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Comparative study of agility among Korf Ball Players and Netball Players of Osmania University

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Abstract:

The purpose of the present study to find out the effect of agility among Korf Ball Players and Netball players of Osmania University. The sample for the present study consists of 20 Male Korf Ball Players and 20 Male Netball players . The Shuttle Run Test were conducted for agility for the both groups .This study shows that Net Ball players are having good agility compare to Korf Ball Players.Netball is sort of like playing basketball, but there is no dribbling and once a player has the ball, they are not allowed to take more than a single step. Speed and Agility is essential because it helps players to get open, get the ball and make the shot. Players are also not allowed to hold the ball for longer than three seconds, so speed and optimal reaction time are critical. The Net Ball Players are having better agility compare to Korf Ball Players.Key Words:Speed, dribbling,agility etc.

Introduction

Korfball is a ball sport, with similarities to netball and basketball. It is played by two teams of eight players with either eight females in each team or with four females and four males in each team. The objective is to throw a ball through a bottomless basket that is mounted on a 3.5 m (11.5 feet) high pole.The sport was invented by Dutch school teacher Nico Broekhuysen in 1902. In the Netherlands, there are around 580 clubs and over 100,000 people playing korfball. It has a mixed-gender league and an all-women league, but no all-men league. The sport is also very popular in Belgium and Taiwan, and is played in many other countries. Mixed-gender korfball is more generally played in the north of the Netherlands, while all-female korfball is generally played in the south.**Netball** is a ball sport played by two teams of seven players. Its development, derived from early versions of basketball, began in England in the 1890s. By 1960, international playing rules had been standardised for the game, and the International Federation of Netball and Women's Basketball

(later renamed the International Netball Federation (INF)) was formed. As of 2011, the INF comprises more than 60 national teams organized into five global regions**.**

Purpose of the Study. The purpose of the present study to find out the effect of agility among Korf Ball Players and Netball players of Hyderabad District in India

Methodology

The sample for the present study consists of 20 Male Korf Ball Players and 20 Male Netball players . The Illinois Agility Test were conducted for agility for the both groups .This study shows that Net Ball players are having good agility compare to Korf Ball Players.Netball is sort of like playing basketball, but there is no dribbling and once a player has the ball, they are not allowed to take more than a single step. Speed and Agility is essential because it helps players to get open, get the ball and make the shot. Players are also not allowed to hold the ball for longer than three seconds, so speed and optimal reaction time are critical.

Results and Discussion:

Table No.1 Showing the Mean Values of Net Ball Players and Korf Ball Players

Agility Test	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
NET BALL Players	20	14.31	0.57	0.18	2.54	38.00	0.02
KORFBALL Players	20	15.57	1.21	0.38			

Table 1 shows that netball players have good agility compare to korfball players. The mean of netball players in the shuttle run is 14.31 compare to korfball players of mean 15.57. Agility is very much important for korfball and netball players.

Conclusions:

It is concluded that Net Ball Players are having better agility compare to Korf Ball Players

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Effect Of Short Interval Training And Long Interval Training On Speed Among Handball Players

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Abstract:

The purpose of this study was to examine the effect of Short Interval Training (SIT) and Long Interval Training (LIT) on speed among intercollegiate handball players. Sixty male players aged 17–24 years were randomly divided into three groups of twenty: SIT group, LIT group, and a control group. The experimental groups underwent their respective training for 12 weeks, while the control group did not participate in any special training. Speed was assessed through sprint timing tests before and after the intervention, and the data were analyzed using ANCOVA at a 0.05 level of significance. The pre-test means were SIT (1.49 s), LIT (1.48 s), and Control (1.49 s), with no significant differences among groups ($F = 1.19$, $p > 0.05$). The post-test means were SIT (1.52 s), LIT (1.51 s), and Control (1.50 s), with $F = 2.87$ ($p > 0.05$). However, the adjusted post-test analysis showed a significant difference ($F = 34.97$, $p < 0.05$). Post hoc analysis indicated that both SIT and LIT significantly improved speed compared to the control group (Mean Difference = 0.02, $p < 0.05$), though no significant difference was found between SIT and LIT. The findings suggest that both training methods are effective in improving speed performance in handball players, and coaches may adopt either approach based on player needs, available time, and training objectives.**Keywords:** Short Interval Training, Long Interval Training, Speed and Handball. Etc.

INTRODUCTION

Handball is a high-intensity, intermittent team sport that places heavy demands on players' sprinting, acceleration and repeated-sprint ability. During match play, players perform many short maximal or near-maximal efforts (sprints, accelerations, changes of direction) separated by brief recovery periods; therefore, both the ability to produce high running velocities and to recover quickly between efforts are critical determinants of match performance. Studies comparing different training formats for team sports have repeatedly emphasized that training methods targeted at improving high-intensity intermittent running and repeated-sprint ability are directly relevant to handball performance.

Interval training can be delivered in many formats, but two commonly contrasted models are short-interval (SI) and long-interval (LI) training. Short-interval training (e.g., repeated efforts lasting a few seconds up to ~30 s at very high intensity with short recoveries) emphasizes neuromuscular speed, acceleration and repeated-sprint capacity, while long-interval training (e.g., sustained intervals of 1–4 minutes at high but submaximal intensity) tends to stress aerobic power, lactate tolerance and sustained high-speed running capacity. The physiological adaptations to SI versus LI differ in emphasis — SI improves neuromuscular and anaerobic power characteristics and running speed over short distances, whereas LI more strongly targets cardiovascular endurance and aerobic capacity — but both can contribute to match-relevant fitness in handball.

Applied studies in team-sport players (including handball) show both SI and LI formats improve important performance markers, yet specificity matters: short, sprint-like intervals typically produce larger improvements in acceleration, short-sprint times and repeated-sprint ability, whereas longer intervals produce larger gains in maximal aerobic speed or endurance tests. For handball players, where repeated high-power bouts and rapid recoveries are decisive, short-interval programs — or mixed programs that include SI sessions — are often recommended because they mirror the intermittent, explosive demands of competition. Controlled interventions comparing speed/agility or SIT with other formats in adolescent and senior handball players provide evidence supporting SI for speed/acceleration improvements when program volume and intensity are well controlled.

Despite reasonably consistent findings, several practical questions remain for coaches: what interval durations, work:rest ratios and total weekly doses best transfer to match sprint performance? And how do short and long interval programs compare when inserted into in-season or preseason schedules already containing technical and tactical training? Some studies indicate that short-interval HIIT is more time-efficient and more specific to handball speed demands, while long-interval work still has value for base aerobic conditioning and recovery capacity — suggesting the optimal program may depend on the season phase and athlete profile.

Given the sport specificity and mixed evidence, the present study compares the effects of **Short Interval Training (SI)** versus **Long Interval Training (LI)** on speed (10 m and 20 m sprint times), acceleration and repeated-sprint ability in intercollegiate handball players over a controlled intervention period. By using standardized field tests and a randomized group design, this research aims to provide coaches with clearer, evidence-based guidance about which interval format better improves handball-specific speed qualities, and how each method might be integrated into typical training cycles.

EXPERMENTAL DESIGN

Find out the study effect of short Interval Training and Long Interval Training on speed among handball players .The study was formulated as a true random group design consisting of a pre-test and post test. The subjects men shot putters who are participated inter collegiate tournaments in

kadapa district (N=60) were randomly assigned to three equal groups of twenty and their age ranged between 17-24 years . The selected subjects were divided into three groups randomly. Experimental Group I was considered short Interval Training training group, experimental group II was long Interval Training training group and control group was not involved in any special treatment. Pre test was conducted for experimental Groups I and II and the control group on speed. Experimental groups underwent the respective training for 12 weeks. Immediately after the completion of 12 weeks training, all the subjects were measured of their post test scores on the selected criterion variable. The difference between the initial and final scores was considered the effect of respective treatments. To find out statistical significance of the results obtained, the data were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed to test the significance of the study.

RESULTS ON SPEED

The effect of short interval training(SIT) , long interval training (LIT) and control group (CG) were analyzed through statistical analysis tool ANCOVA, comparing the initial and final means of speed of handball players and is presented in Table I

Table I

Ancova Results On Sit And Lit With Control Group Among Handball Players On Speed

	SIT GROUP	LIT GROUP	CONTROL GROUP	SOURCE OF VARIANCE	SUM OF SQUARES	df	MEAN SQUARES	OBTAINED F
Pre Test Mean	1.49	1.48	1.49	Between	0.00	2	0.00	1.19
				Within	0.11	72	0.00	
Post Test Mean	1.52	1.51	1.50	Between	0.01	2	0.004	2.87
				Within	0.10	72	0.00	
Adjusted Post Test Mean	1.52	1.51	1.49	Between	0.01	2	0.00	34.97*
				Within	0.01	71	0.00	
Mean Diff	0.03	0.03	0.01					

Table F-ratio at 0.05 level of confidence for 2 and 72 (df) =3.12, 2 and 71 (df) =3.12.
*Significant

As shown in Table I, the obtained pre test means on speed on SIT was 1.49, LIT group was 1.48 was and control group was 1.49. The obtained pre test F value was 1.19 and the required table F

value was 3.12, which proved that there was no significant difference among initial scores among the handball players

The obtained post test means on speed on SIT group was 1.52, LIT group was 1.51 was and control group was 1.50. The obtained post test F value was 2.87 and the required table F value was 3.12, which proved that there was no significant difference among post test scores due to SIT among handball players

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 34.97 was greater than the required value of 3.12 and hence it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table II.

