**INDEX**



**ISSN 0975-5020**

# Editorial

Right to vote is your fundamental right and duty also towards our Nation. Whichever the political ideology you belong, it is duty of every citizen to vote and take this Election as one of the Sports where rules of Sports need to be followed without any grudges in mind after the election verdict is out all citizens do respect the ruling party coming in power and participate in nation building process in peace and harmony.

India is heading for LokSabha election 2019 this month - the world's largest democratic election exercise. Indian General Election dates 2019 schedule is out and the national election will be held in seven rounds from April 11 and the results will be announced on May 23. This general election will choose the 17th LokSabha. The members of the largest party or coalition will then choose the Prime Minister. Assembly polls will also be held simultaneously in Andhra Pradesh, Sikkim, Arunachal Pradesh and Odisha, which would make it the largest elections to be held across the country in decades. Andhra Pradesh assembly elections will be held on April 11, Sikkim Assembly elections and Arunachal Pradesh assembly elections will also take place on April 11. Odisha assembly elections will take place in four phases on April 11, April 11, 18, 23 and 29.

In this year's LokSabha election 2019, around 90 crore people are eligible to vote this time. The number is an increase of about 9 crore compared to last time. It is estimated that about 13 crore voters this time will be first-time voters. The actual number of people who do vote, however, is far less. Even though 2014 saw the highest turnout ever in independent India's history at 66.4 per cent, it meant a huge 27.3 crore people did not vote.

Two-thirds of Indians are under 35. With 430 million Indians owning a smartphone, half a billion using the Internet, 300 million using Facebook, 200 million sending messages on WhatsApp and 30 million users on Twitter, political parties and candidates will aggressively use new technology and social media to win the hearts and minds of young voters.

Holding elections in India, world's seventh largest nation by area and second most populous country is a complex process. The model code of conduct has already been put in place for this year's election where nearly 2,000 parties and over 8,000 candidates will be contesting elections for 543 seats. The model code of conduct is a set of guidelines that candidates, and political parties and governments must follow to keep elections fair.

Millions of poll workers, police and security personnel are deployed in cities, towns, villages and hamlets. They use planes, boats, trains, helicopters, elephants and camels and travel by foot to reach far flung voters, because every vote counts. Elections in India are nothing less than a "festival of democracy."

**ISSN 0975-5020**

# A New Invention of 360° TitaniUM Core Strength Exercise and Physical Performance

**Lim Boon Hooi:** Centre for Sports and Exercise Sciences, University of Malaya
**Teo Eng Wah:** Centre for Sports and Exercise Sciences, University of Malaya
**Nguyen Van Bac:** Faculty of Sport Science, Ton Duc Thang University, Vietnam
**Pham Thanh Anh Khoa:** Faculty of Sport Science, Ton Duc Thang University, Vietnam

**Abstract**

This paper described the location of Core Muscles in human body at the beginning. Core muscle strength is an important pre-requisite for all athletes. The core was described as an anatomical box consisting of 29 pairs of musclesforming a front (abdominals), back (paraspinals and gluteals), topand bottom (pelvic floor and hip girdle). The core represents the connection between lower and upper limbs and should be considered as a functional unit in which different muscles interact, even if not located in the thoraco-lumbar region (such as shoulders and pelvic muscles). Exercises involving the full body linkage such as plank exercises or Core Strength Training, have been advocated to enhance the capacity of transmitting force through the body linkage.It follows by describing the imperative segment of the body in regards to human movement. The core is defined as the limbo-pelvic hip complex and it is where our center of gravity is located and where the movements of the body originate.An efficient core allows for optimal acceleration, deceleration and stabilization of the entire kinetic chain during functional exercise. The core needs to be trained appropriately in order to efficiently distribute weight, absorb force, and transfer ground reaction forces during functional movements. The core muscles stabilize the spine and trunk during movements of lower and upper extremities such as jumping, running, and throwing. The contribution of Core Strength to the physical performance of athletes were discussed in the following section. Various methods of assessment werepresented to give the readerson assessment methods related to Core Strength Muscular Strength and Endurance. Final part of this paper is sharing the New Innovation & Registered Intellectual Property (IP) on Core Strength Exercise - **360° Core Strength TitaniUM Exercise.** It is anewsequence of exercise to strengthen the core region muscles, easy to remember with nospecific equipment needed to carry out thisexercise. Suitable for all athletes and non-athletes.

**Key words:** Core Strength, Physical Performance, 360° Core Strength TitaniUM Exercise

## Introduction

Core muscle strength is an important prerequisite for all athletes. The core was described as an anatomical box consisting of 29 pairs of muscles (Diagram 1&2) forming a front (abdominals), back (paraspinals and gluteals), top (diaphragm), and bottom (pelvic floor and hip girdle) (Richardson et al., 1999).

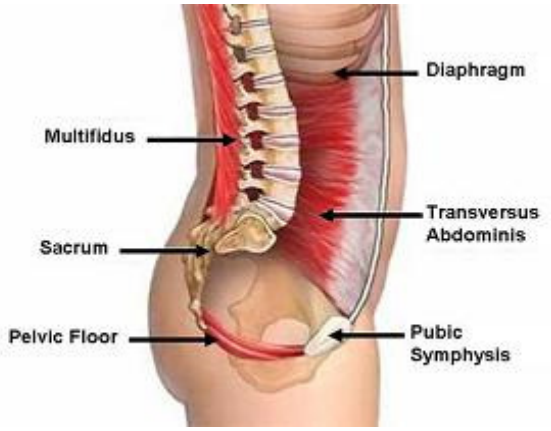



Diagram 1: Core Muscles

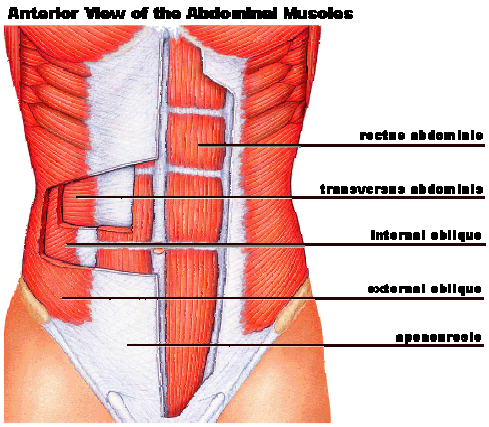



Diagram 2: Core Muscles

The core represents the connection between lower and upper limbs and should be considered as a functional unit in which different muscles interact, even if not located in the thoraco-lumbar region (such as shoulders and pelvic muscles). Exercises involving the full body linkage such as plank exercises or Core Strength Training, have been advocated to enhance the capacity of transmitting force through the body linkage (Schoenfeld et al., 2014).

The core is the most imperative segment of the body in regards to human movement. Most functional movements within the body originate at the core; therefore, most movements of the ankle and lower leg begin at the core. If the core is efficient, it may allow for optimal performance at all peripheral joints of the body, including the ankle mortise. (Delecluse, 1997). The core is defined as the limbo-pelvic hip complex. It is where our center of gravity is located and where the movements of the body originate. An efficient core allows for optimal acceleration, deceleration and stabilization of the entire kinetic chain during functional exercise. The core needs to be trained appropriately in order to efficiently distribute weight, absorb force, and transfer ground reaction forces during functional movements. The core muscles stabilize the spine and trunk during movements of lower and upper extremities such as jumping, running, and throwing.

The core musculature also has been described as both producing and preventing motion (Behm et al., 2010) and only preventing motion (Bergmark, 1989; Fredericson &Moore, 2005;McGill, 2010). Power is never generated by the core but rather in the hips and then transmitted through a stable or stiffened core (McGill, 2010). Optimal core stability is the ability to control the trunk to allow the greatest transfer of torque to the terminal segments (Kibler et al., 2006). Consequently, the ability to stabilize the anatomical core or preventing motion could have a significant influence on athletic performance by not bending and loosing propulsion, thus encouraging the transfer of torque to the extremities.

In recent years, core strength training is widely used in improving performance (Saeterbakken et al., 2011; Schilling et al., 2013; Stanton et al., 2004; Tse et al., 2005), reducing the risk of injuries in athletes, increasing physical fitness in healthy individuals (Sekendiz et al., 2010), and rehabilitation of patients with a low back pain (Marshall &Murphy, 2006).

**Core Strength and Physical Performance**

In the sports environment where training has focused on the potential connection between coremusculature conditioning and improved athletic performance(McGill, 2010; Hedrick, 2000).There is evidence to support the positive influence incorporating core exercises has on performance measures (Cosio-Lima et al., 2003; Sato &Mokha, 2009). Iacono et al. (2014) reported that static and dynamic balance of soccer players improved after a four-week Core Strength Training. Their training program consisted of exercises to prevent injuries in addition to soccer training five times per week.

Sandrey and Mitzel (2013) found that a 6-week core stabilization training resulted in significant gains at three directions of the Star Excursion Balance Test (SEBT) in high school track and field athletes. Lust et al. (2009) reported that a 6-week training program, including combined use of open and closed kinetic chain, plyometric, and core-stability exercises, improved core endurance in baseball athletes. Basset and Leach (2011) observed that an eight-week Core Strength Training program increased core endurance times compared to the control group in junior female elite gymnasts.

Another study investigated the relationship between isokinetic core strength and several performance tests using college baseball players (Clayton et al., 2011). The findings demonstrated a correlation between isokinetic core strength and the backwards overhead medicine ball throw which is arguably a valid test of total-body explosive power (Stockbrugger & Haennel, 2001). When considering the relationship the core may have with performance, core muscle strength was found to be of greater significance than endurance (Clayton et al., 2011).

Studies tested the effect of core stability training on performance measures requiring exercises to be performed on physioballs (Cosio- Lima et al., 2003; Parkhouse & Ball, 2011; Sato & Mokha, 2009; Stanton et al., 2004). Unstable static versus unstable dynamic core exercises were tried using university athletes (Parkhouse & Ball, 2011). The results demonstrated an increase in core muscle endurance and strength; however these benefits did not transfer to improved performance in jumping, sprinting, or the medicine ball throw.

Study from Stanton et al. ( 2004) found improved scores with the core stability test, but the training did not influence performance scores such as a treadmill Vo2max, running economy, or running posture. Another study (Sato & Mokha, 2009) attempted to find if core training influenced ground reaction forces, a star excursion balance test, and a 5000 m run test. There was a significant improvement in 5000 m times, but no other changes were found.

The Cosio-Lima et al. (2003) study used an untrained female population to compare curl-up and back extensor exercises performed on a physioball to the same done on the floor. The physioball trained group showed significant improvements in abdominal EMG activity and balance times compared to the floor exercise group. The authors of the studies finding significance in specific measures all suggested the results were attributed to benefits accrued through exercises on unstable surfaces by providing improved stability and proprioceptor activity in addition to possible benefits from higher training volumes.

There has been some previous research exploring the effects core training may have on performance (Cosio-Lima et al., 2003; Parkhouse &Ball, 2011; Sato &Mokha, 2009; Stanton et al., 2004;Tse et al., 2005;). College rowers were used (Tse et al., 2005) to study the effect of a core training protocol on core endurance and performance measures (overhead medicine ball throw, vertical jump, broad jump, shuttle run, 2000 m maximal rowing ergometer test). The core training demanded participants to use the “hollowing” technique in

conjunction with specific core exercises. No increase was noted, questioning the significance of the hollowing technique on functional performance, which included an explosive power test.

Several previous studies investigated the relationship between core muscle endurance and performance tests (Clayton et al., 2011; Nesser & Lee, 2009; Nesser et al., 2008; Okada et al., 2011). When exploring division I football players (Nesser et al., 2008) and female soccer players (Nesser & Lee, 2009) the relationships between core muscle endurance and performance were not strong. These results put into question the specificity of muscle endurance tests with performance measures of quick, explosive movements requiring muscle strength and power.

Schilling et al. (2013) showed that core strength and endurance training program two times per week for six weeks led to significant enhancements in 3 different core endurance tests (back extensor endurance, flexor endurance, and lateral musculature endurance) in ten untrained college students. But, there were no improvements in their agility, sprint, and vertical jump performances. They suggested that strength training may not be the only contributor to these performance markers. They stated that agility type exercises should be added to strength training programs and longer training programs might be needed for significant improvements.

**Assessment of Core Strength**

Currently, assessments are performed by means of various methods and no consensus has been reached regarding the optimal test to be used. Most of the time, assessment of trunk extensors has been performed by means of maximum effort tests;however, alternatives to maximum effort tests have also been developed.

Static tests (Figure 1 & 2; Demoulin et al., 2006b).

Figure 1

Figure 2

Dynamic tests (Figure 3; Udermann et al., 2003)

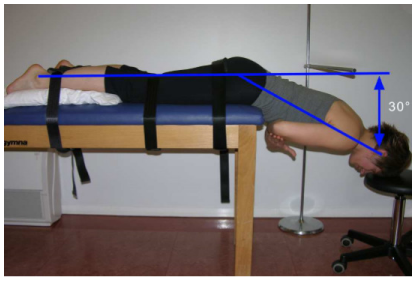



Figure 3

Static strength test (Figure 4a, b, c; Durmus et al., 2009)

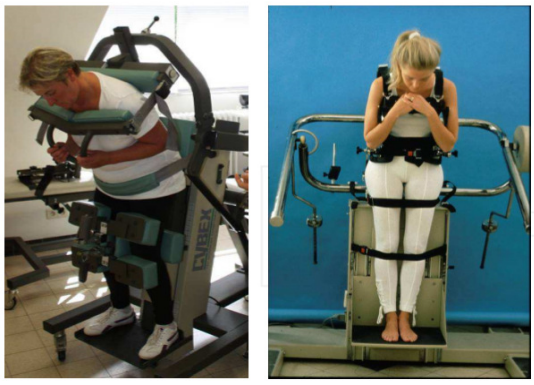
a) b) c)

Fig. 4. a) Hand-held dynamometer, b) "Pulling test" in standing position, c) "Pulling test" in prone position

Specialized and commercialized equipment (Figure 5)

Fig. 5. MedX™, David® and Tergumed® dynamometers, respectively

Isoinertial measurements (Figure 6a, b)



a) b)

ISSN 0975-5020

**New Innovation &Registered Intellectual Property (IP) on Core Strength Exercise - 360° Core Strength TitaniUM Exercise**

Intellectual property is a catchall term for a bucket of legal concepts, all directed toward a business's intangible assets. IP includes:

- Patents that protect new and useful inventions,
- Copyrights that protect creative expressions (what media companies call "content"), and
- Trademarks that protect brands and consumer goodwill.

The advent of a worthwhile, original invention is a rare occurrence. Often materializing from out of nowhere, ideas for new products appear after long brainstorming sessions or as simple, spontaneous revelations. At times obvious in a "why didn't I think of this" kind of way and for others as a bit more complex, a good invention always contributes to some sort of advancement. Whether it is a solution to a particular problem or an enhancement to an existing product that better maintains a person's quality of life, every inventive development serves its own significant purpose. At such, I and my partner invented the 360° Core Strength TitaniUM Exercise and registered Patent with IP.

360° TitaniUM Core Strength Exercise® (Figure 7) is a newsequence of exercise to strengthen the coreregion muscles. It is easy to remember with nospecific equipment needed to carry out thisexercise. It is suitable for all athletes and non-athletes.The structured sequence of exerciseswould enable the practitioners to experiencegreater efficiency of movement; improvedbody control and balance; increased poweroutput from both the core musculature andperipheral muscles such as the shoulders,arms and legs; reduced risk of injury (the coremuscles act as shock absorbers for jumpsand rebounds etc.); improved balanceand stability; and improved overall athleticperformance.


Figure 7

**References**

1. Basset, S.H., Leach, L.L., 2011. The effect of an eight-weektraining programme on core stability in junior female elitegymnasts. Afr. J. Phys. Hlth. Educ. 9e19.
2. Behm, D.G., Drinkwater, E.J., Willardson, J.M., Cowley, P.M.,2010. The use of instability to train the core in athletic andnonathletic conditioning. Applied Physiology, Nutrition, andMetabolism 35, 91e108.
3. Bergmark, A., 1989. Stability of the lumbar spine: a study inmechanical engineering. ACTA Orthopaedica Scandinavica 230,1e54.

4. Clayton, M.A., Trudo, C.E., Laubach, L.L., Linderman, J.K.,DeMarco, G.M., Barr, S., 2011. Relationships between isokineticcore strength and field based athletic performance tests in malecollegiate baseball players. Journal of Exercise Physiologyonline14, 20e30.
5. Cosio-Lima, L.M., Reynolds, K.L., Winter, C., Paolone, V.,Jones, M.T., 2003. Effects of physioball and conventional floorexercises on early phase adaptations in back and abdominalcore stability and balance in women. Journal of Strength andConditioning Research 17, 721e725.
6. Delecluse, C., 1997, Influence of strength training onsprint running performance. Sports Medicine24 (3): 147-56.
7. Demoulin, C.; Grosdent, S.; Bury, T.; Croisier, J.-L.; Maquet, D.; Lehance, C.; Crielaard, J.M.& Vanderthommen, M., 2009. Cardiovascular responses to static assessments oftrunk muscles. *Journal of Musculoskeletal Pain,* Vol.17, No.4, pp. 378-389.
8. Durmus, D.; Akyol, Y.; Alayli, G.; Tander, B.; Zahiroglu, Y. & Canturk, F. (2009). Effects ofelectrical stimulation program on trunk muscle strength, functional capacity,quality of life, and depression in the patients with low back pain: a randomizedcontrolled trial. *Rheumatology International,* Vol.29, No.8, pp. 947-954.
9. Fredericson, M., Moore, T., 2005. Muscular balance, core stability,and injury prevention for middle- and long-distance runners.Physical Medicine and Rehabilitation Clinics of North America16, 669e689.
10. Hedrick, A., 2000. Training the trunk for improved athleticperformance. Strength and Conditioning Journal 22, 50e61.
11. Iacono, A.D., Martone, D., Alfieri, A., Ayalon, M., Buano, P., 2014.Core stability training effects on static and dynamic balanceabilities. Gazzetta Medica Ital. 173, 197e206.
12. Kibler, W.B., Press, J., Sciascia, A., 2006. The role of core stabilityin athletic function. Sports Medicine 36, 189e198.
13. Lust, K.R., Sandrey, M.A., Bulger, S.M., Wilder, N., 2009. The effectsof 6-week training programs on throwing accuracy, proprioception,and core endurance in baseball. J. Sport Rehabil.18 (3), 407.
14. Marshall, P.W., Murphy, B.A., 2006. Evaluation of functional andneuromuscular changes after exercise rehabilitation for lowback pain using a Swiss ball: a pilot study. J. Manip. Physiol.Ther. 29 (7), 550e560.
15. McGill, S., 2010. Core training: evidence translating to betterperformance and injury prevention. Strength and ConditioningJournal 32, 33e46.
16. Nesser, T.W., Lee, W.L., 2009. The relationship between corestrength and performance in division I female soccer players.Journal of Strength and Conditioning Research 12, 21e28.
17. Nesser, T.W., Huxel, K.C., Tincher, J.L., Okada, T., 2008. Therelationship between core stability and performance in divisionI football players. Journal of Strength and ConditioningResearch 22, 1750e1754.
18. Okada, T., Huxel, K.C., Nesser, T.W., 2011. Relationship betweencore stability, functional movement, and performance. Journalof Strength and Conditioning Research 25, 252e261.
19. Parkhouse, K.L., Ball, N., 2011. Influence of dynamic versusstatic core exercises on performance in field based fitnesstests. Journal of Bodywork & Movement Therapies 15,517e524.

20. Richardson, C., Jull, G., Hodges, P., Hides, J., 1999. TherapeuticExercise for Spinal Stabilization and Low Back Pain: ScientificBasis and Clinical Approach. Churchill Livingstone, Edinburgh,Scotland.
21. Saeterbakken, A.H., Van den Tillaar, R., Seiler, S., 2011. Effect ofcore stability training on throwing velocity in female handballplayers. J. Strength Cond. Res. 25 (3), 712e718.
22. Sandrey, M.A., Mitzel, J.G., 2013. Improvement in dynamic balanceand core endurance after a 6-week core-stability-training programin high school track and field athletes. J. Sport Rehabil. 22(4), 264e271.
23. Sato, R., Mokha, M., 2009. Does core strength training influence running kinetics, lower-extremity stability, and 5000-m performance in runners? Journal of Strength and Conditioning Research 23, 133e140.
24. Schilling, J.F., Murphy, J.C., Bonney, J.R., Thich, J.L., 2013. Effectof core strength and endurance training on performance incollege students: randomized pilot study. J. Bodyw. Mov. Ther.17 (3), 278e290.
25. Schoenfeld BJ, Contreras B, Tiryaki-Sonmez G, Willardson JM, Fontana F., 2014. An electromyographiccomparison of a modified version of the plank with a long lever and posterior tilt versus thetraditional plank exercise. *Sports Biomech*, 13: 296-306.
26. Sekendiz, B., Cug, M., Korkusuz, F., 2010. Effects of Swiss-ball corestrength training on strength, endurance, flexibility, and balancein sedentary women. J. Strength Cond. Res. 24 (11),3032e3040.
27. Stanton, R., Reaburn, P.R., Humphries, B., 2004. The effect ofshort-term swiss ball training on core stability and runningeconomy. Journal of Strength and Conditioning Research 18,522e528.
28. Stockbrugger, B.A., Haennel, R.G., 2001. Validity and reliability ofa medicine ball explosive power test. Journal of Strength andConditioning Research 15, 431e438.
29. Tse, M.A., McManus, A.M., Masters, R.S., 2005. Development andvalidation of a core endurance intervention program: implicationsfor performance in college-age rowers. J. Strength Cond.Res. 19 (3), 547e552.
30. Udermann, B.E.; Graves, J.E.; Donelson, R.G.; Ploutz-Snyder, L.; Boucher, J.P. & Iriso, J.H., 1999. Pelvic restraint effect on lumbar gluteal and hamstring muscleelectromyographic activation. *Archives of Physical Medicine and Rehabilitation,* Vol.80,No.4, pp. 428-431.

