



**A COMPARATIVE STUDY ON LEVEL OF FLEXIBILITY AND  
STRENGTH ENDURANCE BETWEEN YOGA AND  
MALLAKHAMB TRAINEES**

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**ABSTRACT**

The purpose of the present study was to compare the level of Flexibility and the Strength Endurance among the Yoga and Mallakhamb trainees. For the collection of data 30 samples are selected from Mallakhamb and Yoga Respectively. The chosen samples are belonging to various Educational Institution from Dakshina kannada district. Representative samples belonging age group of 14-25 years. The collected data statistically analyzed. To achieve meaningful conclusions the Mean, Standard Deviation and t-test was calculated and represented through suitable figures and tables. Researcher concludes that there is a major difference in the selected variables. Yoga trainees have more Flexibility than Mallakhanb and Mallakhamb trainees have more Strength Endurance than yoga trainees.

**Keywords:** level of Flexibility, Strength Endurance, Mallakhamb, Dakshina Kannada

## 1. INTRODUCTION

Yoga is a discipline to improve or develop one's inherent power in balanced manner. It offers the means to attain complete self-realization. The literal meaning of the Sanskrit word yoga is Yoke. Yoga can therefore be defined as a means of uniting the individual spirit with the universal spirit of god (**Ministry of Ayush, 2014**) our understanding of Yoga derives to us mostly from Patanjali's Yoga sutras, who resided some time during the early Christian era. The Yogasutras is the most important old Yoga scripture. However, Patanjali did not invent the yoga scheme. It was performed much before Patanjali in the Indian subcontinent by adherents of Jainism, Saivism, Buddhism and many ascetic traditions, some of which were subsequently incorporated into the Vedic religion. The Indus individuals were likely acquainted with certain elements of Yoga. Yoga is a Sanskrit word meaning to 'unite' or 'stick together' and the vital aim of Yoga is to bring together human mind and spirit into a harmonious whole. The main methods of Yoga are physical postures or 'asanas' and motion, breathing techniques or 'pranayama.' Yoga Originating in the old East and gaining huge popularity in the contemporary Western world.

The origin of this ancient Indian sports can be traced to earlier part of 12th century. A mention of wrestlers exercising on wooden poles is found in the Manasholes, written by Chalukya in 1153 A.D. It was revived late in the 19th century by Balambhatta Dada Deodhar, physical instructor to Bajirao Peshwa-II. He took great efforts to popularize this sports. Resemblance of the shape of the Ancient and modern mallakhamb to the human structure can be easily seen. At first mallakhamb was always concerned with kusti, to learn different styles of kusti (**Vishwajit Thakare, 2015**)

**Saraboji (2018)** find out the effect of Mallakhamb training on selected physical fitness variables among college level boys. He indicated that after six weeks of mallakhamb training the experimental group showed significant improvement on the selected physical fitness variables namely strength and flexibility. **Rajkumar (2018)** revealed that the yogic practices group showed significant level difference in all the selected psychological variables when compared with control group. Hence, the male type 2 diabetes patients of experimental group showed noticeable decrease in breath holding time, systolic blood pressure and diastolic blood pressure which may be due to twelve weeks of yogic practices. **Saravanan and Mahaboobjan (2017)** showed that there was significant level differences exist among yoga practice group, mallakhamb practice group and control group. And also yoga practice group, mallakhamb practice group showed significant difference on Breath holding time, Vital capacity and kabaddi playing ability to control group. When experimental groups were compared mallakhamb practice group showed significant improvement on Breath holding time, Vital capacity and kabaddi playing ability.

### 1.1 Yoga

A Hindu spiritual and ascetic Discipline, a part of which, including Breath control, simple meditation, and the adoption of specific bodily postures, is widely practiced for health and Relaxation ([http:// wikipedia.org](http://wikipedia.org))

### 1.2 Mallakhamb

An ancient (Eastern) Indian sport which originated as a complimentary exercise for wrestling but is now practiced as a sport itself. The name is a combination of the words

"Malla" which means athlete or strong man and "Khamba" which means pole (Daved, 2012).

### 1.3 Flexibility

Flexibility is range of motion in a joint or group of joints or the ability to move joints effectively through a complete range of motion (Scott, 2019).

### 1.4 Strength Endurance

The Strength Endurance is the specific form of strength displayed in activities which require a relatively long duration of muscle tension with minimal decrease in Efficiency (Stiff, 2000).

The purpose of the study was to compare the level of Flexibility and the Strength Endurance among the Yoga and Mallakhamb trainees. It was hypothesized that there is no significant difference in level of Flexibility among Yoga and Mallakhamb trainees. It was also hypothesized that Mallakhamb trainers have more strength endurance than Yoga trainees.

## 2. METHODOLOGY

### 2.1 Selection of subjects

For the collection of data 30 samples are selected from sub-junior, junior and senior male Mallakhamb Tranees (N=15) and Yoga trainees (N=15) from various Educational Institution from Dakshina kannada district.. Representative samples belonging to age group of 14-25 years.

### 2.2 Selection of tests

Sit and reach flexibility test: The sit and reach test is a common measure of Flexibility, and Specifically Measures the Flexibility of the lower back and Hamstring muscles. This test was first described by Wells and Dillon (1952) and is now widely used as a general test of Flexibility. Push-up test: Push up is the one of simply and best measures of upper body Strength Endurance.

### 2.3 Statistical techniques

The collected data statistically analyzed. To achieve meaningful conclusions the Mean, Standard Deviation and t-test was calculated and represented through suitable figures and tables. The collected data statistically analysed and Represented through Figures and tables.

## 3. RESULTS

It deals with the analysis and interpretation of data that was collected from the subjects through specific test. The collected data was calculated by Mean, Standard deviation and t-test. Result was represented by suitable Figures and Tables.

**TABLE 1**  
**SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF FLEXIBILITY OF YOGA AND MALLAKHAMB TRAINEES**

Respondents	Mean	SD	MD	$\sigma$ DM	t-ratio
Mallakhamb Players	30.57	4.81	14.13	1.467	9.63*
Yoga Players	44.70	6.99			

The table 1 shows that there was a significant difference between mean scores of flexibility of Mallakhamb and Ypga players, as the obtained t-value of 9.63 was higher than the  $t_{0.05}(28)=2.05$ .

Mean and Standard deviation of Yoga trainees Flexibility were 30.57, 4.82 and Mallakhamb trainees is 44.7 and 6.99 respectively. The mean values indicates that Yoga trainees have more Flexibility than Mallakhamb trainees.

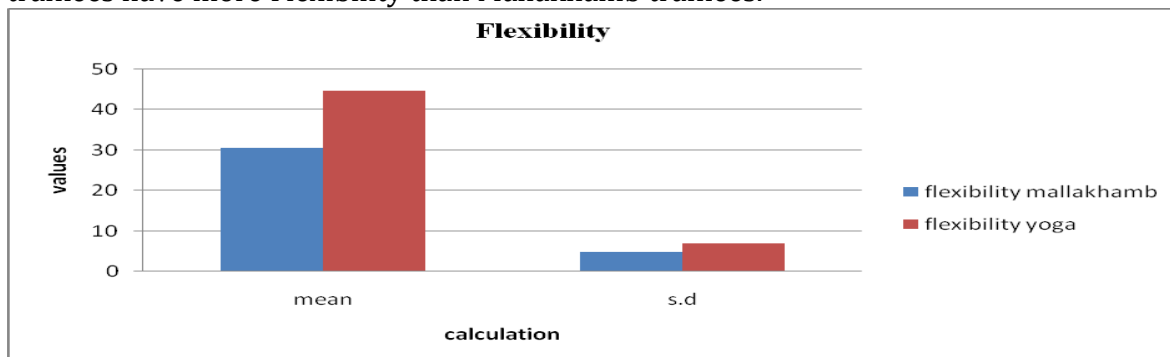


Figure-1: Mean scores of of Flexibility between Yoga and Mallakhamb trainees

**TABLE 2**  
**SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF STRENGTH ENDURANCE OF YOGA AND MALLAKHAMB TRAINEES**

Respondents	Mean	SD	MD	$\sigma$ DM	t-ratio
Mallakhamb Players	41.27	6.41	4.94	0.909	5.43*
Yoga Players	36.33	6.39			

The table 2 shows that there was a significant difference between mean scores of flexibility of Mallakhamb and Ypqa players, as the obtained t-value of 5.43 was higher than the  $t_{.05(28)}=2.05$ .

Mean and Standard deviation of Yoga trainees Flexibility were 36.33, 6.39 and Mallakhamb trainees is 41.27 and 6.41 respectively. The mean values indicates that Mallakhamb trainees have more strength than Yoga trainees.

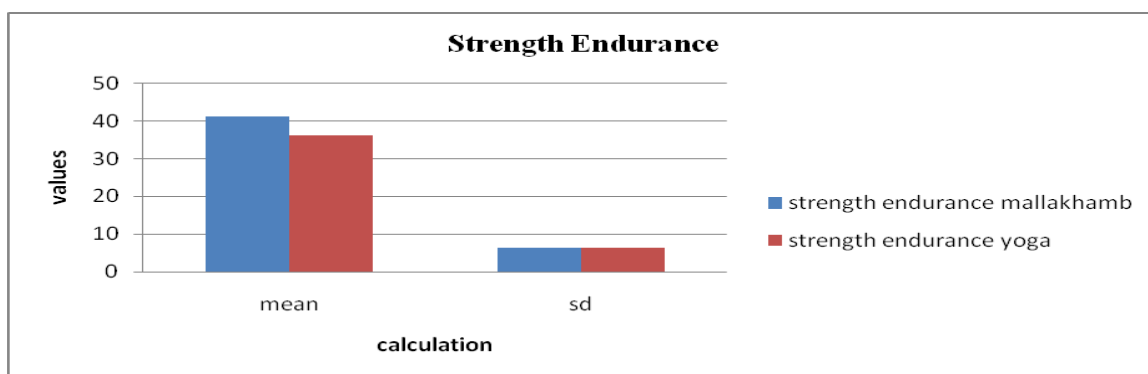


Figure-2: Mean scores of of Strength Endurance between Yoga and Mallakhamb trainees

#### 4. DISCUSSION

The research work has been taken up with the purpose of compare the level of Flexibility and Strength Endurance between Yoga and Mallakhamb trainees. At the very outset we knew that there is a significant difference in the selected variables. The result also

indicates that there is significant difference in the level of Flexibility and the Strength Endurance. It explore Yoga trainees have more Flexibility than Mallakhamb trainees and Mallakhamb trainees have more Strength Endurance than Yoga trainees. It was hypothesized that there is no significant difference in level of Flexibility among Yoga and Mallakhamb trainees is totally rejected. It was also hypothesized that Mallakhamb trainers have more strength endurance than Yoga trainees has been totally accepted.

## 5. CONCLUSIONS

1. The result reveals that the Yoga and Mallakhamb trainees showed significant difference in selected variables such as Strength Endurance and Flexibility.
2. The Yoga trainees have better level of Flexibility and Mallakhamb trainees possess more Strength Endurance.
3. The Formulated hypothesis that there is no Significant Difference in Flexibility between Yoga and Mallakhamb trainees and null Hypotheses Ho is rejected.
4. There is a significance improvement in Strength Endurance of Mallakhamb trainees due to routine resistive practices.

## 6. RECOMMENDATION

Similar research on distinct variables may be performed.. The same study may be extended to over all state.. The current research focuses primarily on men. The same research can be carried out on women. Similar studies can be carried out for different age groups. It is possible to extend the same survey to different trainees.

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## CHANGES IN SPORTS FORMAT AND RISE IN INJURIES

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### ABSTRACT

Sports, as a field, have undergone drastic change over time. What was the sole monopoly of the elite has now become accessible to all sections of society. Moreover, the high financial stakes and competition has made sportspersons push the boundaries of physical endurance to be relevant. The shortened and fast-paced formats of sports results in more frequent number of injuries on the field. Though advancements in medical care are available, the required recovery time may not be adhered to due to various pressures. This can lead to serious reinjuries and worse, end sports careers. It is not just the rough and tumble contact sports like football and hockey that have higher injury rates. Non-contact sports like tennis and badminton can throw up injuries due to the fast movement and power needed for the sport. Even a gentlemanly game like cricket reports more injuries than before. The rise in injury rates and early burning out of players is attributed to hectic schedules and the need to play as many games possible to stay up in the rankings as also for the monies.

**Key Words:** changes in format, League games, high stakes, competitive field, monopoly, endorsements, physical endurance.

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## 1. INTRODUCTION

Sports have been a major part of every growing child's life – in school, on the street, in the grounds. It was meant to be a release from academic stress and also for physical fitness. Holistic health, both mental and physical, was emphasized. Children and even adults enjoyed sport as a leisure activity and it helped people bond together. There was no necessity for equipment(s) or special grounds to engage in sports. Professional sport was not considered a serious career option as it was not very remunerative or permanent. There was no stability and the risk of injury and its effects was a major deterrent to participation in professional sport.

The format of the game has changed to a fast-paced adrenalin-rushing sport almost identical to that of the Roman gladiators. The expectations of the fans are very high. Advanced technology has enabled the audience to watch games played live while being connected to their groups simultaneously without moving out from their homes. Sport has become a very lucrative business with many sponsors investing capital, logistics and other infrastructure required for the advancement of the game. Since they invest huge amounts, they expect more huge returns.

Luc Nillis suffered a double compound shin injury when he collided with the goalkeeper. After the operation, his leg was infected forcing doctors to consider amputation. This ended his career.

Since 2016, Rafael Nadal, Roger Federer, Novak Djokovic and Andy Murray have been out of form due to injuries for significant periods of time. Andy Murray had to announce his retirement for this year in the middle of Australian Open 2019. Among the women players, Maria Sharapova, Serena Williams were forced to pull out early in 2018.

The recent death of Australian cricketer Phil Hughes due to a head injury has shocked the cricketing fraternity. Earlier, Raman Lamba of India had also succumbed to a hit on his head while fielding. In 2012, Mark Boucher suffered a cut to his eye and had to announce his international retirement. Shikhar Dhawan, Vijay Shankar and Bhuvneshwar Kumar -- have suffered injuries in the Cricket World Cup 2019 and had to be ruled out.

## 2. METHODOLOGY

A literature search was performed using keywords like "sports injuries", "changes in sports format", "commercialization of sports" etc. Rough contact sports like football and hockey which are known for higher injury rates were studied. The article focuses more on cricket, which is a gentlemanly non-contact sport and expected to have minimal rates of injuries. Studies on commercialization of sport were included to relate the change in sport format to rise in injuries.

## 3. RESULTS

### 3.1 Inclusion of various social classes and regions in sports

Serious professional sport was not as prevalent as it is today. Only the rich class could afford to take up sports seriously. The middle class were more focused on their children completing their education and settling in a permanent job. Children from the lower income groups had to take up employment to help the family fires burning. So, the sports field was mostly restricted only to the elite. Talent was overlooked and the sports field had to compromise and settle for what came its way.

Cricket, a game which is followed and played in every nook and corner of India, was represented mainly by players from metros, cities and big towns, till a few decades back. Most of the players were well educated, came from good families and could afford to play the sport. Now, there are many professional agencies, which scout for talent right from childhood, which they feel is the right time to enter the competition. They also scout from various sections of society and also in remote areas which are away from the social mainstream. Today, we can see players in the team from diverse family backgrounds and locations. Talent rules supreme.

### **3.2 Players' Remuneration**

Sport has become a very competitive field with very high stakes. Sportspersons are paid astronomical figures depending on the level of sport and their standing in the team. Earlier, even star sportspersons had to have a regular job to survive in the off-season. Once the sports season was over, they would have to get back to their jobs or businesses. Nowadays, companies and organizations are more than happy to have the star sportspersons to represent them as brand ambassadors. They are chasing the superstars with mind-blowing packages and incentives.

