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# Assessment on Physical Health Status of Adults Having Different Socio-Economic Condition in Assam State

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## Abstract

Health of individuals varies in every different cities, countries and continents. Life style, infrastructure, emotional and social wellbeing are influential factors of an individual physical as well as mental health. It is very essential to have knowledge about one of the major domain of overall health i.e. physical health. The study was conducted to assess the overall physical health status in normal adult men of Assam state using SF-36 questionnaire. Visiting card, a consent form attached with the Kuppuswamy's socio-economic status questionnaire and SF-36 questionnaire were used to carry out this study and permission was taken from colleges, schools, offices, clubs etc. where ever it was required. Twenty five hundred normal individuals of aged 30-40 years belonging to five different socio-economic classes from various districts of Assam were taken as sample of the study. The result showed that the lower middle socio-economic class group had better in overall physical health than all other socio-economic class groups while lower socio-economic class group was poor in this regards.

**Keywords:** SF-36, socio-economic, multidimensional, UC, UMC, LMC, LUC, LC, PCS.

## Introduction

Status of an individual health in a region is largely governed by the physical health infrastructure and the concerning services provided to the people. Health can be assessed in terms of positive indicators of health status or the total absence of physical health as well as mental health, reflected in disease specific death (mortality) rates. According to statistics of WHO, India is lagging much behind many countries of the world in health status. According to Annual Report, 2008 India got 112th position. This is no less true in the case of Assam state (Basumatari, 2016). The self-rated health responses are used as an indicator of an individual health status and these indicator measures individuals' perception of their overall health. (Khan & Flynn, 2016) completed a research work on the

self-reported health status of older adults in Malaysia and Singapore. Their study revealed that poorer health was more prevalent among people with lower education. A study results revealed that older employed adults had better health outcomes than unemployed older adults and a strong association existed between employment and health status in older adults beyond what can be explained by socioeconomic factors such as education, income (Kachan & Fleming, 2015). In a study by Ronika Agrawal and Charleen D'silva, it was found that the calculated mean of physical component summary (PCS) was 47.87 with SD  $\pm$ 8.17. There was hardly any distinguish between the physical component summary (PCS) score of overall Indian population and Assam state. Again, in the population of United States of America the physical component summary (PCS) mean value is 50 with SD  $\pm$ 10.

## **Method and Procedure**

### ***Sample of Respondents***

To obtain required data, the investigators had selected twenty six hundred (N=2600) adult working men randomly and then categorized in to 500 samples in each socio-economic class as per socio-economic condition from five different divisions of Assam state. The age ranged between 30 to 40 years old. Incomplete questionnaires of respondents and over aged as well as below 30 years aged respondents were not taken as samples for this study. After having been informed regarding the objective and procedure of the study, all respondents took part in this study with their own interest.

### ***Tool***

The tools used in the present study were Kuppuswamy's socio-economic status scale and SF-36 Questionnaires. The used socio-economic status scale was updated by Dr. Nazia Tabassum and Dr. R.L. Lakshman Rao while SF-36 was used to assess health status and it was developed by John E. Ware, Jr.

### ***Analysis of Data***

The One way analysis of variance (ANOVA) was applied to find out whether any significance difference is there in overall physical health status among five different socio-economic categories. In the testing of two tailed hypothesis, the level of significance was set at 0.05.



**Table 1:****Descriptive statistics of Physical Component Summary (PCS) measures**

	No. of Sample	Mean	Std. Deviation	Std. Error	Minimum	Maximum
UC	500	43.33	5.92	.26	27.07	59.64
UMC	500	43.42	5.79	.26	22.15	61.72
LMC	500	44.56	5.76	.26	21.21	64.38
LUC	500	43.15	5.76	.26	26.79	58.07
LC	500	43.02	6.33	.28	25.90	64.72
Total	2500	43.50	5.94	.12	21.21	64.72

**Table 2:****Analysis of variance on Physical Component Summary (PCS) measures among adult men of different socio-economic status groups**

	df	Sum of Squares	Mean Square	F	Sig. (P-value)
Between Groups	4	761.67	190.42	5.44*	0.00
Within Groups	2495	87331.87	35.00		
Total	2499	88093.54			