* * *

# Preferences of Varsity Female Basketball Coach's Leadership Behaviours and Gender: A Cross-Cultural Comparative Study between Malaysia and Iran

**Bita Sobhanzadeh :** Centre for Sport and Exercise Sciences, University of Malaya, Malaysia
**Lim Boon Hooi :** Centre for Sport and Exercise Sciences, University of Malaya, Malaysia
**Goh Yee Suang :** Department of Students Affairs, Tunku Abdul Rahman University College, Malaysia
**Nguyen Van Bac :** Faculty of Sport Science, Ton Duc Thang University, Vietnam
**Pham Thanh Anh Khoa :** Faculty of Sport Science, Ton Duc Thang University, Vietnam

**Abstract:**

The main purpose of this study was to examine and compare the varsity female basketball student-athletes' preferences for coach's leadership behaviours and coach's gender between Malaysia and Iran. A total of 112 varsity female basketball student-athletes were recruited randomly from four universities in MASUM Games and five universities in IUSF Games in Iran.A demographic form and the Revised Leadership Scale for Sport (RLSS: Zhang et al., 1997) were employed in the current study. The RLSS measured the preferences of coach's leadership behaviours by their athletes and has a total of 60 items, measuring six sub-scales. Descriptive statistics on all six sub-scales of RLSS Questionnaire between Malaysia and Iran indicated that varsity female basketball student-athletes preferred Democratic Behaviour (Malaysia: M= 48.31±5.85; Iran: M= 50.50±6.12) from their coaches as highest level. Mean scores of the five sub-scales in RLSS were higher for Iranian athletes, exception the Situational Consideration that revealed lower scores (Malaysia: M= 43.21±2.95; Iran: M= 41.16±4.15). Results of MANOVA indicated that there were significant differences [F (6, 105) = 12.61, P < 0.05; Wilks' Lambda = 0.58]for coach's leadership behaviours by their athlete between Malaysia and Iran. Iranian varsity female basketball student-athletes had significant higher preference scores in Positive Feedback[F (1, 110) =17.59, P < 0.05], Training & Instruction [F (1, 110) =13.37, P < 0.05], and Social Support[F (1,110) = 17.28, P < 0.05] than Malaysian athletes while Malaysian varsity female basketball student-athleteshad higher significant differences for Situational Consideration[F (1, 110) =7.89, P < 0.05]. Chi-Square statistic with two-by-two tables was computed between two countries Malaysia and Iran for preferred coach's gender (male or female coach) found that there were no significant differences [$x^2$ (112) = 0.044, P > 0.05] between the subjects who preferred male coaches and female coaches. Results indicated that overall 67.9% of subjects exhibited a preference for male coaches. A coach can use the information from this study to create an environment most fitting to the needs of the athlete based on their nationality. It indicated that differences in individuals from different environments are the result of continual exposure to different types of stimuli imposed by their respective environments. In accord with Endler (1981), there are countries that have different cultures and these produce varying leadership styles. Since, these findings exhibited that Iranian varsity female basketball student-athletes preferred different coaching styles in comparison with Malaysia and both country had a preference for a male coach, it suggests that coaches be aware of their athletes' preferences of leadership behaviour and also using various coaching methods according to the female athletes' needs and cultural differences that may force significant changes to their normal coaching.

**ISSN 0975-5020**

**Keywords:** Preferred leadership behaviour, preferred coach's gender, cross cultural

## 1. Introduction

The effective coach can lead to individual and team success (Jacob, 2006; McClain, 2006). The Multidimensional Model of Leadership (MML: Chelladurai & Carron, 1978) was utilized as a sport-specific theoretical framework for this study in an athletic environment. The nature of this theory is "situational characteristics have an influence on the coach's behaviour and, in turn, the coach's behaviour has consequences for athlete satisfaction and team performance" (p.35). It will be important for coaches that be effective in their roles and understand player's needs and wants to improve athlete's satisfaction. And as a satisfied athlete also attempt to increase performance (Howard, 2005). Otherwise, lack of a positive team atmosphere and stress environment will effect on performance (Howard, 2005; Reimer& Chelladurai, 1995). Also lack of compatible coaching style when the athletes wish another manner may make an unsatisfied athlete and athlete abandons the sport (McClain, 2006; Molinero et al., 2006;Wilson, 2007). To achieve enhancement in athletic performance and satisfaction, it might be the necessity for a coach to commit in coaching behaviours to which the athlete is interested (Sherman et al., 2000).

A cross cultural study on leadership behaviour is exploring, shortly expanding, and explaining differences in behaviours between countries and cultures. According to the House et al. (2004) researchers emphasize the powerful relationship between cultural values and concepts of leadership like an effective leader. The group of researchers explained that leadership behaviour is different from culture to culture because of the dissimilarity in cultures as well (Lok & Crawford, 2004). Koopman et al. (1999) found that "preferred leadership behaviour varies by culture" (p. 514). Therefore, it can be assumed that the variation in leadership style preferences are influences from cultures' variations would lead to differences in outcomes (Limsila & Ogunlana, 2008). Culture can be considered as situational factor (Chelladurai & Saleh, 1978) affecting leader behaviour. According to Chelladurai & Saleh (2007) it can be noted that preferred leader behavior is affected by situational characteristics such as the type of sport (closed-skill sport or open-skilled sport), level of player's independence (interdependent sport or independent sport), degree of task attributes (task-variability or task-interdependence), the nature of the group, and cultural background (the athletes' nationality, ethnicity etc.). Hence, coaches can improve athletic performance and satisfaction if they become aware of the coaching preferences of their athletes. Also, according to Chelladurai & Carron (1978) that if the preferred leadership behaviour is applied the athletes have a propensity to do better in their sport as a response to the leadership used on them.

Malaysia in the South-East Asian as Islamic Country and Iran also is an Islamic Republic and located in the Middle East. Despite Malaysia is the country has a multi-racial population and as a secular State with Islam as the official religion and the fact that most of the female athletes in this country have experienced playing for coaches of both genders but Iran is an Islamic country that sporting structures hasbuilt in Islamic requirements. For example in Iran, sex segregation in sport is compulsory while, Malaysia is entirely different from Iran. In Malaysia, female athletes can play along with male athletes or watch the mixed competitions in stadiums. They can select their coach freely and legally if they are interested male coaches or female coaches, whereas female athletes in Iran are not allowed to participate

or see contests of each other. It may be the sake of religiosity, superstitions, and traditional opinion or legislation that female athletes cannot choose the opposite gender coaches lawfully as legislation has banned it in Iran. As female athletes in Iran not even have a same condition and gender equity of coaching style than Malaysian athletes, it will be remarkable comparing between these two countries for their preferences of leadership behaviour that if athletes with different nationality require different or similar types of coaching styles and prefer a male or female coach. The working on cross-cultural settings will prove to be a beneficial reference for the field of Sport Psychology. Malaysia and Iran both are an Asian country and almost plenty of people have a main religion is called Islam, and sport freedom is different between two countries and also there are no published the psychological investigations for Malaysian and Iranian female athletes, the authors was interested to search preferences of coaching and coach's gender among varsity female basketball student-athletes between Malaysia and Iran. Comparative studies between Malaysia and other countries rarely have done.

Years of research have shown that a coach for female athletes in university-level has to play a stronger and positive role than male athletes. Collegiate coaches have very high responsibilities and not only should be coach, also act as a teacher, parent, or counsellor (Short & Short, 2005). Then experiences of collegiate coaches must share and support female athletes (Short & Short, 2005). This is the responsibility of coaches to understand how they should work with the population female athletes. Two psychologically characteristics of female athletes are include question their own abilities and have a lower threshold for adapting frustration when not reaching their goals (Miller et al., 2008). Athletes expect motivated coaches with the purpose of have a positive effect on performance. To reach this aim, coaches must have a comprehensive understanding of the female athlete. An understanding of the physical, emotional, social and mental needs of their athletes can aid coaches in getting their athletes to perform more effectively (Miller et al., 2008).

Before 1972, women were made to believe that athletic completion could harm them physically and psychologically and diminish their femininity. Title IX is the 1972 amendment which was created to prohibit discrimination against women in educational institutions and sports on the basis of sex, receiving federal funds, as participation in, and guarantee girls and women the same opportunities as boys and men (Porto, 2008). The increase in participation of female athletes and sports that has occurred since Title IX, there has been a decrease in the number of female coaches over these years (Freeman, 2001). 90% of collegiate teams in 1972 were coached by females while in 1990 only 47.3% of teams were coached by women (Acosta & Carpenter, 1991). As male coach may not be able to fully understand the internal motives of female athletic and as well female athletes may be motivated by different stimuli (Griffin, 2009; Gill, 1992), it would be valuable realizing preference of coach's gender. Since male outnumber female in coaching and administrative positions that would lead the female student-athletes prefer male coaches (Mawson et al., 2006;Swaton, 2010). Many men were hired as administrators and head coaches. Males have traditionally been viewed as the realm owners of sport, (Carpenter& Acosta, 2004; Rhode & Kellerman, 2007; Wilson, 2007). According to Whisenant et al. (2005) that shortage of women in coaching and leadership positions could have been the result of the fundamental belief relating manliness with adeptness in sport and the predominance of males with leadership. The qualifications and the number of positions, as well as the conditions of coaching differ between countries. One may conclude that the profession of coaching at a high level across cultures still seems to be very male-dominated (Fasting & Pfister, 2000).

A few research's studies have done to compare leadership preference by culture (Bolkiah & Terry, 2001; Chelladurai, et al., 1987; Chelladurai, et al., 1988; Numata, 2011). When making decision to investigate preferences of coaching behavior and coach's gender, culture may be one of the most important factors and noticeable value in the coaching process to consider (Numata, 2011). As coaches and their coaching styles are popular issues to study, researchershave investigated preferences for the leadership behaviours and coach's gender, but conducting on a female-only population is rare, while research regarding male athletes is plentiful, (Beam et al., 2004; McClain, 2006). The results of this research on the varsity female basketball student-athletes to compare two different nationalities between Malaysia and Iran addresses the gap identified in this field of work that would be novel.

**2. Methods**

2*.1. Sample*

The sample size included one hundred and twelve (112) individuals were randomly chosen from thenine universitiesin Malaysia and Iran. Malaysian University Sports Council (MASUM) organized the MASUM Games in Malaysia that Basketball is one of MASUM gamesand the Iran University Sports Federation (IUSF) also structured the IUSF sports to compete.

*2.2. Instrumentation*

The varsity female basketball student-athletes' asked to complete demographical information for initial section of the instrument such as age; nationality; name of university, and a special question regarding preference in coach's gender based on selecting male coach or female coach. In the second part of the questionnaire, the Revised Leadership Scale for Sport (RLSS: Zhang et al., 1997) was used in present study. It measured the preferences of coach's leadership behaviours by their athletes. The RLSS has a total of 60 items, measuring six sub-scales: decision style factors comprise Democratic Behavior (DB) 12 items, and Autocratic Behavior (AB) 8 items; motivational factors consist of Social Support (SS) 8 items, and Positive Feedback (PF) 12 items; a direct task factor includes Training and Instruction (TI) 10 items; and a situational factor known as Situational Consideration (SC) 10 items. The RLSS is scored on a 5-point Likert scale (always with 5 points, often with 4 points, occasionally with 3 points, seldom with 2 points, and never with 1 point).

*2.3. Procedures*

An approval was obtained from the tournament administrator of both countries competitions. After confirming approval, a program was scheduled for the researcher to meet the varsity female basketball student-athletes prior to competition or at the end of the game. Initial state was started in Esfahan central city of Iran during the competition season 2010-2011 from female basketball championship of Isfahan's fourth region universities that participants were briefed on the nature and purpose of study and then filled out questionnaire during this period. The varsity female basketball student-athletes in Malaysia also asked to complete a questionnaire indicating their preferences of their coach's leadership behaviours during MASUM games 2011-2012. The completion of questionnaires takes approximately 10-15 minutes.

*2.4. Internal Consistency and Reliability*

The questionnaire was translated into Persian Language for data collection in Iran. The questionnaire was translated back to English by an independent translator to ensure that it was correctly translated while Malaysian athletes were able to complete questionnaires with original version that was English. Analysis of the leader behaviour sub-scale over the

preferred version (female student-athlete preference) revealed acceptable overall internal consistency for six sub-scales. The ranges of alpha coefficients for five sub-scales were found to be acceptable levels of internal consistency (PF: α= 0.91; DB: α= 0.88; TI: α= 0.94; SC: α= 0.86, and SS: α= 0.92; AB: α= 0.64 in Malaysia; PF: α= 0.70; DB: α= 0.84; TI: α= 0.86; SC: α= 0.86, and SS: α= 0.73; AB: α= 0.59 in Iran). As the results supported previous researches, then the MML can be tested with acceptable reliability.

**3. Results**

The participants were 112 the varsity female basketball student-athletes in Malaysia and Iran aged 18 to 26 years (Mean Age: M = 21.5, SD = 1.95). Through the participations, Malaysian (N=42) consisted of 37.5%, and Iranian (N=70) were 62.5%.

The descriptive statistics for six leadership sub-scales provided that show Mean and Standard Deviation. Multivariate of Analysis of Variance (MANOVA) were computed to indicate if there were significant differences between varsity female basketballstudent-athletes' preferences for six sub-scales of coach's leadership behaviors between Malaysia and Iran.

Table 1: Descriptive Statistics & Differences for Six Sub-scales of Leadership Behavior between Malaysia and Iran

| **Behavioural Sub-Scales** | **Country** | | | | **df** | **F** | **Sig** |
|---|---|---|---|---|---|---|---|
| | **Malaysia** | | **Iran** | | | | |
| | **M** | **SD** | **M** | **SD** | | | |
| Positive Feedback (PF) | 41.98 | 6.76 | 47.90 | 7.51 | 1, 110 | 17.59 | 0.001 |
| Democratic Behaviour (DB) | 48.31 | 7.85 | 50.50 | 6.12 | 1, 110 | 2.71 | 0. 102 |
| Training& Instruction (TI) | 37.93 | 7.10 | 41.94 | 4.53 | 1, 110 | 13.37 | 0.001 |
| Situational Consideration (SC) | 43.21 | 2.95 | 41.16 | 4.16 | 1, 110 | 7.89 | 0.006 |
| Social Support (SS) | 29.90 | 3.63 | 32.63 | 3.19 | 1, 110 | 17.28 | 0.001 |
| Autocratic Behaviour (AB) | 20.79 | 5.70 | 20.83 | 2.65 | 1, 110 | 0.003 | 0.957 |

Table 1 indicated that subjects preferred that their coaches have high DB, while the AB was the lowest value. All preference scores for varsity female basketball student-athletes in Iran were higher than Malaysian basketball scores exception SC. The Malaysian athletes rated respectively: DB, SC, PF, TI, SS, and then AB while Iranian athletes scored correspondingly: DB, PF, TI, SC, SS, and at the end AB. It indicated in the same manner be revealed concerning the athlete's preference for DB, SS, and AB for both the Malaysian and Iranian athletes.

Results of MANOVA analysis indicated that there were significant differences [F (6, 105) = 12.614, P < 0.05; Wilks' Lambda = 0.581] in the preference of coaching style between Malaysia and Iran. The findings of MANOVA indicated a significant difference among varsity female basketball student-athletes that preferred significantly more Positive Feedback [F (1, 110) =17.59, P < 0.05], Training & Instruction [F (1, 110) =13.37, P < 0.05], Social Support [F (1,110) = 17.28, P < 0.05], and Situational Consideration [F (1, 110) =7.89, P < 0.05]. Iranian varsity female basketball student-athletes had significant higher preference scores in PF, TI, and SS than Malaysian athletes while Malaysian varsity female basketball student-athleteshad higher significant differences for SC.

The table 2 indicates Frequencies and Percentage by distributions of preferred coach's gender between two different nationalities.Chi-Square statistic with two-by-two tables was computed preferred coach's gender (male or female coach) by subjects between Malaysian and Iranian varsity female basketball student-athletes. The following data was collected by

Chi-Square coefficients.

Table 2: Distributions of Preference in Coach's Gender between Malaysia and Iran

| Country | Preferred Coach's Gender | | | |
|---|---|---|---|---|
| | Female | | Male | |
| | N | % | N | % |
| Malaysia | 13 | 31 | 29 | 69 |
| Iran | 23 | 32.9 | 47 | 67.1 |
| Total | 36 | 32.1 | 76 | 67.9 |

The table 2 demonstrate that 69% Malaysian varsity female basketball student-athletes versus 67.1% Iranian varsity female basketball student-athletes preferred to have male coaches. On the contrary, 31% Malaysian varsity female basketball student-athletes preferred to choose female coaches in comparison with 32.9% Iranian varsity female basketball student-athletes. As regards *percent*of varsity female basketball student-athletesreported the number of person that selected male coaches were higher than female coaches but, this study found no significant differences [$x^2$ (112) = 0.044, P > 0.05] among the participants who preferred male coaches and those who preferred female coaches between Malaysia and Iran. 67.9% of participants exhibited a preference for coach's gender that preferred male coaches.

**4. Discussion & Conclusion**

The discussion was organized according to the differences and descriptive statistics between Malaysian and Iranian varsity female basketball student-athletes' preferences for coach leadership behaviour and coach's gender.

Generally, the findings of MANOVA analysis that there were significant differences [F (6, 105) = 12.614, P < 0.05; Wilks' Lambda = 0.581] in the preference of coaching style between Malaysia and Iran. Although all previous studies have investigated on both gender, not only for female and also by using Leadership Scale for Sport (LSS) on just five sub-scales of leadership behaviour.

The current findings contradicted with Terry (1984) that published investigation of cross-cultural variations in coaching preferences and found no differences in preferred coaching behaviour among different nationalities. He noted that the three viable subject groups (Great Britain, Canada and the United States) all share similar cultural backgrounds and sporting ideologies. The present results confirmed studies of Chelladurai et al. (1987, 1988, and 1993); Bolkiah & Terry (2001); and Numata (2011) that have compared more disparate cultural settings and have shown significant cross-cultural variability. Chelladurai et al. (1987) also studied the differences between Japanese and Canadian physical education students in their perceptions and preferences for specific coaching behaviour. Their findings conclude that cultural background had an effect on leadership behaviour preferences.Chelladurai et al. 1988, again studied leadership in a cross-national setting and found differences in leadership behaviour and satisfaction among Canadian and Japanese athletes that arose from cultural differences. Chelladurai (1993) reported some differences in leadership preference by culture between Finland and Korea. Numata (2011) also indicated that 101 student-athletes from Tokyo Gakugei University, There were significance differences between the American athletes in comparison with Japanese athletes' means that were higher than the American athletes. The other study on the northern part of Borneo as a Malay Islamic state (Bolkiah &Terry, 2001) comprised 159 the national sport team's athletes and 220 athletes from university teams in the London area. There was significant difference for culture that Bruneian athletes preferred more Training & Instruction, Democratic Behaviour, and

Social Support than their British counterparts.

The current study demonstrated that subjects preferred that their coaches have high DB, while the AB was the lowest value. All preference scores for varsity female basketball student-athletes in Iran were higher than Malaysian basketball scores exception SC. The Malaysian athletes rated respectively: DB, PF, TI, SC, SS, and then AB while Iranian athletes scored correspondingly: DB, SC, PF, TI, SS, and at the end AB.

As the current findings revealed similar way regarding the athlete's preference for DB, SS, and AB for both country (Malaysia and Iran) support Numata's findings between American and Japanese athletes. Numata (2011) rated the highest degree for PF and lowest level was AB. The Japanese athletes rated PF and then TI the highest of the five leadership styles while American athletes rated TI and then PF as the highest. The current results conflicted with some previous researches. Bolkiah &Terry (2001) indicated TI and PF were in the highest level, DB and SS were in the moderate, while AB was the lowest degree. There was significant difference for Bruneian athletes that preferred more TI, DB, and SS than their British counterparts. Chelladurai et al. (1987) also determined that those Japanese students participating in modern sports (i.e., basketball and volleyball) preferred more DB and SS than did the Canadian student in similar sports.Chelladurai et al. (1988) found that the Japanese athletes preferred more AB and SS in comparison to the Canadian athletes who preferred TI. Chelladurai (1993) reported in Finland, team sport coaches were perceived more AB, less SS, and DB than individual sport coaches. In Korea, the athletes in combative sports preferred and perceived more AB, SS, and PF than the other sport athletes.

4.1. *Positive Feedback (PF)*

The preferences for PF indicated significant differences between Malaysian & Iranian varsity female basketball student-athletes for coach's leadership style. The Iranian varsity female basketball student-athletes means for PF were rated higher than means from Malaysian athletes. The present study supported results of Chelladurai (1993); Numata (2011) that found significant differences in preferences for PF based on cross-cultural. A study also by Tsutsum (2000) demonstrated female basketball players significantly preferred PF regardless of culture. The current findings contradicted with previous studies by Chelladurai et al. (1987, 1988) and Terry & Howe (1984)they found no significantly higher preference for PF between Japanese and Canadian. Also Bolkiah & Terry (2001) indicated that there were no significant differences between Bruneian athletes and British counterparts for PF. The preference for PF might fulfil the student-athletes' need for recognition and reward by earning praise from the coach. Significant difference for PF in this study required the Iranian athletes' need to strengthen their performance and to maintain their motivational level. It also showed Iranian female athletes desire to have a greater feedback (e.g., compliment, appreciation, credit, and reward) from the coach in practice or competition in compare with their Malaysian counterparts, and Iranian coaches should struggle to compliment or encourage athletes for a good performance even if they performed by mistake.

4.2. *Democratic Behaviour (DB)*

The current results indicated no significant differences between Malaysian and Iranian varsity female basketball student-athletes on their preferences for DB. The present study supported results of Chelladurai et al. (1988); Numata (2011)and Terry & Howe (1984) that found no significant differences in preferences for DB based on cross-cultural. The current results were in contrast to Bolkiah & Terry (2001);Chelladurai et al. (1987); Chelladurai (1993)as they found significant differences for DB between different nationalities. The

current findings indicated the highest level for DB that can support Chelladurai & Saleh (1978) also found that female athletes, as compared to males, showed a preference for DB in the top degree. All varsity female basketball student-athletes included in this study expressed the need for DB from their coaches. Thus a coach should pay close attention to leadership decision-making styles when working with female athletes. These results show that Malaysia and Iranian varsity female basketball student-athletes preferred coach who permits them to participate in decisions pertaining to goals, tactics, technique, and strategies. Thus, results revealed that varsity female basketball student-athletes in Malaysia and Iran preferred to develop their own training and performance goals with limited involvement of the coach as it was scored the highest.

4.3. *Training & Instruction (TI)*

The present findings showed significant differences for preferences of TI between Malaysian & Iranian varsity female basketball student-athletes. The Iranian varsity female basketball student-athletes demonstrated higher mean score for TI than mean score their counterpart Malaysian athletes. The findings of this study supported Bolkiah & Terry (2001); Chelladurai et al. (1988) and Numata (2011); that had significant differences based on cross-cultural variability to compare among different countries for TI. Findings of current results contradicted Chelladurai et al. (1987); and Chelladurai (1993); Terry & Howe (1984).Their findings showed a significant relationship between culture and student-athletes' preferences for TI while Iranian athletes wish more than Malaysian athletes this coach's behaviour. Varsity female basketball student-athletes in Iran preferred the coaches with direct control to improve the athlete's performance level and pay attention specially to correct athlete's mistakes and as well utilizing a diversity of trainings for practice than Malaysian athletes.

4.4. *Situational Consideration (SC)*

The existing results demonstrated a significantly higher preference for SC among Malaysian varsity female basketball student-athletes in compare to their counterpart Iranian athletes. As previous researches utilized the Leadership Scale for Sport (LSS), thus a comparison of this study based on cross-cultural with past findings is difficult. The Revised Leadership Scale for Sport (RLSS) investigates six sub-scales of coaching behaviour while LSS has only five sub-scales that no include SC.The degree to which a coach reflects situational factors in her or his behaviour is referred as Situational consideration. For instance Coaches who take into account factors such as the time, cultural background, environment, and individual members' competencies in setting goals and selecting methods to reach the goals can be deemed to be applying situational consideration. In particular the coaches who practise situational considerations use different behaviours depending on players' condition select suitable players to execute the perfect tasks in the game. As regards, Malaysian varsity female basketball student-athletes comprised a multiracial population (Malay/ Chinese/ Indian/ Others) with different cultural background, findings of this research suggests which coaches in Malaysia should consider environment and individual athletes to achieve goals in sport settings.

