

Table: 2

SELECTION OF TEST INSTRUMENTS AND UNITS OF MEASURE

Motor fitness parameters		
Variables	**Test/Instrument**	**Units**
Speed	50 meters dash	In seconds
Agility	6X10m Shuttle run	In seconds
Explosive power	Standing board jump	In centimeters
Flexibility	Sit and reach test	In centimeters
Muscular endurance	Bent knee sit up test	In numbers
Physiological variables		
Resting pulse rate	Manual method (radial of the wrist)	In numbers
Cardiovascular endurance	Cooper 12 minutes run/walk test	In meters
Breathe holding time.	Manual method (Nose clips)	In seconds
Volleyball skill related performance variables		
Fundamental abilities in field volleyball	Brady Volleyball skill Test	In seconds

TRAINING SCHEDULE

The twelve weeks training schedule planed on the base of progressive load method. Every fourth week load has increased in total time duration, number of exercises, repetitions and sets. Total time duration of each day training session minimum 90 minutes to maximum 120 minutes. Plyometric training and circuit training applied on alternative days in a week. If any volleyball players feel uncomfortable and injuries during any training sessions are free to quit from that training session. The twelve weeks training schedule of Plyometric training and circuit training schedule plan for chosen volleyball players were mention below in details.

STATISTICAL TECHNIQUE

The collected score from Plyometric training group, circuit training group and control group volleyball players beginning and after the treatment period were statistically analyzed by analysis of covariance [ANCOVA] with the software SPSS to find the significant. Where ever the adjusted post test means 'F' value found significant, Scheffe's post hoc test formula applied to find the significant changes between three groups Plyometric training group, circuit training group and control group.

CONCLUSION

The following list of conclusion framed for this study after analyses of motor physiological and volleyball skill related performance score are given below.

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EVALUATING NEUROMUSCULAR COORDINATION FOR HANDS AMONG PHYSICAL EDUCATION STUDENTS

Dr. T. Prabhakar Reddy,
Head, Associate Professor, Department of Physical Education,
Indira Gandhi National Tribal University
Regional Campus Manipur, Manipur.
hod.pedu_rcm@igntu.ac.in

ABSTRACT

The purpose of this study was to evaluate neuromuscular coordination for hands among physical education students. Neuromuscular coordination was evaluated using the soda pop test and the effect of to variable including sex (male and female) and hands (preferred and non-preferred). The data were collected from a sample of (305) students via survey method. Results indicated that sex (male and female) and hands (preferred and non- preferred) appeared most powerful predictors of neuromuscular coordination in favor of female and preferred hand of the student.

Keywords: Nuromuscular coordination, Gender, Handedness, Physical Education Students

INTRODUCTION

The human body is particularly well suited to perform an infinite number of physical stunts. This performance can provide humans with versatility to produce movements that no machine can even handle. The outstanding and spectacular display of gymnastic and diving routines in the Olympic Games is an obvious display of the uniqueness of the human body as a moving machine. The ability of the central nervous system to control and manipulate the level and type of muscular activation and/or inhibition of different motor tasks, which requires accuracy and timing, is referred to as coordination. In other words, coordination is the integration of the nervous and the muscular systems to produce correct, graceful, and harmonious body movements in which hand-eye and/or foot-eye movements, or both, must be integrated (Hoger & Hoger, 2004). Physiologically speaking, coordination is the ability of the nervous system to select and control the level of degree of freedoms in joint actions; in fact for each degree of freedom in a joint, 4.6 muscle groups are involved in controlling each degree of freedom (Prilutsky & Zatssiorsky, 2002) Neuromuscular coordination is an important topic that has been variantly discussed in the literature. To elaborate on this issue, the next few paragraphs present the studies that have been in existence related to this topic. For example, Edermann, Mayer, Murray, and Sagendorf, (2004)

studied the influence of cup stacking on eye-hand coordination and reaction time of 24 boys and 18 girls in second grade as measured by the soda pop and yardstick tests, respectively. Two physical education classes were randomly assigned as treatment and control groups and were pre- and post-tested for hand-eye coordination and reaction time.

The treatment groups participated in a 5-week cup-staking program. Significant improvements were noted for both hand-eye coordination and reaction time between pre- and post-test scores for this group but not for the control group. Therefore, cup staking is indeed effective in enhancing hand-eye coordination and reaction time. It is obvious that the above study focused on fine motor skills for secondary students regardless of the effect of gender. However, Silva, Birkbeck, Russel, and Wilson (1984) compared gross and fine motor skills for 954 secondary male and female students. Results indicated that males out perform females in gross motor tasks while females are superior in fine motor tasks. In short, we can conclude that these studies did not account for the effect of gender with regard to motor and fine skills. After a thorough perusal of the literature, many investigators (Ardle, Katch, & Katch, 1991; Brook & Fahey, 1984; Bloom & Fitch, 1992; Nieman, 1990; Wells; 1984; Wilmore & Costill,

The elements of fitness and physical ability, which as indirectly, relate to gross and fine motor skills. Few of these studies discussed the differences between the sexes. Studies in the area of sex differences in athletic performance witnessed increased momentum when many socio-psychological barriers contributing to female reluctance to sport participation were eliminated in the west. According to these studies in the area of sex difference in performance of the same competitive sport, conclusions were reached among professional coaches working with both sexes (Ardle, Katch & katch, 1991; Brook & Fahey, 1984; Bloom & Fitch, 1992; Nieman, 1990; Wells, 1984; Wilmore & Costill, 1991). These conclusions state that comparison between both sexes in competitive sport must take into account four major differences between the two sexes.

These four dimensions include:

a) anatomical dimension; b) muscle mass; c) metabolic potential; and d) sex-hormones.

When these four dimensions are taken into account in sport performance, researchers (Brook & Fahey, 1984; Nieman, 1990; Wells, 1984) indicated that the sport performance differences arerelative to the type of the fitness elements required for those particular athletic events as follows:

1. Female athlete's performance in strength–dependant sport activities is less than male athletes due to less body mass in females compared to males with the male hormone testosterone as a major contributor to increased muscle mass in male athletes. Accordingly, female's performance in strength and power type activities like throwing, leaping and jumping is less compared to males subjected to the same training program.

2. Males have the following advantages in speed dependent activities:

* Longer lower extremities which give males a mechanical advantage in stride length because longer legs are longer levers.
* More muscle mass in the legs.
* Less fat mass, (this means less inert tissue).

3. Sex differences in short distance races such as 100 and 200-meter dash events are very minimal but increase linearly with increased race distance.

4. In endurance sports, female performance is less than males because males have an advantage in many factors that contribute to oxygen availability and delivery to working muscles such as increased lung size (increased vital capacity), Better maximum ventilation, larger heart and stork volume, increased hemoglobin concentration.

5, Equally trained males will perform better in endurance sports compared to females who never the less, will out perform the untrained age – matched male.

In brief, females are inferior to males in strength and speed dependant athletic events due to anatomical differences betweenthe two sexes (Hales, 1992; Hoger & Hoger, 2004). These factors are behind the almost 10% difference in maximum oxygen uptake in favor of males. However, females can increase their vo2-max through training enough to sustain long distance endurance events such as the marathon.

In spite of this numerous studies there where shortage in the studies which take coordination and its importance and the differences between sexes. An analysis of the research literature on sex differences in simple perceptual-motor tasks has led to conclude that young females exceed their counter males in fine manual dexterity (Broverman, Klaiber, Kobayshi, & Vogel, 1968; Jenson, 2007). Furthermore, females perform better in perceptual motor behaviors associated with speech and reading as well as small muscles simple perceptual motor activities that require speed, repetition and skill. In fact, others (Broverman, Klaiber, Kobayshi, & Vogel, 1968) described motor behaviors in which females are superior to males as behavior with following attributes:

i. The behaviors depend on past experience or learning vs. problem solving of novel or difficult tasks.
ii. The behavior involves fine coordination of small muscles with perceptual and observational processes such as typing or reading vs. behavior that call for gross motor activities that involve large muscle groups.
iii. The behaviors are evaluated in terms of speed and accuracy of repetitive responses such as color naming vs. behavior that require production of new responses or insight as in maze solutions.

Since the previous literature indicate that most of the research studies were carried out using gross motor activities, the researchers of this study aimed to explore sex-differences in performance of motor tasks that depend on Neuromuscular coordination aspect of motor performance.

STATEMENT OF THE PROBLEM

The need and importance of this study is of value to those investigating neuromuscular coordination. After a thorough perusal of the literature, there appears to be, no research studies involving this area in Jordan. Therefore, the purpose of this study was to evaluate neuromuscular coordination of hands among physical education students is viable and important.

Research Question

The following question was formulating to achieve the purpose of the study:

What are the differences in neuromuscular coordination among male and female physical education students and among preferred and non-preferred hands?

RESEARCH METHODOLOGY

Population and Sample

The sample of the study consisted of 305 students selected via random sampling procedures. The participants were assigned Numbers and were entered into computer database. The sample consisted of males and females from rehabilitation, physical education, and sport management departments. The age range was three (18 to 21 years). Students were selected from all academic ranks. The distribution of the sample is shown in Table (1).

Table (1): Sample Description

Variable		N	percentage
Gender	Male	115	37.7
	Female	190	62.3
	Total	305	100
Handedness	Preferred	*305	100
	Non Preferred	*305	100
Academic rank	First year	63	20.66
	Second Year	89	29.18
	Third year	79	25.90
	Fourth year	74	24.26

* These numbers refers using two arm (right and lift for each sample)

Instrumentation:

The instrument used to collect data in this study was Soda Pop Test for neuromuscular coordination ability adapted from Hoger & Hoger (2004) which examined the coordination between the eyes – hand. This test was selected because it is simple, easy to use, and takes few minutes to complete. Furthermore, this test has proven to be valid and reliable.

Validity and Reliability of the Instrument:

The original English version of the test was developed after:

(a) an extensive review of the literature;

(b) consultation and participation by a panel of experts in the area. The test was shown to have both content and face validity. For indication of reliability, the test was studied with 40 students, resulting in an acceptable reliability coefficient of .81 (Hoger & Hoger, 2004).

Instrument translation process:

To ensure equivalence of meaning between the process of the Soda Pop Test (SPT) between the Arabic and English versions, a rigorous translation process was used that included forward and backward translation, subjective evaluations of the translated items and pilot testing. The goal of the translation process was to produce an Arabic version of the SPT that were equivalent in meaning to the

original English version (Lomi, 1992; Sperber, Devellis & Boehlecke, 1994). Two translators (faculty members), both bilingual in English and Arabic, translated the English version of the SPT into Arabic (forward translation). These translators were asked to retain both the form (language) and the meaning of the items as close as possible to the original, but to give priority to equivalence of meaning. When the Arabic translation was finalized, the SPT was then back-translated (from Arabic to English) by two other faculty members, again both bilingual in English and Arabic. The back-translated items were then evaluated by five faculty members who have expertise in the field of instructional design, measurement and evaluation, physical education, and motor learning to ensure that the meaning of the process were equivalent in both the original English version and the back translated version. If differences in meaning were found between them, those process were put again through the forward and backward translation procedures until the faculties were satisfied that there was substantial equivalence of meaning. The finalized Arabic version of the SPT was then pilot tested with a group of 20 students. The feedback from the students did not lead to any substantive changes.

Instrument Standardization:

The instrument was pilot tested with a group of 20 students who were enrolled from physical education faculty. These students were then excluded from the actual sample of the study. Based on the pilot test, the test yielded a reliability coefficient of .85 by using test – retest. These figures suggest that the instrument is suitable to measure neuromuscular coordination. The changes recommended by the validation panel and those identified as needed during the pilot test were incorporated into the test.

The Test:

The researchers and experts drew a straight line lengthwise through the center of a piece of card-board approximately 32X 5 in wide; they drew six marks exactly 5 in away from each other on the line (draw the first mark about 2½ in from the edge of the cardboard). Using a compass, they drew six circles, each 3¼ in diameter, which was centered on the six marks along the line as in Figure 1. For the purpose of this test, each circle is assigned a number, starting with 1 for the first circle on the right of the test tackier and ending with 6 for the last circle on the left. The cardboard, three unopened (full) cans of soda pop, a table, a chair, and stopwatch are needed to perform the test. The cardboard was placed on a table and the person sat in front of it with the center of the cardboard bisecting the body; the preferred hand was used for this test. If this was the right hand, the three cans of soda pop were placed on the cardboard in the following manner: can one centered in circle 1 (farthest to the right), can two in circle 3, and can three in circle 5.

Testing Procedures:

The test used in this study was developed by the researchers based on a review of previous research (Hoger & Hoger, 2004). The purpose of this test is to assess overall motor / muscular control and movement time. To start the test, the right hand was placed with the thumb up; on tin can 1 with the elbow bent at 120°. When the tester gave the signal and the stopwatch began, the can of soda was turned upside down, placing can 1 inside circle 2, followed by can 2 inside circle 4, and then can 3 inside circle 6. All cans, starting with can 1, then can 2, and can3, were turned right side up to their original placement. On this return trip, the can was grasped with the hand in a thumb-down position.

The entire round-trip procedure was done twice, without stopping, and was counted as one trial. Two trips down and up were required to complete one trial. The watch was stopped when the last can of soda pop was returned to its original position, following the second trip back. The preferred hand (in this case, the right hand) was used throughout the entire task. The objective of the test was to perform the task as fast as possible, making sure the cans were always placed within each circle. If the person missed a circle at any time during the test (that is, if the can is placed on a line or outside a circle), the trial must be repeated from the start. When using the left hand, the participant followed the same procedure, except that the procedures were reversed. Prior to initiating the test, two practice trials were allowed. Two test trials were administered, and the best time, recorded to the nearest tenth of the second, was used as the test score. If the person has a missed a circle, the test was repeated until two consecutive successful trials were accomplished.