### **3.3 Change in Play Schedules**

Earlier, the games were played out leisurely covering all aspects enabling audiences to appreciate the finer nuances of the game. Every shot played and every ball bowled would be applauded or criticized while discussing the technicalities of the game. Cricket test matches were played out over the five days, frequently without any clear result and ending in a draw. Nowadays, games have been changed drastically to their shortened format to heighten the excitement and also complete quickly. The matches are very fast-paced and have to be completed within a time limit. The players are kept on their toes, moving around the field incessantly. There is no scope for a pause. Today, cricket, once considered a sport of leisure, has become a fast-paced, adrenalin rushing, exciting game, almost like football or rugby. Football, rugby, basketball are very fast-paced, rough games pushing the players to their physical limits. The players are always moving around, shouting instructions and playing against time. Cricket has also changed to 50 overs-a-side game and further compressed to 20 over-a-side. This has increased the excitement factor in the game and has also put more pressure on the players to deliver and display lightning reflexes on the field.

### **3.4 Introduction of Sports Leagues**

Earlier, in every sport, there were only two or three levels of the game – national, state or district. Nowadays, there are an increasing number of county and league games hosted by different investors and nations. A sportsperson has a chance of playing more number of matches all year round. The concept of off-season has almost vanished. The Premier Leagues, which are a recent growth in India, cover various sports like cricket, football, hockey and also kabaddi, which till recently was considered a native sport and not given much relevance. The emergence of Premier Leagues, helmed and sponsored by big industries and businesses, has changed the very face of sports in India. The Leagues not only have national level and local players but also international players. Every team comprises players from different nations and different sporting cultures. The facilities provided for players – accommodation, travel, medical, etc. – are world-class and remuneration is huge. This creates an incentive/motivation to players to excel and surpass their limits in their game. They push their boundaries to stay relevant in the game. Every sportsperson is as good as his last game. This is again directly dependent on their health



and levels of fitness. It all ultimately boils down to the player maintaining his fitness as per the game requirements.

### **3.5 Rise in Insecurities among Players**

The owners of the team who have high stakes in the game cannot afford to waste their time and energy on an unfit player or one who cannot deliver. The player is replaced by another immediately and the game continues. Moreover, the public memory is short and the public is fickle-minded. Idols and icons last only as long as they are on top of their game. They are easily substituted in the public mind and new superheroes sprout immediately. Transience is rampant and is a normal trait. The audience wants fast, they are not willing to spare time and wait. Every League match has a new hero and the audience loves the change. Any negligence or casual approach to the game can spell doom for the player. He can be out of the team temporarily or worse permanently. Insecurity may result in players go to extremes by overriding their injuries to be in the fray leading to worsening the situation.

### **3.6 Change in Rules**

Rules of the games have also been changed to encourage the pace of the game. There cannot be any wastage of time. The football game is very popular for the scrum formation to celebrate a goal or a save. It was a healthy way of imbibing team spirit and bonding among the players. It would also act as a deterrent on the psyche of the opposite team. New rules have been formed to restrict this as it is perceived as wastage of time and a break in the continuity of the game which is not to the audience's convenience. In cricket, the number of fielders at the boundary has been reduced to provide more excitement to the audience and chance for the batsmen to try to hit boundaries.

### **3.7 Media and the Fan**

Today, the focus is on the sports fan. The fan wants quick entertainment and continuous excitement. Sports have been changed into something spectacular to satiate the impatient and ever-hungry unsatiated fan. A sports fan is no longer satisfied with the sport but also wants entertainment on the field. The earlier fan would be satisfied to get an entry into the stadium or follow the game at home on TV. The advent of improved technology in media has given the fans a better edge. Drones with cameras are used to give an aerial view of the game and give the audience a deeper and clearer vision of the happenings on the field. Social media platforms have made life better and more exciting for the audience. They have the dual advantage of experiencing the thrill of a live game and the technology to stay connected to others to share their reactions, opinions etc. Opinions, reactions are streamed immediately and reach a bigger audience simultaneously as the game is on. The audience does not have to physically be present with his friends or group to enjoy the game. Technology enables the experience for the audience.

The new formats have increased media consumption as there are more channels for airing different games in various parts of the world. The glare of the media is omnipresent in the field and the players are under constant scrutiny. They are expected to perform to more than their potential and are also expected to acknowledge their fans by gesturing or speaking while facing the cameras. The audience is impatient and multitasking and cannot spend much time for the sport. The condensed formats allow them to follow the game while attending to their tasks. The players are expected to provide a dazzling display of their skills as well as provide quick entertainment.

### **3.8 Sponsor is King**

There has been a change in role of the sponsors. Earlier, the sponsors were the recipients of the publicity derived from their affiliation with the games. They would put up their billboards in the grounds strategically. Their advertisements would be aired on television during recess or any time gap during the game. They would try to get the attention of the audience to their products/services. Nowadays, sponsors have become important stakeholders as they finance, manage and market the players and the team to the audience. They pump in huge investments into the games and they rightfully expect return that are just as huge or more for their efforts. Sports, being a very expensive affair, the authorities are forced to turn to these business houses for support.

The changes in format and stakes in sports have been good for many sportspersons as well as for the game. There is more talent displayed, more diversity and scope for learning different aspects of the game from different sources. The game has seen changes in rules and also the equipment used. The grounds are more manicured, synthetic turfs used and games are played even at night under floodlights. Games are played throughout the year and at various locations. Sportspersons also have better access to professional grounds, coaches, trainers and most importantly, better income sources. A good player can be picked up by any league for an astronomical price. There is freedom to play any number of matches anywhere throughout the year. There are no financial or social constraints that existed earlier.

### **3.9 Increased Pressure on Players**

With so much at stake, there is always a lot of pressure on the player to keep his place in the team. The player will perforce try to play as many games possible to be relevant and also for the remuneration. Enormous amount of energy has to be consumed in a very short time in the modern format. This lays great stress and strain on the player's body. At the end of the game the player is fatigued both physically as well as mentally. Proper rest and a peaceful atmosphere are required to relieve the player and be prepared for the next game. The player has to be careful about the diet and nutrition required to keep fit and healthy. Warm ups before the game and exercises for various muscles have to be considered attentively and under a trainer's supervision.

### **3.10 Frequent injuries**

In such fast-paced and high stakes sport, injuries are bound to happen as there is a lot of movement on the field. Players crashing into each other, jostling and pushing to gain a better position have become the norm in today's sport. Injuries are waiting to happen, in spite of precautionary measures on the field. Players may pull a muscle while stretching themselves beyond their limits or throwing themselves in the path of a moving ball to stop it. The injury may be a minor one which can be treated on the field by the physio or a serious one where the player is walked off or carried away from the field.

A minor injury may be treated immediately and the player can get back to the game. There is just a gap of a few minutes which is availed by the others for refreshing themselves. There is extreme relief both to the player and also the team as substituting is quite tricky, especially in the middle or towards the end of the game. After the game, the player is taken under the care of the medicos to ensure that there is no relapse of injury or secondary injuries.

Injuries on the field can be serious like fractures, muscle pulls, ligament tear, etc. which may require the player to be hospitalized immediately. This can be devastating for

the player as well as the team. The fact that the player will not be able to compete for an uncertain period of time is very depressing. It will cripple the player financially, physically and mentally. The type and severity of injury determines the future prospects of the player. It may also mean the end of a great sporting career.

#### **4. DISCUSSION**

Different injuries occur in different games. Usually, sports injuries, especially serious injuries were perceived to be more frequent in the rough, high-octane games like Football, Gymnastics, hockey, athletics and basketball, where there is a lot of movement on the field.

Football is a high-contact game with lots of pushing, running and crashing. Therefore, the injury rate is very high. Every movement on the football field can lead to some injury. Moreover, overuse injuries result due to increased number of games played.

Hockey involves sprinting, sharp turns and sudden changes in direction – movements that may result in injury. Injuries in hockey were mainly to the knee, ankle, thigh, wrist and shoulder. The lower back, groin and calf are more in use due to the low body position of the players who run while bending to move the ball and may result in overuse injuries. Contusions and lacerations were caused by players coming in contact with the ball, stick or the surface.

Tennis is a very popular sport as it is very appealing to the audience. It is a sheer display of grace and power with players delivering intricate strokes and powerful serves. It is also physically demanding and quite complex. It requires a lot of running around the court with a lot of jumps. Excessive use of the wrist, shoulder, back and lower limbs may result in overuse injuries. Falls, sprains, muscle pulls and cramps occur during play. According to the American Orthopedic Society for Sports Medicine, roughly two-thirds of tennis injuries are attributed to overuse and the remaining third to traumatic or acute events. Though it is a non-contact sport, the injury rate is high. Moreover frequent international travel, hard-court surfaces and extended rallies in matches are additional factors for players burning out quickly. Players schedules are hectic as they have to also play many mandatory tournaments to gain ranking points.

Injuries in cricket were usually scratches from falls, sprain in the feet, and blows from a moving ball. With the changed format of the game, even cricketers report hamstring pulls, fractures, muscle pulls and injuries to the back. The players are always moving and throw themselves around while fielding. They move from one posture to another rapidly while fielding and also batting. These could result in injuries which may get aggravated with repeated action. Even bowlers, especially pace bowlers try to increase their speed and put all their force into the movement of the ball. This puts a lot of pressure on the arms, back and legs of the bowler. Any sudden extra movement can cause injuries to the part and put the player out of the game.

The pressure to deliver continuously and effectively within a short time frame is enormous. It takes a toll on both the body and the mind of the players. Rapid and haphazard movements, high levels of precision and alertness, overuse of certain body parts as well as the weather and climatic conditions can have a detrimental effect on the player. Since more games are being played at different venues across different countries and continents, players find themselves jetting around from one part of the globe to the other frequently and sometimes at a trot. Jet lag and lack of time to adapt to the climate or weather of the place also is against the player's performance and fitness. The body is being

put under a lot of stress and strain which it may not cope with. The weakened system of the player will put him at higher risk of injury which may be seriously affecting his life and career. It is argued that today's players have a charmed life with huge monetary rewards, many facilities, perks and fame. The rewards are very high, the adulation and fame is heady. But, everything can come crashing down with an unprecedented serious injury that could put the player out for good.

Injured players have to be put under medical supervision and treated as per the diagnosis. They have to be rehabilitated to get back to their pre-injury state at the earliest possible. The players are given access to state-of-the-art medical facilities with highly advanced infrastructure. The medical team of the institution works in tandem with the team staff to help the player to recover. Beside medication, recovery time is very important for healing of injuries. Sometimes, players overlook the prescribed rest period and get back to the game due to various pressures. This can play havoc with their recovery and fitness.

A player may want to get back quickly and avoid absence from the field due to many reasons, personal as well as team-related. The player will try to come back to the team quickly without complete healing. The high remuneration and accompanying packages are something the player is not willing to forgo so easily. Moreover, the high levels of competition in the games and the fear of being replaced easily preys on the player's mind making him unwilling to spend more time for recovery. Sportspersons are always in the public eye and are idolized by their fans. They are used to see their pictures splashed across various media whether in action on the field or off it. They are followed by the media who try to enhance the ratings of their group by being the first to get news on every aspect of life of the player. They have a hungry fan base waiting to devour this feed. This makes for a very heady and intoxicating experience for the player who is basking in all that adulation and fame. This is something they are not willing to let go easily. Some players, especially the newcomers and the younger lot, try to mask their injuries and return to the sport before complete recovery as they cannot bear to stay away from the limelight. Players put in a lot of time, effort and energy to build up their careers. They have to make many sacrifices and even put their family and loved ones to great discomfort. There is too much at stake to give up and lose. The fall from an icon to a has-been can be devastating.

When a player does not spend the required time for recovery, there is always the danger of re-injury. The injured part is still weak and vulnerable. Any amount of pressure or stress on it can further aggravate the injury. The player must be able to get back to the previous fitness levels in order to compete. Injured players have to be given special care for not just their physical recuperation but also their mental condition. They have to be encouraged and given confidence to focus their energy on recovery.

## **5. CONCLUSIONS**

The Sports field has witnessed major changes in the way games are played. It is no longer just a vocation for a few who are serious about it. It has become very professional with talent scouting agencies sprouting up and penetrating various parts of the country, including remote areas which were earlier out of the mainstream. The composition of team has changed and is very diverse culturally. It is only talent that finally counts.

The format of the game has changed to a fast-paced adrenalin-rushing sport almost identical to that of the Roman gladiators. The expectations of the fans are very high.

Advanced technology has enabled the audience to watch games played live while being connected to their groups simultaneously without moving out from their homes.

Sport has become a very lucrative business with many sponsors investing capital, logistics and other infrastructure required for the advancement of the game. Since they invest huge amounts, they expect huge or even more results. League games may be beneficial to the players as they are paid extravagantly. There are more number of games to participate. The adulation and fame that accompanies them is very intoxicating.

The new format of sports while raising the standards of living of the players also puts a lot of pressure on them. There is huge competition due to the high stakes. A player is as good as his last game. To stay relevant he has to be fit and competent. With more number of games, played there is more stress on the body with less time for rest.

All this pressure to excel and continuous movement on the field can result in injuries. Nowadays, serious injuries do not occur only in certain sports like football, kabaddi, gymnastics etc. They are prevalent across all sports. Improved grounds, gear, equipment and infrastructure are not enough to prevent injuries.

Rehabilitation from injury has become a specialized area in healthcare. The sportspersons are provided medical care and therapy from a skilled team of medical staff affiliated to the teams. The time required for complete healing and recovery has to be followed strictly to ensure bouncing back to pre-injury levels of fitness. Many players return to game quickly without complete recovery. They end up putting more pressure and strain on the injured part which is very weak and vulnerable. This could lead to reinjure or relapse.

What has to be considered is that the human body is like a machine but with feelings and emotions. Overuse and temporary fixations will cause breakdowns. The human body must be respected and its signs must be listened to and understood. Pushing the body to its limits without proper rest will make it weak and more vulnerable to injuries. While the changed format of sports may be beneficial, it is up to the player to be informed and aware of the game and its impact on the body. He has to take precautions accordingly and strengthen not just the body but also his mind. If the mind is strong, the player will be able to focus on recovery and not get depressed and lose faith.

As the saying goes “no pain no gain”, here the lure of rewards is pushing players towards extremes and hurting their bodies in the process. For a player to survive in today’s sports world, he has to be realistic and practical, put in hard work and be prepared for such injuries. This sort of mindset is very much important for the players if they wish to pursue a career in sports. Injuries should not hinder players from entering sports. They must accept them as a part of the game.

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**ASSESSMENT OF HEALTH RELATED PHYSICAL FITNESS AMONG  
MIGRATED BOYS STUDENTS FROM NAXAL AFFECTED  
REGION**

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**ABSTRACT**

The purpose of the study was to assess the Health-related Physical fitness for migrated school boys students of naxal affected regions of Chhattisgarh. A total of One hundred migrated students ranging ages between 14 to 18 years from naxal affected regions of Chhattisgarh, were randomly selected for the present investigation. To collect data on cardiovascular endurance, strength and strength endurance of abdominal muscles, flexibility of back and hamstring muscles and amount of body fat, selected subjects were tested on four health-related physical fitness test items i.e. modified bent/knee sit-ups for one minute, 1.5 mile run/walks test, sit and reach test and triceps and sub-scapular skin folds respectively. To assess the four components of health related physical fitness of Migrated boys and girls students from naxal affected region of Chhattisgarh ranging fourteen to eighteen years of age, F-ratio was computed. The results of study revealed that Significant differences existed among among the different age groups of boys students on of health related physical fitness components except modified sit-up component of physical fitness. Cardiovascular endurance of male migrated students were found improved significantly in age of seventeen years only. Flexibility of back and hamstring muscles of male migrated students improved significantly in age of sixteen years and decline with age up to age of eighteen years. The amount of accumulated fat increased more in age of seventeen years, and incline with age up to age of eighteen years.

**Key Words:** Health, Physical Fitness, School Students, Naxal area, Migrated Boys

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## 1. INTRODUCTION

Health is an important input in any process of development. An unhealthy society can not be a society of high achievers and can not make a nation great. The need for a healthy society and an education system to support it is beyond doubt and discussion. If a nation has to prosper and face the opportunities and challenges of the next millennium, it can not neglect health, education and physical education. Investment in health is not only a humanitarian, moral and ethical, it is an economic imperative.