Table II

Multiple Comparisons of Paired Adjusted Means and Scheffe's Confidence Interval Test Results on speed

MEANS				Required C I
SIT Group	LIT Group	Control Group	Mean Difference	
1.52	1.51		0.00	0.01
1.52		1.49	0.02*	0.01
	1.51	1.49	0.02*	0.01

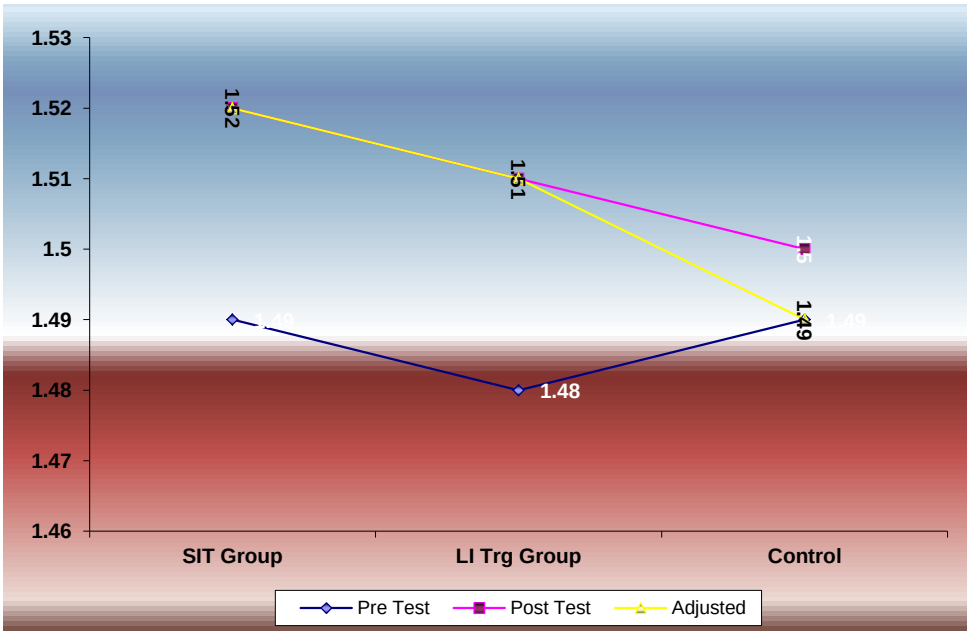
***** Significant

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between SIT group and control group (MD: 0.02). There was significant difference between LIT group and control group (MD: 0.02). There was no significant difference between treatment groups

The ordered adjusted means were presented through LINEdiagram for better understanding of the results of this study in Figure I.

Figure I

LINE DIAGRAM SHOWING PRE TEST, POST TEST AND ORDERED ADJUSTED MEANS ON SPEED



DISCUSSIONS ON FINDINGS ON SPEED

In order to find out the effect of SIT and LIT were compared with the control group speed . The obtained pre and post test means were subjected to ANCOVA and post hoc analysis through Scheffe's confidence interval test.

The effect of SIT and LIT on speed is presented in Table II. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F value 34.97 was greater than the required table F value to be significant at 0.05 level.

Since significant F value was obtained, the results were further subjected to post hoc analysis and the results presented in Table II proved that there was significant difference between SIT group and control group (MD: 0.02) and LIT group and control group (MD: 0.02). Comparing between the treatment groups, it was found that there was no significant difference between SIT and LIT group among handball players

CONCLUSION

The findings of this study indicate that both short interval training (SIT) and long interval training (LIT) produced significant improvements in speed performance among intercollegiate handball players when compared with the control group. The ANCOVA results confirmed that both experimental groups achieved meaningful gains, while no significant difference was observed between SIT and LIT. This suggests that either training method can be effectively implemented to enhance speed qualities in handball players. Coaches and trainers may therefore select SIT or LIT based on available time, athlete needs, or the specific phase of training, knowing that both approaches can positively contribute to the development of sprint performance in handball.

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A Comparative Study of Emotional Intelligence between Athletes and Non-Athletes: A Focus on Cricket

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Abstract:

Emotional intelligence (EI) This is the ability to perceive, understand, regulate and use emotions adaptively — is increasingly recognized as a contributor to success in sport and life. This paper reviews empirical evidence comparing EI in athletes and non-athletes and then focuses on cricket as an illustrative sport where EI matters for performance under pressure. Drawing on validated EI measures and sport psychology literature, we summaries typical methodological approaches, synthesize findings, discuss practical implications for coaches and educators, and recommend directions for future research.

Introduction

Emotional intelligence (EI) describes intrapersonal and interpersonal emotion skills that underpin effective self-regulation, social interaction, and decision-making. In sports, EI is hypothesized to help athletes manage competitive stress, maintain focus, and collaborate with teammates and coaches. Comparing athletes to non-athletes on EI can clarify whether sport participation is associated with enhanced emotion skills or whether pre-existing EI influences who becomes an athlete. Cricket, a cognitively .

Methodology in Comparative Studies

A standard comparative design samples a group of athletes (often from a single sport or multiple sports) and a matched group of non-athletes (students or community members).

Using independent-samples t-tests or ANCOVA to compare groups and control for covariates. Optional Correlating EI with sport performance metrics (coach ratings, statistics) within the athlete sample.

Key steps include:

Administering an EI instrument (e.g., SSEIT).

Collecting demographic and potential confound variables (age, gender, education, socio-economic status).

Key limitations include:

Predominant reliance on cross-sectional designs; randomized or longitudinal studies are needed to test causality.

Overreliance on self-report measures; adding performance-based EI tasks or multi-informant ratings would reduce bias.

Underrepresentation of cricket at elite international levels in the literature; more high-quality cricket studies would clarify sport-specific mechanisms. Future research should run longitudinal intervention trials (e.g., integrating EI training into cricket academies) and measure downstream effects on performance and wellbeing.

Methodological limitations commonly reported include cross-sectional design (limiting causal claims), reliance on self-report (social desirability bias), and heterogeneity in athlete samples (different sports, levels of competition).

Emotionally demanding team sport involving fluctuating pressure situations, provides a useful context for exploring these relationships.

Measures and validity

Most quantitative EI studies use self-report trait measures (e.g., the Schutte Self-Report Emotional Intelligence Test — SSEIT) or mixed models (e.g., Bar-On). The SSEIT is a common 33-item instrument validated for use with athletic populations and has acceptable reliability in sport contexts. When used with athletes, researchers check content validity and factorial structure to ensure items map onto sport-relevant emotion skills (awareness, regulation, utilization).

Comparative findings: athlete's vs non-athletes

The literature offers mixed but generally supportive evidence that athletes often score higher on some EI dimensions than non-athletes. Several cross-sectional studies and systematic comparisons report that involvement in competitive sport correlates with greater emotional awareness, regulation and some components of social EI — effects that vary by level of play, gender and age. However, meta-analytic and review work emphasizes, heterogeneity: some studies find no differences when controlling for confounds (e.g., education, personality), suggesting effect sizes are moderate and context dependent.

Cricket-specific research

Cricket research on EI has focused on how emotional regulation and self-control influence in-game decision making, pressure handling, and consistency of performance. Studies of club and regional cricketers report positive correlations between EI (measured by standard inventories) and performance indicators such as concentration, composure, and coach-rated effectiveness. Research with national and university-level cricketers has also used the SSEIT alongside performance and psychological-skills inventories to show higher EI among more experienced/higher-level players.

Synthesized Findings Which the Evidence Suggested are as follows:

Moderate advantage for athletes on some EI components. Many studies indicate athletes — particularly elite or experienced athletes — display higher emotional regulation and utilisation skills than non-athletes. The advantage is not universal across all EI facets.

Level of play matters. Higher-level athletes (national, university teams) often report stronger EI and psychological-skills profiles compared to recreational athletes. This suggests either that sport participation at higher levels develops EI or that persons with higher EI self-select into higher levels.

Sport context is influential. Team sports and sports with frequent high-pressure decisions (like cricket) place greater premium on regulation and interpersonal EI, so differences with non-athletes may be more pronounced in these sports.

Measurement matters. Studies using instruments validated for athletes (e.g., SSEIT with sport-specific validation) provide more reliable comparisons; when instruments are poorly adapted, results are less consistent.

Discussion and Practical Implications

From a coach and educator perspective, the evidence supports treating EI as a trainable set of skills that can be incorporated into athlete development. For cricket coaches, interventions targeting emotional awareness (recognising stress and arousal signals), regulation strategies (breathing, cognitive reframing, routines between deliveries), and team communication can plausibly improve performance under pressure. For educators and sport administrators, fostering sport participation opportunities may support socio-emotional skill development, but sport alone is not a guaranteed EI enhancer; structured psychological-skills training matters.

Practically, teams should:

Use validated EI assessments (e.g., SSEIT) as part of psychological profiling.

Pair assessment with evidence-based training (emotion regulation skills, mindfulness, simulated pressure practice).

Track EI change longitudinally to test whether sport participation or specific interventions produce durable gains.

Limitations of Existing Research & Future Directions

Conclusion

Comparative evidence suggests athletesand especially higher-level athletes, often show advantages on emotion regulation and related EI components compared to non-athletes, though effects vary by sport, measurement, and sample. In cricket, EI correlates with better in-game self-management and performance. Coaches and sport psychologists should therefore consider assessment and deliberate EI training as part of holistic athlete development, while researchers should prioritise longitudinal, multi-method designs to establish causality.