Distinguishing Ability:

To examine the experimental validity of the test, the researchers sorted data which were collected from the main sample and selected lower and upper quartiles and compared them between the two groups as shown in Table (2).

Table (2): The Distinguish Ability of the Test

variables	N	M	SD	T	Sig
High level group	76	7.93	0.55	29.72	0.001
Low level group	76	11.47	0.101		

Table 2 illustrates that significant differences existed between the two groups which means that the test distinguishes between different abilities and take into account individual differences between the participants.

The Difficulty Coefficient:

Kolmogorov-Smirnov Z test was used to examine the range distribution of data collected from test and their coinciding of normal distribution (see Table 3).

Table (3): The Result of Kolmogorov-Smirnov Z Test

variables	N	M	SD	Z	SIG
Soda Pop Test	305	9.60	1.43	1.139	0.149

The results show that no significant differences exist in the datacollected form the test and their coinciding of normal distribution.

DATA COLLECTION PROCEDURES

Data collection was gathered from the students by flowing procedures: The researchers obtained a list of student's names fromthe registration office. A permission to administer the study on campus was obtained from the precedence. A special hall wasselected to administer the study and the participants were informed of the purpose of the study and were assured confidentiality.

DATA ANALYSIS PROCEDURES

The SPSS statistical package (version 11.5) was employed tocarry out analyses. To answer the research questions, which examined differences in Neuro muscular coordination according togender (male and females) and handedness (preferred and nonpreferred), two- way Anova test was utilized.

RESULTS AND DISCUSSION

To achieve the research question, two-way Anova was used. as shown in Table 4 and 5, there were significant differencesbetween males and females in the neuromuscular coordination testfor the favor of females. Moreover, there were significantdifferences between preferred and non-preferred hands for thefavor of preferred hand. The tables also shown that there were nointeraction between gender and handless.

Table (4): The results of two-way Anova for the Effect of Genderand hand on soda Pop Test

source	Type III sum of suares	df	Mean suare	f	sig
Corrected model	27.708	3	9.236	4.715	0.003
Intercept	5306.060	1	5306.060	2708.492	0.001
Gender	14.399	1	14.399	7.350	0.007
Handless	17.789	1	17.789	9.080	0.003
Hender * handless	6.338	1	6.338	3.235	0.073
Error	589.673	301	1.959		
Total	28754.604	305			
Corrected total	617.381	304			

Table (5): The results of pair wise comparison for the differences of Gender and handless groups

Variables		Mean	Std Error	Groups	Mean Difference	Sig
Gender	Male	10.71	0.356	Male - Female	1.061	0.007
	Feale	9.65	0.162			
Handless	Prfeed	9.591	0.086	Preferred non-preferred	-1.179	0.003
	Non-preferred	10.77	0.382			

With the regard to the differences between males and females, these results can be justified with reports that point out to thepossibility that females are more efficient in coordinating functions ofboth cerebral hemispheres compared to males (Gardle, 1975). Neurologically, there is an area in the brain (cerebral cortex) thatconnect both hemispheres neurologist refer to as the corpus callosumit is speculated by neurologists that this area is larger in femalescompared to males. (Channel four televisions, 2004). According to(Guyton ,1981) the corpus callosum is a massive net work of nervefibers

that separate anatomically both hemispheres, yet it plays animportant role in making information stored in one hemisphereavailable to the opposing one example right to left or vise-versa.On the other hand, there is an area in the frontal part of themotor cortex neurosurgeons have called on area for hand skillsbecause if tumot or any other lesions cause destruction in this area,the hand movements become in coordinated and non purposeful, acondition called motor paraxial (Guyton, 1981). Since females mayhave larger and more massive net work of the corpus callosum nervefibers, the hand skills area might be more efficient in hand skill motortasks.

The superiority of females in this study might also be partly explained by the socio-cultural factor in which childhood and preadolescence experience of females are more eye-hand coordination oriented such as playing with toys, sewing, playing musical instrument, painting and drawing, etc. such small musclemotor acclivities emphasize speed and accuracy which are crucialelements in performing small-muscle motor tasks such as the soda pop test employed in this study.

The results of this study are in agreement with results reported by Silva, Birkbeck, Russel, and Wilson (1984) which indicated the superiority of girls and woman compared to their male counterparts in tasks of fine manual dexterity. Interestingly, the same report indicated that females perform better than males inthe perceptual motor behaviors associated with speech and readingas well as in small-muscle simple perceptual motor tasks that require speed, repetition, and skill the soda pop test meets thecriteria of simple small-muscle motor tasks. Finally, on additional Neuromuscular explanation for the superiority of females compared to males in performing simple motor tasks is a study by (Burg, 1968) who reported that females consistently demonstrated slight but significant higher visual fields than males at just about all ages and that female's eye field's peak at a latter age compared to males.

Many researchers (Branon & Feist,2004) believe that vision and visual attributes contribute heavily to the learning and performance of most motor tasks especially in theearly stages of practice which applies to the soda pop test employed in this study as a novice, unfamiliar motor task in which both sexes have no prior practice except for the familiarization trial before actually taking the test.

As far as the differences in neuromuscular coordination according to preferred and non-preferred hands, results indicated differences between preferred and non-preferred hands incoordination trend to preferred hand. This result is consistent with results reported by Wilmore (1981)

which indicated that males perform better in the preferred hand in baseball throw for distance (which is a gross motor activity) but not in the non-preferred hand which was attributed by the researcher to the past experience ofmales in throwing activities using the preferred hand as part of daily motor tasks in most of pre adulthood sports activities of males which actually extends to adulthood male sports activities.Thus, the results of this study regarding the superiority of the preferred hand over the non preferred hand is in agreement with the socio-cultural aspect of skilled performance in gross as well as fine motor tasks. In fact, this is in agreement with the specificity principle of training that works in the adaptation process of both the muscular and or the neurological dimensions of adaptation to training.

CONCLUSIONS AND RECOMMENDATIONS

This study was carried out to determine differences in neuromuscular coordination according to gender (males and females) and preferred and non-preferred hands. The study concluded that (a) females are superior to males in neuromuscular coordination, (b) students who used preferred hand outperformed students with non- preferred hand in neuromuscular coordination. Based on these conclusions, the researchers recommended investigating sex differences in fine motor tasks that demand eyeleg (foot) coordination; sex differences in field vision were it would be interesting to conduct more elaborate laboratory tests of field vision such as those reported by singer (1980) which include: The Minnesota rate of manipulation test and Crawford small parts dexterity test. Finally, from a practical standpoint, it is recommended that females are better candidates for jobs and sportsthat rely on manual dexterity for accurate and efficient performance (e.g., sewing) while males are better candidates for jobs that involve gross motor skills (e.g., heavy duty jobs).

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PSYCHOLOGICAL SKILLS TRAINING FOR COACHES: ENHANCING ATHLETE PERFORMANCE

Dr. Ravi Nayak
College Physical Education Director SG
Government First Grade for Women's College
Bidar, Karnataka India

ABSTRACT

This paper explores the importance of Psychological Skills Training (PST) for coaches and its impact on enhancing athlete performance. By focusing on mental conditioning techniques such as goal setting, visualization, self-talk, and relaxation strategies, the study aims to equip coaches with tools to foster their athletes' psychological readiness. The findings suggest that PST not only improves athletes' performance but also strengthens coach-athlete relationships, enhancing communication and trust.

Keywords: Psychological Skills Training, Athlete Performance, Mental Preparedness, Mental Resilience, Goal Setting, Self-Talk Strategies, Coach-Athlete Relationship, Performance Enhancement, Mental Toughness, Coaching Practices, Athlete Development

INTRODUCTION

Athlete performance is a multifaceted outcome shaped by a combination of physical training, technical proficiency, and mental preparedness [1]. While physical and technical aspects have traditionally received significant attention, the critical role of mental skills in achieving peak performance is often underestimated. Mental preparedness, encompassing focus, resilience, confidence, and stress management, is an essential component of athletic success [2-3].

Coaches, as pivotal figures in an athlete's journey, are uniquely positioned to address this gap. By incorporating Psychological Skills Training (PST) into their coaching practices, they can provide athletes with structured strategies to enhance their mental capabilities. PST involves methods such as goal setting, visualization**,** self-talk, and relaxation techniques that empower athletes to overcome psychological barriers, maintain composure under pressure, and perform consistently [4-5].

This paper explores the critical role of PST in coaching, emphasizing its potential to:

- Enhance athletes' psychological readiness.

- Improve performance consistency and mental resilience.
- Strengthen the coach-athlete relationship, fostering trust and effective communication.

By analyzing PST's application and its impact on athlete outcomes, this study aims to provide evidence-based recommendations for integrating PST into coaching programs. Through this approach, a sustainable model for optimizing athlete performance can be achieved.

PURPOSE OF THE STUDY

The purpose of this study is to:

- Examine the role of PST in coaching practices.
- Assess the effectiveness of PST techniques in enhancing athlete performance.
- Provide evidence-based recommendations for integrating PST into coaching programs.

METHODOLOGY

A mixed-methods approach was adopted, combining quantitative data from surveys and performance metrics with qualitative insights from interviews.

- **Participants:** 50 coaches and 150 athletes across various sports disciplines were recruited.
- **Tools:** Pre- and post-intervention performance data, psychological assessment scales (e.g., Mental Toughness Questionnaire), and semi-structured interviews.
- **Intervention:** A 12-week PST program focused on:
  - Goal setting and performance planning.
  - Mental imagery and visualization exercises.
  - Developing effective self-talk strategies.
  - Relaxation and stress management techniques.
- **Data Analysis:** Statistical analysis was performed using paired t-tests and ANOVA, while thematic analysis was conducted for interview responses.

RESULTS

The PST intervention yielded significant improvements in athlete performance metrics and psychological readiness:

- Athletes showed a 20% increase in mental toughness scores ($p < 0.05$).
- Performance consistency improved by 15% across competitive events.
- Coaches reported enhanced communication and athlete engagement.

- Thematic analysis highlighted the importance of trust, tailored strategies, and continuous feedback in successful PST implementation.

Table 1 PST Intervention Results

Metric	Pre-Intervention	Post-Intervention	Improvement (%)
Mental Toughness Scores	70	84	20
Performance Consistency	65	75	15
Coach-Athlete Communication	60	80	20

The table 1 summarizes the key metrics analyzed during the Psychological Skills Training (PST) intervention:

- **Mental Toughness Scores:** Increased from 70 to 84, representing a 20% improvement. This suggests that PST significantly enhanced athletes' resilience, focus, and ability to handle pressure.
- **Performance Consistency:** Improved from 65 to 75, showing a 15% gain. This highlights how PST contributed to athletes maintaining steadier performance levels across competitions.
- **Coach-Athlete Communication:** Improved from 60 to 80, reflecting a 20% increase. Enhanced communication likely fostered trust and better understanding, facilitating individualized coaching strategies.

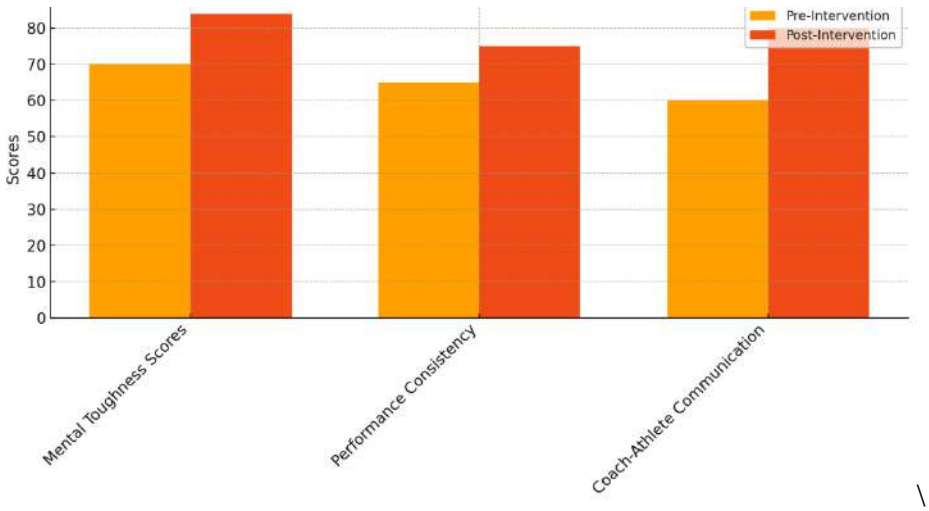

Figure 1 Pre- and Post-Intervention Metrics

Figure 1 shows the comparison of pre- and post-intervention scores for each metric (mental toughness,

performance consistency, and coach-athlete communication).

Pre- and Post-Intervention Metrics: The figure 1 compares the pre- and post-intervention scores across the three metrics:

- The substantial increase in scores post-intervention emphasizes the efficacy of PST in improving psychological and communication-related outcomes.
- The consistent improvement across all metrics suggests a holistic benefit of PST, positively impacting athletes' mental and performance domains.