4.5. *Social Support (SS)*

The results of this study indicated significantly preferences for SS behaviours of their coach among Iranian varsity female basketball student-athletes in compare to Malaysian athletes. The current findings confirmed results of Chelladurai et al. (1987, 1988); Chelladurai (1993); and Bolkiah & Terry (2001) based on cross-cultural for comparison among different countries. The present results showed incongruence with previous investigation by Numata

(2011) demonstrated that a similar pattern concerning the athlete's preference for SS. Their findings showed a significant relationship between culture and student-athletes' preferences for SS while Iranian athletes tend more than Malaysian athletes this coach's behaviour. This study suggests that Iranian coaches must involve themselves in satisfying interpersonal needs of varsity female basketball student-athletes and provide a warm atmosphere that athletes confide in coaches for solving their personal problems.

4.6. *Autocratic Behaviour (AB)*

The current results confirmed differences were not significant between Malaysian and Iranian varsity female basketball student-athletes on their preferences for AB. The current findings confirmed studies of Bolkiah & Terry (2001); Chelladurai et al. (1987); Numata (2011); Terry & Howe (1984); and based on cross-cultural. The present results were in contrast to Chelladurai et al. (1988); and Chelladurai (1993). They found significant differences between different nationalities. And also Chelladurai & Saleh (1978) found that male athletes had a significantly higher preference for Autocratic Behavior than female. The lowest level for AB in comparison with other five sub-scales exhibited Malaysian and Iranian varsity female basketball student-athletes do not like the coaches who employ independent decision-making and authority to the coach to provide structured environment and refuse to comprise on matters surrounding practice, and also coaches who keep aloof the athletes.Thus a coach should pay close attention to leadership decision-making styles when working with female teams.

4.7. *Preferred Coach's Gender*

When comparing this information about female coaches with data from other countries must take into consideration to get a more general overview of female coaches in each country like Malaysia and Iran was difficult. The current results in the general indicated67.9% preferred to be coached by a male, 32.1% preferred female coaches that 69% Malaysian varsity female basketball student-athletes versus 67.1% Iranian varsity female basketball student-athletes preferred to have male coaches. There was no significant difference for preferred coach's gender between Malaysia and Iran. The current study was in contrast with Fasting & Pfister (2000) that investigated female and male coaches by 38 elite female soccer players from Germany, Norway, Sweden and the USA. The results showed that the following gender-related trends emerged cross-culturally. Female soccer players had a trend for female coaches. And also Martin et al. (2001) indicated a different report of preference for a female coach by female athletes. Since the majority of coaches are male, this could assist to explain the female athletes' preference toward male coaches. Present study supported previous research findings that indicated female athletes show a greater preference for male coaches (George, 1989; Le Drew & Zimmerman, 1994).

In conclusion, this study demonstrated that varsity female basketball student-athletes in Iran preferred different coaching styles than Malaysian. Differences were significant for Positive Feedback, Training & Instruction, Social Support and Situational Consideration ($P < .05$). This study will help coaches understand better the positive insight they have and also coaches know more about their players' preferences and can match their preferred behavior with own actual behaviours. Although findings of this study explain that awareness of the Malaysian coaches can be more on varsity female basketball student-athletes needs in comparison to their counterpart Iranian. According to the MML athlete characteristics like cultural background could influence on preferences of coach's leadership behaviors (Chelladurai, 1980).The significant differences between Malaysia and Iran student-athletes

were consistent with the proposal Chelladurai et al., 1988 that cultural differences are an important situational variable in the coaching process and should be considered carefully in future cross-cultural or different nationality investigations.

Female athletes preferred male coaches; although there was no significant difference between two different nationality Malaysia and Iran; that can be due to: the male outnumber female in coaching and administrative positions (Swaton, 2010) because of amount of female coach's salary, or existence of hegemonic masculinity (Massengale & Lough, 2010). It can be according to the wrong belief that female coaches don't have the skills necessary to win championships (Mawson, 2006). Results revealed that coaches should be aware of preferred leadership behavior and preferred coach's gender by their female athlete that can employ suitable coaching behavior based on the situation and their gender and also using various coaching methods according to the female athletes' needs and different environments.

Consequently, this study recommended that future cross-cultural research examine the influence of national cultures on coach's leadership practices with larger samples of respondents from multiple levels of sport settings in order to extend this research study and the generalizability of results. Research studies thus, far have made considerable contributions to support the idea that leadership behaviours and practices vary from culture to culture. Results of the study contribute to the body of knowledge of cross-cultural leadership at sport settings. Analysis of the athletes' preferences on leadership behaviours of their coach from two different environments may contribute to understanding of the effect of leadership in coaching on athlete satisfaction.

**Acknowledgements**

All participants in this study that if there were no their assistance and cooperation, this study could not be organized.

**References**

1. Acosta, R., & Carpenter, L. (1991). Back to the future: Reform with a woman's voice. *Academe, 77*(1), 23-27.
2. Beam, J. W., Serwatka, T. S., & Wilson, W. J. (2004). Preferred leadership of NCAA division I and II intercollegiate student-athletes. *Journal of Sport Behavior, 27*(1), 3-17.
3. Bolkiah, S., & Terry, P. C. (2001). *Coaching preferences of athletes in Brunei Darussalam and Great Britain: a cross-cultural test of the path-goal theory*.
4. Carpenter, L. J., & Acosta, R. V. (2004). Women in Intercollegiate Sport: A Longitudinal, National Study Twenty Seven Year Update, 1977–2004. *Women's Sports Foundation, Eisenhower Park, East Meadow, NY, 11554*.
5. Chelladurai, P. (1980). Leadership in sports organizations. *Canadian Journal of Applied Sports Science, 5*, 226-231.
6. Chelladurai, P. (1993). Leadership.In R. N. Sineges, M. Murphey, & C. K. Tennant (Eds.), *Handbook of research on sport psychology.* New York; Macmillan.
7. Chelladurai, P., & Carron, A. V. (1978). *Leadership*. Paper presented at the Canadian Association for Health, Physical Education and Recreation Sociology of Sport Monograph Series A.
8. Chelladurai, P., & Saleh, S. D. (1978). Preferred leadership in sports. *Canadian Journal of Applied Sport sciences 3*, 85-92.
9. Chelladurai, P., Imamura, H., Yamaguchi, Y., & Oinuma, Y. (1988). Sport leadership in a cross-national setting: The case of Japanese and Canadian university athletes. *Journal of Sport & Exercise Psychology*.

10. Chelladurai, P., Malloy, D., Imamura, H., & Yamaguchi, Y. (1987). A cross-cultural study of preferred leadership in sports. *Canadian Journal of Sports Science, 12*, 106-110.
11. Chelladurai, P., & Saleh, S. (2007). Dimensios of leader behavior in sports: development of a leadership scale. *En: D. Smith & M. Bar-Eli (Eds.) Essential readings in Sport and Exercise Psychology, Champaign: Human Kinetics*, 185-189.
12. Endler, N. S. (1981). Situational aspects of international psychology. In D. Magnusson (Ed.), *Toward a psychology of situations.* Hillsdate, NJ: Erlbaum.
13. Fasting, K., & Pfister, G. (2000). Female and male coaches in the eyes of female elite soccer players. *European Physical Education Review, 6*(1), 91-110.
14. Freeman, W. H. (2001). *Physical Education and Sport in a Changing Society* (6th ed.). Boston: Allyn & Bacon.
15. George, J. J. (1989). Finding solutions to the problem of fewer female coaches. *The Physical Educator, 46*, 2-8.
16. Gill, D. L. (1992). Gender and sport behavior. In T.S. Horn (Ed.). *Advances in sport psychology*, 143-160.
17. Griffin, B. S. (2009). *An examination of division level and player position on the preferred leadership behaviors of NCAA men's soccer athletes.* The university of north carolina at chapel hill.
18. House, R., Hanges, P., Javidan, M., Dorfman, P., & Gupta, V. (2004). Culture, leadership, and organizations: The GLOBE study of 62 cultures: Thousand Oaks, CA: Sage.
19. Howard, W. (2005). Leadership: Four Styles. *Education, 126*(2), 8.
20. Jacob, R. L. (2006). *The relationship between perceived coaching behaviors and win-loss success in National Collegiate Athletic Association (NCAA) Division I men and women's basketball coaches.* State University of New York at Buffalo.
21. Koopman, P. L., Den Hartog, D. N., Konrad, E., & al, e. (1999). National culture and leadership profiles in Europe: Some results from the GLOBE study. *European Journal of Work and Organizational Psychology, 8*(4), 503-520.
22. LeDrew, J. E., & Zimmerman, C. (1994). Moving towards and Acceptance of Females in Coaching. *Physical Educator, 51*(1), 6-14.
23. Limsila, K., & Ogunlana, S. O. (2008). Performance and leadership outcome correlates of leadership styles and subordinate commitment. *Engineering, construction and architectural management, 15*(2), 164-184.
24. Lok, P., & Crawford, J. (2004). The effect of organisational culture and leadership style on job satisfaction and organisational commitment: A cross-national comparison. *Journal of Management Development, 23*(4), 321-338.
25. Martin, S., Dale, G., & Jackson, A. (2001). Youth coaching preferences of adolescent athletes and their parents. *Journal of sport behaviour, 24*(2), 197-212.
26. Mawson, L. M. (2006). Sportswomanship: The Cultural Acceptance of Sport for Women versus Accommodation of Cultured Women in Sport. *Sport, rhetoric, and gender: Historical perspectives and media representations*, 19–30.
27. McClain, N. M. (2006). *Unique aspects of team cohesion with female athletes.* Alliant international university, San Francisco Bay.
28. Miller, T. W., Ogilvie, B. C., & Branch, J. (2008). Sport psychology consultation: The influence of gender on learning style. *Consulting Psychology Journal: Practice and Research, 60*(3), 279.

29. Molinero, O., Salguero, A., Tuero, C., Alvarez, E., & Marquez, S. (2006). Dropout reasons in young Spanish athletes: Relationship to gender, type of sport and level of competition. *Journal of Sport Behavior, 29*(1), 255-269.
30. Numata, A. (2011). A comparison of leadership preference by culture.
31. Porto, B. L. (2008). Halfway home: An update on Title IX and college sports. *VT. BJ, 34*, 28.
32. Rhode, D. L., & Kellerman, B. (2007). Women and leadership: The state of play. *Women and leadership: The state of play and strategies for change*, 1-62.
33. Riemer, H. A., & Chelladurai, P. (1995). Leadership and satisfaction in athletics. *Journal of Sport & Exercise Psychology*.
34. Sherman, C., Fuller, R., & Speed, H. (2000). Gender comparisons of preferred coaching behaviors in Australian sports. *Journal of sport behaviour, 23*(4), 389-406.
35. Short, S. E., & Short, M. W. (2005). Essay: Role of the coach in the coach-athlete relationship. *The Lancet, 366*, S29-S30.
36. Swaton, B. (2010). Girls Can Play, Too: Has the Lack of Female Leadership in NCAA Athletics Become an Afterthought? *Seton Hall J. Sports & Ent. L., 20*, 1-333.
37. Terry, P., & Howe, B. (1984). Coaching preferences of athletes. *Canadian journal of applied sport sciences. Journal canadien des sciences appliquées au sport, 9*(4), 188.
38. Whisenant, W., Miller, J., & Pedersen, P. M. (2005). Systemic barriers in athletic administration: An analysis of job descriptions for interscholastic athletic directors. *Sex roles, 53*(11), 911-918.
39. Wilson, R. (2007). Where Have All the Women Gone? *Chronicle of Higher Education, 53*(35), 1.
40. Zhang, J., Jensen, B., & Mann, B. (1997). Modification and revision of the leadership scale for sport. *Journal of sport behaviour, 20*, 105-122.

* * *

# Changes in Physiological Functions of Down Syndrome Affected Individuals After One Year of Practicing Aikido at Sport Training Center in District 3, HCMC

**Ngoc Thang Hoa:** Ho Chi Minh City University of Sport, Vietnam
**Xuan Hien Nguyen, Le Nhat Quang Tran:** Faculty of Physical Education, The University of Danang, Vietnam,

**Abstract**

Positives changes in physiological functions help affirm sport's effect on human bodies for normal humans in general and Down syndrome affected individuals in particular. Research has been conducted with 35 Aikido practicers with Down syndrome aged 18-25 at Sport Training Center in District 3, HCMC. Of these practicers, 21 are male and 14 are female. By using methods such as document analysis, survey, function checking, statistical method, 4 indicators have been selected to make evaluation for changes in physiological functions of Down syndrome affected individuals practicing Aikido at Sport Training Center in District 3, HCMC. Research results contribute to the scientific background for building the system of exercises that are suitable for the physic development of Down syndrome affected later on.

**Key words:** Physiological function, Aikido, Down syndrome, HCMC.

## 1. Introduction

With the advancement of society, the benefits of practicing sports to people in general and to Down syndrome affected individuals in particular are undeniably important. With such a great interest in modern facility investment, Sport Training Center in District 3, HCMC has become a familiar destination for local people as well as young ones, those who are keen on doing sports in district 3. There are also more and more sport training programs at the center such as boxing, traditional martial arts, Taekwondo…, especially charitable classes, Aikido classes for the disabled with the participation of 200 people, of which Down syndrome affected individuals account for a large constitution.

Aikido is a kind of martial art that was originated from Japan by Morihei Ueshiba. Physically, this martial art comprises of throws and joints-locking. Aikido does not put a great emphasis on attacking the opponent, but making use of the opponent's strength to control them instead. In Aikido, the goal is not to conquer the enemy, but to conquer oneself. Aikido brings lots of significant benefits in both physical and spiritual training. Soft and flexible postures can be applied to all ages and even to Down syndrome affected individuals. With an idea that physiological function is one of the most important factors under the influence of sport toward Down syndrome affected individuals in life, this research "CHANGES IN PHYSIOLOGICAL FUNCTIONS OF DOWN SYNDROME AFFECTED INDIVIDUALS AFTER ONE YEAR OF PRACTICING AIKIDO AT SPORT TRAINING CENTER IN DISTRICT 3, HCMC" has been conducted.

**Methods:**

35 participant's with Down syndrome aged 18-25 that are practicing Aikido at Sports Center District 3 in which the number of 21 males and 14 females, with the use of the

following 05 methods: literature reviews; survey; functional testing methods; Statistical methods.

## 2. Results and Discussion

### 2.1 Research on selecting the evaluation indicators of physiological function of Down syndrome affected people attending Aikido training

In order to have a systematic evaluation of the function of Down's syndrome affected individuals in Aikido training, the following steps should be taken: (1) Systematizing the indicators of physiological functionof other similar martial arts by many different authors. (2) On the basis of existing indicators, selecting indicators that are relevant to the characteristics of the target population in order to reduce indicators that are inappropriate or less likely to be used. (3) Using a questionnaire to get opinions from Aikido experts, teachers and trainers, in order to find the indicators that are relevant to the researched subject. (4) Testing the reliability of indicators.

The results of the 4-step selection, with 24 experts, trainers, teachers, administrators, logical and scientific, 4 indicators have been selected to assess functional changes for Down syndrome affected individuals including: Heart rate (times/min), Cardiac function(HW), Vital capacity (liter), Relative vital capacity (ml / kg) .

### 2.2 Evaluation of changes in physiological functions of people with Down syndrome after one year of Aikido training at the Sports Center in District 3, Ho Chi Minh City.

#### 2.2.1 The reality of physiological functions of people with Down syndrome practicing Aikido at the Sports Center District 3, Ho Chi Minh City.

**Table 1 The reality of physiological functions of Down syndrome affected female individuals practicing Aikido at the Sports Center District 3, Ho Chi Minh City (n=21)**

| No | Criteria | $\bar{X}$ | σ | Min | Max | Cv % |
|---|---|---|---|---|---|---|
| 1 | Heart rate (times/min) | 80.24 | 5.70 | 70.00 | 87.00 | 7.06 |
| 2 | Heart work (HW) | 9.50 | 1.02 | 8.20 | 12.00 | 10.72 |
| 3 | Vital capacity (liter) | 2.00 | 0.42 | 1.10 | 3.00 | 22.08 |
| 4 | Relative vital capacity (ml/kg) | 30.50 | 6.23 | 17.62 | 44.11 | 20.44 |

The test results of physiological function of Down syndrome affected male individuals practicing Aikido at Sport Training center of District 3, Ho Chi Minh City have been shown in table 1: 02 indicators on VitalCapacity, relatively vitalcapacity have relatively low homogeneity, the index of heart rate is highly homogeneous, index of cardiac function has a uniform homogeneity. The highest homogeneity was the frequency of heart rate with a coefficient of variation of 7.06%, followed by cardiac index of 10.72%, and Vital capacity of 22.08% and the last one is relative vital capacity.

**Table 2 The reality of physiological functions of Down syndrome affected female individuals practicing Aikido at the Sports Center District 3, Ho Chi Minh City (n=14)**

| No | Criteria | $\bar{X}$ | σ | Min | Max | Cv % |
|---|---|---|---|---|---|---|
| 1 | Heart rate (times/min) | 69.07 | 5.20 | 63.00 | 84.00 | 7.50 |
| 2 | Heart work (HW) | 8.47 | 1.21 | 6.40 | 10.20 | 14.24 |
| 3 | Vital capacity (liter) | 1.46 | 0.40 | 1.00 | 2.60 | 26.20 |
| 4 | Relative vital capacity (ml/kg) | 27.30 | 5.40 | 18.62 | 38.51 | 19.72 |

The test results of physiological function of Down syndrome affected female individuals practicing Aikido at Sport Training center of District 3, Ho Chi Minh City have

been shown in table 2: The index of Vital capacity has the lowest homogeneity, and the index of heart rate has the highest homogeneity, the two other indexes have average homogeneity. The index of heart rate has the highest homogeneity with the coefficient of variation of 7.5%, followed by the cardiac function index of 14.24%, and the relative Vital capacity of 19.72% and finally is the index of vital capacity of 26.20%.

**2.2.1 Evaluation of changes in physiological functions of people with Down syndrome after one year of Aikido training at the Sports Center in District 3, Ho Chi Minh City.**

Research results are shown in Table 3; there are also comments on the physiological function index of men with Down syndrome after one year of practicing Aikido at the sport training center of District 3 Ho Chi Minh City as follows:

**Table 3.Changes physiological functions of Down syndrome affected female individuals practicing Aikido at the Sports Center District 3, Ho Chi Minh City (n=21)**

| No | Criteria | At the beginning | | After one year | | W% | t | P |
|---|---|---|---|---|---|---|---|---|
| | | $\bar{X}$ | SD | $\bar{X}$ | SD | | | |
| 1 | Heart rate (times/min) | 80.24 | 5.70 | 79.52 | 5.50 | 0.90 | 1.01 | >0.05 |
| 2 | Heart work (HW) | 9.50 | 1.02 | 9.40 | 1.03 | 1.06 | 1.52 | >0.05 |
| 3 | Vital capacity (liter) | 2.00 | 0.42 | 2.02 | 3.40 | 5.60 | 5.16 | <0.05 |
| 4 | Relative vital capacity (ml / kg) | 30.50 | 6.23 | 32.33 | 5.93 | 5.92 | 4.71 | <0.05 |

$n = 21$ $t_{0.05} = 2.086$

In Table 3, it can be clearly shown that after one year of practicing, all of the physiological function indices of 21 male with Down syndrome increased significantly and through self-correlation t-tests, it can also be indicated that there are only two out of four of The difference that are statistically significant at $p < 0.05$. Considering the growth rate, the highest growth belongs to the Relative Vital capacity index with W = 5.92% and the lowest is the Heart rate index with W = 0.9%.

**Table 4Changes physiological functions of Down syndrome affected female individuals practicing Aikido at the Sports Center District 3, Ho Chi Minh City (n=14)**

| No | Criteria | At the beginning | | After one year | | W% | t | P |
|---|---|---|---|---|---|---|---|---|
| | | $\bar{X}$ | SD | $\bar{X}$ | SD | | | |
| 1 | Heart rate (times/min) | 69.07 | 5.20 | 79.52 | 5.50 | 3.25 | 2.33 | <0.05 |
| 2 | Heart work (HW) | 8.47 | 1.21 | 9.40 | 1.03 | 3.12 | 2.52 | <0.05 |
| 3 | Vital capacity (liter) | 1.46 | 0.40 | 1.55 | 3.71 | 5.68 | 6.23 | <0.05 |
| 4 | Relative vital capacity (ml / kg) | 27.30 | 5.40 | 28.54 | 4.89 | 4.43 | 5.10 | <0.05 |

In table 4, after one year of practicing, all the physiological function indices of 14 women with Down syndrome after one year of practicing Aikido at Sport Training Center in district 3 increased significantly. Through self-correlated t-test, it has been found that all indices are statistically significant at $p < 0.05$. Considering growth rates. The highest one is in Vital capacity, and the lowest one is Cardiac function with W = 5.68% and W = 3.12%, respectively.

## 3. Conclusion

Considering changes in two parameters: growth rates and average values as well as the effect of aikido training on Down syndrome affected individuals after one year of practicing at Sport Training Center in District 3, there has been a significant increase and through t-test,

it has been also shown that for male individuals, two out of four indices are statistically significant at $p < 0.05$. Considering the growth rate in men, the index of relative Vital capacity is the highest with W = 5.92% and the lowest is the index of heart rate with W= 0.9%; for female individuals, the highest growth rate is of the index of vital capacity with W = 5.68% and the lowest one is of the index of Cardiac function with W = 3.12%. Positive changes in physiological function are the basis to state that the impact of Aikido on people with Down syndrome is scientifically based.

**References**

1. Lê Bửu, Dương Nghiệp Chí, Nguyễn Hiệp (1983), *Lý luận và phương pháp huấn luyện thể thao*. NXB Tp.HCM.
2. Dương Nghiệp Chí (1991), *Đo lường thể thao*, NXB TDTT, Hà Nội.
3. Lê Quý Phượng, Đặng Quốc Bảo (2002), *Cơ sở y sinh học của tập luyện TDTT vì sức khỏe,* NXB TDTT, Hà Nội.
4. Đỗ Anh Tài (2009), *Phân tích số liệu thống kê*, Đại học Kinh tế và quản trị kinh doanh Thái Nguyên.
5. Lâm Quang Thành, Nguyễn Thành Lâm, Nguyễn Hoàng Minh Thuận (2016), *Giáo trình Đo lường thể thao*, NXB Đại học Quốc gia, Tp.HCM.
6. Nguyễn Đức Văn (2000), *Phương pháp thống kê trong TDTT*, NXB TDTT, Hà Nội.
7. Homma, Gaku (1990), *Aikido for Life*, Berkeley, California: North Atlantic Books, tr. 20–30.
8. Pranin, Stanley (1983), Injuries, Encyclopedia of Aikido.
9. Pranin, Stanley (2006), Jumbo Taiso,Encyclopedia of Aikido.
10. Shifflett, C.M. (1999), *Aikido Exercises for Teaching and Training*, Berkeley, California: North Atlantic Books.