Health is a continuum from maximally dependent and incapacitating conditions to a maximally self-reliant blissful life. "Etymologically" the word "Health" is derived from the English term meaning 'whole' which in turn means a well-integrated holistic living state. The corresponding term in Sanskrit is 'SWASTHYA' which means relying on one's own self of blissful condition (Rao, 1999).

The World Health Organisation (Kapur and Baligs, 1994) has defined health as, "A state of complete physical, mental and social well-being and not merely an absence of disease and infirmity." Health is a multi-factorial concept of physical, mental, emotional and spiritual.

According to Bapat (1982) most often the terms 'Health' and 'Physical Fitness' are considered synonymous. Fitness certainly plays an essential role in health. Equally good health provides a solid foundation on which fitness rests. Fitness provides one of the most important keys to health and enables humanity to live life to the fullest.

Fitness is a broad term denoting dynamic qualities that satisfy the needs of mental and emotional stability. It is a major factor determining the output of personal life. But the term physical fitness denotes that organic systems of the body which are healthy and function efficiently so as to enable the fit person to engage in various tasks and leisure activities without much strain. Life will be miserable and unsuccessful without good health; a life without fitness is like 'a ship without a radar. Fitness parking lot in an effort to find a spot ten yards closer to the store's entrance. The groceries do not even have to be carried out anymore. They are usually taken out in a cart and placed in vehicle by a youngster working at the stores (Hoeger and Hoeger, 1990).

Fitness is currently viewed as a series of components, each of which is specific in terms of its development and maintenance. Typically, fitness components are divided into two basic categories : those essentially related to health, such as body composition, cardiovascular endurance and capacity, flexibility and muscular strength and endurance, and those related to motor-skill performance - Agility, balance, coordination, power, reaction time, speed and strength.

Health related fitness is defined as the ability to perform strenuous activity without excessive fatigue showing evidence of traits that limit the risks of developing diseases and disorders which affect a person's functional capacity. Components of health-related physical fitness are identified as muscular strength, endurance, flexibility, cardio-respiratory endurance and body composition. However, the degree of development of each varies with the type of physical activity (Siedentop, 1994).

In today's changing pattern of human life the latest concept of health-related fitness seems to be more relevant. Motivated by the new concepts of fitness, the researcher opted to assess and prepare norms of the health-related physical fitness of school children of Bastar division of Chhattisgarh State.

Tsimeas, *et. al.*, 2005; Harman, 1967; Pen, Tan and Malina, 2003; Rasmussen, 1970; Kumar and Singh, 2012; Chatterjee, Mandal, Das, 1993; Hunsiker and Reiff, 1966; Tuteja, 1978; Elnashar and Mayhew, 1984; Dartagan, 2012. etc compared the physical fitness among school children. The cultural differences may influence the fitness status (Lamb, 1994).

The purpose of the study was to assess the Health-related Physical fitness for migrated school boys students of naxal affected regions of Chhattisgarh.



## 2. METHODOLOGY

### 2.1 Selection of Subjects

A total of One hundred migrated students ranging ages between 14 to 18 years from naxal affected regions of Chhattisgarh, were randomly selected for the present investigation. Out of these regions, as many as 20 boys for each age group were randomly selected to be the subjects of the study.

### 2.2 Selection of Variables

The variables of health related physical fitness i.e. cardiovascular endurance, strength and strength endurance of abdominal muscles, flexibility of back and hamstring muscles and amount of body fat were selected for the purpose of study.

### 2.3. Selection of Tests

To collect data on cardiovascular endurance, strength and strength endurance of abdominal muscles, flexibility of back and hamstring muscles and amount of body fat, selected subjects were tested on four health-related physical fitness test items i.e. modified bent/knee sit-ups for one minute, 1.5 mile run/walks test, sit and reach test and triceps and sub-scapular skin folds respectively.

### 2.4 Statistical Techniques

To assess the four components of health related physical fitness of Migrated boys and girls students from naxal affected region of Chhattisgarh ranging fourteen to eighteen years of age, F-ratio was computed.

## 3. RESULTS

To find out the significance of difference among mean scores of migrated boys students of fourteen to eighteen years of age from naxal affected region on four components of health related physical fitness were statistically analysed by using F- test, and data pertaining to this has been presented in table 1 and 4..

**TABLE 1**  
**ANALYSIS OF VARIANCE ON FOUR COMPONENTS OF HEALTHRELATED PHYSICAL FITNESS OF**  
**MIGRATED BOYS STUDENTS OF FOURTEEN TO EIGHTEEN YEARS OF AGE**

S. NO.	Component	Source of variance	df	Sum of Squares	Mean of Square	F-value
1	Modified Sit-ups	Between groups	4	759.94	189.98	2.27
		Within group	95	7945.05	83.63	
2	Cardio-respiratory function	Between groups	4	87.92	21.98	11.31*
		Within group	95	184.66	1.94	
3	Sit and reach	Between groups	4	1350.98	337.75	5.45*
		Within group	95	5890.93	51.13	
4	Body composition	Between groups	4	306.49	76.62	7.94*
		Within group	95	917.28	9.66	

\*Significant at .05 level

F. .05(4,95) =2.47

It is evident from table 1, that there were significant differences among the different age groups of boys students on different components of health related physical fitness i.e. cardio-respiratory function, sit and reach and body composition, as the obtained F-values of 11.31, 5.45 and 7.94 respectively were higher than the required F.05 (4, 95)=2.47. But significant difference was not observed among boys students from fourteen to eighteen years of age on modified sit-up component of physical fitness, as the obtained F-value of 2.27 was less than the required F.05 (4, 95) = 2.47.

As the F-ratio on different components of health related physical fitness among migrated boys students was found to be significant, Scheffe's Test of Post-hoc Comparison was applied to find

out the significance of difference between ordered paired means of different age group and data pertaining to this, has been presented in table 2 to 4.

**TABLE 2**  
**SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS OF MIGRATED BOYS STUDENTS OF FOURTEEN TO EIGHTEEN YEARS OF AGE ON CARDIO-RESPIRATORY FUNCTION**

Age in Years						
14	15	16	17	18	MD	C.I.
14.21	11.99	-	-	-	2.22*	1.38
14.21	-	11.97	-	-	2.24*	
14.21	-	-	12.08	-	2.13*	
14.21	-	-	-	11.58	2.63*	
-	11.99	11.97	-	-	0.02	
-	11.99	-	12.08	-	0.09	
-	11.99	-	-	11.58	0.41	
-	-	11.97	12.08	-	0.11	
-	-	11.97	-	11.58	0.39	
-	-	-	12.08	11.58	0.50	

\*Significant at .05 level

The data in table 2 clearly reveals that mean differences between fourteen - fifteen followed by sixteen, seventeen and eighteen years of age migrated boys students were found statistically significant, as the confidence interval of 1.38 was lesser than the obtained mean differences. The significant differences were not observed among migrated boys students between fifteen - sixteen followed by seventeen and eighteen; between sixteen-seventeen followed by eighteen and between seventeen-eighteen years age group, as the confidence interval was higher than the mean differences. The data clearly indicate that cardiovascular endurance of boys migrated students were found improved more in age of eighteen years only.

**TABLE 3**  
**SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS OF MIGRATED BOYS STUDENTS OF FOURTEEN TO EIGHTEEN YEARS OF AGE ON SIT AND REACH TEST**

Age in Years						
14	15	16	17	18	MD	C.I.
30.18	23.10	-	-	-	7.08	7.09
30.18	-	34.22	-	-	4.04	
30.18	-	-	30.60	-	0.42	
30.18	-	-	-	31.35	1.17	
-	23.10	34.22	-	-	11.12*	
-	23.10	-	30.60	-	7.50*	
-	23.10	-	-	31.35	8.25*	
-	-	34.22	30.60	-	3.62	
-	-	34.22	-	31.35	2.87	
-	-	-	30.60	31.35	0.75	

\*Significant at .05 level

The data in table 3 clearly reveals that mean differences between fifteen - sixteen followed by seventeen and eighteen years of age migrated boys students were found statistically significant, as the confidence interval of 7.09 was lesser than the obtained mean differences. The migrated boys students did not have any significant difference between fourteen - fifteen followed by sixteen, seventeen and eighteen; between sixteen-seventeen followed by eighteen and between seventeen-eighteen years age group, as the confidence interval of 7.09 was higher than the obtained mean

differences. The data clearly indicate that flexibility of back and hamstring muscles of boys migrated students was better in age of fifteen years than other age groups and decline with age up to age of eighteen years .

**TABLE 4**  
**SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS OF MIGRATED BOYS STUDENTS OF FOURTEEN TO EIGHTEEN YEARS OF AGE ON BODY COMPOSITION**

Age in Years						
14	15	16	17	18	MD	C.I.
11.05	10.87	-	-	-	0.18	3.08
11.05	-	12.15	-	-	1.10	
11.05	-	-	15.54	-	4.49*	
11.05	-	-	-	13.65	2.60	
-	10.87	12.15	-	-	1.28	
-	10.87	-	15.54	-	4.67*	
-	10.87	-	-	13.65	2.78	
-	-	12.15	15.54	-	3.39*	
-	-	12.15	-	13.65	1.50	
-	-	-	15.54	13.65	1.89	

\*Significant at .05 level

The data in table 4 clearly reveals that mean differences between fourteen – seventeen; between fifteen –seventeen and between sixteen- seventeen years of age migrated boys students were found statistically significant, as the confidence interval of 3.08 was lesser than the obtained mean differences. The migrated boys students did not have any significant difference between fourteen – fifteen followed by eighteen; between fifteen-sixteen followed by eighteen and between sixteen-seventeen followed by eighteen and between seventeen-eighteen years age group, as the confidence interval was higher than the obtained mean differences. The data clearly indicate that the amount of accumulated fat increased more in age of seventeen years only in comparison of other age boys.

#### 4. DISCUSSION

One Way Analysis of variance resulted significant differences among migrated school boys students of naxal affected regions of Chhattisgarh health related physical fitness i.e. cardio-respiratory function, sit and reach and body composition. But insignificant difference was not observed among migrated school boys students of naxal affected regions from fourteen to eighteen years of age on modified sit-up component of health related physical fitness.

Scheffe’s Test indicated that that cardiovascular endurance of migrated school boys students were found improved gradually up to the age of eighteen years. The flexibility was found better among migrated school boys students of naxal affected regions in age of fifteen years than compred to 14, 16, 17, and eighteen years of age. It indicate that flexibility of back and hamstring muscles of male migrated students improved significantly in age of fifteen years and decline with age up to age of eighteen years . The amount of accumulated fat increased more in age of seventeen years

#### 5. CONCLUSIONS

1. Significant differences existed among among the different age groups of boys students on of health related physical fitness components except modified sit-up component of physical fitness.
2. Cardiovascular endurance of male migrated students were found improved significantly in age of seventeen years only.
3. Flexibility of back and hamstring muscles of male migrated students improved significantly in age of sixteen years and decline with age up to age of eighteen years .

4. The amount of accumulated fat increased more in age of seventeen years, and incline with age up to age of eighteen years .

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## ROLE OF YOGIC PRACTICES DURING LOCKDOWN

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### ABSTRACT

The current paper highlighting various Yogic practices which is very important for everyone during a lockdown. Yoga is an ancient Indian way of life, which changes the attitude of your mind and body, diet, and the practice of specific techniques such as yoga asanas (postures), breathing practices (pranayamas), and through meditation one can reach peak of their consciousness. As per Dr. Manmath Manohar Gharote, Director of The Lonavala Yoga Institute, Every human is in fact one organism. This organism has different aspects of personality. They are physical, mental, emotional, social and spiritual. All those aspects of personalities work together. Thus if one aspect is disturbed all the other aspects are started getting trouble. So in simple words, the concept of Health is perfect coordination between all the aspects of personalities. Why yogic practices are important? Because they are not simply physical as they performed through the body. But they are more Psycho-physical in nature. Practioner perform the practices through the body but they get results at mental and emotional levels. Especially in this stressful situation in Lockdown, the common layman must perform yogic practices such as asana, pranayama, bandha-mudra, shuddhikriyas or meditation, etc. by which they get fitness at Physical level, stability at Mental level, harmony at Emotional level, maturity at Social level and upliftment at Spiritual level. In that sense, this situation is an opportunity for everyone to develop an all-round personality.

**Keywords:** -Yoga, Mind and body, Meditation

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## 1. INTRODUCTION

### 1.1 MEANING AND DEFINITION OF YOGA

Yoga is a spiritual and ascetic discipline, a part of which, including breath control, simple meditation, and the adoption of specific bodily postures, is widely practised for health and relaxation. (<https://www.lexico.com/definition/yoga>). Yoga is a discipline to improve or develop one's inherent power in a balanced manner. It offers the means to attain complete self-realization. The literal meaning of the Sanskrit word Yoga is 'Yoke'. Yoga can therefore be defined as a means of uniting the individual spirit with the universal spirit of God. According to Maharishi Patanjali, Yoga is the suppression of modifications of the mind (<http://ayush.gov.in/about-the-systems/yoga/definition-yoga>).

### 1.2 IMPORTANCE OF YOGA

The word 'yoga' is being taken from Sanskrit and means to unite. Yoga is not a religion, it is a technique that helps in keeping mind, body, and soul healthy. During the lockdown, people can face physical problems like obesity, laziness and can also face mental stress problems. In this situation, Yogic exercise can help you in balancing your physical and mental well-being. Yoga is an ancient Indian way to understand your soul. It clears your vision and makes you less worried about your problems. During the lockdown, people have many questions about this global pandemic which is affecting their daily life and creates tension in their minds. People are worried about their future, their jobs due to this pandemic economy may go down and it can cause a recession. There are many other questions in people's mind, they get anxiety due to this situation. By practicing yoga they can overcome any kind of anxiety. Yoga teaches you to stay calm in tension focus on a solution rather than thinking about the problem. By practicing different asanas you can build your confidence and stay focused. Other forms of exercise assure physical fitness. Yoga helps in the development of the spiritual and stellar body. Yogic exercise generates cosmic energy in the bodies. The aspirant feels rejuvenated and energized. It gives physical and mental disciplines to gain a peaceful body and mind; it helps cope with stress and anxiety and keeps you in comfort. Yoga makes your body flexible and improves muscle strength and body tone. It increases respiration, energy, and vitality. Yogic exercise can do much more for your body from the way you feel, look and move. Daily practice of yoga can help lose weight, release stress, improve immunity and maintain a healthier **lifestyle** (<https://honairesort.com> and <https://www.oceanicyoga.com/importance-of-yoga-in-our-daily-life>)

### 1.3 MIND AND BODY

Yogic exercise can practice by people of all ages and doesn't require any special skills. The main aim of yoga in our daily life is to develop Physical, Mental, Social, and Spiritual health.

#### 1.3.1 Develops our physical health

In this lockdown, many people are facing the challenge to stay physically fit. People are at home and cannot go to the gym, gardens or out for a walk. So keep your body fit is the main challenge but by practicing yoga they can stay fit. In yoga, there are various exercises to improve your physical fitness. To maintain good health, additional exercises within the structure "Yoga in Daily Life" are the methods for purification of Hatha Yoga. It includes Deep Relaxation, Concentration Exercises as well as Mudras and Bandhas (special Yoga techniques).

Despite all of these exercises food also plays a vital role to keep our body in good health. What we eat, has huge impacts on our body, psyche, habits and on our qualities. In brief, the food we consume has an effect on our entire being. Food is the main source of our physical energy and high spirits. A well-balanced diet includes healthy grains, fresh vegetables, and fruits, sprouts and pulses, dry-fruits, milk, salads, herbs, and spices – either raw or freshly cooked. Reheated or denatured foods, meat, and eggs are needed to avoid and it is also best to avoid any kind of alcohol, nicotine, and drugs as it can have a negative impact on our health.