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Effect Of 12 Weeks Of Plyometric Training and Circuit Training On Speed And Agility among Long Jumpers of Rayalseema college of Physical Education

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Abstract

The purpose of the present study was to determine the effect of plyometric training and Circuit training on the selected performance parameters such as speed and agility of Rayalseema college of Physical Education between the age group of 18 to 25 Years. The selected subjects were divided into three groups of 15 each, namely, two experimental groups and one control group. Out of total subjects of 45 15 underwent plyometric training, another set of 15 underwent Circuit training while the control group did not receive any specific training. The duration of the training period was 12 weeks at a rate of 3 sessions per week. The results of the study reveal that there is a significant improvement on plyometric training group and Circuit training group when compared to control group. The improvement in performance may be attributed to plyometric and circuit training . Key words: plyometric training, circuit training, speed, explosive power etc.

Introduction

Circuit Training is developed by the Scientist Morgan R.E. and Adamson G.T. at University of Leeds in the year 1957. This is Resistance to develop the motor abilities such as strength, Speed and endurance. **Circuit training** is a exercise "circuit" which consists of prescribed exercises which includes for the upper body, lower back, abdomen and Lower body. It can be done with own body Weight and using the resistance exercises such as Barbells, Medicine Balls etc.

Plyometric exercises are great for increasing overall explosive strength and speed, giving you an acceleration and power advantage over the competition. They teach muscles to produce maximum force in a minimum amount of time by training the stretch reflex of the muscles being used.Plyo training can be done in many ways with focuses on many different body parts but most commonly seen are various jumps utilizing the muscles throughout the legs, and hips. This type of training is a key component to many programs for athletes, from high school teams to the pros.

Purpose of the Study:

The purpose of the present study was to determine the effect of plyometric training and Circuit training on the selected performance parameters such as speed and agility of Rayalseema college of Physical Education between the age group of 18 to 25 Years.

Methodology

The sample for the Study consists of 45 Long Jumpers of Rayalseema College of Physical Education, Prodattur, A.P.The selected subjects were divided into three groups of 15 each, namely, two experimental groups and one control group. Out of total subjects of 45 15 underwent plyometric training, another set of 15 underwent Circuit training while the control group did not receive any specific training. The duration of the training period was 12 weeks at a rate of 3 sessions per week. The results of the study reveal that there is a significant improvement on plyometric training group and Circuit training group when compared to control group. The improvement in performance may be attributed to plyometric and circuit training .

Results and Discussion

Table 1: Pre- and Post-Test Measurements in 30 M Run and Shuttle Run among Long Jumpers.

Group	30 M (s) Pre	30 M (s) Post	Shuttle Run (s) Pre	Shuttle Run (s) Post
Control	4.85 ± 0.12	4.83 ± 0.11	12.50 ± 0.38	12.48 ± 0.37
Plyometric	4.84 ± 0.10	4.60 ± 0.09	12.52 ± 0.35	11.75 ± 0.33
Circuit	4.86 ± 0.11	4.52 ± 0.08	12.55 ± 0.36	11.25 ± 0.32

The Results of the Study shows that Plyometric Training group has increased from 4.84 in Pre Test to 4.60 in Post Test in 30 M Run and 12.52 in Pre Test to 11.75 in Shuttle Run. The Results of the Study shows that Circuit Training group has increased from 4.86 in Pre Test to 4.52 in Post Test in 30 M Run and 12.55 in Pre Test to 11.25 in Shuttle Run. The Results of the Study shows that Control group has increased from 4.85 in Pre Test to 4.83 in Post Test in 30 M Run and 12.50 in Pre Test to 12.48 in Shuttle Run. The Results of the Study shows that Circuit Training performed better than Plyometric Training and Control Group.

Conclusions

It is concluded that Circuit Training performed better than Plyometric Training and Control Group.among Long Jumpers of Rayalseema College of Physical Education.

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A Comparative Study Of Aerobic Endurance Among Hand Ball Players and Korf Ball Players Of Osmania University

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Abstract

Aerobic Endurance is the amount of oxygen intake during exercise. Aerobic Endurance is the time which you can exercise, without producing lactic acid in your muscles. Modern handball is played on a court 40 by 20 meters with a goal in the center of each end. Korfball is a mixed gender team sport, with similarities to netball and basketball. A team consists of eight players; four female and four male.The aim of the present study was to study the difference in aerobic endurance among Hand Ball and Korf Ball Players of Osmania University The 40 Male Subjects between the age group of 18 to 25 Years r i.e. Twenty Hand Ball Players and twenty Korf Ball Players of Osmania University has taken for the study. The 12 Run Cooper Test were used to evaluate the aerobic endurance among Hand Ball And Korf Ball Players. The Study shows that the Hand Ball Players are having very good aerobic endurance compare to the Korf Ball Players. It is recommended that Net Ball and Korf Ball players must be given good endurance training to play the game in efficient manner.**Key words**: Aerobic Endurance, Net Ball, Korf Ball Etc.

INTRODUCTION:

Aerobic Endurance is one of the main fitness components, important for success in many sports. Certain sports, such as distance running and triathlon, it is the most important physical attribute. In many other sports, including football codes, good endurance is also very important as part of the overall fitness profile. A vote of the top sports requiring endurance has the obvious ones of track and field distance runners, road cyclists and longer distance swimmers in the top three.

Korf Ball:

Korfball (Dutch *Korfbal*) is a mixed gender team sport, with similarities to netball and basketball. A team consists of eight players; four female and four male. A team also includes a coach. It was founded in the Netherlands in 1902 by Nico Broekhuysen. In the Netherlands there are around 580

clubs, and over 100,000 people playing korfball. The sport is also very popular in Belgium and Taiwan and is played in 54 other countries

The game consists of Two Half of 30 minutes each, with an interval of 5 minutes between the first and second half. After every two Goals the team has to change the courts.

Hand Ball

Handball also known as team handball, Olympic handball, European team handball, European handball, or Borden ball is a team sport in which two teams of seven players each (six outfield players and a goalkeeper) pass a ball to throw it into the goal of the other team. A standard match consists of two periods of 30 minutes, and the team that scores more goals wins.

Modern handball is played on a court 40 by 20 meters (131 by 66 ft), with a goal in the center of each end. The goals are surrounded by a 6-meter zone where only the defending goalkeeper is allowed; the goals must be scored by throwing the ball from outside the zone or while "jumping" into it. The sport is usually played indoors, but outdoor variants exist in the forms of field and Czech handball (which were more common in the past) and beach handball (also called sand ball). The game is quite fast and includes body contact, as the defenders try to stop the attackers from approaching the goal. Goals are scored quite frequently; usually both teams score at least 20 goals each, and it is not uncommon for both teams to score more than 30 goals.

.**Purpose of the Study:**

The Purpose of the Study is to find out the aerobic endurance among hand ball players and korf ball players of Osmania University, Hyderabad

Significance of the Study:

The significance of this study is to find out aerobic endurance among hand ball players and korf ball players. This Study will bring true facts of sports training to develop the aerobic endurance among hand ball and korf ball players.

Methodology:

Aim :To find out the Aerobic Endurance between Male Hand Ball and Male Korf Ball Players.

SAMPLE:

The sample for present study consists of 20 Male Hand Ball Players and 20 Male Korf Ball Players of Osmania University between the age group of 18-25 years.

TOOLS:

12 Minute Cooper Test is used for collection of Data.

RESULTS

The Table No.1 showing the Mean, S.D, Standard Error, t-ratio of Hand Ball Players and Korf Ball Players in Cooper Test.

Table No.1

Results of 12 min Cooper Test	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Hand ball Players	20	3050.00	219.71	49.13	1.69453	38.00	0.10
Korf Ball Players	20	2950.00	137.71	30.79			

The Hand ball Players Mean Performance is 3,050 Meters and the Net Ball Players Mean performance is 2950 Meters. There is mean difference of 100 Meters between Hand Ball and Korf Ball Players. The Performance of Hand ball Players is very good comparing to Korf Ball Players. Hence it is concluded that hand Ball Players are good in aerobic endurance than korf ball Ball Players.

Results

Hence it is concluded that hand Ball Players are good in aerobic endurance than korf ball Ball Players.

RECOMMENDATIONS:

1. It is recommended that good Aerobic Endurance must be given to Korf Ball and Hand Ball Players.
2. It is recommended that similar studies can be conducted on female sports persons.

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Wikipaedia, Korfball and Hand Ball

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Improving Cardiovascular Performance and Decreasing Perceived Exertion with Lactate Supplement

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ABSTRACT: Improving Cardiovascular Performance and Decreasing Perceived Exertion with Lactate Supplement. The purpose of this study was to determine the effect of a supplement containing Calcium Lactate, Magnesium Lactate Dihydrate, and Zinc Oxide (Muscle Sentry LLS, Cleveland, OH) (MS) versus a placebo (PLA) on physiological performance and muscle recovery. Twelve male subjects (23.7 ± 2.1 yrs) underwent an exercise protocol while ingesting a single dosage of both MS and PLA for two separate trials. Experimental testing was used to investigate the differences in maximum aerobic capacity (VO_2 max), creatine kinase levels (CK), perceived exertion index (PEI), and blood flow (BF) during single dosage supplementation. Paired samples t-tests demonstrated a significant improvement in VO_2 and PEI following MS supplementation when compared to PLA ($P<0.05$). Analysis of variance demonstrated a main effect for time ($P<0.05$) as BF increased during the exercise protocol but did not differ between supplementation. CK was not significantly different between conditions ($P>0.05$), however change scores demonstrated less muscle damage following MS ingestion. From these findings, it appears that MS supplementation resulted in increased performance and decreased the perceived difficulty of the exercise when compared to PLA. **Key Words**: Exercise, VO_2 max, PEI Cardiovascular endurance etc.