* * *

# A Study of Sustainability Practices in Indian Food Service Industry

**Dr. Parag Kalkar :** Director, SIOM
**Dr. Sachin Borgave:** Director, PIBM
**Dr. Sameer Koranne:** Professor, SIHMCT

**Abstract**

The sustainability practices in food service industry is vital today, most of the food service restaurants in India are aware of sustainability practices and performing at certain extent. It is also essential to explore the sustainability factors performing by the food service industry and the benefits perceived by the restaurants. It has found that following are the common and vital sustainability factors practiced by food service industry viz- use of organic vegetables, locally produced food, less meat & more veggies, bio degradable disposables, water recycle, eco friendly architecture, natural ambience, use of energy saving devices, waste separation, e waste disposal, reduction of refrigerants and increasing consumer participation. There is a negligible difference of opinions in benefits perceived by the hoteliers through sustainability practices.

**Key words:** Sustainability practices, Food service Industry, Fine & Dine, Fast Food Restaurants, Bar & Restaurant

## Introduction

Restaurant and food service industry has witnessed tremendous growth in last few decades and has emerged as largest creator of direct & indirect employment at an average rate of 6% CAGR. The world food trade is growing by leaps and bounds and has established itself as high profit and maximum demand industry. It is fuelled by international growth of tourism activity and large number of young and working population. Indian food service industry has been benefitted by international trend and has welcomed many international branded outlets. The dimensions of service industry have also changed by adopting newer platforms and formats including online and telephonic ordering of food. The growth is seen in organized and unorganized sector at almost all the locations and in retails stores of metro and tier II cities. Cornell (1975) suggests that the restaurant is one of the major waste producers in the field of commercial catering industry and Curry (2012) mentions that about 50 percent of total waste of hotels comes from the food waste. As per Mona et al (2011), particularly the food waste causes environmental pollution that contributes to global warming and ultimately results in climate change causing depletion of natural resources. The increasing size of food service sector has also added the concerns about environment and sustainability and it become imperative to understand and evaluate sustainability practices in food service sector. Vikas Mohan et al (2017) have suggested that the management has major role in preventing food waste by committing to sustainable practices. The proposed study would be an attempt to evaluate the operations and practices aligned with the sustainability principles and parameters. The data gathered from various format of food service industry from strategic tourist locations through tested tools to assess and evaluate the presence of prevalent sustainability efforts and recognize obstacles in achieving the sustainability standards. It would also discover new

opportunities to implement sustainable practices in general.

Though tourism and hospitality industry is considered as smokeless industry, the advent of tourism and technology has brought paradigm shifts in the business practice and has strong impact on ecosystems of the geographies. The complexity created by a world economy supported by rapid population has put pressure on usage of natural resource and foods to exceptional levels. Increased tourism and hotel business has stressed the environment and slowly the consumers are becoming concerned about its impact on environment. Building construction and creation of tourist amenities at sensitive location has polluted the scenic and natural beauty; huge amount of water usage creates untreated drain water polluting natural sources. The increased movement of tourists and vehicular traffic, usage of fuels and creation of smoke has direct effect on air quality. International arrivals and tourists from different cultures have impacted on social and cultural aspects of the locations. Lighting, décor, construction of guest facilities and other infrastructure has drastic effects on the natural landscape of popular locations. That has increased the context of sustainability to tourism, hospitality and food service industry. Food wastes are major source of hazardous green house gases and Deepak et al (2017) suggests that contributes to global warming. Sustainability has been defined and redefined to inculcate environmental, social as well as economic domains Dasgupta, 2000 has suggested that the exponential growth of business activities are not viable for long term. (Gibson, 2006). It would affect the future generation and would leave irreversible impact on world. Since the competitive advantage is coupled with public perception about a company and its response to general concerns, there is sense of responsibility amongst brands. General awareness of environmental impacts has made the companies to feel the pressure of taking up green initiatives. The premise of food service operations is different than other industries as it is located in urban areas and touches every individual in its periphery. Though the customer satisfaction is most important, balancing the business sense with sustainability becomes a critical task for food service industry. This makes it imperative to study and examine the sustainable practices in this industry.

It is a known fact that prevention of one ton of food wastage can save us 4.2 tons of CO2 equivalents (www.theworldcounts.com). The tremendous and worldwide growth of food service industry is good for economy but on other hand it has to be checked for the negative impacts it leaves on the socio-economic and geographical structure. The studies have shown that one third of food produced is wasted without processing it is posing a threat to the ecology in general. Restaurant industry has uneven and uncertain demands. It is major source of food waste due to its extensive a' la carte menus which requires huge inventory of raw material and regularly produces food waste of unsold inventories.

The perishability of uncooked and cooked food is coupled with insufficient and inappropriate storage results in large stocks of food waste. Specialty menus using specific parts of vegetables, fruits and animal parts and leaves leftovers, the inferior quality produce and fewer yields from raw material contributes to wastage. Huge amount of water is used for multiple time cleaning and utensils and premises as well as use of wash rooms. Functions and parties produce tones of wastages. Use of disposables, canned raw material increases the amount of packing material wastes. Traditional methods of cooking and other operations, old equipments and less trained employees add to wastage of resources. Luxury elements requires huge amount of electricity, water and fuels. According to food & Agriculture organization of United Nations, an estimated amount of 40% of total food waste happens at restaurant levels due to more importance given to appearance of food. Even if a just one fourth of this wastage

is avoided, we can feed 870 million people in the world. Since large number of customers recognizes the seriousness of environmental issues, the choices of restaurants are becoming more ecologically cognizant and purchase decisions are becoming environmentally friendly (Han, Hsu, & Sheu, 2010). To respond to this trend the restaurant industry has started to invest efforts into designing and practicing eco-friendly products and services but this is at nascent stage. This recommends the restaurant industry to adjust their services to meet the changing expectations of the customers. As it is understood that food service industry has to adopt sustainable practices in order to improve their corporate image and establish loyal relationship with customers (Andreassen & Nguyen & Leblanc, 2001).

However the construct of sustainability has not been specific in food service industry due to variability in the services, products, a consumer demands, nature of ingredients and styles of services. The format and models of restaurants also makes it difficult to adopt the green practices with ease and there is s strong need of studying the trends and practices so far established by different organizations. There is a need of integration of various functions to make overall operations sustainable. Identification of the parameters and scales and evaluating it is highly required to enhance sustainability for the industry as a whole.

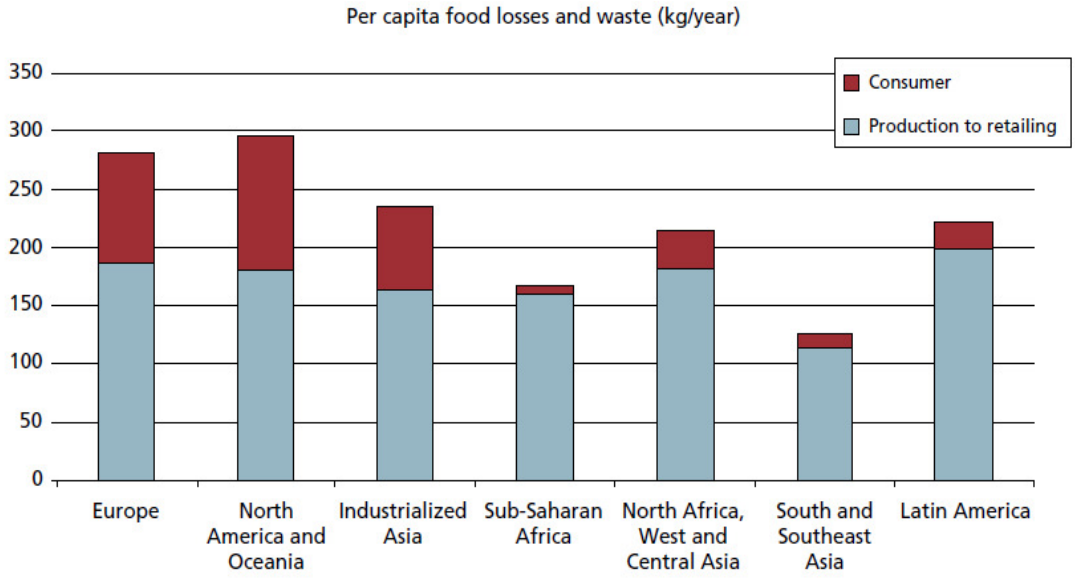
**Objectives**

The specific objectives of the study are

1. To review the prospects of sustainable restaurant industry.
2. To evaluate and identify important sustainability factors practiced by Hoteliers.
3. To assess the benefits perceived by hoteliers through sustainability practices

**International Status**

Restaurant industry is bound to grow manifold throughout the world. It has already acknowledged that the catering and restaurant industry has significant social and environmental impacts at local and global levels. The choices made about food and type of restaurants services decipher into the weakening of natural resources, more landfill and large emissions of toxic gases that has impacted on environmental and social sustainability. Global foot print of tourism industry is setting trends in social, geological, demographical and ecological aspects of life and leaves strong impact for local, regional and global ecosystems. The food losses and waste across the world per year are estimated about 30% for cereals, 20% for oil seeds, meat and dairy, 40-50% for root crops, fruits and vegetables, meat and dairy plus 35% for fish. Out of total food waste, a whopping 40% waste occurs at retail spaces during and after processing. As projected by WTO, India and China are bound to become economic powerhouses and would change tourism plot of Southeast Asia. Internet and globalization has made quality and cost conscious customers (Rezel Peter, 2008). Latest trends that are gaining hold in the Food Services space that includes Virtual Kitchens and Chef on Wheels. Online ordering-in has become an integral part of the eating experience and several service providers are providing last mile delivery. Food Services is emerging as a key contributor for the global economy and employment generation and also growth for other sectors. It demands for designing and developing sustainable practices in this industry to make it viable for future generations. The following chart shows worldwide trend of wastage of food per capita.




Source: http://www.fao.org

**National Status**

Indian restaurant industry is expected to grow exponentially with large chunk of world consumption rated from India. It has become key contributor to Indian economy by providing direct and indirect employment and has reached to an estimated figure of Rs.3.37 Lakh Crore and expected to grow at a rate of 10% CAGR to reach 5.52 Lakh Crores. Entry of international brands of QSR and Fine dine restaurant along with retails space has also help the food service industry to grow. Consumers are finding a good tradeoff of eating out against cooking food at home. Dr.Sanjaya Baru, Secretary General of FICCI expects tremendous opportunities in this sector, thanks to the Digital India and Start up India programs acting as stimulus. Ms. Saloni Nangia, President, Technopack Adviser has mentioned that the state and the union governments shall provide the policy and fiscal benefits to food service industry as it is creating more employment and meeting the changing consumer needs. However, an alarming fact that cannot be ignored that India wastes Rs.244 crores a worth of food every day and an estimated 40% of it is post harvest (www.economictimes.com). Since India stands at 100$^{th}$ rank of Global Hunger Index and still wastes food equal to consumption of United Kingdom, this makes it more shocking (www.businesworld.com). It also interesting to note that out of total food waste, around 35% comes from only customer plates from restaurants. Other nations have already framed policies for regulating the impacts on environment and have adopted green practices widely. Keeping with this trend, Indian restaurant industry is also changing positively to adopt sustainable practices. Firms are acting on their own perceptions of sustainability and take effort towards sustainability initiatives. There is lack of integration of all dimensions of sustainability that includes environmental, social and economical.

**Scope of the Research**

The typical operations pattern of restaurant industry shows that the restaurants have many shapes, sizes and formats as well as management structures making it a complex for uniform policies. This research would attempt the discussion on various sustainable practices in industry and evaluate them to find out the most significant ones that should facilitate

attainment of goals. It may result in highlighting the policies that encourage saving of all natural resources and using correct methods of handling operations. It would give a strategy to management for efficient and effective usage of resources by selecting, building and maintaining specific procedure. It would also give scope for continuous improvement in operations to balance customer satisfaction and achievement of organizational goals of sustainability.

**Significance of the Study**

The balancing act of sustainability and profitability with increased customer satisfaction can be achieved by gradual decrease in inventories and increased sales volume that would represent best use of resources and courtesy towards environment. It would also give holistic insights about sustainability food service with broader context and methods of integrating sustainability in all aspects of operations. The study would produce methodologies for Refuse, Reduce, Reuse and Recycle, Restore. It is expected to provide avenues for awareness amongst customers and inclusiveness of local community to counter pollutions. Sustainability practices would become the most significant strategies for achieving competitive advantage in food service industry. The specific significance of the study are -

- Hoteliers' perception about sustainable food service practices.
- The improved or modified operations that would help reduce wastage.
- Sustainable menu planning and sophisticated food ordering system.
- Improved level of customer satisfaction and balancing exceptional organizational goals.
- Possibilities of mitigating the sustainable practices across industry.

**Methodology**

The study reveals characteristics of variety of food service outlets practicing sustainable operations and management, ecosystem of hotel industry and analyzing best green practices. The research is descriptive and a cross-sectional research design. Primary data gathered through a snapshot survey from food service industry. Simple random sampling method used to select respondent outlets, with attention to justify representation for all categories of food service outlets. Since there is no specific data about the classified outlets; considering it as infinite population, an appropriate sample size drawn using statistical formula. The top management, operational mangers and frontline supervisors from these outlets interviewed with pretested questionnaire having twenty seven questions categorized on hoteliers' performance on sustainable practices and seventeen questions on benefits perceived category wise by hoteliers. Total 146 questionnaires validated and analyzed.

**Analysis and Interpretations**

To obtain foremost factors of sustainability in food services practiced at optimum level, a factor analysis is applied.

| **KMO and Bartlett's Test** | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | 0.567 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 468.797 |
| | Df | 351 |
| | Sig. | 0.000 |

| Rotated Component Matrix[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Component | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Use of Organic Vegetables | | | | | | 0.754 | | | | |
| Environment Friendly Meat & Milk | | | | | | | | 0.574 | | |
| Locally Produced food | | | | 0.718 | | | | | | |
| Onsite Produced Food | | | | -0.669 | | | | | | |
| Less Meat & More Veggies | | | | | 0.710 | | | | | |
| Less Fried Food | | | | | | 0.563 | | | | |
| Less energy on Preparation | | | 0.569 | | | | | | | |
| No Disposables | | | | | | | | | | |
| Bio Degradable Disposables | | | | | 0.675 | | | | | |
| Disposables made by Recycle | | | | | | | | | | |
| Less Consumption | | | | | | | 0.537 | | | |
| Recycle | | | 0.702 | | | | | | | |
| Self Reliance for water | | | | | | | | | | 0.580 |
| Eco Friendly Architecture | | 0.676 | | | | | | | | |
| Natural Ambience | | | | | | | | | | 0.679 |
| Use of Energy Saving Devices | | 0.750 | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Use of Natural Energy | -0.487 | | | | | | -0.412 | | | |
| Reduction of Food Waste | | 0.427 | | | | | | | | |
| Waste Separation | | | | | | | | 0.734 | | |
| Reuse of Waste | 0.572 | | | | | | | | | |
| Sustainable waste disposal | 0.470 | | | | | | | | | |
| E Waste Disposal | 0.706 | | | | | | | | | |
| Reduce usage of detergents abd cleaners | | | | | | | | | | 0.533 |
| Reduction of Refrigerants | | | | | | | | | 0.776 | |
| Elimination of Chemical food agents | | | | | | | | | | |
| PR on eco-friendly practices | | | | | | | | | 0.590 | |
| Increasing Consumer participation | | | | | | | 0.720 | | | |
| Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. | | | | | | | | | | |
| a. Rotation converged in 22 iterations. | | | | | | | | | | |

KMO Bartlett's test shows 56.7 percent of sampling adequacy and hence the further factorial analysis is carried out. A principal component matrix method used and extracted ten components; a rotation converged in 22 iterations. The sustainability factors marked with higher Eigen values were identified while the lower values are suppressed and not mentioned in the table. There are twelve factors acknowledged with higher weightages as follows.

| **Sustainability Category** | **Sustainablility Factor** |
|---|---|
| Sustainable Ingredients | Use of Organic Vegetables |
| | Locally Produced food |
| Eco Friendly Menu | Less Meat & More Veggies |
| Recycling of Service items | Bio Degradable Disposables |
| Water Efficiency | Recycle |

| | |
|---|---|
| Energy efficiency | Eco Friendly Architecture |
| | Natural Ambience |
| | Use of Energy Saving Devices |
| Water Management | Waste Separation |
| | E Waste Disposal |
| Chemical Reduction | Reduction of Refrigerents |
| Consumer Awareness | Increasing Consumer participation |

Hoteliers are more inclined towards sustainability ingredients like use of organic vegetables and locally produced food may be farm produced fresh vegetables. In energy efficiency maximum sustainability factors preferred are eco friendly architecture, natural ambience and use of energy saving devices, such restaurants attracts more customers due to its simplicity and homely culture. Water management suitability factors like waste separation and E-waste disposables have direct impact on cleanliness and hygiene. Hoteliers prefer towards sustainability practice in eco friendly menu using less meat and more veggies. The practices of bio degradable items and recycle of water are used to maintain the restaurant's ambience, avoiding or negligible use of refrigerants in food items can preserve taste of the food and hence hoteliers are reluctant to use refrigerants despite of its advantage in increasing the life span of food items. The sustainability practices shall be increased through the consumer awareness and the hoteliers get motivated towards such practices with consumer awareness and participation.

**ANOVA**

| ANOVA | | | | | | |
|---|---|---|---|---|---|---|
| | | Sum of Squares | df | Mean Square | F | Sig. |
| Personal Gains-Contribution to social cause | Between Groups | 2.402 | 3 | 0.801 | 0.410 | 0.746 |
| | Within Groups | 277.379 | 142 | 1.953 | | |
| | Total | 279.781 | 145 | | | |
| Personal Gains-Improved health & wellness | Between Groups | 6.606 | 3 | 2.202 | 1.074 | 0.362 |
| | Within Groups | 291.236 | 142 | 2.051 | | |
| | Total | 297.842 | 145 | | | |
| Personal Gains-Higher moral & eliminating guilt | Between Groups | 10.212 | 3 | 3.404 | 1.982 | 0.119 |
| | Within Groups | 243.816 | 142 | 1.717 | | |
| | Total | 254.027 | 145 | | | |
| Personal Gains-Better public image | Between Groups | 9.396 | 3 | 3.132 | 1.572 | 0.199 |
| | Within Groups | 282.939 | 142 | 1.993 | | |
| | Total | 292.336 | 145 | | | |
| Personal Gains-Involvement in global cause | Between Groups | 2.799 | 3 | 0.933 | 0.486 | 0.693 |
| | Within Groups | 272.824 | 142 | 1.921 | | |
| | Total | 275.623 | 145 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Social Benefits- Part of responsible group | Between Groups | 3.319 | 3 | 1.106 | 0.557 | 0.645 |
| | Within Groups | 282.242 | 142 | 1.988 | | |
| | Total | 285.562 | 145 | | | |
| Social Benefits- Sustainable development | Between Groups | 3.088 | 3 | 1.029 | 0.521 | 0.668 |
| | Within Groups | 280.371 | 142 | 1.974 | | |
| | Total | 283.459 | 145 | | | |
| Social Benefits- Help to local community | Between Groups | 4.501 | 3 | 1.500 | 0.806 | 0.493 |
| | Within Groups | 260.721 | 140 | 1.862 | | |
| | Total | 265.222 | 143 | | | |
| Social Benefits- Reduction of carbon footprint | Between Groups | 0.190 | 3 | 0.063 | 0.030 | 0.993 |
| | Within Groups | 304.468 | 142 | 2.144 | | |
| | Total | 304.658 | 145 | | | |
| Benefits to Food Service Org. Branding | Between Groups | 13.239 | 3 | 4.413 | 2.089 | 0.104 |
| | Within Groups | 295.754 | 140 | 2.113 | | |
| | Total | 308.993 | 143 | | | |
| Benefits to Food Service Org. Improved PR | Between Groups | 1.830 | 3 | 0.610 | 0.283 | 0.838 |
| | Within Groups | 303.922 | 141 | 2.155 | | |
| | Total | 305.752 | 144 | | | |
| Benefits to Food Service Org. Savings on Materials | Between Groups | 2.999 | 3 | 1.000 | 0.477 | 0.699 |
| | Within Groups | 297.529 | 142 | 2.095 | | |
| | Total | 300.527 | 145 | | | |
| Benefits to Food Service Org. Culture development | Between Groups | 11.877 | 3 | 3.959 | 2.001 | 0.117 |
| | Within Groups | 280.952 | 142 | 1.979 | | |
| | Total | 292.829 | 145 | | | |
| Benefits to Food Service Org. Menu planning & execution | Between Groups | 5.730 | 3 | 1.910 | 0.825 | 0.482 |
| | Within Groups | 328.934 | 142 | 2.316 | | |
| | Total | 334.664 | 145 | | | |
| Environmental Benefits- Lesser damage to nature | Between Groups | 2.233 | 3 | 0.744 | 0.374 | 0.772 |
| | Within Groups | 282.788 | 142 | 1.991 | | |
| | Total | 285.021 | 145 | | | |
| Environmental Benefits- Preservation of flora & fauna | Between Groups | 12.924 | 3 | 4.308 | 2.545 | 0.058 |
| | Within Groups | 240.336 | 142 | 1.693 | | |
| | Total | 253.260 | 145 | | | |
| Environmental Benefits- Improved bottom-line | Between Groups | 4.105 | 3 | 1.368 | 0.756 | 0.520 |
| | Within Groups | 256.888 | 142 | 1.809 | | |
| | Total | 260.993 | 145 | | | |

To test the differences, variances in hoteliers benefits perceived through sustainable practices ANOVA is applied. It seems all the hoteliers have similar perception throughout the benefits perceived from sustainable practices in food industry. However hoteliers have minimal awareness towards flora and fauna, especially fine dine and bar restaurants have recorded lower perceptions in this class.

**Conclusion**

The hotel industry in India in organized sector are well aware towards sustainable practices, this may be due to their responsiveness towards customers, healthy practices and government policy compliances. The research indicates the unanimous conformity in benefits perceived through sustainability practices and is geared up for such practices. Hoteliers also insist customer awareness in this regards. The ministry of hotel and tourism shall take a note on sustainability awareness program for people in India and appreciations to the restaurants practicing healthy sustainability towards the environment.