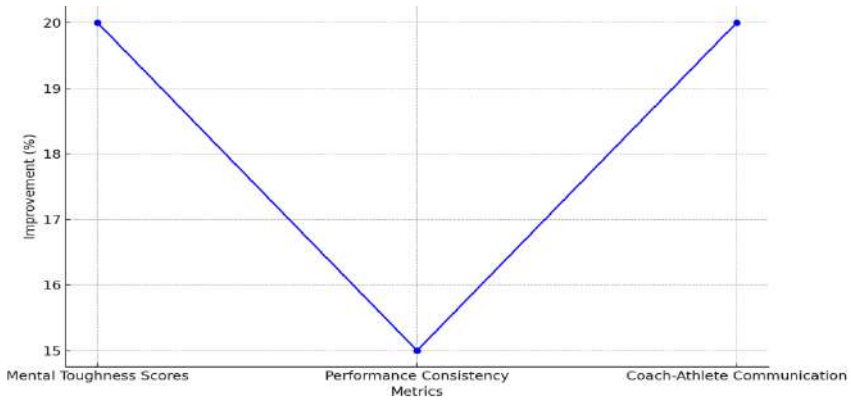

Figure 2 Percentage Improvements in Metrics after PST

Figure 2 shows the percentage improvement in each metric following the intervention.

Percentage Improvement: The figure 2 highlights the percentage improvements for each metric:

- **Mental Toughness and Communication:** Both saw the highest improvement (20%), indicating that PST effectively targets both psychological readiness and interpersonal dynamics.
- **Performance Consistency:** While slightly lower (15%), this still reflects a meaningful improvement, demonstrating that PST equips athletes to perform more reliably in competitive settings.

OVERALL INTERPRETATION

The results and visualizations collectively demonstrate that PST is a powerful tool for enhancing athlete performance. The intervention led to notable gains in mental toughness, performance stability, and coach-athlete communication, confirming the value of integrating psychological training into coaching practices. These findings reinforce the need for structured PST programs to maximize athlete potential.

1. **Discussion.** The results underscore the transformative potential of PST in sports coaching. Coaches who adopt psychological skills as part of their training regimen empower athletes to overcome mental barriers, enhance focus, and achieve peak performance under pressure. However, challenges such as resistance to change and

limited resources were noted. Addressing these barriers requires institutional support, regular training for coaches, and collaboration with sports psychologists.

Key takeaways include:

- PST is most effective when integrated into daily training routines.
- Customizing techniques to individual athlete needs enhances effectiveness.
- Long-term benefits include improved team cohesion and sustained performance.

CONCLUSION

Psychological Skills Training represents a critical yet underutilized aspect of modern coaching. By equipping coaches with PST techniques, athletes can achieve their full potential, leading to improved performance and greater mental well-being. Future research should focus on long-term PST outcomes and its application across diverse sports and competitive levels.

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A STUDY ON SELF-CONFIDENCE OF EDUCATION AND PHYSICAL EDUCATION STUDENTS

Dr. Hanumanthayya Pujari.
Professor
Department of studies in physical Education and Sports Science's
Akkamahadevi Women University, Vijayapura
hgpujaru@gmail.com

INTRODUCTION

Sports activities are universal. These activities are carried on in every country. Sports are a means to attain physical and mental health. Sports activities are of different kinds. These activities need not be in the form of games only. Every individual will be active in one or the other way in daily life. Normally physical activities only are considered as sports, for Eg: Running, Jumping, Throwing, Foot ball, Volley Ball, Hockey etc. These activities will be carried on through individual's physical movements.

Sportsmen are the people who are sound physically as well as mentally. They will also have certain skills, talents, and physical energy. Normally sportswomen will participate in any game or event of her interest with competitive spirit.

Sports are an important and essential activity for each and every individual. Because to carry on the day-today's activities and responsibilities people need lot of physical energy and endurance.

Therefore, every individual must try to cultivate one are tile other sports activity in their life. Sportsmen will be doing his regular exercises morning and evening. So he will be trying to improve his physical and mental stamina and skills regularly before participating in any games, sports and competition. As said above the sportsmen need good physical health for which they have to have rich and, highly nutritious and energetic food. They must also do regular exercises early in the morning in fresh air to develop sound physical and mental health. The role of women in sports has been there as in so many other societal situations very mixed. There has been a noted increase in the number of participants in recent years, but the importance of the role of women as top level coaches and administrators has not always effectively increased to the same degree. Physical factors include sound body and health, mental factors include her confidence in herself and her abilities the aspiration to achieve, attitudes towards game, etc. Normally the self confidence in the individuals is the most important factors which determines his level of aspiration as well as his performance

EDUCATION MEANING

Education is a process of bringing or molding a young for living a congenial and comfortable life. Since times immemorial the man has been bringing up or educating his off springs for living a sane social life, and since times immemorial the education al objective have been brining, up or educating his offspring's for living a sane social life. And since

Aristotle “has defined Education has "Creation of a sound mind in sound body" but this we can understand that Education should pay attention to our physical needs and also to the mental needs”.

PHYSICAL EDUCATION

Physical Education is an essential part of the total Education program and makes significant contributions toward the achievement of Desirable education and health outcomes through the medium of physical activity. Quality Physical Education programs promote the physical growth and development of children and youth while contributing to their general health and well being. They are based on a planed sequence of experiences in a wide variety of activities beginning with basic movement skills and progressing toward more complex sport, dance, and other forms of movement.

Barrow defined Physical Education as an education of and through human movement where many of educational objectives are achieved by means of big muscle activities involving sports, games, gymnastic, dance and exercise.

SELF-CONFIDENCE

According to Dr. Keith Ball "confidence comes with good goals, good preparation, and familiarity with success, prediction of success, re-experiencing past success and giving the appearance of assuredness".

Self confidence is a simple attribute of perceived self It is neither a part of the self, nor it is independent from the self, nor it is independent from the self Simply speaking self confidence refers to in individual' perceived ability to act effectively in a situation to overcome obstacles and to attain successes.

STATEMENT OF THE PROBLEM

The present study is to assess the level of self-confidence of Education and Physical Education students of Karnataka State Akkamahadevi Women University, Vijayapur.

HYPOTHESIS

1. It was hypothesis that the Education and Physical Education student have higher level of self Confidence.
2. There is a significant difference between Education and Physical Education student in level of Self-Confidence.

OBJECTIVES OF STUDY

1. To know the level of self- confidence of Education and Physical Education students of Karnataka State Akkamahadevi Women's University, Vijayapur.
2. To find out the difference in level of self confidence of Education and Physical Education student.

Sample Design:

Physical Education Students	Education Students	Total
30	30	60

1. Self confidence questionnaire (SCQ) developed by M. Basavanna is used in the present study this questionnaire consists of 100 items. Hypothesis tested that people with high self confidence were significantly more capable of taking risk in predicting their performance than to less confident ones and the hypothesis was confirmed.

STATISTICAL TECHNIQUES:

As the purpose of the study was to of self-confidence of Physical Education Students and Education students, and also to find out the differences between the Physical Education Students and Education students of self-confidence the mean, SD, and T. valves were calculated to test the significant difference. Between the two groups, further the level of self-confidence was compared with norms as mentioned above

The confidence in, the individual will help her to pull forth her all abilities to reach the goal. In the University athletic meet or Education systems of competition among Women's will be very high and challenging. Naturally the women are taking part in these events should have higher level of self-confidence. With this supposition it is hypothesized that the Physical Education Students and Education students will have higher level of self-confidence.

Ho-1 Physical Education and Education student's women's student have high level of self-confidence.

Table- 4.l: Showing the mean, SD of the Physical Education and Education students on the measures of the self-confidence.

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Mean, SD and t-value of self confidence level among the Physical Education and Education students of Karnataka State Akkamahadevi Women's University Vijayapur.

Type of students	Mean	SD	t-value	Df	P-value	Remark
Physical EducationStudents	56.00	11.60262	4.02228	28	.000	S
Education Students	45.6000	8.7753357				

Significant of 0.05=2048407 (Table value=2.048407)

The table No 1.1 shows mean of Physical Education students self confidence is 56.00 and mean of Education students self confidence 45.60 and Physical Education students SD is 11.60 B Ed students SD is 8.77 of the is the significant between Physical Education and Education students that-value is 4.02 is significant at the table value is 2.04.

FIGURE 4.1 Mean and SD of self confidence of Physical Education and Education students

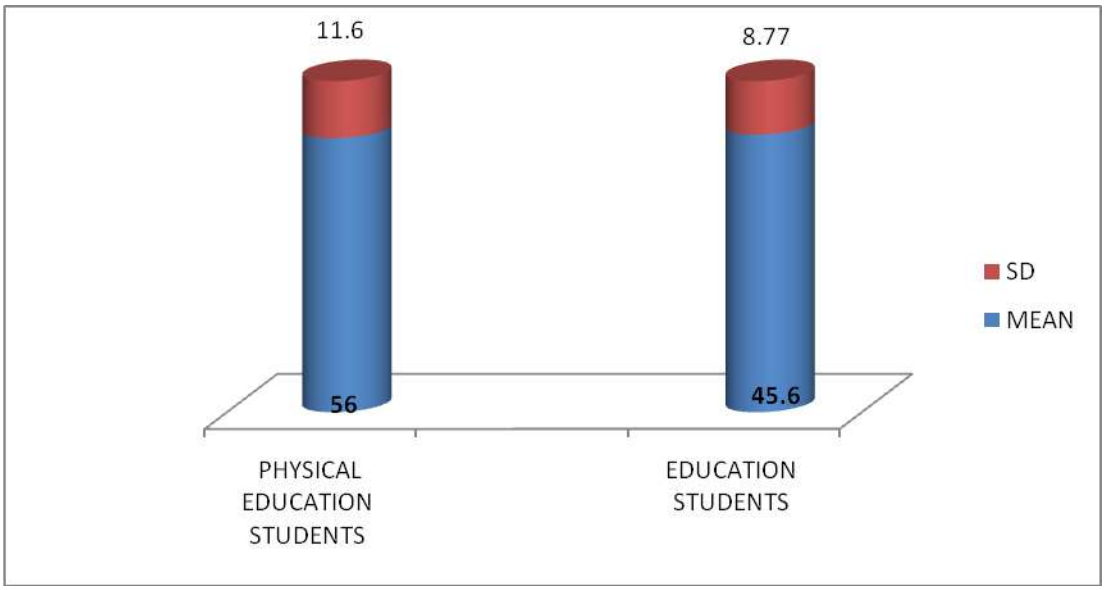

Figure show, s (graph) The figure shows that self confidence of Physical Education students mean is higher than the **Education** students.

When T test applied the colluded T value Pound To-be t=4.02 at 5% level of significance since the concluded t valve is much more (Table value) Hence null Hypothesis is rejected and alternative hypothesis is accepted it can be concluded that self confidence score of Physical Education students it is more among score Physical Education than the Education students.

DISCUSSION OF FINDINGS

- The result of 1.1 table analyses that with the help questionnaires to check the self confidence of Physical Education students have more self confidence than the Education students.
- This graph analyses shows that Physical Education students have more self confidence compare to Education Students. Because Physical Education students are very bold and strengthen. They were receiving everything in a very cool manner.
- This table shows that Physical Education students were 11.60 but compares with Education students is 8.775. this indicates that Physical Education student's confidence level is higher than Education student.

DISCUSSION OF HYPOTHESIS:

- Through questionnaires get the result that Physical Education students self Confidence level is higher than Education students hence the formulated hypothesis is accepted.

SUMMARY

The women's in modern Society and sports is influenced by various physical, physiological, sociological and psychological factors during training or Course, the social and psychological factors which although have been proved to contribute to performance in events in the higher competitive Study.

It is in this context that the present study aimed to probe the Level of self- confidence of women's. In the present investigation it was assumed that the Physical Education students will have higher level of self confidence than Education student. Because they posses high efficiency high mental abilities, and better Logic idea. But the results indicated that (t-ratio both Physical Education and Education wise having Average Level of self- confidence.

CONCLUSIONS;

1. The Physical Education and Education students of Karnataka State Akkamahadevi women's university have average level of confidence.
2. There is a significant difference in the level of self-confidence between Physical Education and Education Students of Karnataka State Akkamahadevi Women's university Vijayapura.

3. Hence it may be concluded that nature of physical activities and long expose to academic environment and regular practice results in eliciting different level of self –confidence among physical education students and it also concluded that nature of game situation causes the similar kind of abilities, and emotion and feeling among the participating.
4. The study reveals that the self-confidence of Physical Education students is higher than the Education students. The reason behind this is the exposure to the higher students and the more of maturity

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THE IMPACT OF YOUTH PARTICIPATION ON THE GROWTH OF LOCAL SPORTS INFRASTRUCTURE IN LUCKNOW

Dr. Bapu Narsinga Chogule
Professor of Physical Education,
JJT University, Rajasthan

Miss.Shivani Gupta
Research Scholar
JJT University, Rajasthan

ABSTRACT

This study explores the impact of youth participation on the development and expansion of local sports infrastructure in Lucknow, a rapidly growing city in Northern India. Youth engagement in sports plays a pivotal role in shaping the demand for better facilities, promoting physical wellness, and fostering community development. The research examines how active involvement of young people in various sports influences the planning, construction, and improvement of local sports infrastructure, such as stadiums, playing fields, and recreational centers. Through a combination of field surveys, interviews with local sports authorities, and data analysis, the study identifies the direct and indirect effects of youth sports participation on infrastructure investment, policy changes, and community engagement. Findings highlight that increased youth participation has led to enhanced government and private sector interest in developingand upgrading sports facilities, thus contributing to the overall growth of the city's sports ecosystem. Furthermore, it emphasizes the importance of creating accessible and diverse sporting opportunities to sustain long-term development. The study concludes with recommendations for policymakers and stakeholders to further leverage youth sports initiatives to drive infrastructure growth and community development in Lucknow.