### **1.3.2 Develops our mental health**

During the lockdown mental health is very important. One should practice yoga to stay mentally fit in this situation. Many organizations have appealed to people to stay mentally calm because any kind of mental illness can cause depression, anxiety, and other illness. They also have shared yogic exercise and how it can help you to fight mental problems or stress. Yogic exercises increase our body awareness, relieve stress, reduce tension, muscle strain, and inflammation, and improve our focus, calms our nervous system. These important benefits of yoga make it more important for our mental health and we should practice it daily.

### **1.3.3 Develops our social health**

During this global pandemic, social health is the most important factor. A person needs to take care of themselves as well as their family also. Social health is the ability to be happy with ourselves and to make others happy. Yogic exercise improves your social health and teaches you to care and to connect with other people in society, to understand our social responsibilities, and also to help the community. By practicing yogic exercise which improves our social health we can also teach others to practice this exercise to stay relax in this pandemic situation. Social health teaches us to experience life in all its beauty.

There are some social illnesses like drug addiction. Although, the government has stopped the selling of all non-essential goods which include liquor, and tobacco. People with alcohol problems facing major withdrawal symptoms and it could affect their physical well-being. People committing suicide due to the non-availability of alcohol, a youth committed suicide in Kodungaloor in Thrissur district as he was dealing with major withdrawal symptoms. Not only this, but a 38-year-old man also consumed shaving lotion because he didn't get alcohol and died. During the lockdown, many people consume alcohol for entertainment but those who have addicted its nightmare for them to survive without alcohol. Many cases happened in Kerala, to stop such incident CM Pinarayi Vijayan directed excise dept. that people with doctor's prescription can avail liquor (<https://www.mensxp.com/social-hits/news/74443-kerala-govt-to-supply-liquor-as-per-doctors-prescription-after-multiple-people-committed-suicide.html>)

Yogic exercise to improve your social health can also help this kind of people who are facing withdrawal symptoms it can also help in overcoming this illness and gives them a positive aim and new purpose in life. The good surrounding has a great impact on our psyche, build our personality and character. Positive surrounding plays a vital role in our spiritual development. By practicing yoga which improves our social health we can work for ourselves and can help others. It teaches us to do important and creative work for our community, to preserve nature, environment and how we can develop peace in our surroundings.

#### **1.4 MEDITATION**

Meditation is a practice where an individual uses a technique – such as mindfulness, or focusing the mind on a particular object, thought, or activity – to train attention and awareness, and achieve a mentally clear and emotionally calm and stable state.(<https://en.wikipedia.org>)

During this lockdown, mental peace is very important and meditation is the best way to calm ourselves. By practicing meditation one can master his ability to focus on his goals. Meditation can be practice by any age group. Many people get frustrated by just sitting home and they get annoyed easily by small things. They lost their temper very quickly and get offended, so especially this kind of person needs to do meditation regularly it makes them calm mentally and emotionally. People can practice meditation also at home it just requires silence. There are tutorials available online or many videos to teach how to practice meditation. There are many different ways in different religions to practice meditation but the result is common, to achieve inner calmness and peace.

#### **2. CONCLUSION**

On the basis of the foregoing discussion, it may be concluded that yogic exercise can help people in many ways during this global pandemic situation. People can stay physically and mentally fit by practicing yoga and meditation. Peoples need to practice yoga and meditation daily in their life to achieve a mentally calm and emotionally stable state. During this global pandemic, people are facing many challenges as there is a nationwide lockdown. It affects their daily routine as they can't go out for a walk or to the gym. But yogic exercise can help them to stay physically fit. Yoga and meditation have many benefits from a different perspective, it increases your physical strength, awareness, thinking ability and reduces your muscle strain, stress, tension and makes a person more calm and happy.

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**UNIVERSITY CLIMATE AND ITS RELATIONSHIP TO THE WORK  
PERFORMANCE OF FACULTY MEMBERS IN THE FACULTIES OF  
PHYSICAL EDUCATION OF THE UNIVERSITY OF BAGHDAD  
AND MUSTANSIRIYA**

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**ABSTRACT**

The present research aims to identify the role of the university climate and its relation to the work performance of the faculty members of the physical education and sports science. The research sample includes (316) college teaching staff of physical education and sports sciences at Baghdad and Mustansiriya University. The researchers used the descriptive approach with correlations as a research method. The university scale went under some modifications before using as a scale to measure the relationship between them. Some of the tools and devices used in the research procedures with the selected scales, then the results analyzed statistically. The obtained results showed there is a positive relationship between the university climate and the work performance of the faculty members. The researchers also suggested that the university vision should show a deep and comprehensive understanding of the concepts of modern administration by providing information that helps the faculty staff to make right and good decisions in a scientific way to reach the desired goals.

**Keywords:** university climate, work performance, physical education, sports science.

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## 1. INTRODUCTION

Modern and good management is the basis for the university's success and development. The modern sports administration is particularly working on development and success of faculties of physical education and sports sciences. It works to spread the spirit of cooperation, understanding, and trust among the faculty members to achieve the desired goals. The success of the university depends on some variables such as the nature of work in colleges, the type of relationships and interactions between faculty members, and the type of administrative leadership. These variables are able to identify the university climate of the colleges that have great influence and a direct reflection on the achievement of goals and enhancement the confidence among all.

The colleges differ in terms of their nature work, their structure and their size. However, they cannot be far from the administrative obstacles in their performances. Physical education colleges consist of many faculty members. Each member has different goals and values. Either members cooperate with one another to achieve the goals and values set or they may compete with each other. In this situation, management plays an important role in solving problems between two faculty members or between a group of members and others. "The good leader must know the demands of faculty members and how to express them and find ways or means to diagnose them." (**Farhan, 2015**).

The university climate represents the internal work environment with its various variables, characteristics, and interactions. It plays a major role in enhancing the performance and the work of the teaching staff. Hence, it is possible to say that the university climate considers the entity of the educational institution in all its dimensions. "Its success to create a suitable working climate to the faculty members this leads to enhance the setting and stability of individuals and organization at the same time such as the faculty members feel their importance in the work and their ability to participate in decision-making, contribute to set up policies and plans, and sense of trust between the administration and individuals." (**Ibrahim, 2002**)

Thus, the importance of research is to identify the relationship between the university climate and its relation to the work performance of the faculty members in the faculties of physical education of the University of Baghdad and Mustansiriya, on the basis that these two variables are the most important variables that contribute to the development and progress of the colleges to achieve their desired goals.

### 1.1 Research problem

The president of the educational institution and the faculty members have an important role in the success of the management affairs in the institution as they have a role in the failure of the work. They are supposed to have experiences, a perception in accepting the ideas and the interaction in order to improve their job performance. This leads to a positive job interactional setting and motivates them to achieve the objectives of the educational process.

Generally, the experiences of the researchers in the university work, and in addition to studying many foreign and Arab studies, they suggest the importance of the university climate by studying the effective role of the university president and the faculty members to set up the work.

Thus the research problem is that " Is there relationship between university climate and work performance of faculty members in the faculties of physical education and sports sciences? "

### 1.2 Objectives.

1. Determining the prevailing university climate in the University of Baghdad and University of Mustansiriya
2. Identify the faculty members performances in the faculties of physical education and sports sciences.
3. Identifying the relationship between university climate and job performance in the selected universities

### 1.3 Hypothesis

There is a statistically significant correlation between university climate and job performance in the selected universities.

#### 1.4 Research domains

**Human domain:** Faculty Members of Physical Education and Sports Sciences at the Universities of Baghdad and Mustansiriya.

**Time domain:** 20/12/2017 -15/2/2018.

**Spatial domain:** the headquarters of the faculties of physical education and sports sciences at the Universities of Baghdad and Mustansiriya.

## 2. METHODOLOGY

The quantitative method is followed in this study, as it is suitable for this type of data. The researchers used the descriptive approach, thus the form of survey and the correlations are chosen as it is one of the most appropriate approaches to the nature of the research problem.

### 2.1 Participants

The research society includes all teaching staff of the faculties of physical education and sports sciences at the University of Baghdad and Mustansiriya, whose the total number was (316) college instructors distributed as follows: faculty members at the University of Baghdad was totally (256) members, and faculty members of the University of Mustansiriya was totally (60) ). Table (1) shows the distribution of the research samples.

**TABLE 1**  
**DISTRIBUTION OF THE INDIVIDUALS OF THE RESEARCH SAMPLES**

Applying sample	Survey Sample	Statistical Analysis Sample	Total Research Sample
206	50	60	316

### 2.3 Description of Scales

#### 2.3.1 University climate scale

The researchers display previous studies in this field, as well as the survey, included the needs, ideas, and perceptions expressed by faculty members, through personal interviews, then, the first draft form of university climate scale was designed that primarily contains(50) items divided into four areas (management style, work method, approach, technology).

The researchers ensure two types of validity in the present study: apparent validity and content validity by the submitting the scale to experts and specialists<sup>1</sup>in the science of sports

management and administration and sports psychology to judge the validity of the questionnaire form items in accordance with well- standard scales to identify whether the items are good or not. By doing so, it is one of the best methods to measure construct validity. (Al-Kubaisi, 2010) states that "the best way to verify the apparent validity of the scale is by judging a number of raters to determine the extent to which the scale items are represented what they are intended to measure". The reports of the experts show that 80% of the questionnaire items are very good, while (10) items need to delete as they are not related to the scale areas with modifying a few items in order to be appropriated items.

To achieve the reliability of the scale, the researchers calculated coefficient by applying the test and re-test to the small sample, whose was ( 60) respondents. The time period between the first and second scale tests was (10) days. The Pearson correlation for each of the scales is (83%) of stability coefficient . This is a good indication of the stability of the participants' responses to the applied scale.

The pilot test was conducted with a (50) faculty members of the research society by submitting the scale form to check the clarity of the scale items. After two weeks, the scale was reapplied to the same group to find out correlation coefficient Pearson between the two scales. it is (83%) coefficient of reliability of the survey sample.

After doing some modifications to the applied scale, the final scale form included (40) items distributed into four areas. Each item has five-grade options ( very high strong, very strong, somewhat strong, weak and none) with (5,4,3,2,1) marks respectively, and the total score of the scale ranges between (200-40) marks. The default Average is (120).

### **2.3.2 Work performance scale**

In the present study, the work performance scale that was designed by Youssef Abdel-Atia Bahr and TawfiqAttiaEl-Ajla) is adopted.(Bahr and Al-Hijla, 2010) . The scale has psychometric characteristics. The scale includes (15) items with five options (always, often, sometimes, rarely . very rarely) distributed into three areas (work performance elements performance parameters, and performance evaluation criteria). Reliability, consistency, and objectivity are checked according to ( Likert) method in measuring weights for items that gradually starts in one positive direction from (1 to 5).

The scales forms were distributed with the help of the assistant team to the (206) faculty members of the Universities of Baghdad and Mustansiriya to fill in them from the date (15/1/2018 to 30/1/2018. 178) and then collected them.Then, the input data process started for the purpose of statistical treatment and to obtain the final results of the study

### **2.2 Data Collection:**

- A. Personal interviews.
- B. Arabic sources and references.
- C. Clearing form of Information and data .
- D. Literature review, previous studies, and experts.

### **2.5 Statistical Analysis**

Mean, SD, t-ratio and pearson Moment coefficient coorelation (r) were computed with help of SPSS program for collected research data.

### 3. RESULTS AND THEIR INTERPRETATION

**TABLE 2**  
SIGNIFICANCE OF DIFFERENCE BETWEEN MORAL TRUTH AND TYPE OF THE UNIVERSITY ATMOSPHERE

Variable	Mean	Standard Deviation	Average	DF	t-Value	significance
University Climate	138.106	19.765	120	177	8.457	0.00

It is shown in table (2) that mean of their scores is (138.106) and the standard deviation of (19.765) and the default mean (120) and (T) value is (8.457) at (177) degree of freedom (177), which indicates the significance of the differences and the fact that the arithmetic mean is greater than the default mean of the scale, it means that the difference is in favor of the research sample. The researchers attribute that the methods used by the university and the colleges' deans are based on the mutual consultation between them and members of teaching staff as well as they participate in the decisions making that concern their work, "which must be characterized by renewal and non-stalemate and non-compliance." (Abu Tayeh et al., 2010). This leads to facilitate the completion of the work, duties, and activities of faculty members, and attempt to avoid routine work, thus the work process is easily accomplished through the spirit of the community and belonging to their place of work.

**TABLE 3**  
SIGNIFICANCE OF DIFFERENCE BETWEEN BETWEEN MEAN SCORES OF JOB EFFICIENCY LEVEL OF FACULTY MEMBERS OF PHYSICAL EDUCATION AND SPORTS SCIENCES

Variable	Mean	Standard Deviation	Average	DF	t-Value	Significance
Work performance	67.568	7.970	45	177	4.567	0.00

Table (3) shows that the arithmetic average of the scores is (67.568) and a standard deviation of (7.970), with a default mean (45). while (T) value is (4.567) at (177) the degree of freedom, which indicates the significance of the differences and the fact that the arithmetic mean is greater than the default mean of the scale, it means that the difference is in favor of the research sample. The researchers suggest that the elements of the work performance are essential components. There cannot be effective performance and professional work without them, "This is due to its importance in measuring and determining the level of performance of teaching staff members (Durrat, 2003)."

**TABLE 4**  
RELATIONSHIP BETWEEN UNIVERSITY CLIMATE AND FUNCTIONAL PERFORMANCE OF THE UNIVERSITY CLIMATE

Variables	Mean	Standard Deviation	Pearson's correlation coefficient	DF	Significance
Weather climate	138.106	19.765	0.578	176	0.00
Work performance	67.568	7.970			

Table(4) shows that the value of the simple Pearson's correlation coefficient was (0.578) and the true significance of (0.00) is less than (0.05) indicating that there is a strong correlation between the two variables indicating that good work performance has an effect in determining the university climate level, and its direct impact on achieving the desired goals . The researchers explain that open university climate has positive dimensions in the faculties such as good work, innovation, motivation, creativity, cooperation and avoiding boredom and routine work," this leads teaching staff to identify the first working environment and identify problems and work to solve them, and the open university climate is a good indicator of the need to manage the work proportionally in the educational institution to increase the efficiency of work performance (**Abdel Hamid, 2015**)." ."

#### **4. CONCLUSIONS**

1. The results showed that the attitudes of the faculty members towards the open university climate are a good degree.
2. There is a positive relationship between the university climate and the work performance of the faculty members of the Faculty of Physical Education and Sports Sciences of the University of Baghdad and Mustansiriya.

#### **5. RECOMMENDATIONS**

1. The university leadership must deepen the concepts of modern administration by providing information that helps the faculty to make right and positive decisions in a scientific way to achieve the desired goals.
2. Need to conduct training workshops in modern management through seminars, conferences, and direct meetings.
3. Conduct new variables studies in modern management to develop work performance.

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**THE COST OF A GOOD BODY: A QUANTITATIVE ANALYSIS OF  
FINANCIAL INVESTMENT IN MAINTAINING A HEALTHY  
LIFESTYLE FOR CONSUMERS OF DIFFERENT  
SPENDING CAPACITIES**

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**ABSTRACT**

The purpose of study was to assess the cost of a good body through quantitative analysis of financial investment in maintaining a healthy lifestyle for consumers. following paper calculates the average investment a rational consumer would make while attempting to engage in regular exercise in a commercial setting. The calculation revolves around costs relating to the gym, gear, the differential cost of eating healthier food, travel etc. and stratifies the data by the spending capacity of the consumer. The exploratory research looks at the both ends of the financial spectrum and attempts to calculate a mid-point. From the minimum a person could feasibly spend to achieve an acceptable amount of fitness to the higher end that would save effort and time. The “cost of a good body” entails not just the upfront cost of the membership but also the added costs associated with a fitter lifestyle. The paper further equates the average cost to other everyday items as well as larger expenses or investments a person may make..

**Key words: Cost, health, consumers, Lifestyle, Finance**

## 1. INTRODUCTION

The objective of the research would be to ascertain an average cost that can be tied to joining the gym for an average Indian consumer. The data is not only based on market research and scoping but also on real life accounts of the amount spent for the same. Though the cost has tried to incorporate fluctuations arising from sales, offers, eating habits etc. preferences and market behavior may cause personal accounts of the same to vary though the ballpark figure should not deviate largely.