**Relevant References**

1. Curry, R. (2012), The Composition of Waste Disposed of by the UK Hospitality Industry (No. RES093-001). Waste and Resources Action Programme (WRAP), United Kingdom.
2. Deepak, B., Nidhi, Y., Munish, B., Bishnoi, N. R., Mona, S. (2017), Energy Management Practices in an Autoancillery to Reduce Carbon Footprints for Environmentally Sustainable Manufacturing, International Journal of Engineering Research and Application 7(7): 20-25
3. EunHa Jeong and SooCheong Jang, (2010) Effects of restaurant green practices: Which practices are important and effective?,Caesars Hospitality Research Summit. Paper 13.
4. Freeman Emily (2011) Restaurant Industry Sustainability: Barriers and Solutions to Sustainable Practice Indicators, master's thesis, Arizona State University
5. Han, H., Hsu, L. T., & Sheu, C. (2010). Application of the Theory of Planned Behavior to green hotel choice: Testing the effect of environmental friendly activities. Tourism Management, 31(3), 325-334
6. Herzog Carolyn (2016) Environmental Sustainability within the Restaurant Industry submitted to University of Guelph.
7. Johnsons Michael (2010) Environmental Sustainability within the Restaurant Industry
8. Mona, S., Kaushik, A. and Kaushik, C.P. 2011, Hydrogen Production and metal-dye bioremoval by a Nostoc linckia strain isolated from textile mill oxidation pond. Bioresource Technology
9. Singh D, Amandeep Ad, (2018), Food Waste Management: Study of Indian Hotel Industry, International Journal of Creative Research Thoughts (IJCRT) Volume 6, Issue 1, ISSN: 2320-2882
10. Vikas Mohan, Bansal Deepak, Sharma Mona (2017). Reduction and management of waste in Hotel Industry, International journal of engineering research and application, Vol 7 issue 7 pp34-37, (Elsevier) 102, 3200-3205
11. www.businessworld.in/article/India-Wastes-As-Much-Food.../27-08-2017-124858
12. https://economictimes.indiatimes.com
13. http://www.fao.org/docrep/014/mb060e/mb060e02.pdf
14. http://thecsrjournal.in/food-wastage-india/
15. http://www.theworldcounts.com/counters/world_food_consumption_statistics/world_food_waste_statistics#more-facts

* * *

# Comparative Study of Selected Physical Fitness Components between Urban and Rural College Level Students

**Dr. Chaya Kishanrao Kothe:** College of Physical Education, Kautha, Nanded. MS, India
**Dr. Deepak Bachhewar:** Vasntrao Naik College Cidco, Nanded. MS, India

**Abstract**:

The researcher was the student of post graduate department of physical education and he observes physical fitness among Rural and Urban area students in S. R. T. M. University Nanded by taking three tests on them. The tests taken by him are muscular endurance, flexibility and reaction time test. That is why the researcher thinks about the physical fitness in physical education. Hence the researcher has undertaken the study, "Comparative Study of Selected Physical Fitness Components between Urban and Rural College Level Students"

**Introduction**

Physical education in India is often a neglected part of education and many schools across the country do not realize the importance of having physical education as a part of the system. There are many benefits that are available from physical education and there are a few schools that have managed to strike the balance between academics and physical fitness.

Some of the benefits of having a physical education in India are

**Proper Physical Growth**

Schools that provide physical education from an early age have understood the importance of all round growth. Physical education helps in development of muscles and bones and children kept fit from an early age. Obesity is a problem among many children and this can be partly solved by stressing on physical education. Obesity can lead to many problems such as diabetes, heart problems and imbalances in hormones in children. Encouraging physical education in schools will help to contain the problem of obesity to an extent. Children who are enrolled in some form of sport or the other reap the benefits in the long run.

**Growing Future Sportsmen**

Some children show signs of interest in sports from an early age and these prodigies should be encouraged and given the proper amount of guidance in schools. In India several children are restricted from playing sports, despite showing signs of early excellence. With proper support and systems in place children will be able to bring out the best in themselves and they may even go on to represent the country at some point in the future. Thus, encouraging physical education India is important and schools must realize the potential benefits that can be achieved from just a few hours of activity every day.

**Escape From Routine**

Physical education in India also serves to distract the children from a set routine and provides an escape from the tedious hours in a classroom. Short periods of physical activity can be a good way to relieve some of the pressure that is bound to build up in a classroom.

**Stress relief**

Children have to cope with different types of pressure in a classroom and also among their friends, and engaging in some form of physical activity can be a good way to relieve some of this stress. After a stressful day at school, playing some form of sport is a good way to release some steam.

**Confidence building**

Excellence in some form of sport or physical activity will provide children with confidence. Introverted children will be able to express themselves through sports and this is one of the main aspects of physical education in India. Children who are allowed to take part in inter schools games and sporting events, meet new people and this builds confidence and also builds a sense of companionship and camaraderie. Children who take part in team sports will be able to visualize themselves as being a part of a group and this will be beneficial when they are a part of work groups in the future. Physical education in India has to be encouraged and schools have to understand the importance of having a separate period for physical activity.

**Statement of the problem:**

**"Comparative Study of Selected Physical Fitness Components between Urban and Rural College Level Students"**

**Objectives of the study:**

- The primary objective of the study was to compare muscular endurance between rural and urban area of students.
- The secondary objective of the study was to compare flexibility between rural and urban area of students.
- The third objective of the study was to compare reaction time between rural and urban area of students.

**Hypothesis of the Study:**

1. H1 there would be significant difference in flexibility among Rural and urban college level students.
2. H2 there would be significant difference in muscular endurance among Rural and urban college level students.

**Methodology**

**Source of data:**

The data pertaining to this study were collected from the physical education students of S.R.T.M University Nanded Campus.

**Selection of subject:**

The subjects were selected in Swami Ramanand Teerth Marathwada University Nanded, Total 40 subjects were selected for the presented studies and their age is ranged from 18-28 years.

**Collection of data:**

The data pertaining to the study was collected by administering the tests for the selected variables. Before Collection of data, the subjects were given a chance to practice the prescribed tests so that they should become familiar with the tests and know exactly what is to be done to ensure uniform testing condition the subjects was tested during morning and data was collected.

**Selections of variables**

The following variables were selected

- Muscular endurance
- Flexibility

**Administration of the test:**

**Purpose**: To measure the flexibility of the back and leg (hamstring) muscles.

**Equipment**: A testing box or a flex measure and a yardstick.

**Procedure**: The subject is asked to remove shoes and place his/her feet against the testing box while sitting on the floor with straight knees. Now the subject is asked to place one hand on top of the other so that the middle fingers of both hands are together as the same length. The tester keeps his/her hand on the knees of the subject to keep them straight not allowing any bending of the knees. The subjects instructed to lean forwards and place his/her hands over the measuring scale lying on the top of the box with its10 inch mark coinciding with the front edge of the testing box. Then, the subject is asked to slide his/her hands along the measuring scale as far as possible without bouncing and to hold the farthest position for at least one second.

**Scoring:** Each subject is given three trials and the highest score nearest to an inch is recorded and 10 inches are subtracted from the recorded reading.

- **Purpose**: To measure the muscle strength and endurance.

**Equipment**: A mat for each subject & stopwatch.

**Procedure**: The subject is asked to lie on the back with the knee bend feet on the flower & heels not more than 12 inches from the buttocks. The angle at the knees should be less than 900 angle. The subject has to put the hands on the back of the neck with the figure clasped and has to place the elbows squarely on the mat the subject's feet are to be held by assistant to keep them in touch with the surface the subject is asked to tighten the abdomen muscles and bring the head and elbows to the knee the entire above processes constitutes one sit-up. The subject is asked to return to the starting position and to do sit-ups again.

**Statistical analysis:**

For the analysis of data mean, standard deviation and t-ratio were used to compare physical fitness between urban and rural inter-collegiate students. The level of significance was setup at 0.05.

Formula for mean, standard deviation and t- ratio are as below.

$M = \sum X/N$

$S.D = \sqrt{X2/N}$

T- Ratio = M1 – M2/ Critical ratio.

**Analysis of the data and results of the study**

For the analysis of Physical fitness variables, Urban and Rural area students in S.R.T.M University Nanded were selected for the study, who was instructed to give the true response for the selected test, sit-ups, flexibility and reaction time were used. After collecting the data, the mean and standard deviation of Urban and Rural area students group were found out and t- test value was calculated in order to find the Physical fitness difference between Urban and Rural area students of S.R.T.M University Nanded.

**Table 1: Shows statistical comparison in muscular endurance between Rural and urban area students**

| Group | N | Mean | S.D | D.O.F | T-ratio |
|---|---|---|---|---|---|
| **RURAL** | 20 | 30.35 | 4.00 | 38 | 2.76 |
| **URBAN** | 20 | 36.8 | 9.66 | | |

Mean of Rural group =30.35 which is lesser than the mean of Urban group = 36.8, so the mean difference was found as 6.45. To check the significant difference between Rural and Urban group, the data was again analyzed by applying t test. Before applying t test, standard

deviation was calculated between Rural and Urban group. Where S.D. of Rural group = 4.00 and S.D. of Urban group=9.66 and the calculated value of 't' where found 2.76 which was greater than tabulated t=2.0244 at 0.05 level of significance. This shows that there was significant difference in Sit-ups between Rural and Urban group, so the hypothesis was accepted.

**Table 2: Shows statistical comparison in Flexibility between Rural and urban area students**

| Group | N | Mean | S.D | D.O.F | T-ratio |
|---|---|---|---|---|---|
| **RURAL** | 20 | 7.75 | 2.82 | 38 | 1.07 |
| **URBAN** | 20 | 6.25 | 5.59 | | |

Mean of Rural group =7.75 which is greater than the mean of Urban group =6.25, so the mean difference was found as 1.5. To check the significant difference between Rural and Urban group, the data was again analyzed by applying t test. Before applying t test, standard deviation was calculated between Rural and Urban group. Where S.D. of Rural group =2.82 and S.D. of Urban group=5.59 and the calculated value of 't' where found 1.07 which was lesser than tabulated t=2.0244 at 0.05 level of significance. This shows that there was insignificant difference in Flexibility between Rural and Urban group, so the hypothesis was rejected.

**Conclusion**:

Within the limitations of the study and from the statistical analysis the following conclusion is drawn.

1. There was insignificant difference in flexibility among Rural and urban college level students.
2. There was significant difference in muscular endurance among Rural and urban college level students.

**References:**

1. Hao W et, al,.Gender comparisons of physical fitness indexes in Inner Mongolia medical students in China. 2014 Aug 31;7(1):220-7.doi: 10.5539/gjhs.v7n1Pp220.
2. Huff, "A Comparison Of Physical Fitness Levels Of Home School And Public School Students In South Alabama", Dissertation Abstract International, Vol. 61, No. 02, August, 2000.
3. Christian P., "Relationship Between Physical Performance Item And Body Composition", Research Quarterly, Vol.4, May, 1970.
4. Johnson Joseph B., "A Comparison of Physical Fitness and Self Concept Between Junior High School Negro and White Male Students", Dissertation Abstract International, Vol. 31, No. 2, August, 1971.
5. Morteza Jourkesh, et, al,., Comparison of Physical fitness level among the students of IAU, Shabestar Branch, Annals of Biological Research, 2011, 2 (2) :460-467
6. Farzaneh Moslemi-Haghighi, et, al,. Comparison of physical fitness among smoker and non-smoker MEn , vol3 1-2 (2011)
7. Garstecki MA, et, al, Comparison of selected physical fitness and performance variables between NCAA Division I and II football players. J Strength Cond Res. 2004 May;18(2):292-7.

8. Gregor Jurak, et, al., The comparison of physical fiTness of 13-year-old sTudenTs from ljubljana and belgrade, University of Ljubljana, Faculty of Sport, Slovenia, University of Belgrade, Faculty of Sport and Physical Education, Serbia (2009)
9. A. W. Sloan, Comparison of tests of physical fitness of student teachers at Cape Town , Internationale Zeitschrift für angewandte Physiologie einschließlich Arbeitsphysiologie 1996, Volume 23, Issue 1, pp 24-33
10. Gahlawat, Parveen, Comparison of Physical Fitness status of Rural and Urban Male Collegiate students in Kurukshetra, Department of Physical Education, Kurukshetra University. Haryana, (2005)

* * *

# Effects of Physical Fitness Training Programmes on Neuroticism and Extraversion on Volleyball Players

**Dr. Vikram Kunturwar:** Director of physical Education, Shankarrao Chavan College Ardhapur, Nanded

**Abstract**

The aim of the research was to determine the **effects of physical fitness training programmes on neuroticism and extraversion on volleyball players.** Only one group was targeted experimental group, there was no control group. The 30 male volleyball players, participated in the study and their age ranged between 19-30 years. Training was given to the experimental groups. The data was collected through respondents in the form of different experimental tests. A training program was planned for 12 weeks, 5 days a week and 90 minutes. a day. Exercise that use large muscles groups that can be maintained continuously and are aerobic in nature. These exercises include walking, running, jogging, climbing, jumping row and cross country. The result reveals that there was significant effects of Physical fitness training programme was found in **neuroticism and extraversion** on Volleyball players

**Introduction**

The Extraversion is personality traits. The extravert person's orientation is towards the standard words. He deals people intelligently in social situation. Neuroticism is a minor mental disorder characterized by inner struggles & Discord & social relationship.

The importance of physical fitness programmes is linked to a top performance in sports. Regular physical activity in childhood and adolescence improve muscle power , muscle strength & endurance, health build, healthy bones & muscles, hips control weights, minimize , depression, anxiety and stress, increases self- esteem and may improve cardio reparatory function. Physical fitness is recognized as an important component of health. Volleyball is a psycho-social Activity. It has both psychological and social dimension besides physical, physiological and technical aspects.

**Methods**

Only one group was targeted experimental group, there was no control group. The 30 male volleyball players, participated in the study and their age ranged between 19-30 years.Training was given to the experimental groups.The data was collected through respondents in the form of different experimental tests. The demographic information about Gender, age, daily smoking, drug use, etc. was obtained before seeking responses. The study area was restricted to Marathwada region of Maharashtra. **Procedure of Test**

Pre and post-test was taken on 30 Volleyball Players from various colleges, voluntary to participate in the Physical fitness training programmes. Exclusion criteria were the presence of chronic medical conditions such as asthma, heart disease or any other condition that would put the subjects at risk when performing the experimental tests. The subjects were free of smoking, alcohol and caffeine consumption, antioxidant supplementation and drugs during the programmes. They completed an informed consent document to participate in the study. All 30 acted as experimental group for Physical fitness training programmes with no control groups.

**Applied Training Program**

A training program was planned for 12 weeks, 5 days a week and 90 minutes. a day. Exercise that use large muscles groups that can be maintained continuously and are aerobic in nature. These exercises include walking, running, jogging, climbing, jumping row and cross

country. There was training programmes in the academic schedule of physical education department. The exercise session should consist of the following procedure: Warm - up period will be approximately 10 min., this was combine callisthenic – type stretching, exercise and progressive aerobic activity. However, cool down period was 5 to 10 min. The data was collected through respondents in 30 volleyball players from different colleges of Swami Ramanand TeerthMarathwada University Instructions was given to the volleyball players.

**Eysenck Personality Questionnaire - Revised (EPQ-R)**

Eysenck Personality Questionnaire - Revised (EPQ-R) was used. The EPQ measures the traits of personality: Extraversion and Neuroticism.

Scoring Key of EPQ-R Scale Mode of Response Items Score are as :

**Neuroticism**: 3, 7, 12, 15, 19, 23, 27, 31, 34, 37, 38, 41, 47, 54, 58, 62, 66, 68, 72, 75, 77, 80, 84, 88

**Extraversion**: '21, 29, 42 1 1, 5, 10, 14, 17, 25, 32, 36, 40, 45, 49, 52, 56, 60, 64, 70, 82, 86

**Results of the study**

The results concerning this are presented in the form of tables and also illustrated with the help of suitable figures where ever necessary. For the sake of t-ratio and methodical presentation of the results, following order has been adopted.

**Table -1**

**Mean Scores and Standard Deviation of selected Components of volleyball players.**

| Sr.No. | Components | Volleyball players | |
|---|---|---|---|
| | | Mean | Standard Deviation |
| **1.** | Age (Year) | 22.23 | 2.33 |
| **2.** | Weight (Kg) | 65.03 | 7.23 |
| **3.** | Height (Cm) | 175.87 | 14.12 |
| **4.** | Competition in one year | 7.09 | 2.33 |

Table 1 shows the mean (S.Ds.) age of volleyball players was 22.23 (2.33). Their weight was 65.03 (7.23) Kg. and their height was 175.87 (14.12) cm.

**Figure -1**

**Shows Mean Scores and Standard Deviation of selected Components of Volleyball players**

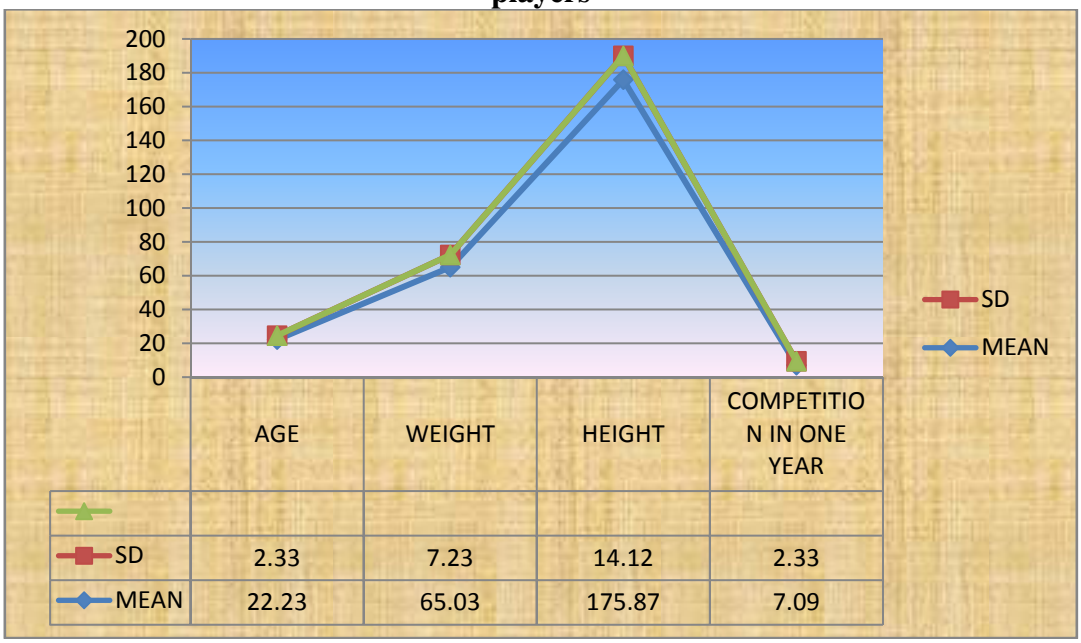


**Table- 2**
**Means scores, standard deviation and t-ratio of neuroticism of pre and post-test of Volleyball Players.**

| Variable | Test | Number | Mean | S.D. | t-ratio |
|---|---|---|---|---|---|
| **Neuroticism** | Pre Test | 30 | 12.44 | 1.99 | **10.17*** |
| | Post Test | 30 | 10.10 | 1.78 | |

***Significant at .05 level.***

Table- 2 Shows that mean scores, standard deviation and t-ratio of **Neuroticism** in pre and post-test of Volleyball Players.

The Mean scores, standard deviation of selected physiological variable with respect to Neuroticism of pre and post-test of Volleyball players have been presented through graphically in fiure-2.

**Figure-2**
**Illustrates the Mean Scores and Standard Deviations of Neuroticism of Pre and Post-Test of Volleyball Players.**