Introduction

Ergogenic aids are defined as substances or devices used to improve exercise and athletic performance by improving the production of energy (4). Athletes and coaches aggressively pursue ergogenic aids in an attempt to better athletic performance, no matter how minute the effects (4). It has recently been suggested by the manufacturer, Muscle Sentry, LLC of Cleveland, OH, that a single dosage of a calcium lactate, magnesium lactate, and zinc oxide ergogenic aid known as Muscle Sentry (MS) will improve cardiovascular performance and prevent muscle trauma in athletes. Therefore, we designed the present investigation to examine the effectiveness of this ergogenic aid to meet its claims in improving performance and reducing muscle damage. In order to do so, we conducted a randomized, double blind placebo control study to account for all independent variables under the experimental conditions.

To address the company's claim as labeled on the bottle, "Formulated to Improve Cardiovascular Performance and Prevent Muscle Trauma," we opted to use a maximum aerobic

capacity test (VO_2 max) as well as monitor creatine kinase (CK) levels both pre- and post-exercise. The maximal capacity to transport and use oxygen during exercise is known as maximal oxygen uptake (VO_2 max). It is considered by exercise physiologists to be the primary physiologic measurement of cardiovascular fitness (6) in the determination of performance capabilities. CK has been used as a marker for muscle damage. An increase in blood plasma concentrations of CK is typically observed following exercise. It can be indicative of muscle damage and tearing (5). Therefore inducing muscle damage will result in a rise in CK levels in the blood plasma.

Recent research has suggested that catecholamines improve athletic performance. During exercise, such as a VO_2 max test, catecholamines have also been shown to stimulate muscle glycolysis that increases the production of lactate (2). Hence, the lactate supplementation of MS may in fact promote performance enhancement similar to that of the naturally occurring catecholamines.

The purpose of this study was to investigate the response of physically active males to a lactate based supplement. The study was conducted to determine the potential ergogenic benefits of supplementing MS pre-exercise and to verify whether or not MS met the claims provided by the manufacturer (i.e., improve performance while preventing muscle trauma). A differential response following the ingestion of the supplement as compared to ingestion of the placebo was hypothesized. We expected to see different responses in VO_2 max, CK, blood flow (BF), and perceived exertion (PEI).

Methodology

Subjects

Twelve physically active and apparently healthy individuals were recruited for this study. The group of subjects was selected as a representation of the frequently used average sample found in current performance studies. The subjects were recruited using an active student population and from a database of students who had previously contacted our laboratory for separate, unrelated studies. Subjects were given an opportunity to familiarize themselves with the protocol, and were required to read and sign an informed consent form.

Procedures

Protocol

The subjects reported to the Exercise Physiology Laboratory on five separate occasions. During the initial visit, the subjects were familiarized with the study protocol and, then, were asked to sign the informed consent document as well as complete a medical history questionnaire. The subjects' anthropometric measurements were also recorded. They were instructed to refrain from consuming caffeine containing foods and beverages prior to reporting to the laboratory and were asked to not engage in any outside physical activity while participating in the study. After the initial visit, the subjects underwent two separate exercise trials in which they consumed two capsules of MS or PLA and vice versa. Two days following each of the exercise sessions, the subjects reported to the laboratory for blood sampling. The exercise trials were scheduled a week apart to allow for adequate muscle recovery and rest. The supplement was randomized to eliminate an order effect as well as decrease tester bias.

Exercise Trials

The two separate exercise trials (MS, PLA) consisted of a cycling max test followed by an eccentric plyometric exercise protocol. An ultrasound Doppler (Logiq 7, General Electric Medical Systems, and Milwaukee, WI) was used to measure blood flow BF at the beginning of each exercise trial. During this non-invasive procedure, the subjects laid supine on a gurney with their right arm at a 90° angle to their chest. The ultrasound transducer was placed on the upper arm near the bicep brachii muscle to measure the diameter of the brachial artery to calculate the blood flow through the brachial artery. Following the initial ultrasound, venous blood samples were drawn via antecubital venipuncture. The samples were stored at –80°C for subsequent analysis. These blood samples were used to monitor CK levels as markers of muscle damage.

Following blood collection, the subjects ingested a single dosage of either supplement (MS, PLA). The subjects ingested the other supplement on the second exercise trial. After waiting 15 min (as suggested by the label) the subject were prepared for the VO_2 max test using a magnetically braked cycle ergometer (Lode Excalibur, Groningen, Netherlands). The graded exercise procedure (GXT) determined the subjects' maximal aerobic fitness. The GXT protocol began with the standard 2-min warm-up period at 60 W. Resistance increased 50-100 W each minute thereafter. This increase in workload allowed for a progressive maximal voluntary exhaustion of the subjects. In order to determine VO_2 max at the point of exhaustion, an automated open circuit metabolic system (Parvo Metabolic Cart, Sandy, Utah) was used. RER standards were assessed and achieved to validate maximum aerobic capacity in $mL \cdot kg^{-1} \cdot min^{-1}$.

Following the subjects' VO_2 max test, an eccentric resistance and plyometric exercise regimen was administered with the purpose of inducing muscle damage. This included 5 stations of 60 sec plyometric training exercises. This protocol incorporated upper, lower, and total body plyometric drills. Immediately following the exercise another BF recording was performed and the perceived exertion index test (PEI) was administered to determine the subjects' subjective exercise exertion. The subjects were then allowed to leave the laboratory for 48 hrs before returning for another blood sampling to monitor muscle damage. In total, the subjects completed a pre-screening, two separate blood draw and exercise tests, and two blood draw visits.

Statistical Analyses

Means and measures of variability were calculated. Paired samples t-tests were used to analyze VO_2 max and PEI differences between trials. A two time (pre, post) by two-condition (MS, PLA) repeated measures analysis of variance (ANOVA) was used to examine differences in BF and CK. Post-hoc analyses of any significant main effects of condition were achieved using t-tests with the Benjamini and Hochberg False Discovery Rate correction for multiple comparisons (1). All statistical analyses were performed using SPSS for Windows (version 17.0, SPSS Inc., Evanston, IL).

Results

Physical Characteristics

The subjects' physical characteristics are listed in Table 1. Each subject reported both resistance and aerobic training as part of their typical exercise routine.

Table 1. Physical Characteristics of the Subjects.

Variable	Males (n = 12)
Age (yrs)	23.7 ± 2.1
Height (in)	71.1 ± 2.7
Weight (lb)	189.5 ± 21.2

Data are Mean ± SD

VO_2 max

We used paired samples t-test to determine differences in aerobic performance. A significantly greater performance score was achieved during the VO_2 max (P=0.032) after ingesting MS compared to PLA (Table 2). The MS results suggest a greater maximum performance achieved when compared to PLA.

PEI

A paired sample t-test was used to compare mean difference in PEI between conditions. The test revealed a significantly lower PEI (P=0.002) after MS supplementation (Table 2). Therefore, it is reasonable to conclude that MS promoted a lower perceived energy expenditure following exercise.

Table 2. Performance and Perceived Exertion Following a Single Dosage of MS or PLA.

Variable	MS	PLA
VO_2 max ($mL \cdot kg^{-1} \cdot min^{-1}$)	39.7 ± 6.9*	37.9 ± 7.3
PEI	7.1 ± 1.3*	8.1 ± 1.0

*Significant improvement (P<0.05). (Mean ± SD)

CK

There was not a significant main effect of condition for changes in CK levels (P=0.205). MS did show a lower level of CK in the blood (42.6 ± 125.3 $mg \cdot dl^{-1}$ MS, 110.6 ± 153.5 $mg \cdot dl^{-1}$ PLA, Table 3), but the difference was not significance.

BF

There was a significant main effect of time Pre and Post (P=0.001) for BF. However, there was neither a significant main effect for condition (P=0.284) nor an interaction between time and condition (P=0.291). Post hoc paired samples t-tests revealed that BF increased across time (182.6 ± 119.1) $L \cdot min^{-1}$ MS, 215.6 ± 128.0 $L \cdot min^{-1}$ PLA, Table 3) while supplementing either MS or PLA (P<0.05).

Table 3. Subjects' Physiological Responses Following a Single Dosage of MS or PLA.

Variable	MS	PLA
Δ **CK** ($mg \cdot dl^{-1}$)	42.6 ± 125.3	110.6 ± 153.5
Δ **BF** ($L \cdot min^{-1}$)	182.6 ± 119.1	215.6 ± 128.0

*Significance (P<0.05). (Mean ± SD)

DISCUSSION

The present study was the first to examine the physiologic and performance related results of a single dosage of a particular calcium lactate, magnesium lactate dehydrate, and zinc oxide supplement (MS) prior to exercise. Earlier research investigating a carbohydrate sports drink with the addition of a lactate solution showed increased endurance performance and peak power during a cycling trial at a level just below the respiratory threshold (3). However, the consumption of lactate did not affect a change in VO_2 max or the difference in perceived exertion (3). Our study differed in that we found improvements in our exercise group following MS supplementation when compared to PLA. The subjects' VO_2 max increased significantly with a single dosage of MS prior to test. Bryner et al. (1998) observed no differences in time to exhaustion with lactate supplementation. Another group monitored exertion and observed that lactate led to no differences in exhaustion as well (6). Our study differed as our subject group reported a significantly lower PEI immediately following exercise. Therefore, our findings suggest that a single dosage of MS resulted in an increase in performance and a decrease in perceived exertion.