For every spending capacity variable quantities have been indentified based on subjectivity and trend analysis. The costs have been taken at market value wherever possible and multiple sources like aggregators and official websites have been considered for each cost. Items which fluctuate with seasons or time have also been taken at 3M intersections (Mean Median and Mode) and additional cost break ups have been provided for each number.

The analysis does not limit itself to simple addition, rather cumulates the total investment into a fitter lifestyle by considering all additional costs that become hidden at the time of purchasing a gym membership. Though at home workouts and simple running can be a cost free exercise, most people now prefer a space and time for such physical activity. Resolutions and promises also point the crowd towards thoughts where a monetary upfront investment is equivalent to future will power they will expend. Since most people think that paying will motivate them to lead a healthier life, the paper can also help in expanding the horizon from virtual to actual costs and help in the cost benefit analysis variables.

## 2. METHODOLOGY

The methodology consists of collation and comparison of data points and considers various sources for each cost. Each spending capacity will consist of the 5 main variables that are:

- 1) Cost of the gym membership: This is inclusive of trainer costs for high spending capacities and includes gyms with additional facilities in medium spending capacities
- 2) Food and supplements: Additional items like protein powder, health supplements and whey have been spread across the various strata's
- 3) Sports Gear: Regular attire consisting of comfortable loose clothing from sports centers or showrooms have been considered, along with the fact that people have use items from their existing wardrobe.
- 4) Travel costs have been considered with a five kilometer radius and options like walking have been taken into account
- 5) Additional costs include all extras like the excess loads of laundry that will be performed or the differential costs of soap that will be used up.

### 2.1 Selection of Independent Variables

1. Gym membership Cost
2. Food and Supplement Cost
3. Wearable gear, attire and equipment cost
4. Travel and Transport cost
5. Additional (miscellaneous) cost
6. Cumulative Cost



## **2.2 Sub variables of each Independents Variable**

Each of the variables above has at least three sub variables under it, each with multiple items which have been explained in detail in the next segment.

### **2.2.1 Low Cost gyms**

Low cost gyms without trainer supervision are available for prices lower than one thousand a month, with certain locations having rules restricting the visits per day or week. These establishments are generally in one location and despite other branches being present; the membership applies only in the home centre. For most of their clothing needs persons in this category with use their existing wardrobe options, with minimal expenses sports gear and clothes. The clothes bought are from cheaper discounted retailers and brand image or high quality is not a metric that is considered. Food and nutritional needs are paid attention to, but expenses are minimized, and cheaper healthier options are delved into. The food already being made in these households is also eaten with care to not eat canteen food at their jobs or only go outside for the occasional meal. For travel related to the gym, either walking to the gym or other public transport options is used. Persons may also use their cycles or rent one from one of the many available rentable options. Other expenses like additional usage of soap or deodorant are curbed and used at regular cycle times.

### **2.2.2 Medium Cost gyms**

Gyms in the medium rung are also mostly trainer less, though offer the guidance of personnel leading a class (E.g.: Cult. Fit) or offer a wider variety of equipment with more ease in the locations and timings. These gyms also are generally equipped with additional amenities like Spas and saunas and may provide app based assistance. Persons in this category would shop at discount outlet stores of bigger brands or at Wholesale box stores like Decathlon. Though these outlets may provide items at both ends of the spectrum, the choices made here would fall in the mid ranges, with equal emphasis on quality and value. The items are also bought considering laundry cycles. Items like sports bags and sweat bands would also be bought along with one-time purchases like a digital fitness band and a new pair of earphones. Food habits would include ordering in from healthier outlets 5-7 times a month while going out is taken at 3-4 times. This is taken as over and above the food already being made at home due. Travel associated with the gym would be through their own car or through services like Uber Pool, Autos or bike renting services. Finally, the usage of items like soap, shampoo, detergent and perfume would increase and the differential costs have been accounted into the total cost

### **2.2.3 High Cost gyms**

For all persons in the high cost, ease and saving time is considered a higher priority than saving money and behaviors have been considered accordingly. Gyms are taken up with the assistance of personal trainers at posh locations. Attire and gear has been bought afresh with items like towels and sweat bands included in the calculation. Additional one-time expenses like Air Pods and Fit bit are also included. Food costing has been done considering ordering habits at 7-10 times a month and outings at 3-4 times a month. The food cooked at home also includes healthier vegetable and fruits and add-ons like Whey protein shakes have been considered Travel is taxi based options such as Uber and Ola due to the ease. Finally, the usage of items like soap, shampoo, detergent and perfume would increase and the differential costs have been accounted into the total cost

## 2.2 Types of Data

The data is mainly based on market research from source and official websites, along with real life account summaries and breakdowns of the cost accrued. The population for gyms includes locations like Delhi and Bangalore and focus on chains that are set up pan India. For wearable gear, attire and equipment the focus is on retail and wholesale stores with prices used from collators and official websites. Food and supplement costs have been taken from online food delivery apps, grocery delivery apps and market prices Travel costs are based on transport and logistics app estimates and petrol prices during the period. Finally, the additional costs have been taken at market prices

## 3. RESULTS AND THEIR INTERPRETATION

TABLE 2

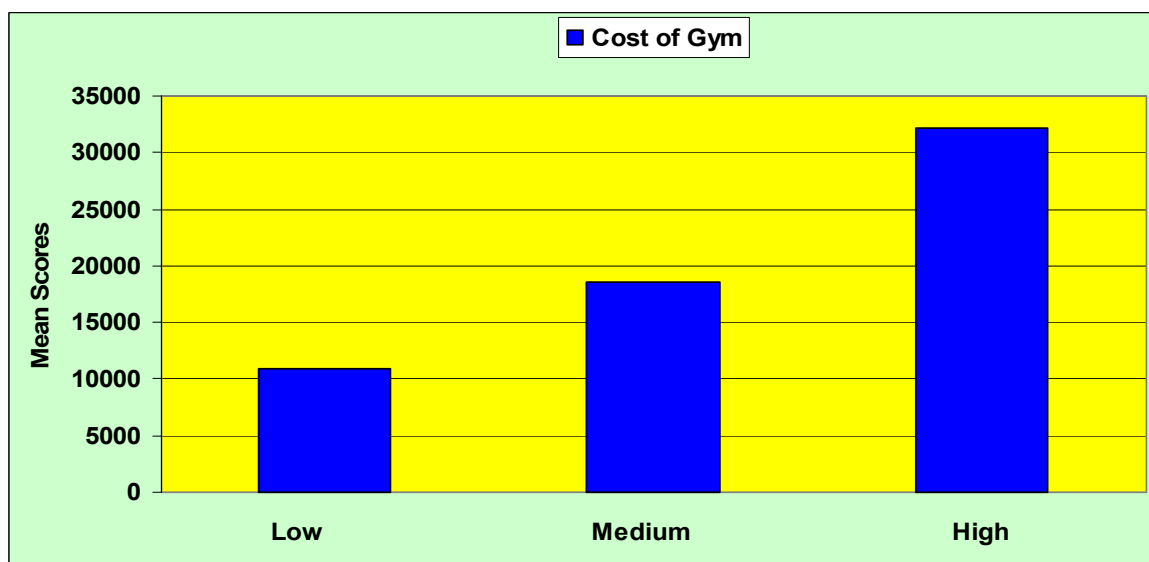
### SUMMARY OF THE PATTERNS AND BEHAVIOURS FOR EACH VARIABLE UNDER THE SPENDING CATEGORIES

Spending Capacity	Gym Membership	Sports Gear	Food Supplements	Travel	Others
Low	Total Fitness	Existing Attire	Home cooked Meals	Walking	Shampoo & Soap
	Fuerza	Decathlon(Low), Amazon	Cooked by self or family member	Bus, Car Pool, Cycle	Laundry
	SNAP Fitness	Street Hawkers and Vendors	Miniscule differences from regular diet		Creams
Moderate	GOLDS Gym	Decathlon(Medium), Lifestyle	Differential for added protein vegetables and fruit	Own Car(Petrol)	Band-Aids and bandages
	Cult Fit	Factory Outlet Stores	Order meals from healthier outlets less than 7 times a month	Uber/Ola Pool	Deodorants and Perfumes
	Anytime Fitness	Additions: Sports bag, bottle, towel, earphones, Fitness Band	Dine out at healthy eateries less than 5 times a month	Autos	
High	Volt Fitness Club	Decathlon(High), Adidas	Differential for added protein vegetables and fruit	Uber, Ola	
	Olympia	Additional: Sports bag, bottle, towel, Home equipment	Dine out/Order from healthy eateries more than 5 times a months	Local Taxi	
	Fitness Finesse	Additional: Fit Bit, Ear pods	Protein Powder, Peanut Butter, Pills, Whey Etc		

**TABLE 3**  
**SUMMARY OF GYM COSTS STRATIFIED BY SPENDING CAPACITY**

Gym	Cost
<b>LOW</b>	<b>10844</b>
Total Fitness	11025
FUERZA	9833
SNAP Fitness	11673
<b>MEDIUM</b>	<b>18517</b>
GOLDS Gym	18060
Cult Fit	16490
Anytime Fitness	21000
<b>HIGH</b>	<b>32230</b>
Volt Fitness Club	28990
Olympia	31700
Fitness Finesse	36000

Table 3 reveals that the each chain chosen is present pan India for the low and medium spending capacities. Since persons who do only want a limited commitment to the gym, per day visit limitations, lack of specialized equipment or lesser individual attention may not be deal breakers. The gyms then function as areas that provide baseline motivation and have basic treadmills and weights available. Though better gyms will have specialized trainers and include workouts and meal and diet charts, the cost may be too much for someone to bear.



**Figure-1: Comparison of the Mean Cost of a Gym Membership**

**TABLE 4**  
**SUMMARY OF SPORTS GEAR AND ATTIRE COSTS STRATIFIED BY SPENDING CAPACITY**

Items	Quantity	Price/Item	Total
<b>LOW</b>			<b>1460</b>
Tops	2	150	300
Bottoms	2	263	526
Socks	3	107	321
Shoes	1	313	313
<b>MEDIUM</b>			<b>11303</b>
Tops	5	455	2275
Bottoms	4	475	1900
Socks	7	90	630
Shoes	2	812	1624
Sweat Bands	2	137	274
Sports Bag	1	638	638
Towel	2	231	462
Earphones	1	500	500
Fitness Band	1	3000	3000
<b>HIGH</b>			<b>39825</b>
Tops	7	1000	7000
Bottoms	6	1100	6600
Socks	6	175	1050
Shoes	2	1650	3300
Sweat Bands	2	200	400
Sports Bag	1	1550	1550
Towel	3	475	1425
Air Pods	1	13000	13000
Fit Bit	1	5500	5500

It is clear from Table 4 that the quantity of the items in clothing has been considered taking into account how often the people will be willing to wash the clothes and use their own wardrobe items. The price break ups for each item have been taken from multiple sources ranging from street hawkers in low to Adidas in high. Additional wearable like off brand fitness bands and an extra pair of earphones have been taken in the mid level assessment. For the high capacity, though air pods may not be an expense that the person will consider at the time of starting gym, they may see added benefits in other realms later on.

**TABLE 5**  
**SUMMARY OF FOOD COSTS STRATIFIED BY SPENDING CAPACITY**

Food	Quantity	Price/Item	Total
<b>LOW</b>			<b>17052</b>
Eggs	480	6	2880
Fruits	12	440	5280
Vegetables	12	741	8892
Existing Home Food	-	-	-
<b>MEDIUM</b>			<b>54972</b>
Eggs	720	6	4320
Fruits (Cost is Per Mnth)	12	550	6600
Vegetables (Cost is Per Mnth)	12	1281	15372
Food Orders	72	465	11160
Food Outings	48	1300	15600
Additional	48	40	1920
<b>HIGH</b>			<b>130660</b>
Eggs	720	10	7200
Fruits (Cost Per Mnth)	12	770	9240
Vegetables (Cost Per Mnth)	12	1570	18840
Peanut Butter/Added Supplement	6	300	1800
Food Orders	108	1205	43380
Food Outings	48	3850	46200
Additional	2	2000	4000

Table 5 indicates that the food expenses have been done taking into account the additional protein and fiber requirements an average gym member will try to satisfy. Regular food items like carbohydrates and pulses have not been considered. For medium and high categories, though the number of food orders and outings has been considered at nearly the same level, the price points vary due to differences in locations. Food additional also consider the occasional protein why shake a person belonging to the second category may buy, while high category persons will invest in the protein powder box itself for ease and consistency. Food happens to areas where the increase is exponential at each level.

**TABLE 6**  
**SUMMARY OF TRAVEL COSTS STRATIFIED BY SPENDING CAPACITY**

Travel	Quantity	Price	Total	Total /Year
<b>LOW</b>			<b>17052</b>	<b>LOW</b>
Eggs	480	6	2880	Eggs
Fruits	12	440	5280	Fruits
Vegetables	12	741	8892	Vegetables
<b>MEDIUM</b>			<b>3180</b>	<b>38160</b>
Own Car (Petrol)	6	110	660	
Uber Pool	6	120	720	
Autos	6	200	1200	
Rented Bike	6	100	600	
<b>HIGH</b>			<b>5880</b>	<b>70560</b>
Uber	12	240	2880	
Ola	12	250	3000	

Table 6 reveals the travel costs have been taken at market cost and petrol usage is based on average car mileages.

**TABLE 7**  
**SUMMARY OF ALL ADDITIONAL COSTS STRATIFIED BY SPENDING CAPACITY**

Additional	Quantity	Price	Total
<b>MEDIUM</b>			<b>3650</b>
Body Wash	6	150	900
Shampoo	2	200	400
Laundry Detergent	2	125	250
Band-Aids/Bandages	10	50	500
Deodorants and Perfumes	8	180	1440
Cream	2	80	160
<b>HIGH</b>			<b>5800</b>
Body Wash	6	110	660
Shampoo	2	120	240
Laundry Detergent & Softner	2	350	700
Band-Aids/Bandages	10	100	1000
Deodorants and Perfumes	8	350	2800
Cream	2	200	400

Table 7 shows the additional costs like creams, band aids, better soaps and higher usages have been considered, though such costs have not been taken for low spending capacity spenders since these would be seen as frivolous and non justifiable.

**TABLE 8**  
**CONSOLIDATED COSTS OF SELECTED INDEPENDENT VARIABLES**

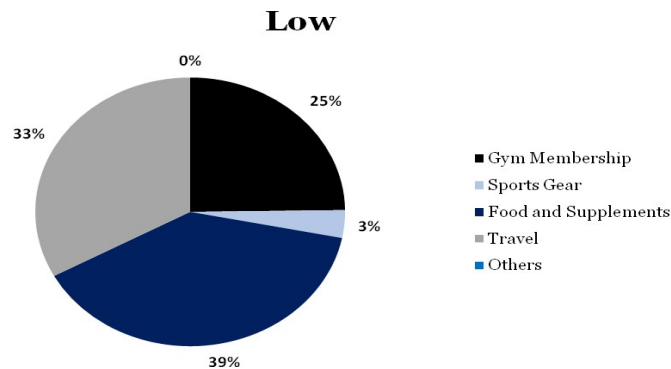
Spending Capacity	Gym	Gear	Food	Travel	Other	Total
Low	10,844	1,460	17,052	14,400	-	<b>43,756</b>
Moderate	18,517	11,303	54,972	38,160	3,650	<b>1,26,602</b>
High	32,230	39,825	1,30,660	70,560	5,800	<b>2,79,075</b>

**TABLE 9**  
**PERCENTAGE OF LOW COSTS FOR SELECTED INDEPENDENT VARIABLES**

Particulars	%
Gym Membership	25%
Sports Gear	3%
Food and Supplements	39%
Travel	33%
Others	0%

Table 9 reveals that the costs are uncontrollable in nature like travel and gym memberships constitute 2/3rds of the cost while food and gear take up the rest. Clothes are taken from existing wardrobe and food makes up a larger portion of the expenditure since it is seen as a basic need. Eating protein and fiber high foods are not add-on and rather

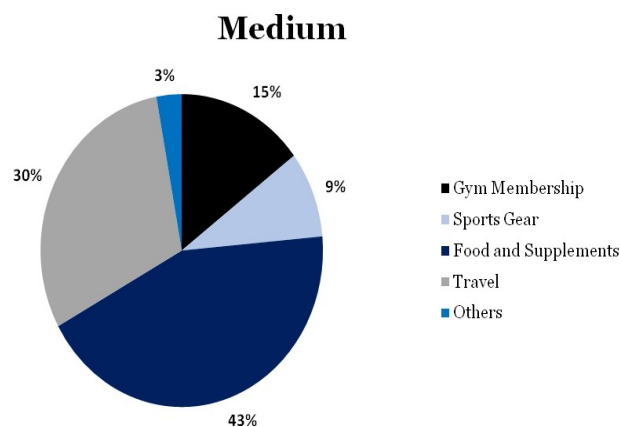
replacements to the existing diet. Travel is also usually clubbed to be after or before work and the location of the gym is chosen accordingly.