Keywords: Impact, Youth Participation, Growth, Local Sports, Infrastructure, Lucknow

INTRODUCTION

The growth of local sports infrastructure is pivotal for fostering a healthy and active society. In cities like Lucknow, where sports culture is steadily gaining momentum, the involvement of youth plays a critical role in shaping the development of this infrastructure. Youth participation in sports not only boosts physical activity but also brings a surge of energy,

innovation, and grassroots support to local sports initiatives. As young individuals actively engage in sports at various levels, their contribution extends beyond just playing — they become advocates for improved facilities, create demand for better resources, and inspire their communities to prioritize sports development. In Lucknow, a city with rich cultural traditions and a growing urban landscape, the involvement of its youth in sports can significantly influence the expansion and modernization of local sports infrastructure. This introduction aims to explore the impact of youth participation in sports on the growth of local sports infrastructure in Lucknow, highlighting the opportunities and challenges that arise as the city strives to nurture its athletic potential.

ROLE OF YOUTH IN SPORTS DEVELOPMENT

Youth participation in sports is often viewed solely in terms of the athletes themselves. However, the influence of youth on the growth of sports infrastructure is far-reaching. Young people are not only consumers of sports infrastructure but are also active participants in shaping the spaces where sports activities occur. Youth-driven initiatives can push for the construction of new facilities or the upgrading of existing ones. They help bring attention to the need for specialized training centers, better equipment, and venues that can host regional or national competitions. These demands, when addressed, can stimulate a broader process of sports development.

In many cases, youth involvement can lead to greater interest and investment in particular sports. For instance, if a significant number of young people show an interest in basketball, football, or athletics, local governments and private entities are more likely to recognize the need to develop specialized facilities. Furthermore, this active engagement helps highlight deficiencies in the existing infrastructure, whether it be in the form of outdated facilities, lack of access to coaching, or insufficient funding. These deficiencies must be addressed in order to cultivate an environment where young people can thrive.

YOUTH PARTICIPATION AND LOCAL GOVERNMENT SUPPORT

In Lucknow, youth participation in sports has increasingly attracted the attention of local and state governments. Over the years, government policies have begun to emphasize the need for improved sports infrastructure and youth development programs. The influence of youth on policy and decision-making processes is undeniable. By engaging with decision-

makersandadvocatingfortheir needs, youth groups in Lucknow have been able to draw attention to the critical role that sports play in shaping healthier, more active communities.

The Uttar Pradesh government has launched several initiatives aimed at improving sports infrastructure at the grassroots level. Programs such as the Khelo India initiative have led to increased government funding for sports facilities, particularly those in smaller cities and rural areas. Youth participation is central to the success of these programs because it is the young athletes and their communities that directly benefit from better facilities and greater access to competitive sports. Furthermore, by organizing local competitions, tournaments, and events, youth groups in Lucknow can create a demand for higher- quality infrastructure. In turn, local governments are more likely to invest in building or upgrading sports facilities, such as stadiums, multi-purpose halls, and training centers.

IMPACT OF SCHOOL AND COLLEGE SPORTS PROGRAMS

Educational institutions in Lucknow have also played a pivotal role in developing sports infrastructure. Many schools and colleges have introduced sports programs that encourage students to take part in competitive sports, while simultaneously offering training and access to local facilities. The involvement of young people in such programs has a significant influence on the expansion and modernization of sports infrastructure. As the number of students participating in school sports increases, educational institutions are compelled to invest in better facilities, equipment, and coaching resources.

Moreover, these institutions often serve as hubs for youth sporting activities. The success of youth sports programs within schools and colleges can lead to the development of specialized sports complexes and training facilities. It also brings attention to the need for long-term investment in infrastructure that supports youth engagement in sports. In Lucknow, many educational institutions have adopted a holistic approach to sports, integrating sports with academics and extracurricular activities. This approach not only enhances the overall student experience but also makes a compelling case for the creation of better infrastructure to accommodate growing demand.

PRIVATE SECTOR AND COMMUNITY INVOLVEMENT

While government initiatives play a significant role in shaping sports infrastructure, the private sector and community-based organizations also contribute to the development of sports facilities in Lucknow. These entities often collaborate with youth groups to enhance local sports infrastructure, particularly in areas where public investment is insufficient. Private businesses, sports clubs, and local entrepreneurs can build and maintain sports complexes, gymnasiums, and fitness centers, offering youth access to a range of sporting opportunities.

The role of community organizations in Lucknow has been crucial in addressing gaps in sports infrastructure. These organizations often work directly with youth to identify local needs and advocate for necessary changes. For example, a local community group in Lucknow might identify a shortage of football fields or indoor sports courts and push for the development of such facilities. By creating opportunities for youth to engage in sports outside the traditional school environment, these organizations further contribute to the broader network of sports infrastructure.

Moreover, partnerships between youth groups and the private sector can lead to the establishment of sports academies, coaching programs, and sports events, all of which require significant infrastructure development. Through collaborations like these, youth participation becomes a driving force for enhancing local sports facilities, which in turn benefits the entire community.

THE NEED FOR SPECIALIZED SPORTS INFRASTRUCTURE IN LUCKNOW

While Lucknow has made significant strides in terms of sports infrastructure, it still faces challenges related to the lack of specialized facilities for certain sports. As the interest in sports like badminton, volleyball, hockey, and athletics grows among youth, the need for dedicated training centers and competition-ready venues becomes apparent. In the past, sports facilities in Lucknow were primarily designed to cater to a limited number of mainstream sports, with cricket often dominating the scene. However, as youth participation in a variety of sports increases, the demand for multi-purpose facilities that can accommodate a wide range of sports disciplines becomes more urgent.

Specialized infrastructure for sports like tennis, swimming, athletics, and wrestling is essential for providing youth with the opportunities they need to pursue excellence in their chosen sport. Many cities across India, including Lucknow, have begun to recognize the importance of investing in these specialized facilities. A well-rounded sports infrastructure can support not only recreational participation but also the development of high-performance athletes who may go on to represent their city, state, or country in international competitions.

RESEARCH METHODOLOGY

This section outlines the research methodology for investigating the impact of youth participation on the growth of local sports infrastructure in Lucknow. The study aims to explore how the involvement of young individuals in sports activities contributes to the development of sports facilities and infrastructure at the local level.

RESEARCH DESIGN

This study will employ a mixed-methods research design. This design combines both qualitative and quantitative approaches, enabling a comprehensive understanding of the subject matter. The quantitative approach will gather measurable data, while the qualitative approach will provide deeper insights into the underlying factors and perspectives.

Quantitative data will be collected through surveys and statistical analysis of youth participation levels and available sports infrastructure.

Qualitative data will be gathered through interviews and case studies to provide adeeper understanding of how youth engagement influences infrastructure development.

POPULATION AND SAMPLE

The study will focus on two main groups within the local sports ecosystem:

Youth participants (ages 14-30) who are actively engaged in sports across different levels, from school competitions to amateur leagues in Lucknow.

Local sports authorities including government officials, sports associations, and community leaders involved in the development and maintenance of sports infrastructure. Sampling Method:

Youth participants will be selected using stratified random sampling to ensure representation from different age groups, genders, and types of sports (e.g., cricket, football, athletics).

Local sports authorities will be chosen using purposive sampling, targeting key decision makers and planners within the sports infrastructure sector.

The sample size will be determined based on the population of active sports participants and local authorities, ensuring a representative sample from both groups.

RESULT AND DISCUSSION

Youth participation in sports has a significant influence on the development of sports infrastructure in cities. In Lucknow, as in many other regions, active involvement of young people in sports can drive demand for better sports facilities, influence policy decisions, and promote the development of local sports infrastructure. This study examines how youth participation in sports influences the growth and development of local sports infrastructure in Lucknow.

Survey Data and Results:

A survey was conducted among youth participants, local sports officials, and community members to analyze the perceived impact of youth sports participation on the growth of sports infrastructure in Lucknow. The results were tabulated to illustrate the key factors, including investment in infrastructure, policy changes, and overall growth.

Table1: Demographic Information of Survey Participants

AgeGroup	**Male(%)**	**Female(%)**	**Total Participants (%)**
14-18	45	15	60%
19-25	25	10	35%
26-30	10	5	15%
Total	80%	20%	100%

Interpretation:

The majority of participants are from the 14-18 age group, indicatingthat this demographic is the most actively engaged in local sports activities, which significantly affects infrastructure demand.

Table2: Youth Participation in Different Sports

Sport	**NumberofParticipants(%)**
Cricket	30%
Football	25%
Badminton	20%
Basketball	15%
Hockey	10%

Interpretation:

Cricket and football are the most popular sports, with the highest number of youth participants. This shows the areas where local infrastructure development should be prioritized.

Table 3: Perceived Impact of Youth Participation on Sports Infrastructure

Aspect of Infrastructure	**High Impact (%)**	**Moderate Impact (%)**	**Low Impact (%)**	**No Impact (%)**
Sports Complex Development	60%	25%	10%	5%
Accessibility to Facilities	55%	30%	10%	5%
Government Funding for Sports	50%	35%	10%	5%
Availability of Coaches	40%	40%	15%	5%
Community Engagement in Sports	70%	20%	5%	5%

Interpretation:

The table shows that the majority of respondents believe youth participation has a significant impact on the development of sports complexes, access to facilities, and community involvement.

The growth of infrastructure and government funding is most significantly driven by youth sports activities.

Table 4: Perceived Barriers to Sports Participation in Lucknow

Barrier	**Percentage (%)**
Lack of Proper Sports Facilities	45%
Insufficient Government Funding	30%
Limited Coaching Resources	15%
Lack of Awareness in the Community	10%

Interpretation:

The most significant barrier to youth participation is the lack of proper sports facilities, which hinders growth. This indicates a need for targeted investment in infrastructure to support growing youth participation.

Table 5: Government Investment in Sports Infrastructure (Before and After Youth Participation Increase)

Year	**Pre-Youth Participation Surge(INR)**	**Post-Youth Participation Surge(INR)**
2018	5 Crore	7 Crore
2019	6 Crore	8 Crore
2020	7 Crore	10 Crore
2021	8 Crore	12 Crore
2022	10 Crore	15 Crore

INTERPRETATION:

The data suggests a clear increase in government funding and investment in sports infrastructure following the rise in youth participation in local sports. This supports the hypothesis that youth engagement drives the demand for better facilities.

DISCUSSION

The findings of the survey and the analysis of data highlight several key insights aboutthe impact of youth participation on sports infrastructure development in Lucknow.

1. YOUTH AS A DRIVING FORCE FOR INFRASTRUCTURE DEVELOPMENT:

The data from Table 3 demonstrates that youth involvement directly contributes to the creation of better sports complexes and greater accessibility to sports facilities. Youth demand has influenced both local government and private sectors to invest more in building sports infrastructure, with an increasing trend of funding and development projects observed in recent years (Table 5).

2. IMPORTANCE OF POPULAR SPORTS:

Cricket and football are the most popular sports among youth in Lucknow, as seen in Table 2. This suggests that these sports are the primary drivers of infrastructure needs. Local governments and organizations should prioritize these sports when planning infrastructure upgrades and expansions.

3. BARRIERS TO GROWTH:

The primary barrier, as shown in Table 4, is the lack of proper sports facilities. This is compounded by insufficient government funding and a shortage of qualified coaches. However, the increased participation has helped address these challenges to some extent, with government funding seeing a notable increase over the years (Table 5).

4. COMMUNITY AND POLICY IMPACT:

The significant impact on community engagement in sports, as shown in Table 3, indicates that youth sports programs have a broader effect beyond infrastructure. Increased youth participation has led to greater community involvement, policy advocacy, and even local economic benefits through improved social cohesion and community health.

5. NEED FOR CONTINUOUS INVESTMENT:

While youth participation has spurred growth, the infrastructure is still insufficient to fully meet the growing demand. The government and private sectors must continue investing in sports facilities, particularly in emerging sports such as badminton and basketball, which are gaining popularity but lack proper infrastructure in the city.

CONCLUSION

In conclusion, youth participation plays a pivotal role in the growth and development of local sports infrastructure in Lucknow. By actively engaging in sports, young individuals not only enhance their physical and mental well-being but also contribute to the demand for better facilities, organized events, and modernized infrastructure. As youth sports programs thrive, they encourage local governments and private sectors to invest in building and upgrading sports facilities, which ultimately benefits the entire community. Further more, the involvement of young people fosters a culture of sportsmanship, discipline, and teamwork, which can lead to a long-term improvement in the city's sports ecosystem. Through sustained investment in youth participation, Lucknow can strengthen its sports infrastructure, nurture future athletes, and create a more vibrant, active society.

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COMPARATIVE STUDY ON PHYSICAL FITNESS COMPONENTS AMONG KHO- KHO AND KABADDI PLAYERS OF HIGH SCHOOL BOYS OF WARANGAL DISTRICT

Yasmin,

Department of Physical Education,

Kakatiya University, Warangal, Telangana

Abstract

The progress of the Nation lies in the hands of the people, who are healthy and physically fit. Every individual should develop physical fitness for a happy and effective living. In order to get physical fitness one has to involve in physical activities Physically active people have a lower risk of heart disease, high blood pressure, diabetes, obesity and some type of cancer. Despite all the benefits of physical activity, most people in this country are a sedentary. Given that regular physical activity helps people enjoy better health. A desirable level of fitness was accepted at entry level for couple of jobs and professional training. Kabaddi and Kho-Kho players were one such field of endeavour. One of the very important factors responsible for the performance in competitive sports is fitness. Good fitness helps to quick improve in the performance of Kabaddi and Kho-Kho players.