Interestingly, there were no significant differences in both muscle damage and BF. However, when looking at the raw data, the average change in CK from pre- to post-exercise trial was lower with the single dosage of MS. The subjects' BF showed similar trends across both trials meaning that blood flow increased to the working muscles with the dosage of MS and PLA.

Limitations

As a result of these findings, we have found some limitations to our study. First, it is apparent that sample size was a limitation. We may have added to the finding of the current study with a larger sample size. The investigation did lead to statistical significance in a few variables, but not in other variables. This may have been due to the large deviations found between subjects. Second, another limitation to this study may have been the homogenous "low-fitness" of the subjects. It may have been more beneficial to focus on subjects with a higher level of aerobic fitness since the supplement was designed and synthesized for athletes. In the future, it is important that researchers explore dosage sizes. If the dose is individualized based on each participant's weight, it may be possible to discern different results.

Conclusions

As hypothesized, a single dosage of Muscle Sentry demonstrated different physiological effects when compared to a Placebo. In terms of the subjects' cardiovascular performance and perceived exertion, MS resulted in significant physiologic improvements. The results did not meet significant standards in demonstrating differences in muscle damage prevention and improved localized blood flow between MS and PLA. Therefore, we can clearly state that a single dosage of MS will allow an athlete to work at a higher intensity for a longer period of time without perceiving the increased workload. This could result in improved performance during both training and competition from both a physical and a mental standpoint. Both factors are equally important when high level athletes are competing.

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A Comparative study of Collegiate-level Handball and Tennis players: Anthropometry, Fitness, and Performance.

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Abstract

The Handball and tennis are physically demanding sports with different physiological and anthropometric demands. This study compared anthropometry, body composition, aerobic capacity, explosive power, agility, and holding grip strength between collegiate handball and tennis players. The 30 Collegiate handball players (mean age 21.03 ± 1.32 yrs) and 30 collegiate tennis players (mean age 19.87 ± 0.90 yrs) were evaluated. Measures: height (cm), body mass (kg), body fat (%), VO_2max (ml·kg^{-1}·min^{-1}), vertical jump (cm), agility test (s; lower = better), and handgrip strength (kg). Independent-samples t-tests compared groups (α = 0.05). Cohen's d reported effect sizes. Handball players were significantly taller (183.26 ± 5.49 cm vs 178.99 ± 5.72 cm; t = 2.954, p = 0.005, d = 0.76) and heavier (83.06 ± 6.76 kg vs 71.11 ± 4.35 kg; t = 8.152, p < 0.001, d = 2.11). Body fat higher in handball (15.53 ± 3.06% vs 11.22 ± 2.50%; t = 5.985, p < 0.001, d = 1.55). Tennis players had slightly higher VO_2max (54.24 ± 3.26 vs 52.39 ± 3.72 ml·kg^{-1}·min^{-1}; t = -2.05, p = 0.045, d = -0.53). Handball players demonstrated greater vertical jump (57.60 ± 5.62 cm vs 52.75 ± 4.80 cm; t = 3.594, p = 0.001, d = 0.93). Tennis players were faster on the agility test (8.36 ± 0.22 s vs 9.07 ± 0.31 s; t = 10.128, p < 0.001, d = 2.62). Handgrip strength favored handball (51.53 ± 5.47 kg vs 45.66 ± 5.77 kg; t = 4.047, p < 0.001, d = 1.05).**Keywords**: Collegiate athletes, Handball players, Tennis players, Anthropometric characteristics, Body composition, Physical fitness, Motor fitness, Performance analysis, Agility, Strength, Endurance, Flexibility, Speed, Reaction time, Skill-related fitness.

Introduction

Handball and tennis are mutually explosive, skill-based sports but change in typical movement patterns, energy system demands, physical and physiological advantages. Handball requires repeated high-force throws, contacts, and vertical/jumping actions; tennis requires rapid change-of-direction, endurance across points, and fine upper-limb control. The understanding of differences at the collegiate level helps coaches modify strength & conditioning and talent identification.

Objectives: To compare anthropometric, body composition, aerobic, power, agility, and grip outcomes between collegiate handball and tennis players and quantify differences using statistical tests and effect sizes.

Methodology

Participants

- Two groups: Handball (n = 30) and Tennis (n = 30).
- Subjects: male collegiate athletes, 18–24 years, regular training (≥4 sessions/week), injury-free for 3 months.
- Measures collected in preseason under standard conditions.

Measures used

- **Age (yrs):** self-reported.
- **Height (cm):** stadiometer.
- **Body mass (kg):** calibrated in digital weighing scale.
- **Body fat (%):** skinfold caliper using standard 3-site method and validated equations.
- **VO_2max (ml·kg^{-1}·min^{-1}):** estimated by multistage shuttle or treadmill test (valid estimate protocol).
- **Vertical jump (cm):** countermovement jump measured with jump mat.
- **Agility (s):** 5-10-5 shuttle / T-test variant; lower is better. (Here reported as a single typical agility metric.)
- **Handgrip strength (kg):** dominant-hand dynamometer; best of 3 trials recorded.

Statistical analysis

- Descriptive statistics: mean ± SD.
- Between-group comparisons: independent-samples t-test (two-tailed). Assumption checks: normality (visual & Shapiro–Wilk) and equality of variances (Levene's test); Welch correction applied when needed.
- Effect size: Cohen's d (pooled SD).
- Significance threshold: $p < 0.05$.

Results

Participant appearances (group means ± SD)

Variable	**Handball (n=30)**	**Tennis (n=30)**	**t**	**p**	**Cohen's d**
Age (yrs)	21.03 ± 1.32	19.87 ± 0.90	3.999	<0.001	1.03
Height (cm)	183.26 ± 5.49	178.99 ± 5.72	2.954	0.005	0.76
Weight (kg)	83.06 ± 6.76	71.11 ± 4.35	8.152	<0.001	2.11
Body fat (%)	15.53 ± 3.06	11.22 ± 2.50	5.985	<0.001	1.55
VO_2max ($ml \cdot kg^{-1} \cdot min^{-1}$)	52.39 ± 3.72	54.24 ± 3.26	-2.050	0.045	-0.53
Vertical jump (cm)	57.60 ± 5.62	52.75 ± 4.80	3.594	0.001	0.93
Agility (s)	9.07 ± 0.31	8.36 ± 0.22	10.128	<0.001	2.62
Handgrip (kg)	51.53 ± 5.47	45.66 ± 5.77	4.047	<0.001	1.05

Interpretation of effect sizes (Cohen's d): small ≈ 0.2, medium ≈ 0.5, large ≥ 0.8.

Key statistical findings

- **Anthropometry:** Handball players were significantly taller and heavier with large effect sizes (height: medium–large; weight: very large).
- **Body composition:** Handball players had significantly higher body fat % (large effect).
- **Aerobic capacity:** Tennis players had slightly but significantly higher VO_2max (small–moderate effect in favor of tennis).
- **Explosive power & strength:** Handball players had greater vertical jump performance and higher handgrip strength (large effects).
- **Agility:** Tennis players were substantially faster on the agility test (very large effect).

Discussion

The comparative analysis highlights sport-specific physiological and morphological differences.

- **Stature and mass:** Handball players' greater height and mass align with the demands for reach, physical and physiological contact, and throwing power. Coaches can leverage these qualities of power- and contact-oriented training.
- **Body fat:** A higher body fat percentage in handball players may reproduce positional demands and muscle vs. fat distribution; nonetheless, nutritional and conditioning strategies could reduce unnecessary fat while preserving power.
- **Aerobic capacity:** Tennis players' higher VO_2max is consistent with prolonged point play, long match durations, and repeated high-intensity rallies requiring sustained aerobic contribution.
- **Power and grip strength:** Better vertical jump and grip in handball likely reflect generation of throwing velocity and explosive jumps; tennis requires grip endurance and precision but not necessarily maximal static grip strength.
- **Agility:** Tennis's superior agility (faster change-of-direction) fits its need for short, rapid movements and multi-directional court coverage.

Practical implications: Strength & conditioning programs has been monitored: handball, emphasize power, upper-body strength, and contact resilience; tennis, emphasize lateral quickness, repeated sprint ability, and aerobic conditioning.

Limitations: Simulated dataset (illustrative). If applied to real athletes, include larger, mixed-sex samples, positional analysis (e.g., wing vs. goalkeeper in handball; singles vs. doubles tennis), and in-season vs off-season comparisons. Field tests and lab measures should be standardized for maximal validity.

Conclusion

At the collegiate level, handball players tend to be taller, heavier, and excel in explosive power and grip strength; tennis players show superior agility and diffidently higher aerobic capacity. Training and talent identification should reflect these sport-specific profiles.