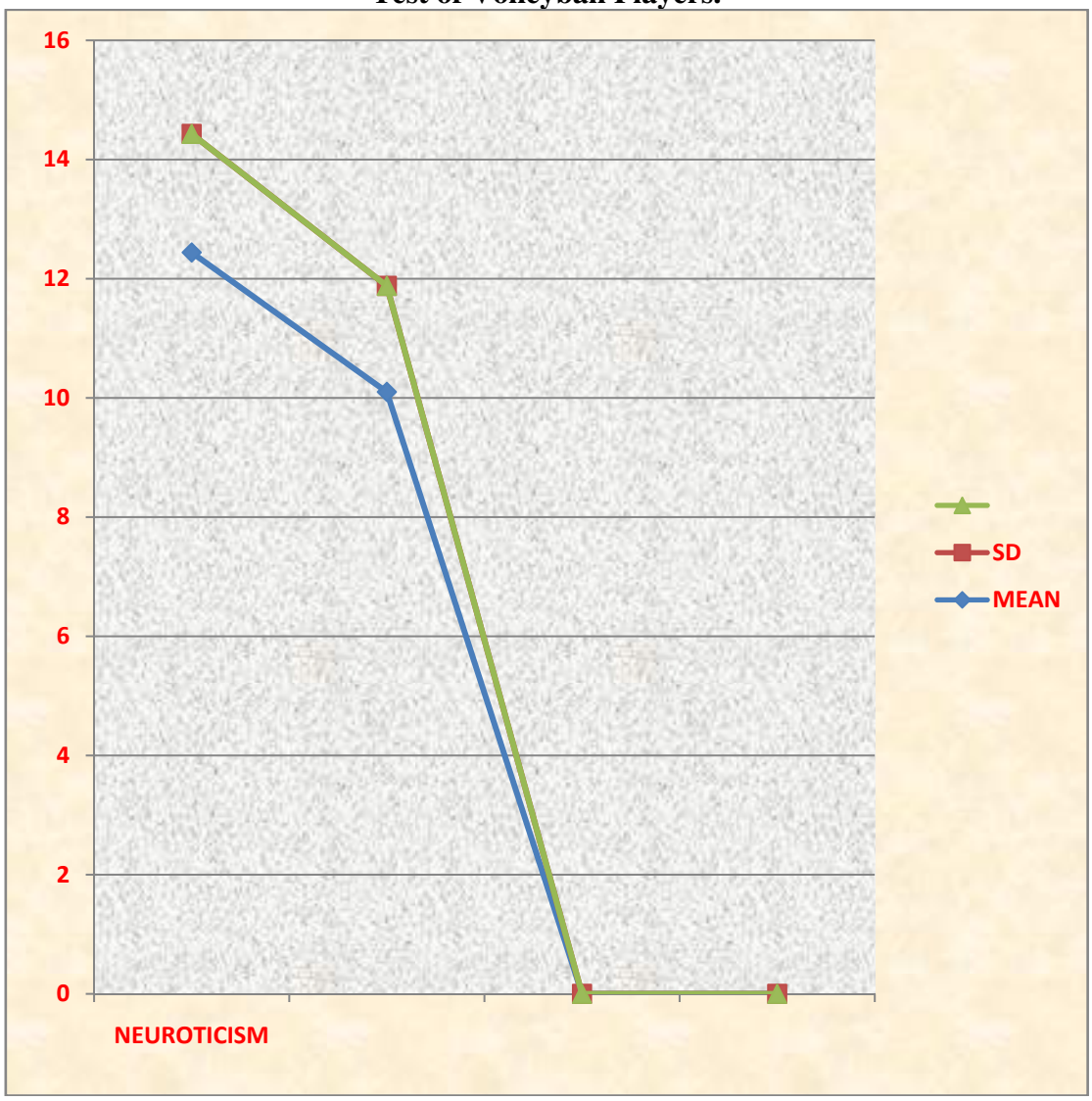


**Table-3**
**Means scores, standard deviation and t-ratio of Extraversion of pre and post-test of Volleyball Players.**

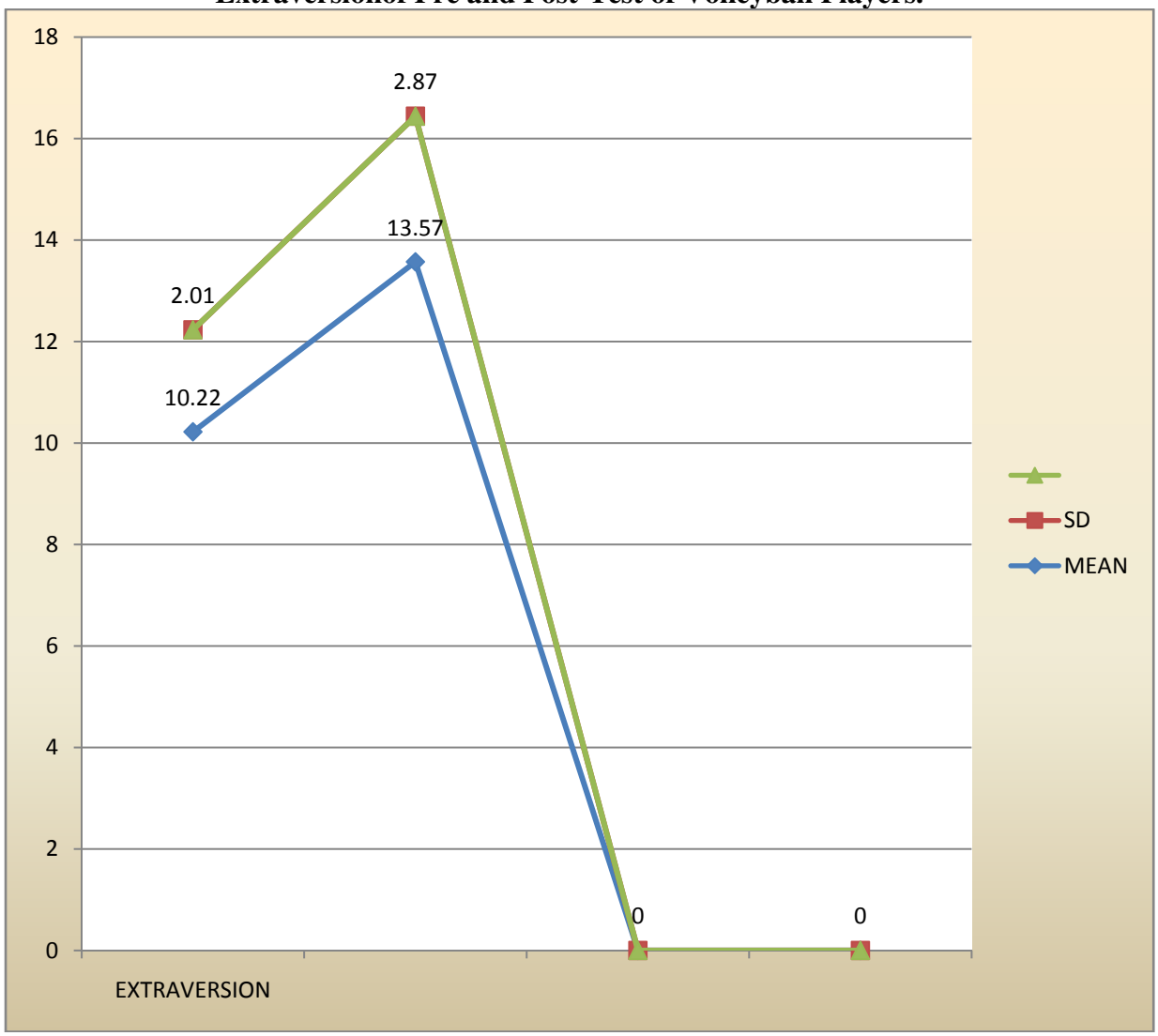
| Variable | Test | Number | Mean | S.D. | t-ratio |
|---|---|---|---|---|---|
| **Extraversion** | Pre Test | 30 | 10.22 | 2.01 | **5.31*** |
| | Post Test | 30 | 13.57 | 2.87 | |

**** Significant at .05 level.***

Table- 3 Shows that mean scores, standard deviation and t-ratio of **Extraversion** in pre and post-test of Volleyball Players

The Mean scores, standard deviation of selected physiological variable with respect to Extraversion of pre and post-test of Volleyball players have been presented through graphically in fiure-3

**Figure-3**
**Illustrates the graphical presentation of Mean Scores and Standard Deviations of Extraversionof Pre and Post-Test of Volleyball Players.**



**Discussion**

With regards to selected physiological variable in **Neuroticism** in pre and post-test of Volleyball Players they have obtain the mean value of 12.44 and 10.10 respectively which are given in the Table -10 shows that significant effects of Physical fitness training programme was found in Neuroticism (**t=**p<0.05) on Volleyball players. That means Physical fitness training programme are effective for reduce Neuroticism among Volleyball players. With regards to selected physiological variable in **Extraversion** in pre and post-test of Volleyball Players they have obtain the mean value of 10.22 and 13.57 respectively which are given in the Table -11 shows that significant effects of Physical fitness training programme was found in Neuroticism ( **t=**p<.05) on Volleyball players. That means Physical fitness training programme was effective for increase extraversion among Volleyball players.

**References**

1. A M Epstein, C B Begg, and B J McNeil(1984) The effects of physicians' training and personality on test ordering for ambulatory patients. *American Journal of Public Health November 1984: Vol. 74, No. 11, pp. 1271-1273*.
2. A N Goss, D L Bassett, D C Gerke(1990) Psychological factors in temporomandibular joint dysfunction: anxiety. *Australian prosthodontic journal* /Australian Prosthodontic Society 02/1990; 4:35-9.
3. Cheng, Jen-Son, Yang, Ming-Ching, Ting, Ping-Ho, Chen, Wan-Lin; Huang, Yi-Yu.(2011).Leisure, Lifestyle, And Health-Related Physical Fitness For College Students, *Social Behaviour and Personality: an international journal,*
4. Edimansyah,B.A., Bnrusli and Lnaing.(2008).Effects of short duration stress management training on self perceived depression, anxiety & stress in male automotive assembly workers: A quasi – Experimental study, *Journal of Occupational medicine & toxicology*, *3:28*
5. Emma,B., Antonio,B.(2012).Olfaction in Affective and Anxiety Disorders: A Review of the Literature. *Psychopathology (impact factor: 1.64*
6. Epstein, A.M., Begg,C.B., andMcNeil,B.J.(1984).The effects of physicians' training and personality on test ordering for ambulatory patients. *American Journal of Public Health: Vol. 74, No. 11, pp. 1271-1273.*
7. Eston,R., Stansfield,R., Westoby,P.andParfitt,G.(2012).Effect of deception and expected exercise duration on psychological and physiological variables during treadmill running and cycling. *Psychophysiology. Apr;49(4):462-9.*
8. F,Trudeau., RJ,.Shephard.,Arsenault,F.,Laurencelle,L.. (2003).Tracking of physical fitness from childhood to adulthood. *Can. J. Appl. Physiol.28(2): 257-271. Canadian Society for Exercise Physiology*

* * *

# Anabolic Steroids : A Prohibited Substance for Sports Person

**Anu Gill :** PET , Govt. Girls High School , Gurugram , Haryana

**Abstract**

Ben Johnson's victory in the 100 m at the 1988 Seoul Olympics.He subsequently failed the drug test when stanozolol was found in his urine. He later admitted to using the steroid as well as Dianabol, testosterone, Furazabol, and human growth hormone amongst other things. Johnson was stripped of his gold medal as well as his world-record performance. Carl Lewis was then promoted one place to take the Olympic gold title. Lewis had also run under the current world record time and was therefore recognized as the new record holder. These side-effects of anabolic steroids include Intramuscular abscesses and other microbial bacteria that can cause infections, from counterfeited products the user decides to purchase on the black market, high blood pressure and cholesterol, as well as infertility, and dermatological conditions like severe acne. Mental effects include increased aggression and depression.

**Introduction**

**Doping** refers to the use of banned athletic performance-enhancing drugs by athletic competitors, where the term doping is widely used by organizations that regulate sporting competitions..There is growing tendency, in Modern times of using 'Dopes' by the sports person to be super human being and to better one's performance field. When particularly fine performance is achieved, there is also a strong temptation for the less successful competitors to hint that some from of 'doping' was responsibleOver 30% of athletes participating in 2011 World Championships admitted having used banned substances during their careers. According to a study commissioned by WADA, actually 44% of them had used them. Nevertheless, only 0.5% of those tested were caught. The whole Russian track and field team was banned from the 2016 Olympic Games, because the Russian State had sponsored their doping program.

**Origin of doping**

The origins of doping in sports go back to the very creation of sport itself. From ancient usage of substances in chariot racing to more recent controversies in baseball and cycling, popular views among athletes have varied widely from country to country over the years. The general trend among authorities and sporting organizations over the past several decades has been to strictly regulate the use of drugs in sport.

**History of Anabolic steroids**

Anabolic steroids use in sports began in October 1954 when John Ziegler, a doctor who treated American athletes, went to Vienna with the American weightlifting team. There he met a Russian physician who, over "a few drinks", repeatedly asked "What are you giving your boys?" When Ziegler returned the question, the Russian said that his own athletes were being given testosterone.

**Definition of Doping**

Anabolic steroids (AAS) are the most commonly used substances to improve exercise performance and/or body image of an athlete . The WADA's most recent definition of doping incorporates both a negative list of banned substances and a description of various behaviors related to them.

**ISSN 0975-5020**

**History of Anabolic steroids in Olympic**

Ben Johnson's victory in the 100 m at the 1988 seole Olympics.He subsequently failed the drug test when stanozolol was found in his urine. He later admitted to using the steroid as well as Dianabol, testosterone, Furazabol, and human growth hormone amongst other things. Johnson was stripped of his gold medal as well as his world-record performance. Carl Lewis was then promoted one place to take the Olympic gold title. Lewis had also run under the current world record time and was therefore recognized as the new record holder.[In 2003, however, Wade Exum, the United States Olympic Committee (USOC) director of drug control administration from 1991 to 2000, gave copies of documents to *Sports Illustrated* which revealed that some 100 American athletes who failed drug tests and should have been prevented from competing in the Olympics were nevertheless cleared to compete; among those athletes was Carl Lewis. In sports where physical strength is favored, athletes have used anabolic steroids, known for their ability to increase physical strength and muscle mass.The drug mimics the effect of testosterone and dihydrotestosterone in the body. They were developed after Eastern Bloc countries demonstrated success in weightlifting during the 1940s. At the time they were using testosterone, which carried with it negative effects, anabolic steroids were developed as a solution. The drug has been used across a wide range of sports from football and basketball to weightlifting and track and field. While not as life-threatening as the drugs used in endurance sports,

**Side effects of anabolic steroids**

1. Acne
2. impaired liver function
3. impotency
4. breast formation (gynecomastia)
5. increase in estrogen
6. erectile dysfunction
7. increased sex drive
8. male pattern baldness
9. risk of heart failure

**Side effects in women include**:

1. Hair loss.
2. male pattern baldness
3. hypertrophy of the clitoris
4. increased sex drive
5. irregularities of the menstrual cycle
6. development of masculine facial traits
7. increased coarseness of the skin
8. premature closure of the epiphysis
9. deepening of the voice

A. **Prohibited substances**

- S0. Non-approved substances
- S1. Anabolic agents:
- - Anabolic androgenic steroids
- - Other anabolic agents
- S2. Peptide hormones, growth factors, and related substances
- S3. Beta-2 agonists

- S4. Hormone and metabolic modulators
- S5. Diuretics and other masking agents
- B. **Prohibited methods**
- M1. Manipulation of blood and blood components
- M2. Chemical and physical manipulation
- M3. Gene doping
- II**. Substances and methods prohibited in-competition**
- S6. Stimulants
- S7. Narcotics
- S8. Cannabinoids
- S9. Glucocorticosteroids
- III. **Substances prohibited in particular sports**
- P1. Alcohol
- P2. Beta-blockers.

**Conclusion**

**Anabolic steroids are misused in sports to increase muscle strength and bulk and to promote aggressiveness and as a result increase athletic performance. Anabolic steroids act upon the central nervous system .Anabolic steroids also increase muscle mass and physical strength, and are therefore used in sports and bodybuilding to enhance strength or physique. Known side effects include harmful changes in cholesterol levels. Acne, high blood pressure, liver damage.**

**References.**

1. Thevis M, Kuuranne T, Geyer H, Schanzer W. Annual banned-substance review: analytical approaches in human sports drug testing. *Drug Test Anal*. 2014; **6**: 164-84.
2. Bamberger M, Yaeger D. Over the edge: special report. *Sports Illustrated*. 1997; **86**: 64.3
3. Morente-Sanchez J, Zabala M. Doping in sport: a review of elite athletes' attitudes, beliefs, and knowledge. *Sports Med*. 2013; **43**: 395-411.
4. 4 Laure P, Thouvenin F, Lecerf T. Attitudes of coaches towards doping. *J Sports Med Phys Fitness*. 2001; **41**: 132-6.
5. Sagoe D, Molde H, Andreassen CS, Torsheim T, Pallesen S. The global epidemiology of anabolic-androgenic steroid use: a meta-analysis and meta-regression analysis. *Ann Epidemiol*. 2014; **24**: 383-98.
6. Perry HM, Wright D, Littlepage BN. Dying to be big: a review of anabolic steroid use. *Br J Sports Med*. 1992; **26**: 259-61.
7. Curry LA, Wagman DF. Qualitative description of the prevalence and use of anabolic androgenic steroids by United States powerlifters. *Percept Mot Skills*. 1999; **88**: 224-33.
8. Bhasin S, Woodhouse L, Casaburi R, Singh AB, Bhasin D, Berman N*, et al.* Testosterone dose-response relationships in healthy young men. *Am J Physiol Endocrinol Metab*. 2001; **281**: E1172-81.
9. Hoffman JR, Kraemer WJ, Bhasin S, Storer T, Ratamess NA, Haff GG*, et al.* Position stand on androgen and human growth hormone use. *J Strength Cond Res*. 2009; **23**: S1-S59.
10. Bhasin S, Storer TW, Berman N, Callegari C, Clevenger B, Phillips J*, et al.* The effects of supraphysiologic doses of testosterone on muscle size and strength in normal men. *The New England journal of medicine*. 1996; **335**: 1-7.

11. Meinhardt U, Nelson AE, Hansen JL, Birzniece V, Clifford D, Leung KC*, et al.* The Effects of Growth Hormone on Body Composition and Physical Performance in Recreational Athletes: a Randomized Placebo-Controlled Trial *Annals of internal medicine*. 2010; **152**: 568-77.
12. Baume N, Schumacher YO, Sottas PE, Bagutti C, Cauderay M, Mangin P*, et al.* Effect of multiple oral doses of androgenic anabolic steroids on endurance performance and serum indices of physical stress in healthy male subjects. *Eur J Appl Physiol*. 2006; **98**: 329-40.
13. Montisci M, El Mazloum R, Cecchetto G, Terranova C, Ferrara SD, Thiene G*, et al.* Anabolic androgenic steroids abuse and cardiac death in athletes: morphological and toxicological findings in four fatal cases. *Forensic science international*. 2012; **217**:e13-8.
14. Fineschi V, Riezzo I, Centini F, Silingardi E, Licata M, Beduschi G*, et al.* Sudden cardiac death during anabolic steroid abuse: morphologic and toxicologic findings in two fatal cases of bodybuilders. *International journal of legal medicine*. 2007; **121**: 48-53.
15. Thiblin I, Lindquist O, Rajs J. Cause and manner of death among users of anabolic androgenic steroids. *Journal of forensic sciences*. 2000; **45**: 16-23.

* * *

# Benifits of Meditation in Busy Life

**Dr.Abdul Waheed:** MSM College of Physical Education , Aurangabad

**Abstract**

Today meditation is considered as the most important factor for around development. The aim of the Meditation is to eliminate toxin and impurities within the body that accumulate due to dietary habit. Meditation provides mental relation is very much necessary to produce the desired results. Meditation provides a lasting spiritual rest, which must be experienced and to be understood. Meditation helps to prolong the body's period of growth and cell production, and reduces the decaying process

**Introduction**

Meditation is a distinct practice in Indian philosophy and it is mentioned in many Indian traditional texts. Meditation is the act of focusing one's thoughts or engaging in self – reflection or contemplation. Some people believe that, through deep meditation, one can influence or control physical and psychological functioning and the course of illness8. Meditation is a state of consciousness that can be understood only on a direct, intuitive level. Ordinary experiences are limited by time, space, and the laws of causality, but the meditative state transcends all boundaries.meditation, one slowly gains knowledge of the self, and gets freed from bondages, not merely the external ones, but in one's inner consciousness.Meditation is a process that anyone can use to calm oneself, cope with stress, and, for those with spiritual inclinations,

**Benefits of meditation**

People who meditate regularly land to develop magnetic and dynamic personalities, cheerfulness, powerful speech, lustrous eyes, physical health, and boundless energy. Others draw strength from such people and feel elevated in their presence. In meditation, thinking come to the surface and develop experience a new ideas of the universe, a vision of unity, happiness, harmony, and inner peace. Negative tendencies vanish, and the mind becomes steady. Meditation brings freedom from fear of death, which is seen a doorway to a new name and form.

**Meditation and Health**

The several studies shows that young people can benefit from meditation practices as it contributes to developing healthy bones, sound cardiovascular efficiency and, lung function as well as improved motor skills and cognitive function. The engaging in regular meditation practices is particularly apparent in the prevention of several chronic diseases, including: obesity, depression, cardiovascular disease, diabetes, cancer, Blood pressure, and osteoporosis. Physically active can enhance functional capacity among young people, and can help to maintain the quality of life and independence.

**Meditation and psychological Health**

Meditationthroughout the ages has been acclaimed for health and recreation. It provided fun and enjoyment. It also provided youthful exuberance and the elderly care. Meditation is essential for the enhancing of wholesome personality of an individuals which would depend upon the opportunities provided for universal development of the, physiological, psychological, physical, social and spiritual aspects.

**Meditation and Heart health**

Physically fit person, heart beats at a lower rate and pumps more blood per beat at rest.

Many researchers strongly support the regular meditation helps one to keep a strong and healthy and to prevent cardio vascular diseases.

**Meditation and metabolic function**

As a result of regular meditation and individual's capacity to use oxygen is increased systematically energy production depends on internal chemical or metabolic change.

**Concentration and meditation**

Meditation and concentration are the two royal roads to perfection. Concentration is the process of focusing your mind on a singular object, either within or outside your body, and keeping this attention steady for a period of time. Only true concentration will lead to meditation. The objective of concentration meditation is to develop a single-minded attention directed at some object: an image, a breath, a candle flame, or a word or phrase. Continually returning one's attention to this object develops one's ability to remain calm, focused, and grounded.

**Conclusions**

Everybody accepts the importance of meditation as a base for health of body and mind. It is very important to exercise the mind and body together. meditation is the necessity of spiritual and moral remediation of the society. As well all know that India is a country of various caste and creeds. In order to achieve higher degree of unity in diversity, meditation play a major role in bringing all together under the feeling of oneness. Through games when the traits of co-operation, belongingness, love, affection, attachment develop strongly in students, then automatically we march towards national integration.

**References**

1. Akbar H , "Self – Concept of Physically Challenged Adolescents", ***Journal of the Indian Academy of Applied Psychology*****,** Vol.32, No.I, (2006) pp 4-6.
2. Birkel, DA., and Edgren L. "Hatha Yoga: Improved Vital Capacity of College Students", ***Alternative Therapies in Health and Medicine***, 6 (6) (Nov 2000), pp.55-56.
3. Bhosale( 2011).Examining the effects of anaerobic exercise on blood pressure among sedentary students."*Variorum Multi-Disciplinary e-Research Journal* Vol,-02, Issue-II.
4. Bhosale V (2013). Examining the effects of anaerobic exercise on Heart rate among sedentary students."*Physical Education Foundation of Indian.ISBN NO.*-978-81-927686-0-1. Page no. 216.
5. Chandrabose A "Therapeutic effect of yoga practice on patients suffering from bronchial asthma**",** ***Unpublished Medical Project,*** Pondicherry University, 1994.
6. Chinnaswamy, "Effects of Asanas and Physical Exercise Selected Physiological and Biochemical Variables", ***Unpublished M.Phil. Dissertation,***Alagappa University**,** Karaikudi**, *J***uly, 1992.
7. Gopal et al. "The Effect of Yogasanana on Muscular Tone and Cardio Respiratory Adjustments", ***Yoga Life****,* 6:5, (May 1975), p.3.
8. Harinath, et al.,"Effects of Hatha Yoga and Omkar Meditation of Cardiorespiratory Performance, Psychologic Profile, and Melatonin secretion"**,*Journal of Alternative and Complementaty Medicine****,*** 10 (2), (2004), p.261-268.
9. Joshi AR and Pansare MS, "Effect of Yoga Pulmonary Functions Tests", ***Indian Journal of Physiology and Pharmacology*** ,30:5 (1986), p.9.
10. Karambelkar, P.V., et al., "Effect of yogic practices on cholesterol level in females". ***Yoga Mimamsa,*** 20 (1978), pp.1-8.

11. Lee.C and Russell A, " Effects of Physical activity on Emotional wellbeing among older Australian women: cross sectional and longitudinal analyses"***.Journal of Psychosomastic Responses***, 54 (2) (2003).
12. Mahajan AS, Reddy KS, and Sachdeva U, "Yogic Lifestyle Intervention - Lipid Profile of Coronary Risk Subjects***", Indian Hear J.***, 51 (1) (1999), pp.37-40.
13. Mohan M et al. "Effect of Yoga Type Breathing on Heart Rate and Cardiac Axis of Normal Subjects", ***Indian Journal of Physiological Pharma***, (1986) 30: (1986), pp.334-339
14. Nayar et al, "Effects of Yogic Exercises on Human Physical Efficiency*",* ***Indian Journal of Medicine Research*** (1975), 63: pp.1369-1375.
15. Oak JP and Bhole, "Pulse Rate during and after BhayaKumbaka with Difference conditi1ons of Abdominal Wall", ***Yoga Mimamas***, Vol.I, XXII: 3&4; 71- 76, (1983-84), p.31
16. Sakthignanavel,D "Effect of continuous running, yogic pranayama, and combination of continuous running and yogic pranayama exercise on cardiorespiratory endurance, selected physiological and psychological variables" ***Unpublished Doctoral Dissertation,*** Annamalai University**,** September, 1995.
**17.** Santha J.K., et al., " Study of some physiological and biochemicalparameters in subjects undergoing yogic training". ***Indian. J. Med. Res***., 74 (1981),120-124.
***18.*** Sinha AK and Bhan BN, "Mental Health in University Students", ***Third Survey of Research in Education*** 1978-83, (1987), pp.424-425.
19. Swahney et al., "Coronary Artery Disease Regression Through Life Style Changes: Vegetarianism, Moderate Exercise, Stress Management Through Rajayoga Meditation". ***Defence Institute of Physiology & Allied Sciences***, New Delhi. (1999).
20. Thilagavathy, "A study of academic achievement of adolescents relation to their cognitive style, locus of control, self esteem and mental health"*,* ***UnpublishedPh.D., Thesis***, Annamalai University*,* 1995.
21. Udupa et al, "A Comparative Study on the Effect of Some Individuals Yogic Practives in Normal Persons", ***Indian Journal of Medical Research*** 63, (1975), pp.1066- 1071.