**TABLE 10**  
**PERCENTAGE OF MEDIUM COSTS FOR SELECTED INDEPENDENT VARIABLES**

Particulars	%
Gym Membership	15%
Sports Gear	9%
Food and Supplements	43%
Travel	30%
Others	3%

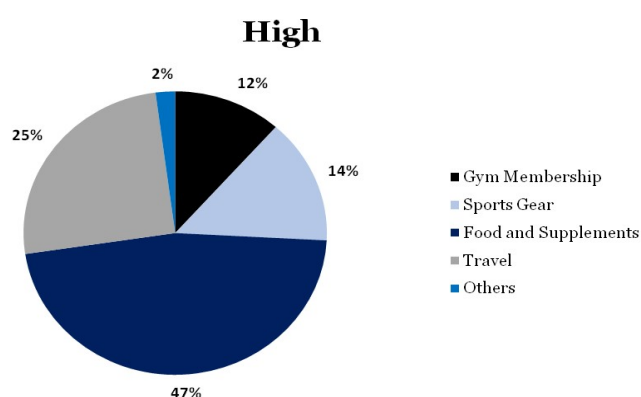
Table 10 indicate the food and attire take up a larger portion of the expenses while travel and membership costs are lower. Attire here also has other impacts like social status and image and comfort of the clothing is considered at equal weightage. This pushes the need to buy newer items, which is also intrinsically linked with starting a new experience. The clothes may be used at other times but usually only act as gym ware. Food is seen in larger quantities due to the realization of necessity of balance between food and physical activity.



**TABLE 11**  
**PERCENTAGE OF HIGH COSTS FOR SELECTED INDEPENDENT VARIABLES**

Particulars	%
Gym Membership	12%
Sports Gear	14%
Food and Supplements	47%
Travel	25%
Others	2%

Finally from Table 11 indicates that the higher spending capacities have gym at the lower side of the main expenses, and rather spend more on the variables in the ecosystem. The excess costs of attire and food are seen as long term investments in health and hence brushed off.

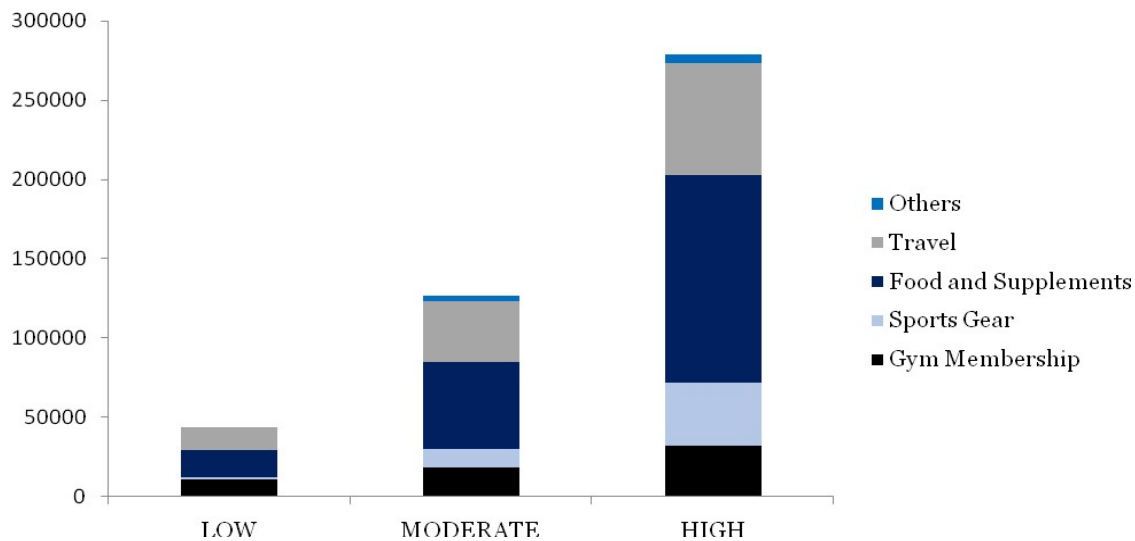


**TABLE 12**  
**PERCENTAGE OF HIGH COSTS FOR SELECTED INDEPENDENT VARIABLES**

Spending Capacity	Gym	Gear	Food	Travel	Others	Total
Low	10,844	1,460	17,052	14,400	-	43,756
Moderate	18,517	11,303	54,972	38,160	3,650	1,26,602
High	32,230	39,825	1,30,660	70,560	5,800	2,79,075

The data in Table 12 shows that persons with lower spending capacities would save money on expenses like food and attire and would only spend largely on the actual membership. This can be contrasted by the spending habits of medium and higher customers who would involve themselves in the ecosystem and invest in longer lasting clothes and better food. The spending triples when seen from lower to moderate and doubles again when moving from moderate to high.





#### 4. CONCLUSION

In conclusion, the average cost of a healthy lifestyle can vary anywhere between half a lakh to 2.8 Lakhs for the entire year. The cost is considering a rigorous routine and diligence to the commitment and the cost would convert to the end goal. The parallels could be drawn to about 700 portions of butter chicken for the cost of a high maintenance lifestyle or 225 large dominos pizzas for the moderate healthy lifestyle

#### 5. LIMITATIONS

1. Actual costs may differ due to sales or preferential pricing
2. Priorities may be changed based on a person to person basis
3. A mixture of characteristics may be applied with higher spending capacity traits in attributes like food but lower in capital onetime expenses like gym

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## PHYSICAL EDUCATION AND SPORT A CAREER OPTION IN INDIA

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### ABSTRACT

Physical Education and sports is an integral part of Education. This paper highlights the broad range of career opportunities and guide people about courses in physical education and sports in India. Physical education and sports as a profession offers many types of career opportunities in different fields. Degrees, Diplomas, Certificate course in the field of physical education and sports beneficial for those, who acquired (Gulhane, 2014) these courses in different field. A career in this area can lead people to a wide range of career options (Adling, 2016) from being a part of the selected sports, health clubs, sports goods manufactures, sports marketing, commentator, sports journalism, trainer, teaching area, coaching area, publications, and many other similar options in both government and private sectors .This paper focus on professional curriculum of physical education and sports in India.

**Key-words:** Sports, Physical Education, Career, Courses.

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## 1. INTRODUCTION:

Later this field was considered as a hobby especially in India but nowadays it is taken as a serious career option. The successful story of sports person in recent years in national and international sporting event has brought the focus to physical education & sports careers. Government of India as well as other sports bodies is encouraging people who have an interest in physical education and sports to develop their natural abilities (Mann, J., & Sharma, K.). In present scenario scope career opportunities in this field becoming wider and more inter connected with the other field. This field helps people to make body physically and mentally fit, fame and money as a career. Sportsperson and physical educator can choose career opportunity in sports marketing, coaching, sports administration, sports medicine, sports promotion and can be employed in private & public sector (Adling, 2016). Government departments and armed forces also have special recruitment drives for extra ordinary sportsman. Sports and physical education related people can setup your own business in manufacturing of sports equipment after gaining experience in this field. This field offers a handsome salary in both public and private sectors. In the field of physical education and sports number of experience is not merely matter but also the person's capability to deliver excellent performance consistently. A career in sports and physical education is a unique occupation. It is a profession by which a student/player can earn a substantial amount of money and at the same time stay fit. Apart from being a profession, sports and physical education has the potential to build character, self discipline, teamwork, sacrifice and fair play can be learned and enhanced through sports competitions.(Killings worth, R., J.Earp, and R. Moore.Sept.-Oct. 2003).

## 2. PRESENTATION OF DATA

A good structure of courses available in physical education and sports can help to give a push to the field. Sports and physical education institutes (**NCTE**) with great potential are imparting education in this field and research is also being carried out in such centers. The degree that is being provided by these institutions is recognized worldwide and accepted everywhere. These courses are running in all over Indian universities and colleges. Most of the universities in India are offering following diplomas i.e. post graduate diploma, Graduate degrees ,Post graduate degrees and research programme of University Grant Commission, New Delhi in the field of physical education and sports, has been presented in Table 1 to 2

. TABLE 1

### LIST OF INSTITUTIONS, COLLEGES AND UNIVERSITIES RUNNING PHYSICAL EDUCATION AND SPORTS SCIENCE COURSES IN INDIA

S.NO.	Name of University/Institution	Place	State
1	National Sports University, Imphal	Imphal	Manipur
2	Swarnim Gujarat Sports University	Gandhinagar	Gujarat
3	Tamil Nadu Physical Education and Sports University, Chennai.	Chennai.	T.N.
4	National academy of Sports Management, Mumbai.	Mumbai.	M.S.
5	Symbiosis school of Sports Sciences Pune.	Pune.	M.S.
6	Centre for Sports Science, Chennai.	Chennai.	T.N.
7	Y.M.C.A college of physical education Chennai	Chennai.	T.N.
8	Indira Gandhi Institute of Physical education and Sports Sciences Delhi.	Delhi	Delhi
9	Punjab university Chandigarh	Chandigarh	Chandigarh
10	Punjabi university Patiala.	Patiala.	PB
11	Kurukshetra University Kurukshetra	Kurukshetra	Haryana

12	Chaudhary Ranbir Singh university Jind	Jind	Haryana
13	Chaudhary Devi Lal University Sirsa .	Sirsa .	Haryana
<b>S.NO.</b>	<b>Name of University/Institution</b>	<b>Place</b>	<b>State</b>
14	Institute of Sports Science & Technology, Pune.	Pune.	M.S.
15	Lakshmibai National College of Physical Education Thiruvananthapuram .	Thiruvananthapuram	Kerala
16	Lakshmibai National Institute of Physical Education Gwalior.	Gwalior.	M.P.
17	Neta ji Subhas National Institute of Sports, Patiala.	Patiala.	PB
18	Annamalai University, Chennai (Tamil Nadu).	Chennai.	T.N.
19	Allahabad University, Allahabad (Uttar Pradesh).	Allahabad	U.P.
20	Andhra University, Vishakhapatnam (Andhra Pradesh).	Vishakhapatnam	A.P.
21	Banaras Hindu University, Varanasi (Uttar Pradesh).	Varanasi	U.P.
22	Jamia Millia Islamia University, New Delhi .	New Delhi .	New Delhi .
23	Manipur University, Imphal (Manipur).	Imphal	Manipur
24	University of Calcutta, Calcutta (West Bengal).	Calcutta	W.B.
25	University of Hyderabad, Hyderabad (Andhra Pradesh).	Hyderabad	A.P.
26	University of Mumbai, Mumbai (Maharashtra).	Mysore	karnatka
27	University of Mysore, Mysore (Karnataka).	Pune.	M.S.
28	University of Pune, Pune (Maharashtra).	Pune.	M.S.
29	University of Rajasthan , Jaipur (Rajasthan).	Jaipur	Raj.
30	Utkal University, Bhubaneswar (Orissa).	Bhubaneswar	Oddisa
31	Visva Bharati University, Santiniketan (West Bengal).	Santiniketan	W.B.
32	College of Physical Education , Pune (Maharashtra).	Pune.	M.S.
33	Noida College of Physical Education, Noida (UP)	Noida	U.P.

**TABLE 2**  
**COURSES OF PHYSICAL EDUCATION & SPORTS IN INDIA**

S,NO.	Diploma in	Post Graduate Diploma in	Bachelor Degree	Master Degree	Research Degree
1	Physical Education	Sports Coaching	B.P.E.S. (Bachelor of Physical Education & Sports).	MPEd. (Master of Physical Education)	Ph.D. in Physical Education
2	Sport Coaching	Sports & Exercise Nutrition	B.P.Ed. Integrated (Bachelor of Physical Education) 4 year after 12 <sup>th</sup>	M.A. (Master of Arts-Sports Journalism and Mass Media Technology)	Ph.D. in Exercise Physiology & Nutrition
3	Sports Medicine	Sports Medicine	Bachelor of Arts in Physical Education	M.Sc., Exercise Physiology & Nutrition	Ph.D. in Sports Psychology

S,NO.	Diploma in	Post Graduate Diploma in	Bachelor Degree	Master Degree	and Sociology Research Degree
4	Sports magament	Sports Management	B.Sc. (Bachelor of Science-Sports Nutrition).	M.P.E.S. (Master of Physical Education and Sports)	Ph.D. in Sports Medicine
5	Sports &Exercise Nutrition	Adventure Sports Administration	B.Sc. (Bachelor of Science – Sports Coaching).	M.Sc., Sports Biomechanics and Kinesiology	Ph.D. in Sports Journalism and Mass Media Technology
6	Sports &Exercise Psychology	Sports Journalism and Mass Media Technology	BA in Sports Management	M.B.A., Sports Management	Ph.D. in Sports Biomechanics and Kinesiology
7	Sports Sciences	Sports &Exercise Psychology	B.P.Ed. (Bachelor of Physical Education) 2 year after Graduation	M.Sc. Sports Coaching	Ph.D. in Sports Management
8	Sports Photography	Fitness Management	B.Sc., Exercise Physiology & Nutrition	M.Sc., Sports Psychology and Sociology	Ph.D. in Sports Coaching
9	-	-	BBA in Sports Management	M.Tech. Sports Technology	M.Phil. in Physical Education
10	-	-	Bachelor of Management Studies in Sports Management.	Master of Sports Management	M.Phil.in Sports Biomechanics and Kinesiology
11	-	-	B.Sc. Health, Physical Education & Sports Sciences	MD Sports Medicine	M.Phil. in Sports Management
12	-	-	-	-	M.Phil.in Sports Coaching
13	-	-	-	-	M.Phil.in Sports Medicine
14	-	-	-	-	M.Phil.in Sports Journalism and Mass Media Technology
15	-	-	-	-	M.Phil.in Exercise

					Physiology & Nutrition
16					M.Phil.in Sports Psychology and Sociology
17					M.Phil.in Sports Technology

In present scenario, sports industry has emerged as one of the lucrative option in India. The sports and Physical Education is one of the most rewarding career options in India with lots of jobs opportunities. Sports opened up many career opportunities for young talents in India. Along with talent, strong determination, perseverance and adequate qualification required. Career in this field categorized into different ways like- Sports based, Science based, teaching based, movement based and media based (Vats Kavita, Sharma Parshant, Sharma J.P., 2015). Today there are many institutes dedicated to impart physical education and sports training in different type of sporting activities in India. Sports and physical education has evolved a full-fledged and practical career option. It is one of the largest foreign exchange earners and provides direct and indirect employment to millions of people worldwide (Mann, J., & Sharma, K.). Jobseeker can find out suitable job through Employment newspaper, advertisements through institutions as well as public service commission of concerned government website, daily publishing newspapers, social networking sites and many more, and list of the institutions, colleges, universities and other sectors has been presented in Table 3 to 9

**TABLE 3  
CAREER OPPORTUNITIES IN UNIVERSITIES:**

Professor in different teaching subject of physical education and sports	Associate Professor in different teaching subject of physical education and sports	Assistant Professor in different teaching subject of physical education and sports	Sports Coach in different discipline
Director of Sports	Deputy Director of Sports	Assistant Deputy Director Sports	Fitness Trainer
Game Organizer			