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Effect Of Combined Plyometric And Resistance Training On Agility Among Kabaddi Players

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ABSTRACT

The purpose of this study was to investigate the *effect of combined plyometric and resistance training on agility among kabaddi players*. Forty-five male kabaddi players (age 17–24 years) from Kadapa district were randomly assigned into three groups: Plyometric Training Group (CPTG, n=15), Resistance Training Group (RTG, n=15), and Control Group (CON, n=15). Agility was assessed using a standard agility test before and after a 12-week training intervention. The pre-test mean scores for CPTG, RTG, and CON were 11.63, 11.65, and 11.61 seconds, respectively, with no significant differences between groups ($F=0.04$, $p>0.05$). After training, the post-test mean scores improved to 10.32 (CPTG), 10.58 (RTG), and 11.60 (CON) seconds, showing significant between-group differences ($F=57.80$, $p<0.05$). Adjusted post-test means confirmed these improvements (10.31, 10.57, and 11.61 seconds, respectively) with high statistical significance ($F=100.71$, $p<0.05$). Scheffe's post hoc test revealed that both plyometric and resistance training groups significantly outperformed the control group, while the plyometric group showed slightly greater improvements than resistance training. The findings suggest that combining plyometric and resistance training is an effective strategy to enhance agility in kabaddi players, with plyometrics offering a marginally superior effect. Coaches and trainers are encouraged to integrate these methods into regular conditioning programs to maximize on-court performance.Keywords :Agility, Plyometric Training, Resistance Training and Kabaddi etc,

Introduction

Kabaddi is a high-intensity contact team sport that requires short, repeated bursts of acceleration, rapid deceleration, multi-directional change of direction (COD), and explosive leg actions. Agility—the rapid whole-body movement with change of velocity or direction in response to a stimulus—is therefore a key determinant of successful raiding and defensive play in kabaddi. Enhancing agility can directly improve a player's ability to evade defenders, execute effective raids, and perform fast, accurate tackles under changing game conditions.

Physiologically, agility depends on a combination of neuromuscular qualities: lower-limb power (rate of force development), eccentric strength for deceleration, reactive strength (stretch–shortening cycle efficiency), coordination and balance, and perceptual-decision skills. Resistance (strength) training improves maximal and eccentric force capacities and can increase the strength base needed for rapid accelerations and decelerations. Plyometric training targets the stretch–shortening cycle and reactive force, improving jump- and sprint-related power and transfer to rapid COD actions. Because these two methods target complementary mechanisms, their combination is logically attractive for agility development.

Empirical evidence from team-sport research shows that short-term plyometric programs improve sprint, jump and COD/agility performance across youth and adult athletes; similarly, appropriately designed resistance training improves change-of-direction ability (especially when exposure is sustained or when strength gains are large enough to transfer). Studies in soccer, basketball and other court/field sports have reported meaningful gains in agility and COD time when plyometrics and strength or sprint training are combined within the training program. These findings suggest that a combined approach may produce larger or more transferable improvements in sport-specific agility than either method alone.

From a practical coaching perspective for kabaddi, a combined plyometric + resistance training program can (a) build a force-production foundation (via strength work), (b) convert that force into rapid, sport-specific reactive actions (via plyometrics), and (c) integrate COD and sport-specific drills so gains transfer to on-court performance. Programming considerations—volume, intensity, sequencing (e.g., strength before plyometrics or interleaving), frequency, and athlete maturity—critically determine whether combined training is synergistic or merely additive.

Given kabaddi's unique demands (short raids, low recovery, contact decelerations), research specifically testing combined plyometric and resistance interventions on agility in kabaddi players is needed. The broader literature from 2014–2016 provides methodological templates and evidence that short (4–8 week) to moderate (6–12 week) combined programs can improve COD, sprint and jump measures in youth and adult team-sport athletes—supporting the rationale to test and implement combined training interventions tailored to kabaddi.

Expermental Design

Find out the study Effect of Combined Plyometric and Resistance Training on Agility among Kabaddi PlayersThe study was formulated as a true random group design consisting of a pre-test and post test. The subjects men kabaddi players who are participated inter collegiate tournaments in kadapa district (N=45) were randomly assigned to three equal groups of fifteen and their age ranged between 17-24 years . The selected subjects were divided into three groups randomly. Experimental Group I was considered plyometric training group, experimental group II was resistance training group and control group was not involved in any special treatment. Pre test was conducted for experimental Groups I and II and the control group on agility. Experimental groups underwent the

respective training for 12 weeks. Immediately after the completion of 12 weeks training, all the subjects were measured of their post test scores on the selected criterion variable. The difference between the initial and final scores was considered the effect of respective treatments. To find out statistical significance of the results obtained, the data were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed to test the significance of the study.

Result On Agility

Table-I

ANALYSIS OF COVARIANCE FOR AGILITY PRE-TEST AND POST-TEST SCORES OF COMBINED PLYOMETRIC TRAINING [CPTG], RESISTANCE TRAINING [RTG] AND CONTROL [CON] GROUPS [In seconds]

TESTS	CPTG	RTG	CON	Source of variance	Sum of squares	df	Mean squares	'f' ratio
Pre-Test Mean	11.63	11.65	11.61	Between	0.02	2	0.01	0.04
				Within	19.43	87	0.22	
Post-test Mean	10.32	10.58	11.60	Between	27.63	2	13.81	57.80*
				Within	20.79	87	0.24	
Adjusted Post-test Mean	10.31	10.57	11.61	Between	28.44	2	14.22	100.71*
				Within	12.14	86	0.14	

Significant level constant at 0.05

[The table value for 0.05 level of significant with 2 and 87 (df) =3.10, 2 and 86 (df) =3.10]

The above table -I displays the combined plyometric exercises treatment group [CPTG], resistance exercises treatment group [RTG] and control group [CON]. The pre test mean values of agility are 11.63, 11.65 and 11. respectively. The obtain 'F' ratio value for initial test mean values of agility is 57.80 lower than the tabular value 2 and 87 (df) =3.10 at 0.05 level of confidence. Therefore there is no significant changes exist in pretest mean values between CPTG, RTG and CON groups kabaddi players on agility.

The combined plyometric e treatment group [CPTG], resistance exercises group [RTG] and control group [CON] post test mean values of agility are 10.32, 10.58 and 11.60 respectively. The obtain 'F' ratio value for post test mean of agility is 57.80 higher than the tabular value 2 and 87 (df) =3.10 at 0.05 level of confidence. It discovered that there is significant differences exist in post test mean values between CPTG, RTG and CON group's kabaddi players on agility.

The combined plyometric exercises treatment group [CPTG], resistance treatment group [RTG] and control group [CON] adjusted post test mean value of agility are 10.31, 10.57 and 11.61 respectively. The obtain 'F' ratio value for adjusted post test mean value of agility is 100.71 higher than the tabular value 2 and 86 (df) =3.10 at 0.05 level of confidence. Hence statistical analysis reveals that there is significant changes exist in adjusted post test mean values between CPTG, RTG and CON group's kabaddi players on agility.

The above score analysis indicated agility performance enhanced due to plyometric exercises and resistance training of Kabaddi players. To find the significant differences between the groups of CPTG, RTG and CON Scheffe's test applied and presented in the table – II.

Table-II

THE SCHEFFE'S TEST FOR THE ADJUSTED POST MEAN DIFFRENCES BETWEEN COMBINED **PLYOMETRIC EXERCISES TRAINING [CPTG], RESISTANCE TRAINING [RTG] AND CONTROL [CON] GROUPS ON AGILITY**

MEANS				Required CI
CPTG	RTG	CON	Mean differences	
10.31	10.57		0.26*	0.24
10.31		11.61	1.30*	0.24
10.31	10.57		0.25 *	0.24

Significant level constant at 0.05 level of confidence

The above table –I indicate the paired mean differences between combined plyometirc exercises treatment group [CPTG], resistance treatment group [RTG] and control group [CON] for agility performance of kabaddi players.

The adjusted post test mean differences between combined plyometirc exercises treatment group [CPTG] and resistance treatment group [RTG] is 0.26 lower than the required CI value 0.24. Therefore it is proved that there is significant differences exist between combined plyometric training group [CPTG] and resistance treatment group [RTG] for agility performance of kabaddi players.

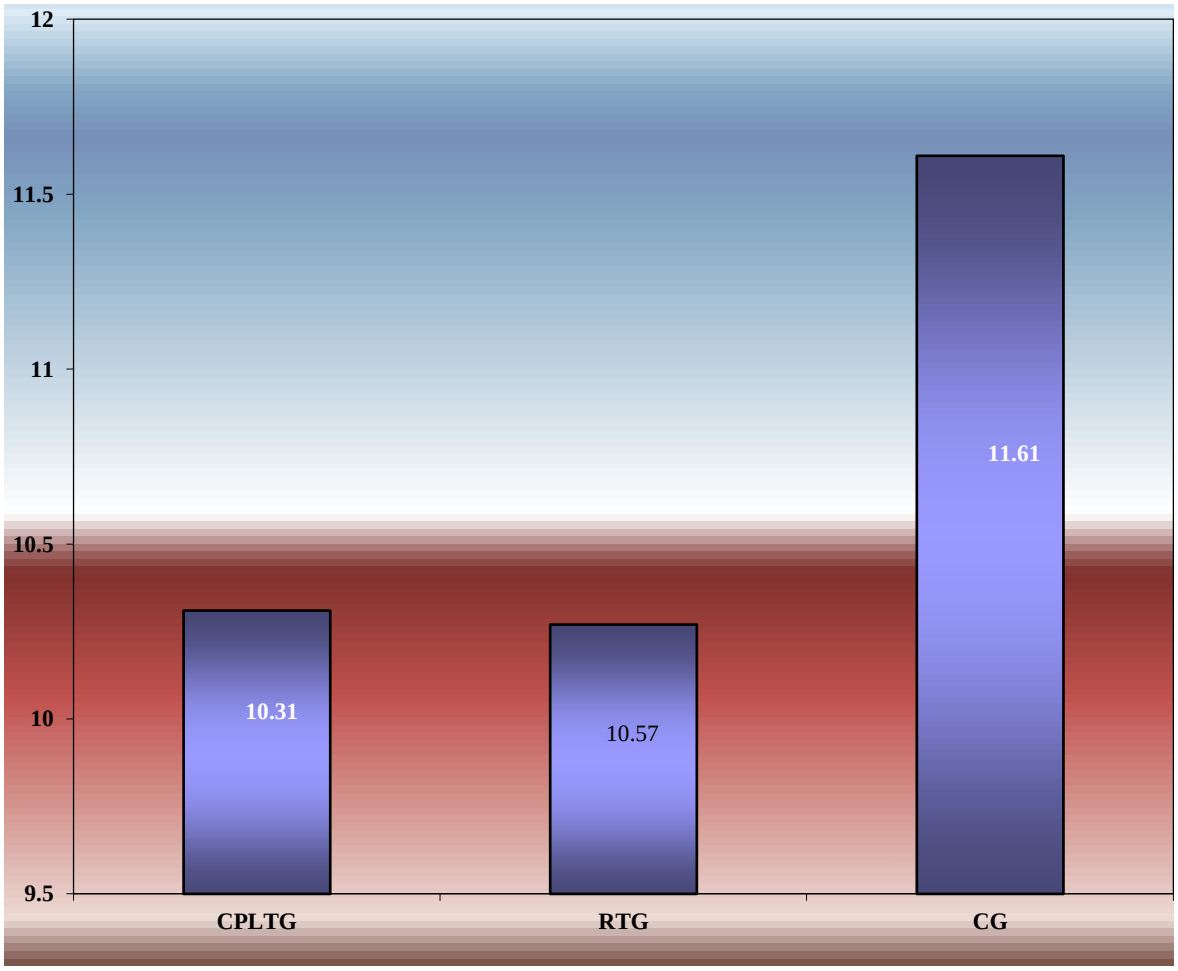
The adjusted post mean difference between combined plyometirc treatment group [CPTG] and control group [CON] is 1.30 greater than the required CI value 0.24. Therefore it is confirmed that there is significant changes exist between combined plyometric training group [CPTG] and control group [CON] for agility performance of kabaddi players.