* * *

# Location wise Injuries in Competitive Football

**Dr. Sinku Kumar Singh:** Swami RamanadTeerthMarathwada University Nanded (MS).

**Abstract**

The primary aim of the present study was to identify the incidence of injuries among three groups of competitive footballers. Accordingly three groups of footballers were targeted; international, national and state footballers aged between 14 to 30 years, information of incidence of injuries was collected, Individually through a questionnaire from 300 footballers. 100 out of each groups from various Indian football teams which were participating in All India Mayor trophy football tournament, Aurangabad (2006) inter-varsity football tournament Goa (2007), Maharashtra state junior football tournament Jalgoan (2007). A Self made questionnaire prepared by investigator was used. Knee,Ankle, Foot and shoulder are more likely to injured all group players

**Introduction**

Football has been demonstrated to be among the most hazardous of organized team sports and injury is a frequent event in football ( Winter Griffith, 1989; Sinku 2006 ).Football requires a variety of physical attributes and specific playing skills, therefore participants need to train and prepare to meet at least a minimum set of physical, physiological and psychological requirements to cope with the demands of the game and to reduce the risk of injury. It is an enjoyable and social sport than can be played from childhood to old age, either at a recreational level or as a competitive sports.Football playing largely involves starting, running, slopping, twisting, jumping, kicking, and turning movements that place the players to greater risk of injury ( Waston 1993).In the epidemiological studies, injury occurs in training or matches interrupted or hampered play ( Sinku 2006 and 2007 ). Special treatment required in order to continue the game, or if the injury has made playing impossible. Football has received a little interest in the sphere of sports medicine.

**Methods**

Total 300 male competitive footballers; 100 out of International players, 100 National players and 100 State groups football players from different Clubs, Academy, State and University were selected as a subject for the present study. Inter-varsity footballers have been considered as national players. Their age ranged from 14 to 30 years. The data collected during tht All India Mayor trophy football tournament, Aurangabad (2006) inter-varsity football tournament Goa (2007), Maharashtra state junior football tournament Jalgoan (2007). Instructions were given to the footballers before filling these questionnaires by the researcher, football coach and football experts.For the present study, questionnaires prepared by the investigator were utilized for collecting of data. The statistical computation of data of the present study is used by using SPSS package in the computer.

Table – 01
**INJURIES WITH RESPECT OF LOCATION AMONG THREE GROUPS OF COMPETITIVE FOOTBALLERS**

| Sr.No. | **Location** | **International (%)** | **National (%)** | **State (%)** |
|---|---|---|---|---|
| 1) | Shoulder | 6.4% | 8.33% | 9.41% |
| 2) | Ankle | 23.2% | 23.14% | 9.41% |
| 3) | Knee | 20% | 22.22% | 18.84% |
| 4) | Hamstring | 10.4% | 8.33% | 4.70% |
| 5) | Head | -- | -- | 3.51% |
| 6) | Groin | 11.2% | 12.96% | 8.23% |
| 7) | Lower Leg | 4% | 8.33% | 7.05% |
| 8) | Hand | 4% | 1.85% | 7.05% |
| 9) | Quadriceps | 2.4% | .92% | -- |
| 10) | Wrist | 4% | .92% | 1.17% |
| 11) | Foot | 4.8% | 1.85% | 12.94% |
| 12) | Upper Arm | 2.4% | 2.77% | 2.35% |
| 13) | Eye | 1.6% | 1.85% | -- |
| 14) | Back | .8% | 3.70% | 7.05% |
| 15) | Hip | 1.6% | 2.77% | 2.35% |
| 16) | Elbow | 1.6% | -- | 4.70% |
| 17) | Chest | 1.6% | -- | -- |

Table-1, shows that the percentage of injuries with respect to location among three groups of competitive footballers.

**Discussion**

International groups footballers reported in 6.4% (Shoulder), 23.2 % (Ankle), 20% (Knee), 10.4% (hamstring), 11.2% (Groin), 4% (Lower Leg), 4% (hand), 2.4 % (Quadriceps), 4.00% (Wrist), 4.8% (Foot), 2.40% (Upper Arm), 1.6% (Eye), 8% (Back), 1.6% (Hip), 1.6% (Elbow) and 1.6 chest injuries respectively with respect to location.Ankle, Knee, Groin and Hamstring are most commonly site of injuries to international groups footballers. Whereas, National groups footballers reported in 8.33% (Shoulder), 23.14 % (Ankle), 22.22% (Knee), 8.33% (hamstring), 12.96% (Groin), 8.33% (Lower Leg), 1.85% (hand), .92 % (Quadriceps), .92% (Wrist), 1.85% (Foot), 2.77% (Upper Arm), 1.85% (Eye), 3.70% (Back), and 2.77% (Hip), injuries with respect to location respectively.Ankle, Knee, Groin, Hamstring and Lower Leg are more occurrence of injuries to national groups footballers with respect to location.Similarly 9.44% (Shoulder), 9.44 % (Ankle), 18.82% (Knee), 4.70% (hamstring), 3.51% (Head), 8.23% (Groin), 7.05% (Lower Leg), 7.05% (Hand), 1.77% (Wrist), 12.94% (Foot), 2.35% (Upper Arm), 7.05 (back), 2.35% (Hip), and 4.76% (Elbow) injuries occurred to state groups footballers with respect to location respectively.Knee, Foot, Ankle and Shoulder are most occurrence injuries to state groups footballers.Each plane can be related to specific imbalance conditions within the foot and leg. Imbalance of the foot will allow either direct training to the body or the body will compensate for the imbalance with additional stress in the form of the overuse, such as strain, muscle fatigue, cramps, tendinitis, or the stress fractures. Specific muscle and soft tissue abnormalities may also cause imbalance injuries. Injuries to the knee and ankle may occur frequently in activities that require acceleration, deceleration, twisting, pivoting, cutting, and jumping A block or tackle to the

outside of the knee, and landing with a straight leg (hyperextension force) may causes of knee injuries. In discussing foot injuries, two major categories stand out; those caused by imbalance, and those caused by training, imbalance injuries of the foot may be described in terms of the reference planes at the body namely : (1) Saggital ; (2) Flexion and extension ; (3) Frontal (side to side ) problems, inversion or eversion at the foot and ankle; (4) Transverse ( rotational) problems, such as in toe, or out of toe, or secondary knee and hip torsional (twisting) problems.

**References.**


1. Chomiak J, Junge A, Peterson L, and Dvorak J (2000) Severe injuries in football players. Influencing factors. *Am J Sports Med* 28: S58-S68 .
2. Cromwell, F.J. Walsh Gromely "(2000) A Pilot Study examining injuries in elite gaelic footballers" British journals of sports medicine, 34: 104-108.
3. Ekstrand J and Gillquist J (1983) Soccer injuries and their mechanisms: a prospective study. Med Sci Sports Exerc 15: 267-270 .
4. Hawkins RD and Fuller CW (1996) Risk assessment in professional football: an examination of accidents and incidents in the 1994 World Cup finals. Br J Sports Med 30: 165-170 .
5. Hawkins RD and Fuller CW (1998) An examination of the frequency and severity of injuries and incidents at three levels of professional football. Br J Sports Med 32: 326-332 .
6. Hawkins RD and Fuller CW (1999) A prospective epidemiological study of injuries in four English professional football clubs. Br J Sports Med 33: 196-203.
7. Heidt RS, Jr., Sweeterman LM, Carlonas RL, Traub JA, and Tekulve FX (2000) Avoidance of soccer injuries with preseason conditioning. Am J Sports Med 28: 659-662 .
8. Junge A (2000) The influence of psychological factors on sports injuries. Review of the literature. Am J Sports Med 28: S10-S15 .
9. Nielsen AB and Yde J (1989) Epidemiology and traumatology of injuries in soccer. Am J Sports Med 17: 803-807.
10. Orchard J, Seward H, McGivern J, and Hood S (2001)Intrinsic and extrinsic risk factors for anterior cruciate ligament injury in Australian footballers. Am J Sports Med 29: 196-200 .
11. Ostenberg A and Roos H (2000) Injury risk factors in female European football. A prospective study of 123 players during one season. Scand J Med Sci Sports 10: 279-285.
12. Rothman, KJ.; Greenland, S; Poole,; Lash, L. (2008). "Causation and Causal Inference". Modern Epidemiology (Third ed.). Philadelphia: Lippincott Williams & Wilkins. pp. 6–7.
13. Singh S.K (2013). A pilot study examining the anatomical site of injuries to Elite level football players. International journal of sports glimpses vol. vol.3( 1) 93-97.
14. Singh S.K (2013)a . Comparison of nature of injuries among aged group football players.*International Journal of Physical Education, Health & Sports Sciences* Vol. 02, ( 2 ): 62-65
15. Singh S.K (2013)b. Nature of Injuries Prevalence in Football Players: A Retrospective Study. October 2013 Entire Research, Vol.- 5, Issue-IV.19-22.
16. Singh S.K (2013)c. Biological Maturity of Injuries Sustained due to Causes among Football Players. *Journal of Exercise Science and Physiotherapy*, Vol. 9(2): 129-134.

17. Singh S.K (2013)d. Incidence of Injuries during Training and Match Playing Period: Comparison between Different Aged Group Football Players. *Variorum Multi-Disciplinary e-Research Journal Vol.,-04, Issue-II,1-6.*
18. Singh S.K (2014). A pilot study examining the mechanism of injuries to elite level football players.*International Journal of Physical Education, Health and Social Science* (IJPEHSS) Vol. 3, Issue 1, 1-4
19. Singh, S.K. (2013)e. Comparison of Incidence of Injuries among Aged group Football Players. Horizon Palaestra :*International Journal of Health, Sports and Physical Education*, 2 (1) , 72 - 74.
20. Singh, S.K. (2014)bInjuries and performance in football international. *Journal of behavioral social and movement sciences.* Vol.03(1) 28-33

* * *

# Office Yoga: Rejuvenating Life Style

**Dr. Hemant Verma:** D.P.E., J.E.S. College, Jalna. (M.S.)

**Abstract**

The present article is highlighting the office life of day today, and how it affects over the health of a person. The work culture of this scenario makes this fact more helpful and suppresses the dull, restless and busy life. We often work in office or any other work place with sedentary without doing any other activity then sitting on a place in couple of hours in a day in daily work or business. The paper has suggested some of the yoga exercise by doing at office one can get relaxed and rejuvenated. As yoga is a series of movements and stretches to connect our body to mind, and to breath. Yoga asana help to keep us refreshed during hectic hours of duty. It can help to reduce over stress condition responsible to body tiredness and behaviors consciousness.

**Key words:** Office yoga, lifestyle, stress, anxiety.

## Introduction

We live in the 21st century world where huge level of competition we face in our life. Since the birth till death we have to live active to perform well to get in with competition. This makes our life very fast, hectic, tired and full of stress, leading to serious trauma. The scientific inventions, technological developments and rapid processes of urbanization have improved the standard of bring forth varied range of materialistic sufficiency, comfort and enjoyment in human life. Science has also invented pharmaceutical wonderful drugs and surgical equipments to die out human suffering and illness, but in spite of these, new diseases have cropped up and the frequency and number of victimized people by cardiac disorders, respiratory ailments, diabetes and peptic ulcer is increasing day by day. Sitting for a long time is bad for our body and organs. Office culture is somehow more responsible to this, as almost of the office work is done by sitting only. In this way we lose our power and energy to resists over diseases, and get bored in our day to day life schedule. Energy is the capacity to do work, it is needed in every aspects of life i.e. for sitting, standing, sleeping, reading, Dancing or any other major or minor, things requires energy. This energy is also needed in sports activity, can be improved by Yoga life style. Yoga word has been derived from the Sanskrit "योग" means to unite or union. The other meaning is the "connection". Many of daily exercises are the part of yoga, we already perform.

Doing same activity in work place leads our body inactive and lazy. The body does store toxins and lactic acid which need to be excreted regularly. But due to sedentary life style our body started to react in a negative phase and this causes obesity, muscle pain, strain, and stress and Anxiety disorders.

The ache between the shoulder blades, the pain in the neck region, stiffness in the lower back, the sore eyes, the feeling of exhaustion after a long day work may be your un welcome companions, and we would not like their company.

No one is exempt, whatever the job we have such as designer, manager, receptionist, doctor, CA, secretary, politician, company chairman, principal, teachers, and now a day's computer users, programmers etc. Today medical research declares that 90 to 95% of physical disorders are due to stress and tension (zaveri and zaveri, 2006). That's why natural life

through the yoga is demand of today

**Office Life and Need of Yoga**

**Office Life is Deskbound**

Our body is made for movement and activity, and suffers when deprived of it. Joints and muscles will become mobile and elastic until we do not move. Movement is natural and necessary, but most office jobs seem to have needed to sit for a long time. Many corporate offices are working to improvise the office work culture by using open plan workplaces, nutritious food, and couches where people can work on laptops, and fill the forms, meeting and demonstrates. The change has some benefits limited to certain conditions and of course doesn't change the fact that most of the people work sitting.

**Office life can suffer our oxygen intake**

We need pure and fresh air and continuous supply of oxygen and exercise to keep the blood pressure functional. But in most of the office we live in the indoor surrounding where we hardly ever get fresh oxygen, especially if we work in air conditioned surroundings. This affects our Physical and mental health and imbalance us psychologically too. After getting job work done we get out of the office and enter the outer surroundings, which directly absorbed by our body and causes of illness.

**Office life is psychologically draining**

We live in the office where the work conditions may be similar or deferent as per designation, level and seniority. The chairman or head may have better chair then the receptionist, and a separate office with a window that can be open, with all other amenities comparatively better than others may lead inferiority among other staff leading to emotional wearing, to see the comfort of other. And will keep blame us at the end of the day.

**Office life can create anxiety**

In today's context people spend more time in office as compared to earlier. They work constantly at a same place. According to the Bureau of Labor Statistics provided by USA, in 2017, adult's male and female regular employees spent almost 8+ hours in a day. In Indian continent According to Act 1948, Section 51 of the Act, every adult or that worker who has completed 18 years of age cannot work for more than 48 hours in a week and not more than 9 hours in a day should not exceed 10-1/2 hours or maximum 48 hours in a week.

The shift may be day or night depends upon the nature and policies of employer. Feeling of insecure at work place, humiliation by other staff may lead to mental tension and anxiety. Office politics can also be a root cause of anxiety.

**Table no 1,**

Showing the Average Duty hours of male and female employees in USA

| Work nature | Male | Female |
|---|---|---|
| Full-time workers | 08.78 | 08.28 |
| Part-time workers.. | 05.78 | 5.24 |

**Office consumes your whole day**

If you live in a city and work in a rural area, your working day is pillowed between the struggles with rush- hour road journey, traffic or the crowed in transport, may delay your return. Due to these circumstances we may late to office and late to back home. This leads routine problem of grasping the whole day routine. No more time left for personal work.

***We can avoid these problems if we alter our life style in the following manner***

1. Adopt a peaceful life style
2. Do regular exercise
3. Eat nutritious food and avoid junk foods, soft drinks, Soda etc
4. Spare time to do Yoga and Pranayama
5. Have ample time to yourself
6. Visit the place of interest
7. Take part in recreational activities at place of work
8. Avoid continues use of computer, laptop, and Mobile phones
9. Avoid long term sitting on a place
10. Take scheduled rest while work during a day

**Yoga practice**

Yoga is a method by which to obtain control of one's latent powers. It offers the means to reach complete self realization. If we work in any office, we probably experience physical tension from time to time. We can do some specific yoga exercise at office during or between work to release tension, and to rejuvenate the body again to work.

**1. Sit properly**

Spine erect, your pelvis centered and weight of your upper body supported by your pelvis, you are actually resting your body.

**2. Shoulder circling, lifting and squeezing**

Sit in the basic sitting position, with your arms hanging loosely at your sides. Circle your shoulders gently forwards a few times, one at a time and then together. Then circle them gently backwards.

*Do this slowly, and enjoy it.*

**3. Arm rotation**

Place your fingertips on your shoulders. Inhale as you bring your elbows together in front of your chest, then lift them as high as possible, keeping them together for as long as possible . Direct them back, and then begin to lower them behind you.

**4. Head turning**

Inhale as you look forward, and then up towards the ceiling. Tip your head gently backwards, only as far as is comfortable.

Exhale as you slowly look over your right shoulder, letting your eyes lead your head, keeping your chin level.

Inhale as you look to the front.

Exhale as you slowly look over your left shoulder.

Inhale as you look to the front.

Repeat twice more to each side.

**5. Stretching neck**

**a) Lowering head forwards,**

Establish your basic sitting position. Keep your shoulders relaxed as you lift up out of your pelvis, lengthening your spine. Allow your arms to hang loosely at your sides.

Exhale as you tuck in your chin and slowly lower head, aiming your chin forwards the notch in your throat. Hold this position, breathing freely, allowing your neck to lengthen and your head to grow heavier. You should feel a nice stretch through the back of your neck, possibly as far down as your shoulder blades

**b) Lowering head sideways,**

Still sitting in the basic sitting position with your arms loosely by your sides;

Anchor your left hand under your chair seat beside you to avoid lifting your shoulder as you perform the movement**.** Tuck your chin slightly, and exhale as you gently lower head sideways to the right, aiming your ear towards your shoulder. Breathe freely as you hold this position. You will feel a stretch along the left side of your neck, from the tip of your shoulder to the base of your ear. For a stronger stretch, take your right hand up and over your head, and place it just above your left ear, keeping your elbow back**.**

**6. The upper back**

**a) The chest expansion**

Interrelate your fingers behind your back. If you have enough room on either side of you, do this by moving your hand forward in a breast stroke movement, this will open the chest nicely and extend the ribcage, encouraging a full, deep breath.

Straighten your elbows, draw your clasped hands down towards your buttocks, and gently pull your shoulder back.

7. **Four upper back tension relievers**

I) Sit in the basic sitting position. Interrelate fingers in front, turn your palms to face your knees, and exhale as you straighten your elbows.
Inhale as you push palms away from you, raising your straight above your head with your palms facing the ceiling. Have a really good stretch upwards.
Make sure to not tightening your jaw or neck.
Exhale and lower your arms to the front, continuing to stretch and push your palms away from you.
*Repeat twice more.*

II) Interrelate your fingers in front, turn your palms to face your knees and exhale as you straighten your elbows.
Inhale as you raise your straight arms above your head, palms facing the ceiling as in the previous exercise.
Exhale as you lower your clasped hands of your head, but don't touch it. Direct your elbows and shoulders back, and feel the squeeze at the top of your shoulder blades Inhale and stretch your palms towards the ceiling, keeping your elbows and Shoulders back, and straightening your arms. Exhale as you lower your arms in front, stretching your palms away.
Repeat twice more.
Rest your hands In your lap.

III) Interlace your fingers in front , turn your palms to face your knees and exhale as You straighten your elbows
Inhale as you raise your straight arms above your heads, palms facing the ceiling.
Exhale as you lower your clasped hands behind your head as in Exercise 2.This
Time, rest your cupped palms against the back of your head.
Keeping your elbows and shoulders well back, turn your head slowly to the right,
And then to the lift.
Repeat three or four more times to each side, breathing freely.
Inhale as you stretch your arms up, palms facing the ceiling.
Exhale as you lower your arms in front, stretching your palms away.

IV) Interlace your fingers in front , turn your palms to face your knees and exhale as You straighten your elbows.
Inhale as you raise your straight arms above your head, palms facing the ceiling.
Exhale as you lower your clasped hands behind your head, keeping your elbows and shoulders back, and your hands a little away from your head.
Move your arms in large ovals behinds your head, moving your elbows as far out
To each side as possible, keeping them as low and as far back as possible. Do
This three or four times, breathing freely; and then reverse directions.
Inhale as stretch your palms up towards the ceiling.
Exhale and lower your arms in front, stretching them and pushing your palms away. Rest your hands in your lap.
*Finish the sequence by gently circling your shoulders forwards and backwards a few times*.

**Tension –relieving massage**

To end here is a little massage can give us to release Tension in the neck and shoulders and upper back.

Place the palms of your right hand on your upper back on the left midway between the tip of shoulder and your neck. Pick up a handful of skin and muscle, and gently being to need it, as if making Bread, using the heel of your hand and all your fingers. This may feel uncomfortable or even slightly painful. The tenser you are, the tighter your muscles are, then more discomfort there will be. Respect that, and don't try to force your way.

Though it, but just go on carefully massaging, not pinching or pocking, but gently kneading. Then stop kneading, but holding your handful of skin and muscle. Gently shrug your shoulder up and down a few times. Then slowly and gently circle it backwards a few times. Before massaging on the right side, slowly look over your lift shoulder and then over your right shoulder. Notice the difference in how it feels and in how far you can see on each side.

**Conclusion**

By adopting these little exercises in our daily life we can get rid of the stress factor and live a healthy and happy life. Although the best way to get health benefit. We need to adopt a disciplined life.

**Reference:**

1. N.S. Ravishankar, 2002, "Yoga for Health", Pustak Mahal, Delhi.
2. Desmond Dunne 1978 "Yoga made easy" Granada publishing London.
3. Julie Friedeberger 1998, "Office Yoga" Motilal Banarsidass Publishers Delhi.
4. https://www.bls.gov/tus/charts/.

* * *

# Cashless Economy: Challenges before Indian Economy

**Dr. Jivan Biradar :** Assistant Professor, School of Commerce, MIT World Peace University, Pune, India
**Prof. (Dr) Mahesh Abale:** Professor & Head, MBA Department, MIT, Pune, India

**Abstract**

At midnightof 8th November, 2016 everyone thought about the passing various important bills through rigours discussionin the winter session of parliament. But our Prime Minister Mr. Narendra Modi had announcedthat, 'the old Rs.500 and Rs.1000 notes are cancelled and it will be no more acceptable as legal tender'. After this, it has created many problems and on the first day of winter session of parliament argument and chaos had started. The demonetization decision was one step to remove black money from Indian society. In the implementation of demonetization our country has started new journey towards thecashless economy. The developing country like India, low level of internet penetration, uneducated farmers, unbanked population, lower level of awareness among rural inhabitants and cyber security are the major challenges before cashless economy in India. One can say we need to improve above mentioned obstacles to increase cashless economy in India.

**Keywords:** Cashless Economy, Demonetization, Indian Economy, Black Money.

**Introduction:**

At eveningof 8th November, 2016 everyone thought about the passing various important bills through rigours discussionin the winter session of parliament. But our Prime Minister Mr.Narendra Modi had announcedthat, 'the old Rs.500 and Rs.1000 notes are cancelled and it will be no more acceptable as legal tender'. After this, it has created many problems and on the first day of winter session of parliament argument and chaos had started. The whole session went into disruption and session end with no output. During last three years many schemes/polices has been announced and implemented also. After the three years, now there is a question in everyone's mind that iscashless economy really possible Indian society? In this connection this paper has tried to explore the reality and challenges before cashless economy in India.