**Table 3:****Post hoc mean comparison on Physical Component Summary (PCS) measures among adult men of different socio-economic status groups**

Socio-economic Class (I)	Mean (I)	Socio-economic Class (J)	Mean (J)	Mean Difference (I-J)	Std. Error	Sig.
UC	43.33	UMC	43.42	0.09	0.37	0.80
		LMC	44.56	1.24*	0.37	0.00
		LUC	43.15	0.18	0.37	0.64
		LC	43.02	0.31	0.37	0.41
UMC	43.42	LMC	44.56	1.14*	0.37	0.00
		LUC	43.15	0.27	0.37	0.47
		LC	43.02	0.41	0.37	0.28
LMC	44.56	LUC	43.15	1.41*	0.37	0.00
		LC	43.02	1.55*	0.37	0.00
LUC	43.15	LC	43.02	0.13	0.37	0.72

**\*. The mean difference was significant at the 0.05 level.**

## Results and Discussion

Table-1 showed the descriptive statistics of the data on mean overall physical health status of adults in different socio-economic groups. Table 2 revealed that the F-value was significant at 5% level as the p value attached with the calculated F-value is 0.00 which was less than 0.05. Hence, the null hypothesis of no difference in the overall physical health status among the adults in all the five socio-economic groups was rejected. Therefore, LSD post hoc test was used to compare the means in different pairs. From Table-3 it was seen that amongst all the pair wise comparisons only the difference between overall physical health status of the adults in upper class and lower middle class, upper middle and lower middle class, lower middle class and lower upper class, lower middle class and lower class was significant at 5% level because the p-value for those mean differences was less than 0.05.

Based on statistical analysis and graphical representation evident from Table 1, Table 3 and Figure 1, it was inferred that the overall physical health status in the lower middle class adults was better than all other adults whereas overall physical health status was poor in lower socioeconomic class group. Further, overall physical health status was similar in adult men belonged to upper class and upper middle class group while the lower upper socio-economic class group was only better than lower socio-economic class group. The mean calculated for Physical component summary (PCS) is 43.50 and SD is  $\pm 5.94$  where as the United States of America population values for mean Physical component summary (PCS) is 50 and SD is  $\pm 10$ . The scores are higher in comparison to those got by our survey study. On the basis of literature review it was found that with the advancement in the technology, many individuals having upper class socio-economic condition live a sedentary life. They avoiding participating in any sports and with the uses of elevators, they do not climb the stairs. But people belong to lower middle class neither get sedentary life as upper socio-economic classes nor get much govt. fund and facilities as provide to lower classes. Along with that lower middle class people mostly trying to avail a sedentary life in the next days to come. To achieve that they are often get involve in more physical activities that leads to have a better overall physical health.

## References

- ❖ Smith, J. P. (1998). Socioeconomic Status and Health. *American Economic Association*, 88(2), 192-196.
- ❖ Smith, P. James (2007). The Impact of Socioeconomic Status on Health over the Life-Course. *The Journal of Human Resources*, 42(4), 739-764. doi: 10.3368/jhr.XLII.4.739
- ❖ Kim, M. et al. (2010). Socioeconomic Inequity in Self-Rated Health Status and Contribution of Health Behavioral Factors in Korea. *Journal of Preventive Medicine and Public Health*, 43(1), 50-61. doi: 10.3961/jpmph.2010.43.1.50
- ❖ Kumara et al. (2011). Assessment of Socio-economic and Health Status of Fisherwomen

Involved in Coir Retting in Dickwella Secretariat Division, Matara District. *Tropical Agricultural Research*, 23(1), 84-90. doi: 10.4038/tar.v23i1.4635