Keywords: Physical fitness components, Kho-Kho, Kabaddi

INTRODUCTION

Man's performance in this world depends on varieties of fitness. He is required to acquire each variety according to the need in order to develop himself, maintain and prosper. Most frequently employed varieties of fitness are physical fitness, psychological fitness, social fitness and emotional fitness. of the many forms of fitness, physical fitness assumes paramount importance since it is the corner stone of the magnificent human structure called "personality". Originally, man is a muscular creature, and therefore every person shall be active. In man physical fitness develops the ability to last, to bear up, to withstand stress and to persevere under difficult circumstances. Countless research studies indicate that physical fitness is related to improved performance in academic and other fields of endeavour.

PHYSICAL EDUCATION AND SPORTS:

Physical education is that phase of education concerned with the teaching of skill, acquisition of knowledge and development of attitudes through human movement most public schools, colleges and universities recognize the importance of physical education by making it as part of the required

curriculum. This reorganization is accorded to physical education by many nations of the world. In schools, physical education programs provides each person with rural opportunities to access fitness level and consequently select activities that will strengthens personal weakness and promote the development of life time skills and understandings, thus enabling the student to have a full and productive life, while in school and afterwards in a broad view of education. Physical educations uniqueness lies in its contribution to physical (fitness) and psychomotor (skill) development.

It is along with other disciplines in contributing to the cognitive, social and affective area of development in the needs of society, physical education as a part of the total process of education that utilizes games, sports, aquatics, dance and other various activities, helps the individual to achieve the goal of education. Now a day's participation in sports and physical activities is regarded as important health behaviour in both adults and children. Lack of motivation has been identified as possible different for both boys and girls. Many have considered children's reasons for participation in a variety of exercise settings specifically examining the differences between age and gender, particularly in relation to motives for the participation in extracurricular physical activities. Since it has been documented that the children at different stages of adolescence display different cognitive and emotional Characteristics it seems likely that children of different ages will self-support being involved in extracurricular activities for different. Several researchers have noted that early in their secondary education. Children consider participation in sports and game has a positive experience.

It has been suggested that children at this stage is motivated and enjoy taking part in physical activities. Additionally, boy's participation in extracurricular physical activities (ECPA) only decreases in 10 to 12. By contrast, for girls mere is evidence of a decline ECPA participation at the beginning of years 7 to 9. It sums apartment that as children progress through secondary education they become less interested in such activities. In educational spectrum, the prime concern is to impart knowledge that ultimately leads to individual development, in the sense that, the individual would be a fit, healthy and disciplined citizen so that he can serve society and the concerned nation. On the other hand, physical education being the integral part of total education, which aims to develop an individual by concentrating on overall development such as physical, mental, social, and moral aspects and there would be individual to be the most fit and acceptable person in society.

About The Game of Kabaddi:

Kabaddi is a contact sport that originated in ancient India. Kabaddi is an umbrella term which

encompasses various forms of the game including International rules Kabaddi; Sanjeevani, Gaminee, Amar and Punjabi. Kabaddi is the national game of Bangladesh and also the state game of the Indian states of Tamil Nadu, Maharashtra, Bihar, Pradesh, Telangana and Punjab. Kabaddi originated in the southern Indian state of Tamil Nadu, where it is derived from group hunting and village defence. Other forms of Kabaddi originated in northern parts of India. Although the game is a traditional sport in various parts of South Asia, the modern standardized version identifies Kabaddi with Maharashtra where the process of standardizing the rules of Kabaddi took place during 1915 through to the 1920s. Though variations emerged and rules were framed, the game's principal objective remained unchanged.

Modern Kabaddi is therefore a synthesis of the game played in various forms under different names. Kabaddi received international exposure during the 1936 Berlin Olympics, demonstrated by India. The game was introduced in the Indian National Games at Calcutta in 1938. In 1950 the All India Kabaddi Federation (AIKF) came into existence and framed the rules. The AIKF was reconstituted as The Amateur Kabaddi Federation of India (AKFI) in 1972 and the first national tournament for men was held in Chennai. Kabaddi was introduced to and popularized in Japan in 1979 by Sundar Ram of India, who toured Japan on behalf of Asian Amateur Kabaddi Federation for two months to introduce the game. In 1979, matches between Bangladesh and India were held across India. The first Asian Kabaddi Championship was held in 1980 and India emerged as champion beating Bangladesh. The other teams in the tournament were Nepal, Malaysia, and Japan. The game was included for the first time in the Asian Games in Beijing in 1990 where seven teams took part. These are four major forms of Kabaddi played in India which are recognized by the amateur federation. In Sanjeevani Kabaddi, one player is revived against one player of the opposite team who is out – one out. The game is played over 40 minutes with a 5-minute break between halves. There are 7 players on each side and the team that outs all the players on the opponent's side scores four extra points. In Gaminee style, seven players play on either side or a player put out has to remain out until all his team members are out.

About The Game of Kho-Kho: is a tag sport from the Indian subcontinent. It is played by teams of twelve players, of which nine enter the field, who try to avoid being touched by members of the opposing team. It is one of the two most popular traditional tag games of the South Asia, the other being Kabaddi. Apart from the South Asia, it is also played in Africa. Asian Kho Kho Federation was established in the year 1987 during 3rd SAF Games, held at Kolkata, India. The member countries were India, Bangladesh,

Pakistan, Sri Lanka, Nepal and Maldives. The first Asian championship was held at Kolkata in 1996 and the second championship at Dhaka in Bangladesh. India, Sri Lanka, Pakistan, Nepal, Japan, Thailand and Bangladesh were participants of the championship. When the first game was played, though many historians say that it is actually a modified form of `Run Chase`. In the ancient era, a version of the Kho-Kho game was played on `raths` or chariots in Maharashtra. This was known as Rathera. In ancient Kho-Kho history, there were no rigid rules and regulations for playing the game. The Kho-Kho rules were first framed in the early 1900s. A committee was formed at Gymkhana Poona in 1914 for framing the Kho-Kho rules and the first ever book of KhoKho rules was published from Gymkhana Baroda, in 1924.

OBJECTIVES OF THE STUDY

1. To find out the significant different between physical fitness components of Kabaddi and Kho-Kho players in relation to Speed of High School Boys of Warangal District.
2. To find out the significant different between physical fitness components of Kabaddi and Kho-Kho players in relation to Explosive Power of High School Boys of Warangal District.
3. To find out the significant different between physical fitness components of Kabaddi and Kho-Kho players in relation to Agility of High School Boys of Warangal District.
4. To find out the significant different between physical fitness components of Kabaddi and Kho-Kho players in relation to Endurance of High School Boys of Warangal District.

METHODOLOGY

Sample of the Study

The study was formulated based on the simple random sampling. The samples were collected from the 80 High School Boys of Warangal district in the age group of 14 to 17 years The players were divided in to two group‟s experimental group and control. The data was collected separately from Kho – Kho and Kabaddi players of High School Boys in Warangal district.

Sl No	Name of the Game	School	No of subjects
1	Kho Kho Players	High School Boys	**40**
2	Kabaddi Players	High School Boys	**40**
3	**Total Subjects**		**80**

Tools Used

The following physical fitness components are speed, explosive power, flexibility, agility and

endurance were administrated on Kho – Kho and Kabaddi players of High School Boys in Warangal district.

Physical Fitness components

- Speed, Explosive Power, Flexibility, Agility and Cardio respiratory endurance.
- Selection of Variables
- The subjects were assessed on selected criterion variables namely Physical variables (dependent variables)
- Speed (S)
- Explosive Power (EP)
- Agility (A)
- Cardio respiratory endurance (CE)
- Flexibility (F)

COLLECTION OF DATA:

The subjects of the study were in the age group between 14 to 17 years from two groups i.e., Experimental group and control group of Kho – Kho and Kabaddi players ofHigh School Boys in Warangal district. The High school boys consisting80 boys from Warangal district, the researcher has collected the data separately for Kho Kho players and Kabaddi players of High school boys in Warangal district. The subjects were measured with physical fitnesscomponents are Speed, Explosive Strength, Flexibility, Agility and Cardio respiratory endurancewere administrated on Kho – Kho and Kabaddi players ofHigh School Boys in Warangal district.

1.1.1 Table Showing the Mean Values, SD, df, „t‟ value and p-value difference onthe comparison of Kho - Kho and kabaddi players of high school boys in Warangal district in relation to physical fitness component Speed i.e. 50 mt dash.

Sl. No	Subjects	N	Mean	SD	df.	‘t’value	Sig. (2-tailed)
1	Kho – Kho Players	40	7.70	0.723	78	6.841	0.000
2	Kabaddi Players	40	8.90	0841			

DISCUSSION:

Table -1.1.1 shows the mean values, S.D., degrees of freedom, t-value and Sig. (2-tailed) and graph -4.1.1 showing the mean values, S.D. values of Kho – Kho and Kabaddi players in relation to physical fitness component speed i.e. 5o mt dash. The Kho – Kho players of the mean value of high school boys of Warangal district is 7.70, SD value is 0.723, and for the Kabaddi players of high school boys in Warangal district the mean value is 8.90and SD value is 0.841. The degree of freedom is 78. The t-value is 6.841and Sig. (2-tailed) is 0.000. It is very clear a significant difference was found between Kho - Kho and Kabaddi players of high school boys in Warangal district with regards to the physical fitness component Speed i.e. 50 mt dash. The average scores show the difference between Kho - Kho and Kabaddi Players of high school boys in Warangal district. Hence, Hypothesis-I Accepted.

1.1.2 Table Showing the Mean Values, SD, df, „t‟ value and p-value difference on the comparison of Kho - Kho and kabaddi players of high school boys in Warangal district in relation to physical fitness component Explosive Power i.e. standing board jump.

Sl. No	Subjects	N	Mean	SD	df.	‘t’value	Sig. (2- tailed)
1	Kho – Kho Players	40	1.91	0.304	78	3.533	0.001
2	Kabaddi Players	40	2.28	0.599			

DISCUSSION:

Table -1.1.2 shows the mean values, S.D., degrees of freedom, t-value and Sig. (2-tailed) and graph -4.1.2 showing the mean values, S.D. values of Kh0 – Kho and Kabaddi players in relation to physical fitness component Explosive Power i.e. standing board jump. The Kho – Kho players of the mean value of high school boys in Warangal district is 1.91, SD value is 0.304, and for the Kabaddi players of high school boys in Warangal district the mean value is 2.28 and SD value is 0.599. The degree of freedom is 78. The t-value is 3.533and Sig. (2-tailed) is 0.001. It is very clear a significant difference was found between Kho - Kho and Kabaddi players of high school boys in Warangal district with regards to the physical fitness component Explosive Power i.e. standing board jump. The average scores show the difference between Kho - Kho and Kabaddi Players of high school boys in Warangal district. Hence, Hypothesis-II Accepted.

1.1.4 Table Showing the Mean Values, SD, df, „t‟ value and p-value difference on the comparison of Kho - Kho and kabaddi players of high school boys in Warangal district in relation to physical fitness component Endurance i.e. 12 min walk or run.

Sl. No	Subjects	N	Mean	SD	df.	't'value	Sig. (2- tailed)
1	Kho – Kho Players	40	1654.23	90.767	78	7.780	0.000
2	Kabaddi Players	40	1823.88	103.821			

DISCUSSION:

Table -1.1.4 shows the mean values, S.D., degrees of freedom, t-value and Sig. (2-tailed) and graph -4.1.4 showing the mean values, S.D. values of Kh0 – Kho and Kabaddi players in relation to physical fitness component Endurance i.e. 12 min walk or run. The Kho – Kho players of the mean value of high school boys in Warangal district is 1654.23, SD value is 90.767, and for the Kabaddi players of high school boys in Warangal district the mean value is 1823.88and SD value is 103.821. The degree of freedom is 78. The t-value is 7.780and Sig. (2-tailed) is 0.000. It is very clear a significant difference was found between Kho - Kho and Kabaddi players of high school boys in Warangal district with regards to the physical fitness component Endurance i.e. 12 min walk or run. The average scores show the difference between Kho - Kho and Kabaddi Players of high school boys in Warangal district. Hence, Hypothesis-IV Accepted.

1.2.1 Table Showing the Mean Values, SD, df, „t‟ value and p-value difference on the comparison of Kho - Kho and kabaddi players in the age group of 14 years high school boys in Warangal district in relation to physical fitness component Speed i.e. 50 mt dash.

Sl. No	Subjects	N	Mean	SD	df.	't'value	Sig. (2- tailed)
1	Kho – Kho Players	10	7.50	0.675	18	6.647	0.000
2	Kabaddi Players	10	9.30	0.527			

DISCUSSION:

Table -1.2.1 shows the mean values, S.D., degrees of freedom, t-value and Sig. (2-tailed) and graph -4.2.1 showing the mean values, S.D. values of Kho – Kho and Kabaddi players in the age group of 14 years high school boys of Warangal district in relation to physical fitness component speed i.e. 50 mts dash. Inage group of 14 years Kho – Kho players of the mean value of high school boys in Warangal district is 7.50, SD value is 0.675, and for the age group of 14 years Kabaddi players of high school boys in Warangal district the mean value is 9.30 and SD value is 0.527. The degree of freedom is 18. The t-

value is 6.647and Sig. (2-tailed) is 0.000. It is very clear a significant difference was found in the age group of 14 years high school boys between Kho - Kho and Kabaddi playersat Warangal district with regards to the physical fitness component Speed i.e. 50 mt dash. Kho - kho players mean value is better than the kabaddi players mean value. The average scores show the difference between Kho - Kho and KabaddiPlayers in the age group of 14 years of high school boys of Warangal district in relation tothe physical fitness component Speed i.e. 50 mt dash.