**'Good' Decision but 'Not-good' Implementation:**

There are various advantages of this decision like, firstly, that so far many people did not understood the true value of money, but now people has realised not only the value of money but also slowly they will start understanding actual meaning and effects of this decision. Secondly, due to this decision people come to know how to use banking services for their own benefits, how to use E-banking services which will help to increase digitization of Indian society in coming years. Thirdly, the important issues of parallel economy or the black

money in our country will come out at some percent, some extent it will vanished from Indian society and some people will try to find the way out. Finally, the corruption which is biggest enemy of our country, some extent this corruption kind of activity will be not easy in coming years in our economy.

After announcement of this decision Government of India (GOI) had keep on changing many rules because of which banks were not able to manage the implementation at excellent level. Due to which the opposition parties will got one more topic for debate in parliament.When this decision was announced by Prime Minister, there were unexpectedly increase in the pricesof gold. Moreover, not only the share market was affected by this decision but also payment of tax in metropolis had increased with unexpected rate. Many more things had happened during first two week.

On other side, the common people have faced many problems. But they had 100 per cent trusts on this decision so that they warmly welcome and co-operated for implementation. However, if this decision had not taken secretly then the black money would have beenmanaged. That is why everyone thought there should be harder decision require like demonetization.

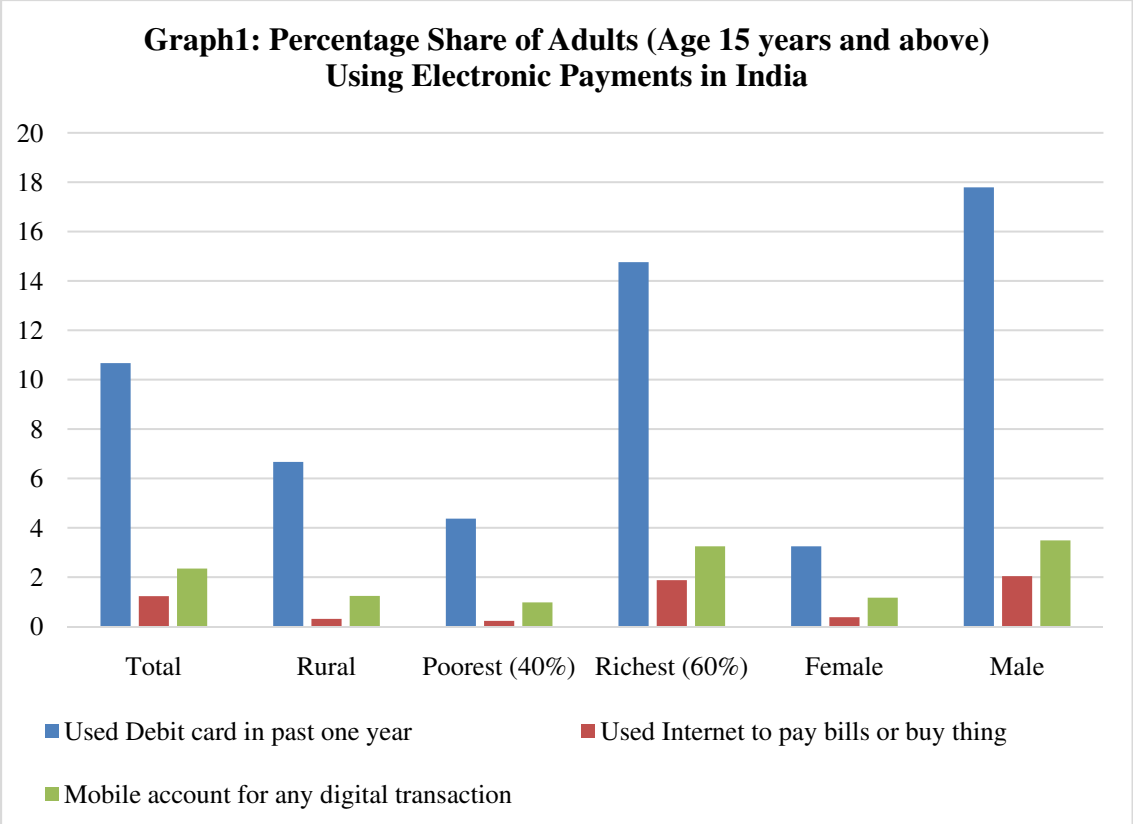
**Challenges before cashless economy in India:**

After demonetization decision, now GOI has taken many initiatives to increase digital mode of payment in the country to minimize the black money, counterfeit currency and terrorism problems in Indian economy. The World Bank Global Findex Data Base, 2014 shows the Percentage Share of Adults (Age 15 years and above) Using Electronic Payments in India Table 1. This table 1 shows that, there are only 10.67 per cent adults who used debit card in past one year and only 6.67 per cent in rural area. Addition to this, there is huge inequality across the level of income groups and gender (Graph 1). This data clearly shows that there are many challenges before Indian society.

**Table 1: Percentage Share of Adults (Age 15 years and above) Using Electronic Payments in India**

| Particulars | Used Debit card in past one year | Used Internet to pay bills or buy thing | Mobile account for any digital transaction |
|---|---|---|---|
| Total | 10.67 | 1.23 | 2.35 |
| Rural | 6.67 | 0.31 | 1.24 |
| Poorest (40%) | 4.37 | 0.23 | 0.98 |
| Richest (60%) | 14.76 | 1.88 | 3.25 |
| Female | 3.25 | 0.38 | 1.17 |
| Male | 17.79 | 2.04 | 3.49 |

**Source:**Atul Sood, Ashapurna Baruah-2017.




**Source:** Atul Sood, Ashapurna Baruah-2017.

Moreover, among various ways of electronic payment in India, people are more friendly with debit card than internet and mobile. But the growth rate of all these declined in 2018 (Table 2)

**Table: 2 Transactions through Internet/Electronic Banking Delivery Channels**

| Type of internet/electronic channels | Year | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2010 | 2014 | Growth Rate in % | 2017 | Growth Rate in % | 2018 | Growth Rate in % |
| No of ATM deployed (In Actual Figure) | 60,153 | 176,410 | 193.27 | 207,036 | 17.36 | 203,266 | -1.82 |
| No of POS deployed (In Actual Figure) | 595,958 | 1,058,642 | 77.64 | 3,027,382 | 185.97 | 3,595,912 | 18.78 |
| No of CREDIT CARDS issued (In Millions) | 18.33 | 20.36 | 11.07 | 35.49 | 74.31 | 44.21 | 24.57 |
| No of DEBIT CARDS issued (In Millions) | 181.97 | 500.08 | 174.81 | 842.47 | 68.47 | 958.15 | 13.73 |

Source: Compiled from Bank wise ATM/POS/Card Statistics, Reserve Bank of India and RBI website.

In this connection, the challenges before the cashless economy in India are as follows:

1. **Uninformed Farmers:** One of the most affected sections of the society is farmers in our country. Due to demonetization, agricultural sector affected adversely because farmers had spent more time in waiting in queue to get old note changed from banks than on farm land to start rabi season activities. Moreover, illiteracy and unbanked farming population are the major obstacles in cashless economy in India.
2. **Rural Population:**Nearly 70 per cent of population resides in rural area in India. This population has adversely affected from demonetizationdecision because the large share of population is away from formal banking system services. Now, when we are talking about cashless economy; education and security issues of digital transaction are to be considering as a prime obstacles. The number of internet users in India increased from 0.50 per cent in 2000 to 34.80 per cent in 2016, but still 65.17 per cent population are under the category of internetless (Non-Users) (Table 3). And this population are mostly in rural part of India.

**Table: 3 Internet Users in India**

| Year | Internet Users** | Penetration(% of Pop) | Total Population | Non-Users (Internetless) | % of Non-Users | 1Y UserChange % | 1Y User Change |
|---|---|---|---|---|---|---|---|
| 2016 * | **462,124,989** | 34.80% | 1,326,801,576 | 864,676,587 | 65.17 | 30.50 | 108,010,242 |
| 2015 * | **354,114,747** | 27% | 1,311,050,527 | 956,935,780 | 72.99 | 51.90 | 120,962,270 |
| 2014 | **233,152,478** | 18% | 1,295,291,543 | 1,062,139,065 | 82.00 | 20.70 | 39,948,148 |
| 2013 | **193,204,330** | 15.10% | 1,279,498,874 | 1,086,294,544 | 84.90 | 21.50 | 34,243,984 |
| 2012 | **158,960,346** | 12.60% | 1,263,589,639 | 1,104,629,293 | 87.42 | 26.50 | 33,342,533 |
| 2011 | **125,617,813** | 10.10% | 1,247,446,011 | 1,121,828,198 | 89.93 | 36.10 | 33,293,976 |
| 2010 | **92,323,838** | 7.50% | 1,230,984,504 | 1,138,660,666 | 92.50 | 48.50 | 30,157,710 |
| 2009 | **62,166,128** | 5.10% | 1,214,182,182 | 1,152,016,054 | 94.88 | 18.60 | 9,734,457 |
| 2008 | **52,431,671** | 4.40% | 1,197,070,109 | 1,144,638,438 | 95.62 | 12.50 | 5,834,088 |
| 2007 | **46,597,582** | 4% | 1,179,685,631 | 1,133,088,049 | 96.05 | 42.90 | 13,995,197 |
| 2006 | **32,602,386** | 2.80% | 1,162,088,305 | 1,129,485,919 | 97.19 | 19.30 | 5,275,016 |
| 2005 | **27,327,370** | 2.40% | 1,144,326,293 | 1,116,998,923 | 97.61 | 22.80 | 5,067,787 |
| 2004 | **22,259,583** | 2% | 1,126,419,321 | 1,104,159,738 | 98.02 | 19.10 | 3,567,041 |
| 2003 | **18,692,542** | 1.70% | 1,108,369,577 | 1,089,677,035 | 98.31 | 11.50 | 1,926,786 |
| 2002 | **16,765,756** | 1.50% | 1,090,189,358 | 1,073,423,602 | 98.46 | 136.90 | 9,689,725 |
| 2001 | **7,076,031** | 0.70% | 1,071,888,190 | 1,064,812,159 | 99.34 | 27.30 | 1,518,576 |
| 2000 | **5,557,455** | 0.50% | 1,053,481,072 | 1,047,923,617 | 99.47 | 96.50 | 2,729,647 |

* estimate for July 1, 2016

** Internet User = individual who can access the Internet at home, via any device type and connection.

Source: Internet Live Stats (www.InternetLiveStats.com)

3. **Unbanked Residents:**According to Report of the Committee on Financial Inclusion (2008) only 27% of total farm households are indebted to formal sources. Similarly, many

committees' reports revealed that, major population of minority communities; Adivaisi's and those who don't have formal identification proof to open bank account are excluded from formal banking system in the country.

In the process of cashless of Indian economy, inclusion of these inhabitants in mainstream banking system is an important challenge.

4. **Inadequate Infrastructure:**The availability of good quality of infrastructure is important in promoting cashless transaction in the economy. Considering the fact in India, there are many areas where infrastructure is not in good quality and adequate. This inadequacy of good infrastructure becomes challenges before cashless economy in India.
5. **Cyber Security:**Many studies show that there is strong positive correlation between level of cyber security and use of digital payment instruments. In India economy, there is a threats of cybercrime due to weak rules and regulation regarding cyber securities. As, the technology is changing with fast pace and on other hand Indian economy has more illiteracy rate, educating people about cyber security and laws is need of the time.

**Conclusion:**

In conclusion we can say that, demonetization decision was one step to remove black money from Indian society. In the implementation of demonetization our country has started new journey to cashless economy. The developing country like India, low level of internet users, illiteracy of farmers, unbanked population, rural inhabitants and cyber security are the major obstacles in creating cashless economy. Finally we can say, we need to improve allthese obstacles to create cashless economy in India.

**References:**

1. Ashok K Nag (2016), Lost Due To Demonetization, *Economic & Political Weekly*, Nov. 26, pp. 18-21
2. Arun Kumar (2016) Estimation of the Size of the Black Economy in India, 1996–2012, *Economic & Political Weekly*, Nov. 26, pp. 36-42
3. Atul Sood, Ashapurna Baruah (2017)The New Moral Economy-Demonetization, Digitalization and India's Core Economic Problems, *Economic & Political Weekly*, Jan. 7, pp. 31-36.
4. Gowda Rajeev (2016), The UPA's Real Growth Story, *The Hindu*, Dec. 19.
5. J Dennis Rajakumar, S L Shetty (2016) Demonetization:1978, the Present and the Aftermath, *Economic & Political Weekly*, Nov. 26, 2016, pp. 13 to 17.
6. Priyanka (2019) A Study of Cashless Economy- Benefits and Challenges in India, *International Journal of Research in Social Sciences,* Vol. 9 Issue 4, April 2019, ISSN: 2249-2496.
7. S. Gurumurthy (2016), Not a Tragedy, but the Remedy, *The Hindu*, Dec. 13
8. Singh Manmohan (2016), Making of a Mammoth Tragedy, *The Hindu*, Friday Dec. 9.
9. Vineet Kohli and R Ramakumar (2016) Economic Rationale of 'Demonetisation', *Economic & Political Weekly*.
10. Vikas Chauhan and Vipin Choudhary (2015), Internet Banking: Challenges and Opportunities inIndian Context, *Apeejay - Journal of Management Sciences and Technology*, 2 (3), June- 2015, (ISSN -2347-5005)
11. Zoya Hasan (2017), The Politics of Demonetization, *The Hindu*, January, 28.

* * *

# Financial Reporting - Schedule III - A quality aspect

**Dr. Mahesh Abale:** Professor and HOD, MAEERs MIT MBA Dept, Pune.
**CA Meghana Limaye:** Research Scholar

**Abstract:**

Economic development of a nation needs capital formation. To achieve development plans a high rate of capital formation is aimed at in all developing countries. To stimulate and guide capital formation, the growth of capital market is a prerequisite. An efficient capital market helps the investors in getting information about various investment opportunities making sound investment decisions and to diversify and reduce risk. Accounting plays a very crucial role in creating and sustaining the level of confidence needed for the success of capital market.The whole aim of accounting is to keep systematic records of financial transactions so they can be communicated to the various stakeholders. The way this information is communicated to the relevant parties is through financial statements**.**Financial statements' analysis and reporting are one of the bedrocks of modern business.The Ministry of Corporate Affairs (MCA) has issued Schedule III which laysdown a format for preparation and presentation of financial statements byIndian companies for financial years commencing on or after 1st April, 2014.This Schedule III has some significant Conceptual changes such asCurrent/Non-current distinction, primacy to the requirements of theaccounting standards, etc.Thequalitative characteristics of financial statements mainly areunderstandability,Relevance, Reliability and Comparability.This paper discusses about the qualitative characteristic of "comparability" and tries to find out whether Schedule III improves the comparability of Financial Statements.

**Introduction:**

Country's economic growth is to an extentdependent on the Corporate Laws. The Companies Act 2013 was enacted to improve corporate governance and better transparency in the corporate sector which is imperative to inculcate confidence amongst investors in Indian market and to further strengthen regulations for the companies, keeping in view the changing economic environment as well as the growth of our economy. Schedule III of the Companies Act, 2013 was notified along with the Act itself on 29 August, 2013thereby providing the manner in which every company registered under the Act shall prepare its Financial Statements. As per Section 2(40) of the Companies Act, 2013,

Financial Statement in relation to a company, includes-

(i) a balance sheet as at the end of the financial year;

(ii) a profit and loss account, or in case of company carrying out activity not for profit, an income and expenditure account for the financial year;

(iii) cash flow statement for the financial year;

(iv) Statement of changes in equity, if applicable; and

(v) Any explanatory note annexed to, or forming part of, any document referred to sub-clause (i) to (iv) stated above.

An objective of financial statements is to serve primarily to those users who have limited authority, ability or resources to obtain information of business and who rely on financial statements as their principal source of information about an enterprise's economic activities. Accounting information that is provided in financial statements, to facilitate economic decisions and to make it useful to users should possess certain

characteristics.Thequalitative characteristics of financial statements mainly areunderstandability,Relevance, Reliability and Comparability.

Understandability:

The financial statements are published to address the shareholders of the company. So it is important that these statements must be prepared in such a way that is easy to understand and interpret for the shareholders. The information provided in these statements must be clear and legible. For the sake of understandability, the management must consider not only the statutory data and information but also the voluntary information disclosures which would make financial statements easier to understand. The aim is to ensure that no one misunderstands what is sought to be communicated.

Relevance:

Information is considered relevant which adds value to the decision making process by providing the required bits and pieces of past, present and future times. Through relevant information users can evaluate whether they are moving along the right path i.e. making correct decisions.Information is also said to be relevant when it is capable of confirming or correcting the existing thought process and information.

Reliability:

Information is reliable when it is dependable and this is possible if it is: free from errors, especially material errors, complete and free from bias and not misleading. Information may be relevant but this alone does not suffice for reliability as well. Information must be reliable as well as relevant in order to be useful for decision making. There are many other factors that contribute towards the reliability of the financial information.

**Comparability:**

Comparability of information refers to its ability to stand useful overtime and against the financial information from other sources. Users cannot evaluate different aspects of entity's financial position and financial performance if they are unable to compare the financial information of one period with another or financial information of one entity with another entity's financial information.

**Need of the study:**

Schedule VI as per Companies Act 1956 was revised as there was a need for enhancing the disclosure requirements under the then existing Schedule VI. From Financial Year 11-12, Revised Schedule VI came in force.

The 1956 Act has been in need of a substantial revamp for quite some time now, to make it more contemporary and relevant to corporates, regulators and other stakeholders in India.The long-awaited Companies Bill 2013 got its assent in the LokSabha on 18 December 2012 and in the RajyaSabha on 8 August 2013. After having obtained the assent of the President of India on 29 August 2013, it has become the much awaited Companies Act; 2013.The changes in the 2013 Act have far-reaching implications that are set to significantly change the manner in which corporates operate in India.

Companies Act 2013 was introduced by the Government and the Schedule III became applicable for the Balance Sheet and Statement of Profit and Loss to be prepared for the financial year commencing on or after April 1, 2014. There are a few amendments to Schedule III till date. There are lots of changes in disclosure norms as per Schedule III. Financial statements to become useful for the users and specifically investors, it is essential to possess certain qualities. One of the qualitative characteristic is "Comparability". This paper tries to find out from the perspective of investors whether they think that Schedule III

improves the comparability of financial statements.

**Literature Review:**

A literature review is the starting point in any research. It is in depth and critical study of the previous research. Literature review is carried out to know the research done in similar area earlier. It gives a theoretical base for the research work. It helps in defining the research problem and nature of the research by identifying research gap. It is easy to formulate the objectives of the research in particular area and define hypothesis with the help of literature review.

For this research paper various articles were referred regarding Revised Schedule VI as per Companies Act 1956, Schedule III as per Companies Act, 2013.Article in Business line-on 26$^{th}$March2009 was regarding the need for revision in schedule VI considering the economic and regulatory changes that have taken place globally. Article in ICAI Journal May 2012 regarding Reality Check in Implementing the Revised Schedule VI stated that the changes brought out in the financial reporting through the Revised Schedule VI cannot be considered as a simple exercise of representation of numbers in a different format, but requires careful consideration of various factors duly reflecting the business considerations and the investor expectations. Guidance note issued by the ICAI has highlighted Key points of Financial Reporting under Companies Act, 2013 as,

There will be uniform accounting period i.e. from 1st April to 31$^{st}$ March of next year for Companies.

Accounting Standards have been given supremacy over Schedule III. This is in line with IFRS which mandates that no statute can override the Standards.

For the purpose of this Schedule, the terms used herein shall be as per the applicable Accounting Standards.

The schedule sets out minimum requirements for disclosure

Each item on the face of the Balance Sheet and Statement of Profit and Loss shall be cross-referenced to any related information in the notes to accounts.

Financial Statements to include cash flow statement and statement of changes in equity. Format of cash flow statement is not prescribed in Schedule III.

Bifurcation of assets and liabilities amongst current and non-current is required.

Changes earlier introduced in Revised Schedule VI which have been retained in Schedule III were understood from literature review.These changes in format and disclosure norms were used to design the questionnaire. Few research articles were studied to have an insight of the qualitative characteristics of Financial Statements.

**Objective:**

To study the impact of Schedule III as per Companies Act 2013 on investors with special reference to quality of comparability.

**Hypothesis:**

**$H_0$:**Schedule III does not improve the comparability of financial statements.

**$H_1$:** Schedule III improves the comparability of Financial Statements.

**Research Methodology:**

The research is based on primary data.

Type of Research: Descriptive

Sampling Method: Judgmental

Sample size 50

Type of Data: Primary

Tools Used for analysis: Mean, SD, t test, Binomial test etc

**Data Analysis:**

H0: Revised Schedule VI does not improve the comparability of Financial Statements.

H1: Revised Schedule VI does improve the comparability of Financial Statements.

**Descriptive Statistics**

| | N | Mean | Std. Deviation | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| The Revised schedule VI, intends to familiarise investors with Ind-AS / IFRS by using certain concepts such as currentnoncurrent classification etc.It aims at better presentation and disclosure intended to facilitate cross border comparability for users of financial statements. | 50 | 3.78 | .887 | -.457 | .337 | .546 | .662 |
| Valid N (listwise) | 50 | | | | | | |

Values of skewness and kurtosis indicates normal distribution (withing + - 2). Therefore, parametric test is used to test the hypothesis.

**One-Sample Statistics**

| | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| The Revised schedule VI, intends to familiarise investors with Ind-AS / IFRS by using certain concepts such as currentnoncurrent classification etcIt aims at better presentation and disclosure intended to facilitate cross border comparability for users of financial statements. | 50 | 3.78 | .887 | .125 |

**One-Sample Test**

| | Test Value = 3 | | | | | |
|---|---|---|---|---|---|---|
| | t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
| | | | | | Lower | Upper |
| The Revised schedule VI, intends to familiarise investors with Ind-AS / IFRS by using certain concepts such as currentnoncurrent classification etc. It aims at better presentation and disclosure intended to facilitate cross border comparability for users of financial statements. | 6.216 | 49 | **.000** | .780 | .53 | 1.03 |

The scale used to measure the opinion of respondents was 5 point likert scale, where 3rd pointer was neutral. Therefore, value of 3 is considered to test the hypothesis of comparability. Mean is 3.78.

Since, $p < 0.05$, null hypothesis is rejected. It is concluded that Revised Schedule VI improves the comparability of Financial Statements.

**Conclusion:**

Schedule III as per Companies Act 2013 laysdown a format for preparation and presentation of financial statements byIndian companies. It is a new generation Financial Statement.As perSection 129(1) the financial statements shall give a true and fair view ofthe state of affairs of the company or companies, comply with theaccounting standards notified under section 133 and shall be in theform or forms as may be provided for different class or classes of companies in Schedule III. The IND AS are basically standards that have been harmonized with the International Financial Reporting Standards (IFRS) to make reporting by Indian companies, more globally accessible and comparable.

**Reference:**

www.mca.gov.in

1. https://taxguru.in/company-law/financial-statementsscheduleiii-companies-act-2013.html?amp
2. http://kthemani.com/download/general_guides/[F]%20Financial%20%20Statements.pdf
3. https://home.kpmg/in/en/home/insights/2017/08/ifrsnotes-guidance-note-ind-as-schedule-3.html

* * *