The mean difference between resistance exercises treatment group [RTG] and control group [CON] is 0.25 greater than the required CI value 0.24. Therefore it is noted that there is changes exist between resistance group [RTG] and control group [CON] for agility performance of kabaddi players.

The pre test, post test and adjusted post mean values of three groups CPTG, RTG and CON of agility performance are displayed in graph figure-I

Figure-I

GRAPICAL ILLUSTRATION OF ADJUSTED POST TEST MEAN VALUES OF COMBINED **PLYOMETRIC EXERCISES TRAINING [CPTG], RESISTANCE TRAINING [RTG] AND CONTROL [CON] GROUPS ON AGILITY**



Conclusion

The study demonstrated that both combined plyometric training and resistance training significantly improved agility among kabaddi players compared to the control group. The statistical analysis revealed meaningful reductions in agility test times for the experimental groups, with the combined plyometric training group showing slightly superior gains over the resistance training group. These findings confirm that explosive, high-intensity training methods effectively enhance the quick directional changes and reactive movements essential for kabaddi performance. Therefore, incorporating combined plyometric and resistance training into regular conditioning programs is strongly recommended for coaches and trainers to optimize agility, court performance, and competitive success of kabaddi players.

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Effect of Core Strength Training exercises for development of Speed among Free Style Event in Swimming of Hyderabad District

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Abstract:

The Purpose of this study was to find out the effect of Core Strength Training exercises for the development of Speed in 50 M Free Style swimming. The sample for the present study consists of 20 Male Swimmers of Hyderabad District out of which 10 are experimental group and 10 are controlled group. Core Strength Training exercises such as Reverse body plank, trunk extension, sit ups, front plank, side plan etc were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training for eight weeks. Pre Test and Post Test were conducted in the 50 M Free Style Event in Swimming. Paired t-tests were used to analyze the data.This study shows that due to the Core Strength Training Exercises there is a improvement of experimental group in the 50 M free style Swimming compare to the controlled group.The Mean Performance of Experimental Group in 50 M Free Style Swimming in Pre Test is 39.22 there is improvement in performance to 37.20. The Mean Performance of Control Group in 50 M Free Style Swimming in Pre Test is 40.22 there is decreased in performance to 41.60. That Means Experimental group has decreased by 1.48 due to the general training. Overall results suggests that due to the Core Strength Training exercise the performance in Swimmers are improved. Core Strength training is essential for elite swimming performance. To optimize the benefit of land based training, you must select exercises with mechanical relevance to the swimming action, particularly those movements which propel the swimmer through water.Key words: Medicine ball exercises, free style swimming etc

Introduction:

Core strength is essential for everyday health and well-being, as a strong core protects the spine, reduces back pain, enhances movement patterns, and improves balance, stability and posture. There are many methods for developing core strength, as well as various pieces of equipment that assist in that development. However, there are plenty of exercises that require only body weight or basic equipment. The most important thing to remember when training the core is to avoid using momentum and instead perform each exercise with awareness so that the core is actually braced or engaged.Sports that require a lot of agility, such as soccer, swimming, gymnastics, or snowboarding, will require multi plane core exercises.

Purpose of the Study:

The Purpose of this study was to find out the effect of Core Strength Training exercises for the development of Speed in 50 M Free Style swimming of Hyderabad District between the age group of 18 to 25 Years.

Methodology:

The sample for the present study consists of 20 Male Swimmers of Hyderabad District out of which 10 are experimental group and 10 are controlled group. Core Strength Training exercises such as Reverse body plank, trunk extension, sit ups, front plank, side plan etc were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training for eight weeks. Pre Test and Post Test were conducted in the 50 M Free Style Event in Swimming. Paired t-tests were used to analyze the data.

Results :

This study shows that due to the Core Strength Training Exercises there is a improvement of experimental group in the 50 M free style Swimming compare to the controlled group.The Mean Performance of Experimental Group in 50 M Free Style Swimming in Pre Test is 39.22 there is improvement in performance to 37.20. The Mean Performance of Control Group in 50 M Free Style Swimming in Pre Test is 40.22 there is decreased in performance to 41.60. That Means Experimental group has decreased by 1.48 due to the general training.

Conclusions:

Overall results suggests that due to the Core Strength Training exercise the performance in Swimmers are improved. Core Strength training is essential for elite swimming performance.

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https://swimcompetitive.com/training/swimming-core-exercises-home

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Effect Of Mindfulness Training And Psychological Skills Training On Anxiety Among High School Kabaddi Players

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Abstract

The present study aimed to investigate the Effect of Mindfulness Training and Psychological Skills Training on anxiety among high school kabaddi players. A total of **60 male kabaddi players** aged **12–15 years** from Proddatur region were randomly assigned into three equal groups (n = 20 each): **Mindfulness Training Group (MTG)**, **Psychological Skills Training Group (PSTG)**, and a **Control Group (CG)**. The experimental groups underwent **12 weeks of structured training programs**, while the control group did not participate in any intervention. Competitive anxiety was measured before and after the training using standardized sport-anxiety assessments.The **pre-test mean anxiety scores** were 0.279 (MTG), 0.264 (PSTG), and 0.281 (CG), with no significant differences among groups ($F = 0.603$, $p > 0.05$). After the intervention, **post-test means** improved to 0.253 (MTG), 0.242 (PSTG), and 0.286 (CG). ANCOVA revealed a **significant difference** among the groups ($F = 3.863$, $p < 0.05$). Post-hoc Scheffé analysis confirmed that the **Mindfulness Training Group significantly outperformed the Control Group** (MD = 0.031, $p < 0.05$), while no significant difference was observed between PST and control (MD = 0.028) or between MTG and PSTG (MD = 0.003).These results suggest that **Mindfulness Training is more effective than Psychological Skills Training and control conditions in reducing competitive anxiety among high school kabaddi players**. The findings emphasize the importance of integrating mindfulness-based practices into training programs for adolescent contact-sport athletes to enhance emotional regulation, focus, and psychological readiness.Keywords: **Mindfulness training, Psychological skills training, Anxiety and High school kabaddi players etc.**

Introduction

Competitive anxiety is a common and performance-limiting problem in youth sport: high-school athletes frequently experience cognitive worries, somatic symptoms and concentration disruption before and during competition, and these responses can undermine both performance and long-term participation. Understanding and addressing anxiety in adolescent athletes therefore has

both performance and welfare implications, especially in contact team sports such as kabaddi where rapid decision-making and physical readiness are critical.

Psychological Skills Training (PST) a structured package of techniques such as goal-setting, imagery, self-talk and arousal regulation has long been used to reduce competitive anxiety and improve coping and performance in athletes. While many studies show positive effects of discrete PST techniques (e.g., self-talk) on performance and on aspects of anxiety, the overall evidence base calls for better-designed interventions and age-appropriate adaptations when working with school-age athletes. This makes PST a logical, evidence-based compactor or component in interventions aimed at anxiety reduction among high-school players.

Mindfulness-based approaches (including MSPE, MAC and brief mindfulness interventions) have gained traction in sport psychology because they explicitly target attention-control, present-moment awareness and acceptance of internal events processes that reduce unhelpful worry and rumination and can increase flow under pressure. Intervention trials and preliminary randomized studies in athletic samples (including youth and adult athletes) show promising reductions in sport-specific anxiety and increases in flow, mindfulness and emotion-regulation suggesting mindfulness is a promising candidate intervention for competitive anxiety in team sports.