CONCLUSION

It is not necessary that all the aspects of cohesion are to be alike for a group or groups. Though many of the qualities of an individual are in born and refined during learning process, but some of the characteristics are seemed to be acquired in parts with specific sports situations. It is inevitable to extend the researches in recognizing the development of solidarity among adolescents through sports participation, as it would lead to a healthy life style and wellness of our kids. Coaches, physical educationists, and sport psychologists would be well advised to assess team cohesion and develop team-building strategies to improve task cohesion.

Human life is based upon the body he keeps. All the activities of life are done with the help of body. Nature has created humans to perform various activities efficiently. Today modernization has made human life easier, as most of the work is performed by the machines. The sedentary life style of man has reduced the efficiency of humans. Fitness not only to improve our abilities but also to improve our health and wellness, this will also help to develop healthy environment around us along with community health, thus, nation will be benefited. By organizing physical fitness programmes, we can improve our fitness, wellness and health (Berger, 1982). Physical fitness is a priceless possession of any man, because it serves as a base for any future development. A week or an unsuitable base can hardly withstand the load of a super structure.

Physical fitness is the fundamental necessity for any sporting activity. Motor qualities such as speed, strength, endurance and flexibility along with physical fitness are essential for excellence in sports. Sports trainers and coaches are emphasizing on improving the physical fitness and motor qualities of the players, which is also known as conditioning. A good conditioning programmed is the back bone over-all training of the sportsperson. Physical fitness is generally achieved through exercise, correct nutrition and enough rest. It is an important part of life. Different games provided to do the body

activities, differently. Kabaddi and kho-kho players are equally conductive to developing skills amongst players. The present study will have the significance of self-assessment of physical fitness and physical and physiological aspect of kabaddi and kho-kho players. The proposed study may seek the significance through the comparison of the factors between the kabaddi and kho-kho players. Coaches, trainers and physical education teacher for kabaddi and kho-kho players to develop physical and physiological fitness of sportsman.

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EFFECT OF PLYOMETRIC TRAINING AND INTERVAL TRAINING ON SELECTED MOTOR FITNESS AND PHYSIOLOGICAL COMPONENTS AMONG VOLLEY BALL PLAYERS

Mohammad Lal Saheb,
Research Scholar, Department of Physical Education,
Kakatiya University, Warangal, Telangana

Prof. P. Ramesh Reddy,
Department of Physical Education,
KITS, Warangal, Telangana

ABSTRACT

Sports training in a nutshell means preparing for a performance and it helps the athletes to build strength, endurance it gradually improves their skill levels and their strengthen confidence. As simple it may be sound for formulating the systematic training method that fulfils all the physical goals to be perfect. The training program has a significant impact on the desired outputs and the training must be relevant to the purpose and sport that intend to pursue. Volleyball is a gathering action where two gatherings of six playersare secluded by a net. Each gathering endeavours to score centres by building up a ball in the other gathering's court under composed rules. Hence, like any athlete, volleyball players also need to follow conditioning program that aims towards them peaking at certain stages of the year. By concentrating on systematic training workouts throughout the off season will enable the volleyball players to perform with greater ability and reduce risk of injury during the competitive season. Skill and plyometric training are commonly employed in athletic conditioning, setting to enhance volleyball playing ability. It has been a piece of the power program of the Summer Olympic Games since 1964. The all out guidelines are expansive. In any case, just, play proceeds as follows: a major part in one of the gatherings begins a 'rally' by serving the ball (tossing or conveying it and a while later hitting it with a hand or arm), from behind as far as possible line of the court, over the net, and into the tolerating gathering's court. As volleyball coordinate incorporates a more noteworthy measure of aptitude execution. Specific volleyball skill training might get someone in general shape and have them improve as an athlete somewhat. In sport, the team training refers the set of physical exercise used to develop either physical or motor fitness aspects of a player.

Keywords: Specific Volleyball Training, Volleyball Players.

INTRODUCTION

Sports play an important role in the evolution of modern society. It is important for an individual, a group, a nation and indeed the world. Performance in sports is the outcome and expression of the total personality of a sports man. It is usually concerned with four areas namely physical power, social adjustment, psychological development and physiological efficiency. Different activities make different demands on the organism with respect to circulatory, respiratory, metabolic and neurological and temperature regulating functions (Anaheim.D, 1987). Sport is an institutionalized competitive activity that involves physical exertion or the use of relative complex physical skills by individuals whose participation is motivated by a combination of the intrinsic satisfaction associated with the activity itself and the external rewards earned through participation. (Anaheim, 1987).

The concept of performance of sports has undergone a sea change owing to innovation in sports science, injection of scientific methods exponential growth in demand for sports and games. This trend invariably raised the standards of performance all over the world. Performance in any sports is mainly depends upon the physical fitness of the individual. The components of physical fitness are strength, endurance, speed, flexibility, agility and co-ordination. Most of the benefits of physical fitness are achieved through training. The training methods include polymetric training, weight training, circuit training, interval training, fartlek training, altitude training, resistance training and set training. Physiology is the study of human body functions. Exercise physiology is the study of how body's structures and functions are changed as a result of exercise. It applies the concept of exercise physiology to training the athlete and enhances the athlete's sports performance. (Ajmeer Singh, 2005).

DEVELOPMENT OF SPORTS

The historical development of sports indicates a great deal about social changes and the nature of sport itself. There are many modern discoveries in France, Africa and Australia of cave art for example, lascaux from prehistory which provides evidence of ritual ceremonial behaviour. Some of these sources date from over 30,000 years ago, as established by carbon dating. Although there is scant direct evidence of sport from this source, it is reasonable to extrapolate that there was some activity at resembling sports.

There are artifacts and structures which suggest that Chinese people engaged in activities which meet our definition of sport as early as 4000 BC. Gymnastics appears to have been a popular sport in China's past. Monuments to the Pharaohs indicate that a range of sports were well developed and regulated several thousand years ago, including swimming and fishing. Other sports included javelin throwing, high jump,

and wrestling. Ancient Persian sports such as the traditional Iranian martial art of Zourkhaneh had a close connection to the warfare skills. Among other sports which originated in Persia are polo and jousting (Singh, H. 1984).

Sport has been increasingly organized and regulated from the time of the ancient Olympics up to the preset century. Activities necessary for food and survival became regulated activities done for pleasure or competition on an increasing scale, for example hunting, fishing and horticulture. The Industrial Revolution and mass production brought increased leisure which allowed increase in spectator sports, less elitism in sports and greater accessibility. These trends continued with the advent of mass media and global communication. Professionalism became prevalent, further adding to the increase in sports popularity. Not only has professionalism helped increase the popularity of sports, but additionally the need to have fun and take a break from a hectic workday or to relieve unwanted stress, as with any profession (Singh, H. 1984).

SPORTS TRAINING

Sport training is the total process of preparation of a sportsman, through different means and forms for better performance. The Sports performance is the result and expression of the total personality of the sportsman. The educational aspect of sports training is unfortunately overlooked by coaches and teachers of physical education in India (Singh, H. 1984). The word ‘training’ has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days and even months and years. The term training is widely used in sports (Singh, H. 1984).

Sports training are a planned, systematic and scientific process of preparation of sports persons for high performances. To achieve this aim different means and methods are used. These means and methods are not static in nature. These are being constantly improved, modified and new ones being discovered by the sports science disciplines. Valuable contributions are made by implementing these means and methods in different forms and under different conditions. The process of scientific observation, experimentation, analysis and synthesis is an important characteristic of sports training in modern age. Sports training, therefore, are a continuous process of perfection, improvement and creation of means and methods of improving sports performance and factors of performance (Uppal, A.K., 2001).

Plyometric training is very popular because it provides exercising the lower extremities mainly by

using one's own body weight and in the upper limbs. The very structure of plyometric training is such that it requires the adaptation of the muscle from an eccentric to a concentric contraction. Modalities, elicits numerous positive changes in the neural and musculoskeletal systems muscle function and athletic performance of healthy individuals (Markovic 2010). Plyometric training procedure of high intensity allowing muscles to produce more effective in a short period of time. Jumping performance is determined by a complex interaction among several factors including maximal force capacity, rate of force development, muscle coordination and stretch shortening cycle (Arabatzi 2010). The greater the athlete's ability to generate maximal force or strength to begin with, the more of it can be converted into sport-specific power. Plyometric movements are powerful and high-impact, although the impact should be controlled as much as possible. Plyometric training requires both strength and endurance. Common plyometric training exercises include various jumps hops and steps or cones (Faigenbaum 2007). Exercises done in water are designed for the body in an upright position. The primary goal of these activities is to improve physical efficiency, and depth of the water. Shallow water programs are typically performed in water that ranges from mid-rib cage to mid-chest in depth. Plyometric training in aquatic nature has become increasingly popular it provides a safer and less stressful alternative to land based programme.

VOLLEYBALL

Volleyball is a dynamic, fast-paced game. The purpose of strength training for volleyball is not to build big muscles, but to develop the physical attributes necessary to improve a player's performance. So strength training is very important to volleyball and should not be developed independently of other abilities such as agility, quickness and endurance. When watching a great volleyball player, the one word that comes to the mind is "quick". Everything the player does is short and quick. There are no long drawn out motions like sprinting in other sports. There is simply a succession of explosive bursts that keep the ball in play and control the flow of the game. The quickness that must be focused on, when training a volleyball player is not only quickness from side to side and front to back, but also quickness from up to down. Unique from other sports, volleyball players must be able to quickly change direction from the upward motion of a vertical jump to the downward motion of a point-saving dig (or vice versa). To play volleyball one has to be good at vertical jump, known as explosive power.

MOTOR FITNESS

Fitness is a key to enjoy life. Exercise is an important aspect of a total fitness programme. Modern living has taken all the exercise out of our lives and so in order to get fit and have to put it back again, regular

exercise is necessary to develop and maintain an optimal level of health, performance and appearance. It makes feel good, both physically and mentally. It gives psychological lift and strengthens a sense of accomplishment. Looking young is a reflection of good health. Regular physical exercise enhance the function of the joints; increase the sense of physical well-being and promotes a sense of feeling good; increases physical working capacity by increasing cardiorespiratory fitness, muscle strength and endurance and decreases the risk of serious diseases that could lead to early disability and death.

Ukoho, (1988) expresses that exercise has shown to improve health prospects in various ways. It helps to reduce body fat and overall weight and reduce blood pressure. Exercise ensures better digestion, respiration and efficient blood circulation. Proper exercise programme can reduce the probability of injuries among older people as well as back injuries among certain occupational group. Exercise tolerance is increased, risk factors are controlled and even progression and regression of coronary artery disease can be influenced by training and diet. Psychological effects include lessened depression and reduced anxiety. Regular physical activity isimportant for maintenance of health and may lead to a better quality of life. Training has to be followed not less than two to three hours per week in at least three sessions at an intensity corresponding to 60 to 85% of maximum heart rate achieved in a symptom limited maximum exercise test. Cardiac patients at high risk should exercise at lower intensities. Exercise occupies a leading role in keeping persons fit. It will be quite difficult to adjust one's life in term of stress, diet sleep and so on without proper exercise. Exercise means using and tuning the body. Exercise builds and maintains physical fitness. (H.U. Niederhauser, 1996).

Physical exercises makes one mentally sharpen, physically comfortable and ease with his body and better able to cope with the demands that everyday life makes upon him. Increased physical fitness not only improves health but improves performance at work. Hundreds of American companies back this idea financially by employing full time directors of fitness for their work. Physical exercise helps an athlete to possess a high degree of physical conditions. In schools there is compulsory activities programmefor all girls and boys. So it would be interesting to find out which of the physical fitness components have significantly contributed for the athletic ability of the runners.

CONCLUSION

Fitness and conditioning are important elements to success in the game of volleyball. It is easy for energy to be drained toward the end of a volleyball match if the fitness level is lacking. In games where two teams are evenly matched, the one with the best overall conditioning often prevails. Fatigue in a

volleyball match can lead to mistakes, and mistakes can lead to a loss. Skill-based conditioning drills follow work to rest ratios similar to competition, incorporate rapid starts, stops and changes of direction close to game speed, and also include technical skills (serving, spiking, blocking, passing, etc). These types of drills can also include "open-chain" activities like small-field scrimmages and different types of competitions. Limited research has been conducted using volleyball players and skill-based conditioning strategies. Skills-based conditioning is centered on a skill (or set of skills) as the objective. The focus is on skill development with the nature of the drill manipulated to achieve a desirable conditioning effect.

Plyometric training involves and uses practicing plyometric movements to toughen tissues and train nerve cells to stimulate a specific pattern of muscle contraction so the muscle generates as strong a contraction as possible in the shortest amount of time. A plyometric contraction involves first a rapid muscle lengthening movement (eccentric phase), followed by a short resting phase (amortization phase), then an explosive muscle shortening movement (concentric phase), which enables muscles to work together in doing the particular motion. Plyometric training engages the myotatic reflex, which is the automatic contraction of muscles when their stretch sensory receptors are stimulated.

The skill training and plyometric training programmes have become highly structured training for enhancement of motor fitness and physiological capacities. It has vastly different training effects depending upon the intensity and duration of the work and rest period. More research is required concerning the variation in skill training and plyometric training and its effects. The applicability of this method of training to improve the motor fitness components is not yet completely known. Consequently, the aim of the present study is to compare the skill training and plyometric training for differences in their effectiveness on selected motor fitness components of school volleyball players.