**TABLE 4  
CAREER OPPORTUNITIES IN IITS AND NITS**

Senior Student Activity & Sports Officer in NITs	Junior Student Activity & Sports Officer in NITs	Sports Officer in IITs	Physical Training Instructor in IITs
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**TABLE 5  
CAREER OPPORTUNITIES IN SPORTS AUTHORITY OF INDIA**

Professor in different teaching subject of physical education and sports	Associate Professor in different teaching subject of physical education and sports	Assistant Professor in different teaching subject of physical education and sports	Sports Coach in different discipline
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Director of Sports	Deputy Director of Sports	Sports Medicine Doctor	Fitness Trainer
Physiotherapist	Strength and conditioning Expert	Psychologist	Dietician

**TABLE 6  
CAREER OPPORTUNITIES IN EDUCATION AND DEGREE COLLEGES**

Assistant Professor in physical education and sports	Deputy Director of Sports	DPE
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**TABLE 7  
CAREER OPPORTUNITIES IN PHYSICAL EDUCATION COLLEGES**

Professor in different teaching subject of physical education and sports	Associate Professor in different teaching subject of physical education and sports	Assistant Professor in different teaching subject of physical education and sports	Sports Coach in different discipline
Principal	Dietician	Psychologist	Fitness Trainer

**TABLE 8  
CAREER OPPORTUNITIES IN ELEMENTARY, SEC. & SEN. SECONDARY SCHOOLS**

Physical Training Instructor	Physical Education Teacher	PGT Physical Education	DPE
TGT Physical Education	Sports Coach		

**TABLE 9  
CAREER OPPORTUNITIES IN STATE SPORTS DEPARTMENT:**

District Sports and Youth Officer	Sports Coach in different discipline
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**TABLE 9  
OTHER CAREER OPPORTUNITIES IN DIFFERENT FIELDS**

Referee/Umpire/Game Official	Sports Clothing Designer	Sports Photographer	Gym Instructor
Sporting Good Salesperson	Sports Promoter	Sports Reporter	Sports Marketing
Sports advisor	Weight-Control Counsellor	Books Publishing sector	Sports Commentator
Sports Agent	Sports Massage Therapist	Media, Sports and Advertising Agencies	Sports Equipment manufacturing sector
Manager /Instructor of Health Club and Fitness centre	Program director in community sports programme	Manager /Instructor of Health Club and Fitness centre	

### 3. CONCLUSION

All the above are the important bright career positions after having the sports and physical education related qualification. Students can choose their field of interest. A career in sports and physical education is a unique occupation. It is a profession by which a student/player/sports professional can earn a substantial amount of money and at the same time stay fit. Apart from being a profession, sports and physical education has the potential to build character, self discipline, teamwork, sacrifice and fair play can be learned and enhanced through sports competitions. Even no steps have been taken by our Govt. to

provide the facilities and opportunities to the students in the context of career in physical education and sports. Moreover India has the great policy in sports but no have proper implementation. So this is the time to review once again for making a proper policy of the sports and physical education to uplift the standard of the physical education and sports in the country to strengthen the sports culture as well as the providing the career opportunities for the betterment of sports personalities and physical education professionals. We have to restructure our curriculums in sports and physical education, excellent research facilities to be provided to the physical education & sports scientists, formulation and proper implementation of the policies are important matter for contemplation. So we can provide better career opportunities to sports and physical education professionals.

#### **4. ACKNOWLEDGMENT**

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## EFFECT OF SPECIFIC TRAINING ON PHYSICAL WELLBEING AND SCHOOL WELLBEING OF SCHOOLSTUDENTS

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### ABSTRACT

Background: The regular physical exercises enable the individual to stay physically fit and to sustain the average individual in his daily activities. People approach fitness by various ways and means to keep themselves healthy and fit and Practice of Specific training will help to develop not only physical strength but also mental strength. Research Design: Sixty male students aged 12–14 years were randomly assigned to experimental (n=30) and control (n=30) groups. The experimental subjects, along with daily school schedule, underwent a combination of Specific Training program alternate day for six days in a week for eight weeks whereas control group participated in their regular school schedule only. Materials and Method: At the baseline and after training intervention Physical Wellbeing and School Wellbeing Self Analysed Questioner of General Wellbeing Questionnaire were used to assess. Statistical Analysis Used: Data were analysed by using One Way ANCOVA test. Results: The results revealed that Effect of eight weeks Specific training intervention has potential benefits to improve Physical Wellbeing and School Wellbeing of the Secondary Schools Boys age ranging from 12-14 years. Conclusion: The findings conclude that Specific Training helped to improve Physical and School Wellbeing among school students of age 12 to 14 years.

**Keywords:** Specific Training, Physical Wellbeing, School Wellbeing, School Students

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## 1. INTRODUCTION

Physical education aims at the promotion of proper growth and development of organic system. Every student should be physically, mentally fit and socially healthy, not only the student who is healthy and fit be able to enjoy life in true sense but will also be able to serve the society and thus the country.

Physical education programmers in school help students to enjoy physical activity by creating competitive as well as non- competitive environment that encourage individual development. Within such a supportive environment, student improves their fitness and basic motor skills, such as running, jumping, throwing etc. They also provide opportunities to take Part in variety of sports and games through which the student may develop the quality of cooperation **(Nisar, Dar& Ahmed, 2017)**.

Sport specific training is simply fitness and performance training designed specifically for athletic performance enhancement. Training programs for athletic performance enhancement could include such areas as strength, speed, power, endurance, flexibility, mobility, agility, mental preparedness (including goal setting), sleep, recovery/regeneration techniques and strategies, nutrition, rehabilitation, pre-habilitation, and injury risk reduction **(<https://www.hpconditioning.co.za/sport-specific-conditioning>)**.

A general program should include all of these components and a more specific program may only include a few, depending upon the athlete's specific needs (based on strengths, weaknesses and/or imbalances) and the demands of the sport they participate in **(<https://evolve-gym.com/2016/11/16/fitness-tip-11-what-is-sport-performance-specific-training>)**.

Wellness refers to diverse and interconnected dimensions of physical, mental, and social well-being that extend beyond the traditional definition of health. It includes choices and activities aimed at achieving physical vitality, mental alacrity, social satisfaction, a sense of accomplishment, and personal fulfilment **(Naci and Ioannidis, 2015)**.

Daily physical activity has the potential to improve health and well-being, yet worldwide surveillance of physical activity levels indicates a growing number of children and adolescents do not meet current physical activity recommendations. He has given the critical importance of primary prevention, transformational change in the current system for identifying and treating youth with exercise deficits is warranted **(Jakubowski, Faigenbaum, & Lindberg, 2015)**.

**Schott & Holfelder, (2019)** demonstrated that especially free-weight training has benefits in improving leg and triceps strength as well as in the subjective perception in older adults.

**Jarani, et al., (2016)** investigated the effects of two physical education programmes on health- and skill-related physical fitness of Albanian children. The results from this study show that exercise- and games-based PE represents a useful strategy for improving health- and skill-related physical fitness in Albanian elementary school children. In addition, the study shows that exercise-based PE was more effective than games-based PE in improving gross motor function and cardio-respiratory fitness.

Most work suggests that exercise and physical activity are associated with better quality of life and health outcomes. Therefore, assessment and promotion of exercise and physical activity may be beneficial in achieving desired benefits across several populations. Several limitations were noted, particularly in research involving randomized clinical trials. These trials tend to involve limited sample sizes with short follow-up periods, thus limiting the clinical implications of the benefits associated with physical activity **(Penedo & Dahn, 2005)**.

**Subrahmanyam & Šmahel, (2011)** suggested some of the different pathways by which the Internet might mediate well-being. Then, it examines the direct and indirect effects of technology on physical well-being. Some of the direct effects include the potential for physical injuries, physiological arousal; indirect effects include the relation between technology use and obesity and sleep patterns.

Many researcher observed that negligible studies have been conducted on ‘effect of physical activates on wellbeing’. No study so far has been conducted on General Wellbeing (Physical and School Wellbeing) of School Students. Hence, the researcher has thought it appropriate to undertake the present study with the help of few studies like studies on daily physical activity, Resistance training, physical education programmes etc.

The purpose of the study was to compare the adjusted Mean Scores of Physical Wellbeing and School Wellbeing of School Boys of Specific Training Group and Non-Specific Training Group by Taking Pre Physical Wellbeing as Co-variate. It was also hypothesized that There is no significant difference in the adjusted Mean Scores of Physical Wellbeing and School Wellbeing of School Boys of Specific Training Group and Non-Specific Training Group by Taking Pre-Physical Wellbeing as Covariate.

## 2. METHODOLOGY

### 2.1 Population and Sampling

Sixty (n=60) Secondary Schools male students age ranging from 12-14 years were identified as subjects from Sree. Amulakh Amichand International school, Wadala, Mumbai -31.

### 2.2 Research Design

The design of the experiment had been planned in three phase’s viz., Phase – I: Pre-test, Phase – II: Training or Treatment, and Phase – III: Post-test. The subjects in the experiment were divided into two groups one experimental group and one control group; each group consisted of 30 subjects. Experimental group was given Specific Training programme for the period of 8 weeks.

### 2.3 Selected Variables

Physical Wellbeing and School Wellbeing variable were selected for the purpose of Study.

### 2.4 Selection of Instrument

General Wellbeing Questionnaire developed and prepared by **Ashok K. Kalia and Anita Deswal (2011)** was used for the purpose of data collection.. The scale consisted of 55 items represented in four subscales: physical well-being, emotional well-being, social well-being, and school well-being. It is a self-reported five point scale included positive and negative items ranging from 'strongly disagree', 'disagree', 'undecided', 'agree', and 'strongly agree'.

### 2.5 Treatment:

The Resistance (Weight Training), Dance Aerobic and yoga intervention was imparted to the experimental group for one hours daily, alternate every day in a week except Sundays and holidays.

### 2.6 Training Schedule:

Week 1st and 2 <sup>nd</sup> (Intensity 50%)	Week 3 <sup>rd</sup> and 4 <sup>th</sup> (Intensity 60%)	Week 5 <sup>th</sup> and 6 <sup>th</sup> (Intensity 80%)	Week 7 <sup>th</sup> and 8 <sup>th</sup> (Intensity 50-60%)
Push-ups	Push-ups	Push-ups	Push-ups
Burpees	Burpees	Squats	Burpees
Jogging	Jogging	Jogging	Jogging
Brisk walking	Brisk walking	Skipping	Brisk walking
Climbing stairs	Climbing stairs	Climbing stairs	Climbing stairs
Stretching (neck-toe)	Stretching (neck-toe)	Stretching (neck-toe)	Stretching (neck-toe)

## 2.7 Statistical Techniques

Since, there were two groups for this experimental study viz. Experimental and Control group, wherein the researcher has decided to compare Mean Scores of selected Wellbeing Variable by taking Pre-Test as Covariate in order to see the effect of Specific Training intervention school boys age 12 to 14 years. One Way ANCOVA test was appropriately used for the data analysis.

## 3. RESULTS AND DISCUSSION

The objective was to compare adjusted mean scores of Physical Wellbeing of School boys of specific training Group and Non-Specific training Group by taking Pre-Physical Wellbeing as a Covariate. The data were analysed with the help of One Way ANCOVA test and results are given in Table 1.

**TABLE 1**  
**ANALYSIS OF COVARIANCE OF PHYSICAL WELLBEING BY TAKING PRE-PHYSICAL WELLBEING AS COVARIATE**

Source of variance	Sum of Square	df	Mean Squares	F-ratio
Between Groups	193.16	1	193.16	18.91
Within Groups	582.45	57	10.22	
Total	1658.60	59		

The adjusted F-value is 18.91 which is significant at 0.00 level with  $df=1/57$  when Pre-Physical Wellbeing was taken as covariate. It shows that adjusted mean scores of Physical Wellbeing of School boys of Specific training Group and Non-Specific training Group differ significantly when Pre-Physical Wellbeing was taken as Covariate. Thus, the Null Hypothesis that there is no significant difference in adjusted mean scores of Physical Wellbeing of School boys of Specific training Group and Non-Specific training Group by taking Pre-Physical Wellbeing as Covariate is rejected. Further the adjusted mean score of Physical Wellbeing of Yogic Practices Group is 44.51 which is significantly higher than that of Non-Yogic Practices Group where adjusted mean score of Physical Wellbeing is 40.88.

Therefore, it may be concluded that Specific training Group was found to be effective in improving Physical Wellbeing of School boys than Non-Specific training Group where Pre-Physical Wellbeing was taken as covariate.

The compare adjusted mean scores of School Wellbeing of School boys of specific training Group and Non-Specific training Group by taking Pre School Wellbeing as a Covariate. The data were analysed with the help of One Way ANCOVA test and results are given in Table 2.

**TABLE 2**  
**ANALYSIS OF COVARIANCE OF PHYSICAL WELLBEING BY TAKING PRE-SCHOOL WELLBEING AS COVARIATE**

Source of variance	Sum of Square	df	Mean Squares	F-ratio
Between Groups	1549.36	1	1549.36	68.73
Within Groups	1284.86	57	22.54	
Total	5304.18	59		

The adjusted F-value is 68.734 which is significant at 0.00 level with  $df=1/57$  when Pre School Wellbeing was taken as covariate. It shows that adjusted mean scores of School Wellbeing of School boys of Specific training Group and Non-Specific training Group differ significantly when Pre-School Wellbeing was taken as Covariate. Thus, the Null Hypothesis

that there is no significant difference in adjusted mean scores of School Wellbeing of School boys of Specific training group and Non-Specific training Group by taking Pre School Wellbeing as Covariate is rejected. Further the adjusted mean score of School Wellbeing of Specific training Group is 54.92 which is significantly higher than that of Non-Specific training Group where adjusted mean score of School Wellbeing is 44.31.

Therefore, It can be concluded that Specific training Group was found to be effective in improving School Wellbeing of School boys than Non-Specific training Group where Pre-School Wellbeing was taken as covariate.

#### **4. CONCLUSION**

Effect of eight weeks Specific training intervention had potential benefits to improve Physical Wellbeing and School Wellbeing of the Secondary Schools Boys age ranging from 12-14 years.

#### **5. ACKNOWLEDGEMENT**

The investigators are grateful to the students who willingly participated in this study. They are also thankful to the authorities of school who gave permission to conduct this experiment.

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## IMPROVEMENT OF SPEED ENDURANCE IN KABADDI PLAYERS ON DIFFERENT TRAINING METHODS

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### ABSTRACT

The present study was designed to evaluate the effect of circuit training and interval training on change of Speed endurance in men Kabaddi players in Kerala state. The investigator has to obtain a sample of selected 60 college men Kabaddi players in Kerala state for this study (two training group and one control group). The population would represent in all relevant aspects and methodology used in this research involves the choice of a specified group of subjects, selection of variable, administering of standard test, using of the relevant tool obtaining pre determined information in the certain chosen factors and subjecting them for a statistical analysis. The results of the study revealed that the speed endurance improved in experimental groups in comparison to control group after a 10 weeks training programme. The circuit and interval training had a positive correlation with the selected speed endurance variable of the college men Kabaddi players. There was also significant differences from pre and post mean score after adjusting pre test score on speed endurance of Kabaddi players.. The different training modalities had influence on speed endurance of college men Kabaddi players.

**Keywords:** Speed, Training, Fitness, Kabaddi, endurance, college men

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## 1. INTRODUCTION

Kabaddi is essentially an Indian game, which commands huge popularity in India as well as in its hinterland. In India, Kabaddi is popular in different names. In the southern parts of India, the game is referred to as Chedugudu or Hu-Tu-Tu. In eastern India, it is fondly called Hadudu (for men) and Kit-Kit (for women). The game is known as Kabaddi in northern India. Breath control, raid, dodging and movement of hand and feet are the basic skills that one has to acquire, in order to play Kabaddi. The player has to acquire power and learn both offensive and defensive skills to excel in the game, which combines the characteristics of rugby and wrestling. (<http://www.iloveindia.com/sports/kabaddi/history.html>)

In the modern times, Kabaddi was given the national status of a game in India in 1918. Consequently, a standard set of rules and regulations for the game were formulated in the same year. However, the rules and regulations were brought to print in 1923. During the same year, an All India Tournament for Kabaddi was organized at Baroda, wherein the players strictly followed the rules and regulations formulated for the game. Since then, the game has come a long way. Its popularity increased and a number of tournaments were organized at national level, throughout the country. In 1938 the game was introduced Indian Olympic Games held at Calcutta, which fetched it international recognition. (<http://www.iloveindia.com/sports/kabaddi/history.html>).