Comparative work that directly tests PST against mindfulness (or tests combined protocols) is limited but growing: well-designed randomized protocols and trial designs have been proposed and piloted (including ambulatory, field-based assessment), because sport performance and anxiety are context-dependent and best measured in realistic practice/competition settings. These comparative designs are particularly relevant for high-school settings, where feasibility, session length, and skill-level tailoring must be considered.

For kabaddi a high-intensity, contact team sport popular among school populations in South Asia targeted research is scarce despite the sport's specific psychological demands (rapid role changes, high physical contact, short high-pressure bouts). Testing the relative effectiveness of a brief, school-suitable mindfulness program and a pragmatic PST curriculum on competitive anxiety (and secondary outcomes such as attention control, confidence and game-phase performance) would therefore fill an applied gap and provide coaches and school sports practitioners with age-appropriate, evidence-based mental training options. The present study seeks to address this gap by using an ecologically valid intervention and field-based anxiety measures in high-school kabaddi players.

EXPERMENTAL DESIGN

Find out the study Effect of Mindfulness Training and Psychological Skills Training on anxiety among high school kabaddi players .The study was formulated as a true random group design consisting of a pre-test and post test. The subjects high school (Boys) kabaddi players in proddatur region (N=60) were randomly assigned to three equal groups of twenty and their age ranged

between 12-15 years . The selected subjects were divided into three groups randomly. Experimental Group I was considered Mindfulness training group, experimental group II was Psychological Skills training group and control group was not involved in any special treatment. Pre test was conducted for experimental Groups I and II and the control group on anxiety. Experimental groups underwent the respective training for 12 weeks. Immediately after the completion of 12 weeks training, all the subjects were measured of their post test scores on the selected criterion variable. The difference between the initial and final scores was considered the effect of respective treatments. To find out statistical significance of the results obtained, the data were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed to test the significance of the study.

RESULTS ON ANXIETY

The statistical analysis comparing the initial and final means of anxiety due to Mindfulness training and Psychological Skills training among school level Kabaddi players is presented in Table-I

Table-I :ANCOVA RESULTS ON EFFECT OF MINDFULNESS TRAINING AND PSYCHOLOGICAL SKILLS TRAINING COMPARED WITH CONTROLS ON ANXIETY

	Mindfulness Training	**Psychological Skills Training**	**Control Group**	**Source of Variance**	**Sum of Squares**	**Df**	**Mean Squares**	**Obtained F**
Pre-test Mean	0.279	0.264	0.281	Between	0.004	2	0.002	0.603
				Within	0.169	57	0.003	
Post-test Mean	0.253	0.242	0.286	Between	0.020	2	0.010	2.701
				Within	0.216	57	0.004	
Adjusted Post-test Mean	0.249	0.252	0.280	Between	0.012	2	0.006	3.863*
				Within	0.085	56	0.002	
Mean Diff	-0.026	-0.022	0.005					

Table F-ratio at 0.05 level of confidence for 2 and 57 (df) =3.16, 2 and 56 (df) =3.16.
*Significant

As shown in Table I the obtained pre-test means on anxiety on Mindfulness training group was 0.279, Psychological Skills training group was 0.264 was and control group was 0.281. The obtained pre-test F-value was 0.603 and the required table F-value was 3.16, which proved that there was no significant difference among initial scores of the subjects.

The obtained post-test means on anxiety on Mindfulness training group was 0.253, Psychological Skills training group was 0.242 was and control group was 0.286. The obtained post-test F-value was 2.701 and the required table F-value was 3.16, which proved that there was no 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 3.863 was greater 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 subjected to post-hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table-II.

Table-II

Multiple Comparisons of Paired Adjusted Means and Scheffe's Confidence Interval Test Results on anxiety

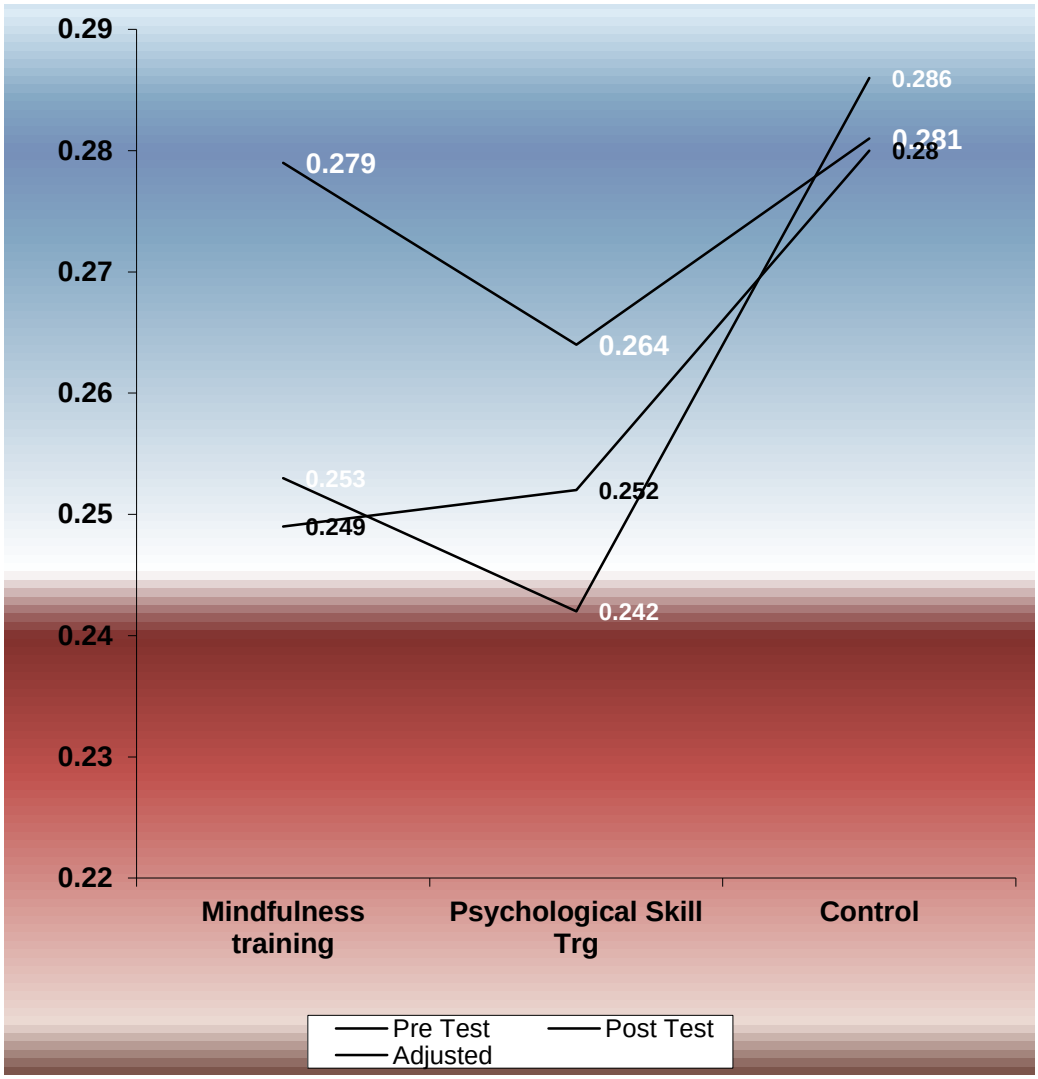
MEANS				**Required C.I.**
Mindfulness training Group	**Psychological Skills training Group**	**Control Group**	**Mean Difference**	
0.249	0.252		0.003	0.031
0.249		0.280	0.031*	0.031
	0.252	0.280	0.028	0.031

***** Significant

The post-hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Mindfulness training group and control group (MD: 0.031). There was no significant difference between Psychological Skills training group and control group (MD: 0.028). There was no significant difference between treatment groups, namely, Mindfulness training group and Psychological Skills training group (MD: 0.003). The ordered adjusted means were presented through line diagram for better understanding of the results of this study in Figure-I

Figure-I

LINE DIAGRAM SHOWING PRE-TEST, POST-TEST AND ORDERED ADJUSTED MEANS ON ANXIETY



DISCUSSIONS ON FINDINGS ON ANXIETY

In order to find out the effect of Mindfulness training and Psychological Skills training on anxiety , the obtained pre- and post-test means were subjected to ANCOVA and post-hoc analysis through Scheffe's confidence interval test.The effect of Mindfulness training and Psychological Skills training on anxiety is presented in Table-I. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F-value 3.863 was greater than the required table F-value to be significant at 0.05 level.

Since significant F-value was obtained, the results were further subjected to post-hoc analysis and the results presented in Table-II proved that there was significant difference between Mindfulness training group and control group (MD: 0.031). There was no significant difference between

Psychological Skills training group and control group (MD: -0.028). Comparing between the treatments groups, it was found that there was no significant difference between Mindfulness training and Psychological Skills training group among school level Kabaddi players. Thus, it was found that Mindfulness training was significantly better than control group in improving anxiety of the school level Kabaddi players.

CONCLUSIONS

The findings of this study revealed that both Mindfulness Training and Psychological Skills Training contributed to reductions in anxiety among high school kabaddi players, with Mindfulness Training showing a significant advantage over the control group. While Psychological Skills Training also produced reductions in anxiety, the changes were not statistically significant when compared with the control group. The results indicate that mindfulness-based approaches, which emphasize present-moment awareness and non-judgmental acceptance, are particularly effective in alleviating competitive anxiety in adolescent athletes. These findings highlight the value of incorporating structured mental training programs especially mindfulness interventions into the regular preparation of young kabaddi players to enhance psychological readiness, reduce pre-competition stress, and support overall athletic performance.

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