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EFFECT OF PLYOMETRIC TRAINING ON DEVELOPMENT OF SPEED AMONG KHO-KHO PLAYERS OF HYDERABAD DISTRICT

Baby

Physical Director,

MJPTBCW RDC (W), Medchal

ABSTRACT:

The aim of this study was to find out The Development of Speed among Kho-Kho Players of Hyderabad District. To achieve the purpose of the study fourthy Kho-Kho Players have been randomly selected from various Hyderabad in the state of Telangana, India. The age of subjects were ranged from 19 to 21 years. The researcher has chosen the experimental method to carry-out the research work for collecting the data and to arrive at conclusion. The test conducted for Speed :(i) 50m dash. The subjects were tested on selected variables prior. The data were selected to the t-ratio test of analysis for significance. The collected data were analyzed statistically through analysis of Mean, Standard deviation and t-ratio test to find out the significance difference, if any between the Kho-Kho players. The 0.05 level of confidence was fixed to test the level of significance difference.

INTRODUCTION

Every human being has a right to have the privilege for getting physical education and sport activities, which are obligatory for the full growth of his or her individuality. The freedom to increase physical, logical and ethical strength through physical education and recreation needs to be guaranteed both within the academic scheme and in other factors of social life. Everyone needs to have chance, in contrast with his or her countrywide trust of sport, and physical education and sport, creating physical health and reaching a level of success in sport which corresponds to his or her talents. Physical education performances are quintessential factors of lifelong training in the generally schooling system.

KHO-KHO

The first code of Kho-Kho regulations was drawn by means of a joint committee consisting of Kho-Kho professionals appointed by a Deccan Gymkhana, Poona in 1914 AD. The guidelines were modified in 1933. To become a top Kho-Kho player or to take part in this game wants intelligence, physical fitness and speed of neuro muscular co-ordination, reaction time etc. They require body suppleness, speedy action, a precise eye to judge the opponent's mind from their motion and their way. Kho-Kho is an indigenous game becoming very famous with extra scientific technique. Kho-Kho gamers need fitness,

quickness in decision, tact, Speed, speed, actions and confidence, strength, stamina to pay attention on the exact approach which demands his mental and physical fitness.

STATEMENT OF THE PROBLEM

The Purpose of the study to find out the "Effect of Plyometric Training on Development of Speed among Kho-Kho Players of Hyderabad District."

SIGNIFICANCE OF THE STUDY:

The findings of the study may be helpful for the physical education teachers and coaches, in assessment of the players ability to take part in different activities and to identify the suitable packages of physical training for the Kho-Kho players to improve their performance.

HYPOTHESIS

They may not be any significant difference in Kho-Kho Players in relation to Physical Fitness variables such as Speed.

They may be any significant difference in Kho-Kho Players in relation to Physical Fitness variables such as Speed.

DELIMITATIONS

The study was delimited to 40 (20 from each group) from Hyderabad district in the state of Telangana, India.

LIMITATIONS

The following factors like food habits, life style, daily routine works, the changes in the climatic conditions like temperature, atmospheric pressure, humidity, were not taken into consideration.

METHODOLOGY

The purpose of the study was to find the "Effect of Plyometric Training on Development of Speed among Kho-Kho Players of Hyderabad District." To achieve the purpose of this study 40 players from Hyderabad district in the state of Telangana, India.Were randomly selected as subjects and their age ranged between 19 to 21 years.

EXPERIMENTAL DESIGN

For this study, the subject are selected at random, independently drawn from Hyderabad district in the state of Telangana, India. Hence, the design of the subjects chosen for this study was based on independently random group design.

CRITERION VARIABLES AND TEST:

S.NO	Dependent Variables	Testes/ Instruments	Unit of Measurement
1.	Speed	50m	Sec

ANALAYSIS OF DATA

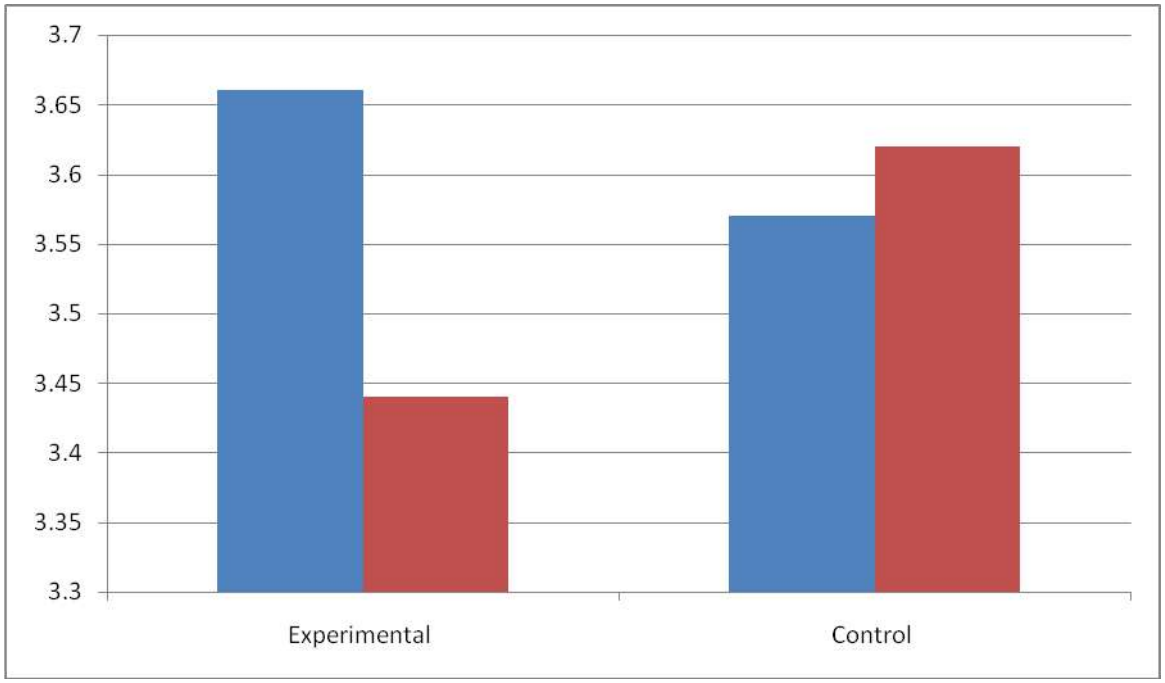
The test conducted by selecting Fourthly Kho-Kho players from Hyderabad district in the state of Telangana, India. The data was collected by concocting Speed "50 m dash". The collected data were subjected to the t-ratio test of analysis for significance.

RESULTS AND DISCUSSION

TABLE-1

Group	N	Pre test		Post test		t
		Mean	SD	Mean	SD	
Experimental	20	3.66	0.26	3.44	0.34	11.54
Control	20	3.57	0.36	3.62	0.51	0.67

From the above table it is observe that Speed (50M in Seconds) of the selected sample in Experimental Group, Pre-test mean is 3.66 With Standard Deviation is 0.26 and post-test mean is 3.44 with Standard Deviation is 0.34. Here the 't' calculated value is 11.54 with 0.05 level of significance. It shows that there is a significant difference between pre-test to post-test seen.



DISCUSSION OF FINDINGS

- It was found that there is significant difference among Kho-Kho players in respect of Speed

CONCLUSIONS

The following conclusion were made on Speed among Kho-kho players of Hyderabad district, Telangana, it was found out that plyometric training had improved Speed.

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EFFECT OF PLYOMETRIC TRAINING AND CIRCUIT TRAINING ON LEG STRENGTH VARIABLES AMONG SCHOOL LEVEL MALE FOOTBALL PLAYERS

Sr. Prof. L.B. Laxmikanth Rathod
Former Vice Chancellor of Palamuru University,
Mahabubnagar Telanagana

P. Karteek Reddy
Ph. D Research scholar, Palamuru University,
Mahabubnagar Telanagana

ABSTRACT

The study was to examine the isolated and combined plyometric training and circuit training on leg strength among school level male football players. Total recruited randomly N=48 (forty eighty) school level football players their age period ranged from 13 years to 16 years as per subject's school records and, who at least participated school level football games competitions. The chosen football players was randomly recruited into four groups each group n=12 football players i.e. empirical groups I football players underwent isolated plyometric exercises (PTFG = 12), empirical group II football players underwent isolated circuit training (CTFG = 12), empirical group III underwent: football players underwent combined plyometric exercises and circuit training (PCFG = 12) and control group football players (NTFG = 12). NTFG was practiced only their respective specialization game. The training period was fixed for 12- week's duration and four sessions in a week. The measurement of leg strength scores was collected through dynamometer test before and after the completion of specific training. The collected score's were analyzed through ANCOVA and level of significant was restricted at 0.05 levels. The study found that isolated, combined plyometric exercises and circuit training program had positive significant impact to gain leg strength performance of football players of three empirical group's players comparative to control group.

Keywords: – plyometric, circuit, Exercises, Combination and strength

INTRODUCTION:

Circuits vary widely as the possible combinations of exercises are infinite. However, each circuit will use a mix of cardio- and weight-based exercises that target different areas, for a full-body workout. Circuit-training exercises include: weight based exercises are push-ups, planks, lunges, sit-ups,

crunches, squats, dumbbell exercises, kettlebell exercises and band exercises. Cardio-based exercises: running, jogging on the spot, cycling, skipping, running up and down stairs, mountain climbers, side-to-side hops and jumping jacks. The benefits of circuit training are weight loss, improved flexibility, increased strength and power, more muscle tone and boosted endurance

Plyometric activities usage of jumps, hops, bounds, and/or skips. This form of exercsies is governed by the stretch-shortening cycle, otherwise known as the reversible action of muscles. Both land- and aquatic-based plyometric training appears to be a potent stimulus for improving athletic qualities. plyometric training has been shown to improve the following physical qualities in both youth and adult athletes strength, speed, power, change of direction speed, balance, jumping, throwing, kicking and bone density. Plyometric activities require athletes to produce high levels of force during very fast movements. Best example of this is sprinting. Maximal speed sprinting demands the athlete moves their body and limbs at the very pinnacle of their ability – making it an extremely fast movement.

STATEMENT OF THE RESEARCH PROBLEM:

To analyze the "Impact of plyometric training and circuit training on leg strength among school level boys football players".

OBJECTIVES OF THIS RESEARCH STUDY

1. The primary objective of this research study is to evaluate the 12-weeks influence of plyometric training and circuit training on leg strength among school level boys football players.
2. The secondary objective of this research are
   - To compare the selected training methods between isolated and combined training on explosive strength among school boy's football players.
   - To judge the best suitable training program among selected three treatments for enhancement of leg strength of football players.

RESEARCH HYPOTHESIS:

- There will be a significant improvement in score of leg strength performance of empirical group's football players after the twelve weeks impact of isolated and combined plyometric training and circuit training when compared with control group football players.
- The combined plyometric training and circuit training will be more effective than the isolated training program.

METHODOLOGY:

The study was to measure the isolated, combined examine the isolated and combined plyometric training and circuit training on leg strength among school level male football players. Total recruited randomly N=48 (forty eighty) school level football players their age period ranged from 13 years to 16 years as per subject's school records and, who at least participated school level football games competitions. The chosen football players was randomly recruited into four groups each group n=12 football players i.e. empirical groups I football players underwent isolated plyometric exercises (PTFG = 12), empirical group II football players underwent isolated circuit training (CTFG = 12), empirical group III underwent: football players underwent combined plyometric exercises and circuit training (PCFG = 12) and control group football players (NTFG = 12). NTFG was practiced only their respective specialization game. The training period was fixed for 12- week's duration and four sessions in a week. The measurement of leg strength scores was collected through dynamometer test before and after the completion of specific training. The collected score's were analyzed through ANCOVA and level of significant was restricted at 0.05 levels.

Table:I

Analysis of Covariance for Leg strength – Dynamometer Test (Kgs) of the PTFG, CTFG, PCFG and NTGP groups for Football players

Groups	PTFG	CTFG	PCFG	NTGP	SOV	Sum of squares	df	Mean Square	F' Ratio
Pre test mean	48.416	49.916	45.833	49.666	B	125.750	3	41.917	
SD	4.926	3.528	4.802	4.097	W	842.167	44	19.140	2.190^{NS}
Post test mean	72.833	60.667	74.916	46.916	B	6000.500	3	2000.167	
SD	10.844	9.393	5.822	4.640	W	2874.167	44	65.322	30.620*
Adjusted mean	72.869	60.411	77.176	45.876	B	6619.475	3	2206.492	
					W	2250.032	43	52.326	42.168*
Mean difference	+24.417	+10.751	+29.083	-2.75	-	-	-	-	-

Note: Table F-ratio value at 0.05 level of confidence for 3 and 44 (df) =2.82, 3 and 43 (df) =2.82 *Significant & NS: Not significant.

PTFG: Plyometric exercises football players group.

CTFG: Circuit training football players group.

PCFG: Combined plyometric and circuit training football players group.

NTGP: Non training group football players.

The above table-I shows that there is a significant difference on leg strength performance among the four groups such as isolated plyometric exercises (PTFG), isolated circuit training (CTFG), combined plyometric exercises and circuit training (PCFG) and control group football players (NTFG). Since the 'F' value required being significant at 0.05 level for 3, 44 d/f and 3, 43 are 2.82, but the computation values of leg strength post and adjusted posttest 'F' values are 30.620 and 42.168 respectively. Which are greater than the tabulated value, it shows that training is effective for positive changes in leg strength performance. Since the obtained 'F' ratio is found significant.