Fitness is the ability to live a full and balanced life. The totally fit person has a healthy and happy outlook towards life. Fitness is the young man's absolute necessity. It breeds self-reliance and keeps man mentally alert. Physical fitness is essential for human beings to adjust well with his environment as his mind and body are in complete harmony (Clarke and Clarke, 1989).

Physical Fitness is the capacity to carry out reasonably well various forms of physical activities without being unduly tired and includes qualities important to the individuals' health and well being. Physical fitness is an ability to carry out daily tasks with vigour and alertness, without undue fatigue and with ample energy to enjoy leisure time pursuits and to meet any unforeseen emergencies (Karthi and Krishnakanthan, 2014).

physical fitness is an important part of the normal growth and development of a child, a generic definition regarding the precise nature of physical fitness has not been universally accepted. Through research and scholarly inquiry, it is clear that the multi-dimensional characteristics of physical fitness can be divided into two areas: health related physical fitness and skill related physical fitness (Douglas and Alan, 1994)

Physical fitness is ability to perform daily task with energy and alertness without under fatigue and still enjoy leisure time pursuits and to meet the unpredicted Emergencies. Physical fitness is defined as a set of ability to carry out physical ability. Regular physical exercise is an important part to remain fit and healthy. It keeps us active in the long run and we also feel better. Exercise can help you to remove some diseases like diabetes, prevention of cancer and heart problems (Rao, 2010)

Circuit training was developed by R. E. Morgan and G. T. Anderson in 1953 at the University of Leeds in England (Sorani, 1966). The term circuit refers to a number of carefully selected exercises arranged consecutively. In the original format, 9 to 12 stations comprised the circuit. This number may vary according to the design of the program (Arjunan, 2015).

The last few decades has seen the introduction of interval training which has considerable influence on sports conditioning. Interval training involves alternating periods of work and rest during a training session. It is a program that varies the intensity within the training session by interspersing a workout of a higher intensity with a rest period of lower intensity; then another workout is completed, once again followed by a rest period, and so on through the workout (Bovas ,2020),.

Speed endurance is the ability to do sports movements with high speed under conditions of fatigue. Speed endurance is a combination of speed and abilities ( Kumar and Khokar, 2016). Speed endurance is the ability to cover maximum distance under the conditions of fatigue in a minimum possible time ( [https:// qforquestions. com/ training-in-sports](https://qforquestions.com/training-in-sports)).

## **2. METHODOLOGY**

### **2.1 Selection of Subjects**

The subjects for present study were 60 college male Kabaddi players between the age of 17–20 year of age from Kerala state. those who regularly participate in training and participating in competitions. All the subjects were randomly assigned to three groups (N=20), out of which two group were experimental and one group served as a control group.

### **2.2 Selection of Variable**

Based on review of available literature, the current research in the area and the feasibility criteria , the speed endurance variable was identified for the present study.

### **2.3 Criterion Measures**

The time taken to run for 600 meters distance was recorded in 1/10<sup>th</sup> of a second for the purpose of .Speed endurance of male Kabaddi Players .

### **2.4 Experimental Design**

An equated group design was used to evaluate the effect of different training modalities on speed endurance of college men Kabaddi plays. The selected subjects (N=60) were randomly divided into three groups with subjects in each group out of which experimental group-A underwent the circuit training. Experimental group B underwent interval training. Group-C (control group) participated in their regular game for 10 weeks. The training programme was carried out thrice in a week i.e. monday, wednesday and friday (Group-A)and tuesday, thursday and Saturday (Group-B). All subjects were treated before and after the entire training period in selected test conducted.

### **2.6 Administration of test**

After a short warm up period the subject takes a standing start position behind the starting line and the starter uses the commands, 'on your marks' and 'go' one trial was permitted. With the starting commands the subjects ran 600 meters as fast as they can. For this purpose digital electronic stopwatches were used. The time taken to run for 600 meters distance was recorded in 1/10<sup>th</sup> of a second.

### **2.7 Statistical techniques**

To evaluate the effect of different training modalities, Percentage analysis, Means, Standard deviation, F-test (ANOVA & ANCOVA), 't'-test and Coefficient of Correlation ( r ) .



**2.8 Test and Re-test Reliability Coefficient**

**TABLE 1  
TEST RE-TEST RELIABILITY COEFFICIENT**

S. No	Variable	Coefficient correlation
1	Speed endurance	0.94*

**2.8 Hypothesis:**

It was hypothesized that the circuit and interval training will have a positive correlation with variable- speed endurance

**3. RESULTS AND DISCUSSION**

In order to find out the effectiveness of the circuit training and interval training on selected physical variable such as speed endurance of college men Kabaddi players, the collected data were analyzed by using percentage analysis and data pertaining to this, has been presented in Table 2 to 6.

**TABLE 2  
LEVEL OF SPEED ENDURANCE OF COLLEGE MEN OF DIFFERENT GROUP KABADDI PLAYERS IN KERALA**

Test	Level	Control group -C		Experimental Group A		Experimental Group B	
		N	%	N	%	N	%
Pre-test	Low	5	25.0	5	25.0	5	25.0
	Average	7	35.0	8	40.0*	7	35.0
	High	8	40.0*	7	35.0	8	40.0*
Post-test	Low	4	20.0	3	15.0	1	5.0
	Average	9	45.0*	11	55.0*	16	80.0*
	High	7	35.0	6	30.0	3	15.0

\* indicates the level of speed endurance in 600 meter run

It is clear from the table 2 that in the post-test the level of speed endurance in 600 meter run of college men is higher in interval group (80%) than the control and circuit group. The mean and SD of pre-test and post-test scores of speed endurance among circuit training group, interval training group and control group, of college men Kabaddi players were computed and data has been presented in Table 3.

**TABLE 3  
DESCRIPTIVE STATISTICS OF PRE AND POST TEST SCORES OF SPEED ENDURANCE OF KABADDI PLAYERS**

S.NO.	Group	Test	Mean	Standard Deviation
1	Circuit Training	Pre-test	1.90	0.33
		Post-test	1.65	0.32
2	Interval Training	Pre-test	1.94	0.32
		Post-test	1.60	0.31
3	Control Group	Pre-test	1.96	0.31
		Post-test	1.91	0.32

The pre-test and post-test data of the experimental groups and the control were analyzed using analysis of co-variance-as the subject of the experimental and control groups were selected at

random and were not equated with reference to the parameters examined, therefore the difference between the initial means of the groups at the pre-test level had to be taken on to account during analysis of post-test difference between the means. To test the significance of obtained F-ratios, the level of significance was set at 0.05 level. The analysis of covariance on data obtained on speed endurance for two experimental and one control group been presented on table 4.

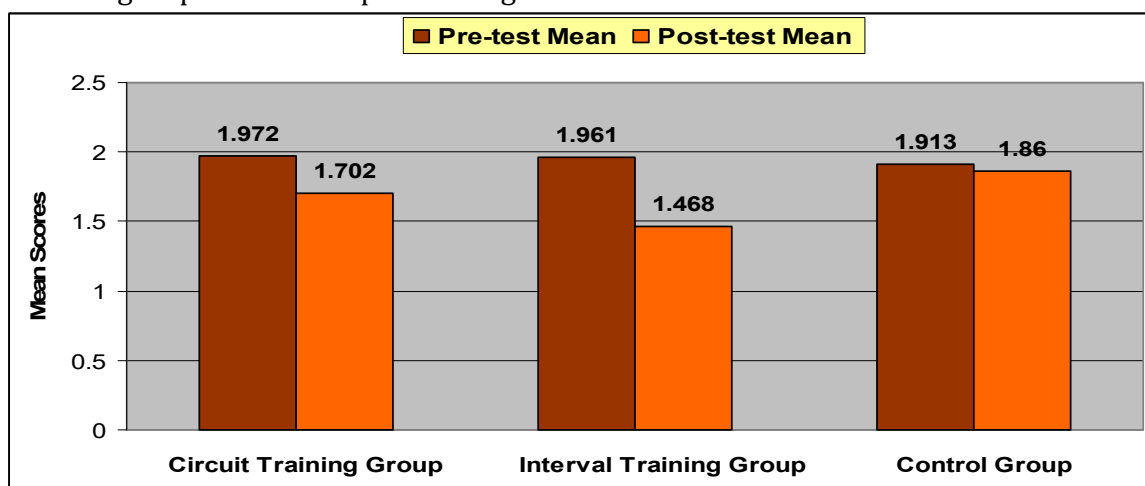
**TABLE 4**  
**ANALYSIS OF CO-VARIANCE FOR EXPERIMENTAL GROUPS AND CONTROL GROUP ON SPEED ENDURANCE**

Mean	Circuit Training Group	Interval Training Group	Control Group	Source of Variance	Sum of Square	df	Mean Squares	F-ratio
Pre-test	1.972	1.961	1.913	Between Group	0.039	2	0.019	0.198
				Within Group	5.601	57	0.098	
Post-test	1.702	1.468	1.860	Between Group	1.555	2	0.778	10.60*
				Within Group	4.181	57	0.073	
Adjusted Mean	1.683	1.456	1.878	Between Group	1.77	2	0.89	22.25*
				Within Group	2.04	56	0.04	

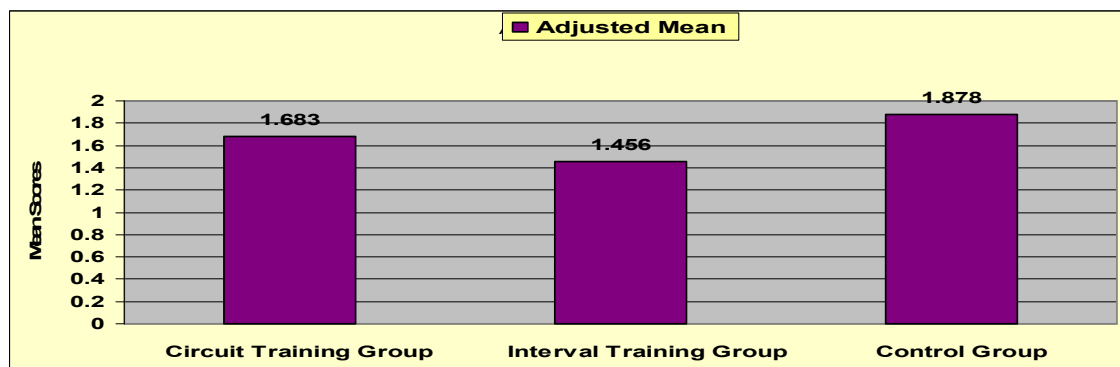
$F_{0.05}(2, 57) = 3.15$ ,  $F_{0.05}(2, 56) = 3.15$

The Finding concerning the pre mean score on speed endurance in table 3 indicated that the two experimental groups and control group did not differ significantly, as the obtained F-value of 0.198 was much less than the obtained  $F_{0.05}(2,57) = 3.15$ , indicating that different groups were more or less equal on speed endurance. An insignificant F-value of 10.60 for the post mean scores on speed endurance among the two experimental groups and control group indicated significant difference from the pre to post test means among the groups. In case of adjusted post means, the obtained F-value of 22.52 was higher than the required  $F_{0.05}(2,57) = 3.15$  at 0.05 level. This indicated that there was significant differences from pre and post mean score after adjusting pre test score on speed endurance of Kabaddi players. This means the different training modalities had influence on speed endurance of college male Kabaddi players.

The graphic presentation of pre-post test means and adjusted final means on experimental and control group has been depicted in figure 1 and 2.



**Figure 1 :- Pre and Post Mean Scores of Experimental Groups and Control Group on Speed Endurance**



**Figure 2 :- Adjusted Mean Scores of Experimental Groups and Control Group on Speed Endurance**

In order to find out the significance difference between pre-test and post-test means of experimental and control groups, the critical ratio of the pre-test and post-test scores were calculated. For this, the mean and standard deviation of the groups were calculated. The data and the result of the test of significance are given in Table 5

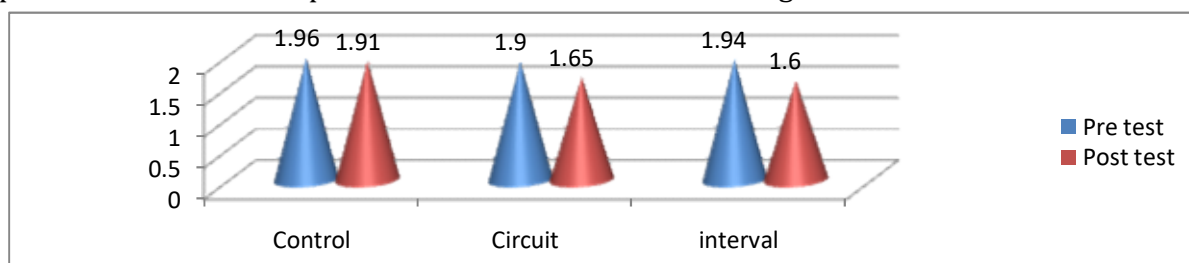
**TABLE 5  
COMPARISON OF PRE-TEST AND POST-TEST SCORES OF SPEED ENDURANCE IN 600 METER RUN AMONG THE CONTROL, CIRCUIT AND INTERVAL GROUP KABADDI PLAYERS**

Group	Test	Mean	S.D	r -Value	't' value	P -value
Control	Pre-test	1.96	0.31	0.96	2.51	0.02
	Post-test	1.91	0.32			
Circuit	Pre-test	1.90	0.33	0.84	6.02	0.00
	Post-test	1.65	0.32			
Interval	Pre-test	1.94	0.32	0.79	7.27	0.00
	Post-test	1.60	0.31			

Significant at .05 level

t.05 (38)=

It is clear from Table 5 that there was significant difference between pre-test and post-test scores of speed endurance among the control group, circuit and interval group of Kabaddi men players. From the mean value it is clear that all the groups seem to take more time in their pre-test to complete 600 meter run than that of post-test which reveals that they perform better in their post-test. This is illustrated in the figure 3



**Figure 3-Difference between pre-test and post-test scores of speed endurance in 600 meter run among the control, circuit and interval group Kabaddi players (based on time)**

From the figure it is found that the physical variable speed endurance improved on both experimental groups, in comparison to control group after a 10 weeks training programme and the interval training group showed significant improvement in speed performance than circuit training group.

In order to find out the correlation between circuit group and interval group in speed endurance in 600 meter run, the mean and standard deviation of the data were calculated and the correlation were computed to see whether there is any relationship between them. The result and correlation coefficient are shown in Table 6.

**TABLE 6**  
**COORELATION BETWEEN CIRCUIT GROUP AND INTERVAL GROUP IN SPEED ENDURANCE OF PRE-TEST AND POST-TEST**

Test	Group	N	Mean	S.D	r-value
Pre-test	Circuit Training V/S	20	1.90	0.33	0.96*
	Interval Training	20	1.94	0.32	
Post-test	Circuit Training V/S	20	1.65	0.32	0.98*
	Interval Training	20	1.60	0.31	

\*Significant at .05 level

As the r value of the table is positive, the proposed hypothesis i.e, the circuit and interval training will have a positive correlation with variable- speed endurance is accepted

#### 4. CONCLUSIONS

1. The speed endurance improved in experimental groups in comparison to control group after a 10 weeks training programme.
2. The circuit and interval training had a positive correlation with the selected speed endurance variable of the college men Kabaddi players.
3. There was significant differences from pre and post mean score after adjusting pre test score on speed endurance of Kabaddi players.
4. The different training modalities had influence on speed endurance of college men Kabaddi players.

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