TABLE: 2

THE SPRINT ABILITIES RESULTS OF SCHEFFE'S METHOD TEST MEAN DIFFERENCES BETWEEN PTFG, CTFG, PCFG AND NTGP GROUPS FOR FOOTBALL PLAYERS

PTFG	CTFG	PCFG	NTGP	MD	CI
72.869	60.411	-	-	13.458^{NS}	14.422
72.869	-	77.176	-	4.307 ^{NS}	
72.869	-	-	45.876	26.993*	
-	60.411	77.176	-	17.765*	
-	60.411	-	45.876	14.535 *	
-	-	77.176	45.876	31.300 *	

Note: * Significant & NS: No significant

PTFG: Plyometric exercises football players group.

CTFG: Circuit training football players group.

PCFG: Combined plyometric and circuit training football players group.

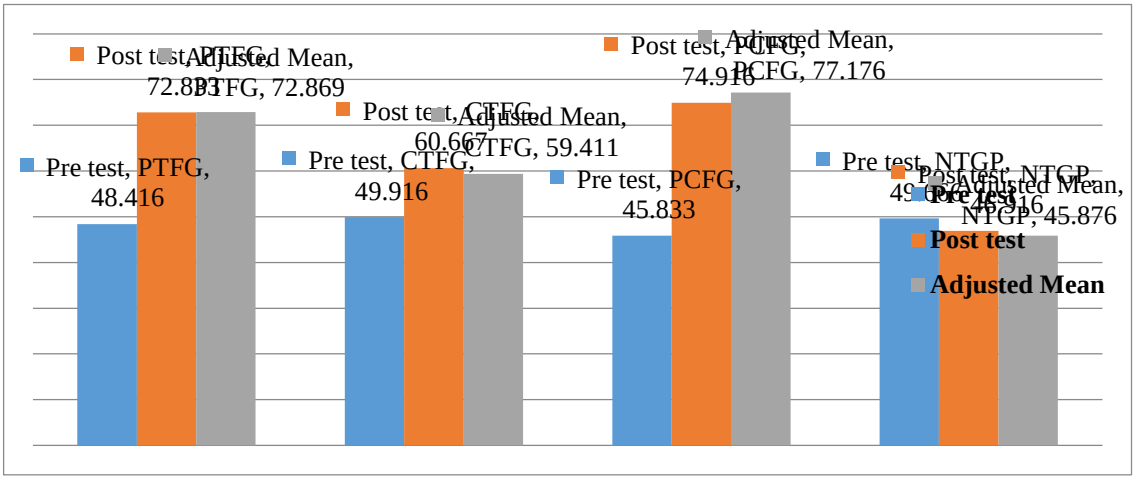
NTGP: Non training group football players.

In above table 2 presented the adjusted final mean variations between the Plyometric exercises football players group [PTFG] and Circuit training football players group [CTFG], Plyometric exercises football players group [PTFG] and Combined plyometric and circuit training football players group [PCFG] are 13.458 and 4.307. These computations adjusted final mean variations values are smaller than calculated formula CI value 14.422. Hence investigator recorded no significant variations resulted between training groups football players after completion of empirical period.

Therefore the adjusted final mean variations between the Plyometric exercises football players group [PTFG] and Non training group football players [NTGP], Circuit training football players group [CTFG] and Combined plyometric and circuit training football players group [PCFG], Circuit training football players group [CTFG] and Non training group football players [NTGP] & Combined plyometric and circuit training football players group [PCFG] and Non training group football players [NTGP] are 26.993, 17.765, 14.535 and 31.300. These computations adjusted final mean variations values are larger than calculated formula CI value 14.422. Hence investigator recorded significant variations resulted between training groups and control groups, isolated and combined training group football players after completion of empirical period.

The prior, final and adjusted post scores results mean of the PTFG, CTFG, PCFG AND NTGP football player groups for leg strength – dynamometer test (kg) clearly represented in bar diagram figure: 1.

FIGURE: 1 THE SPRINT ABILITIES PRE POST AND ADJUSTED POST TEST MEAN NUMBERS OF PTFG, CTFG, PCFG AND NTGP GROUPS FOR FOOTBALL PLAYERS PRESENTED IN BAR GRAPH



PTFG: Plyometric exercises football players group.

CTFG: Circuit training football players group.

PCFG: Combined plyometric and circuit training football players group.

NTGP: Non training group football players.

DISCUSSION ON HYPOTHESIS:

- The first hypotheses stated that there will be significant improvement in score of leg strength performance of empirical group's football players after the twelve weeks impact of isolated and combined plyometric training and circuit training when compared with control group football players. The statistical analysis proved that isolated, combined plyometric exercises and circuit training program significantly improved the leg strength performance of football players. Hence research first hypothesis accepted.

- The second hypotheses stated that combined plyometric training and circuit training will be more effective than the isolated training program. The statistical analysis proved combined training is not superior to isolated training method. Hence research second hypotheses rejected.

Discussion and Findings:

The impact of isolated and combined plyometric training and circuit training are constructive for building leg strength performance of football players comparative with non training group football players.

The studies connected with leg muscles strength results are Shahnaz et al., (2021) found that resisted sprint and plyometric training are equally effective for increasing lower limb functional performance in collegiate male football players. Kuncoro Aji Laksono and Suharjana (2024) plyometric training methods on the sand was more effective than the those on the land for obtaining higher results for increasing leg muscular strength. Georgios et al., (2023 Plyometric exercise, whether applied with or without blood flow restriction, improved leg muscle strength and functional capacity in male amateur football players

CONCLUSIONS:

Tester determined that impact of isolated and combined plyometric training and circuit training are constructive for building leg strength performance of football players comparative with non training group football players. Hence combined plyometric and circuit training is more constructive for legs strength of football players comparative with isolated circuit training. Finally, isolated plyometric and isolated circuit training are equally effective for developing leg muscles strength of football players. Shahnaz Hasa et al., (2021) findings suggest that, during a short-term training period, resisted sprint and plyometric training are equally capable of enhancing the lower limb functional performance of collegiate football players. Sakthivel and Vaithiyanathan (2022) the result concluded that there was significant positive gain on muscular strength and leg explosive power level due to the impact of circuit training than the control group among players. Gopinathan (2019) the result of the study that the experimental group significantly improved the and explosive muscular strength due to six weeks circuit training. Aditya (2014) found that 12-weeks of complex training with core exercises program resulted positive impact for gaining lower body muscular strength of football players

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PHYSICAL EDUCATION FOR SCHOOL CHILDREN

Sr. Prof. Rajesh Kumar

Director and Head, Dept. of Physical Education

Osmania University, Hyderabad, T.G. India

Email:rajesh2sports@gmail.com

Sr. Prof. B. Sunil Kumar

Principal, University College of Physical Education,

Osmania University, Hyderabad, T.G. India

Prof. K. Deepla

Secretary, BOC, IUT, OU

ABSTRACT:

Physical Education activities plays an important role for foundation of physical abilities among students. Many Schools recognized it is essential component of education which helps a child to promote physical and mental health. Physical education classes within schools play a crucial role in establishing a solid foundation for the development of comprehensive physical fitness and creating opportunities for recreational engagement among Indian school students. Physical Education activities includes Team Sports such as foot ball, basket ball, foot ball, cricket etc. Individual sports such as athletics, swimming, cycling etc. promotes all round development of thd childrens. The physical education classes include Traditional Sports, Yoga, Kabaddi, Kho, Mass Drill exercises, and more. Students acquire a diverse range of motor skills and cultivate good health and fitness. To enhance our Comprehensive Health Program, we integrate these facets using a school-wide approach. Our Physical Education classes, while honing fundamental movement skills for adeptness in sports, also encompass components related to nutrition and dietary habits. We also partake in the Healthy Meals in Schools Initiative to ensure students make sound nutritional choices and comprehend the importance of maintaining a well-balanced diet. Physical Education Promotes healthy life style, mental health and also helps in talent identification among children to train in different sports and games. The school Physical education is foundation stone for athlete development. Key Words: Physical Education, Traditional sports, Yoga, fitness etc.

INTRODUCTION

Physical Education activities plays a important role for foundation of physical abilities among students. Many Schools recognized it is essential component of education which helps a child to promote physical and mental health. Physical education classes within schools play a crucial role in establishing a solid foundation for the development of comprehensive physical fitness and creating opportunities for recreational engagement among Indian school students. Physical Education activities includes Team Sports such as football, basket ball, cricket etc. Individual sports such as athletics, swimming, cycling etc. promotes all round development of the childrens.

Outdoor play activities within schools play a crucial role in establishing a solid foundation for the development of comprehensive physical abilities and creating opportunities for recreational engagement among Indian school students. Complementing the physical education curriculum, the Co-Curricular Activities in sports offer avenues for specialized training in specific sports, as well as fostering well-rounded growth within the chosen sport and across various others. In conjunction with other school initiatives, physical education and sports contribute holistically to the preamble of the Physical Education & Sports Development Framework, aligning with the pursuit of 21st Century Competencies that prepare individuals for success in an ever-evolving, interconnected world. The physical education curriculum constitutes an integral segment of India's school education framework. The subjects covered during outdoor physical education classes include Traditional Sports, Yoga, Kabaddi, Kho, Mass Drill exercises, and more. Students acquire a diverse range of motor skills and cultivate good health and fitness.

To enhance our Comprehensive Health Program, we integrate these facets using a school-wide approach. Our Physical Education classes, while honing fundamental movement skills for adeptness in sports, also encompass components related to nutrition and dietary habits. We also partake in the Healthy Meals in Schools Initiative to ensure students make sound nutritional choices and comprehend the importance of maintaining a well-balanced diet. Collaborating with parents, we promote healthy eating habits for students even beyond school hours. The amalgamation of appropriate exercise and proper nutrition significantly contributes to holistic well-being. Outdoor play fosters the development of essential life skills and enhances coping mechanisms among schoolchildren. Engaging in recreational activities in natural settings contributes positively to physical, mental, and overall health. It is within these outdoor leisure pursuits that students can experience the harmonious interplay between body and mind, leading to enhanced well-being.

DISCUSSION:

Physical education tends to be essential during the initial phase of schooling as it prepares students to be fit, bold and confident, and helps them gain good health and focus. Most parents are not aware of the importance of physical education and the benefits of physical activity in their children's lives because encouraging students to exercise ultimately complements their mental and physical health. As parents, we always force our children to concentrate on getting excellent grades and studies. However, at the same time, we neglect the importance of physical activities. Are you wondering why do we need to pay attention to physical education? Let's talk about it and the benefits students derive.

Physical education is introduced to stay healthy and learn various sorts of physical activities that will make students' muscles and bones strong. Regular physical activities like running, cycling, walking, swimming and yoga promote physical growth and personality development of a child. If your child is engaging in daily physical activities, it will be more beneficial for their physical growth. One of the prime benefits of physical education is that it helps ensure good mental health. Mental health is as essential as physical health because it helps in emotional stability. Playing and engaging in physical activities will keep them away from many mental illnesses or disorders like anxiety disorders, depression, and bipolar disorder which can result in severe conditions over long term.

Physical education helps reduce stress levels and keeps students mentally and physically healthy. Many students face stress during exams or other reasons when they start doing some physical activities, which will reduce their stress and make them feel better and fresh. Hence, you should encourage your child to know about the importance of physical education**.** physical education enables students to remain alert, concentrated and pro-active. Regular physical exercise will keep their mind at rest and help them focus on studies as well as sports. They'll be mentally and physically fit. One of the important benefits of physical education is that students will have a good quality of sleep. Doing regular physical activities improve and develop good students' character and self-esteem. Students will be able to enhance their leadership qualities, team spirit, and become confident in making decisions.

CONCLUSIONS

Regular physical activity can help children to improve the Physical fitness, build strong bones and muscles, control weight, and reduce symptoms of anxiety and depression. It is concluded that physical exercises promote Physical fitness among school children. Hence the regular physical activity must be included in the physical education programs in the Schools. Schools are in a unique position to help

students attain the Physical education classes of daily physical activity to promote the physical fitness and good health. Researcher has also observed that there are improvements in leadership qualities on positive side at the early ages. After the research we have also found that physical activity has also significantly improved their discipline and social behavior. The flow of oxygen to the brain is increased. The number of brain neurotransmitters is increased, which assists your ability to focus, concentrate, learn, remember and handle stress. Physical activity is one of the best ways children can improve their health. Aim for at least one hour of activity daily, including aerobic, muscle-strengthening, and bone-strengthening exercises. Aside from health benefits, your children will likely do better in school, too.

RECOMMENDATIONS:

- Evidence suggests that increasing physical activity and physical fitness may improve academic performance and that time in the school day dedicated to recess, physical education class, and physical activity in the classroom may also facilitate academic performance.
- Physical Exercises to the students in schools will improve the Physical fitness, Health related fitness and specific fitness.
- Executive function and brain health underlie academic performance. Basic cognitive functions related to attention and memory facilitate learning, and these functions are enhanced by physical activity and higher aerobic fitness.
- Single sessions of and long-term participation in physical activity improve cognitive performance and brain health. Children who participate in vigorous- or moderate-intensity physical activity benefit the most.
- Given the importance of time on task to learning, students should be provided with frequent physical activity breaks that are developmentally appropriate.
- Although presently understudied, physically active lessons offered in the classroom may increase time on task and attention to task in the classroom setting.

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