- ❖ Khanday et al. (2012). Health status of marginalized groups in India. *International Journal of Applied Sociology*, 2(6), 60-70. doi: 10.5923/j.ijas.20120206.02
- ❖ Galvez et al. (2013). The Impact of Socio-Economic Status on Self-Rated Health: Study of 29 Countries Using European Social Surveys (2002–2008). *International Journal of Environmental Research and Public Health*, 10(3), 747-761. doi: 10.3390/ijerph10030747
- ❖ Suman, et al. (2013). Comparative study of health status in working men and women using Standard Form -36 questionnaire. *International Journal of Pharmaceutical Science Invention*, 2(3), 30-35. doi: March 2013
- ❖ Moller, P. H. et al. (2015). The Sf-36 Questionnaire: A Tool to assess Health-Related Quality of Life. Retrieved from [https://www.zsf.jcu.cz › ppetr › 12DotaznikSF36.doc › at\\_download › file](https://www.zsf.jcu.cz › ppetr › 12DotaznikSF36.doc › at_download › file)
- ❖ Basumatari, S. (2016). Status of Health Infrastructure in Assam. *Asian Journal of Multi-disciplinary studies*, 4(9), 90-97.
- ❖ Gupta, A. A. et al. (2016). Health and socioeconomic status of the elderly people living in Hilly areas of Pakhribas, Kosi Zone, Nepal. *Indian Journal of Community Medicine*, 41(4), 273-279. doi: December 2016
- ❖ Agrawal R. and D'Silva C. (2017). Assessment of quality of life in Normal Individuals using the SF-36 Questionnaire. *International Journal of Current Research and Review*, 9(3), 43-47.





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# Social Media Marketing and Sports in India

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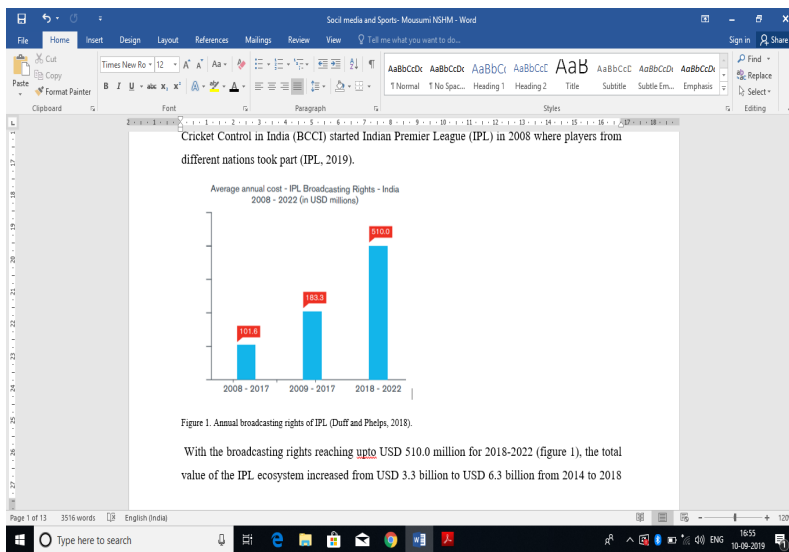
## **ABSTRACT**

With increasing globalization, the marketing in sports have changed drastically since past three decades. India being the 7th largest country consisting of 17.74% of world population with 1.34 billion people residing (National portal of India, 2018) is a huge market for any industry. Additionally, Cricket being considered as religion and emerging market of Indian Premier League (IPL), Indian Super League (ISL) and Pro Kabaddi League (PKL) are evidence of the blooming sports market in India. On the other hand, with the Digital India initiative started by Government of India, digital marketing also got a boost to a great extent in the past few years. Moreover, 98% out of the total population exposed to internet uses different social media platforms (WARC, 2017) in India. This paper aims to conduct a comparative study on the utilization of social media platforms by European and Indian sports market. This paper will also contribute towards the emerging literature on how the social media platforms are utilized within sports market from marketing and networking point of view specially in India, hence revealing additional opportunities to increase fan base online for the managers.

## **Literature Review**

### ***Sports Market in India***

India is the only country where one of the Sport is treated like a Religion-Cricket (Duff and Phelps, 2018). It is the most liked sport by far in India. Considering its increasing popularity, Board of Cricket Control in India (BCCI) started Indian Premier League (IPL) in 2008 where players from different nations participated (IPL, 2019).

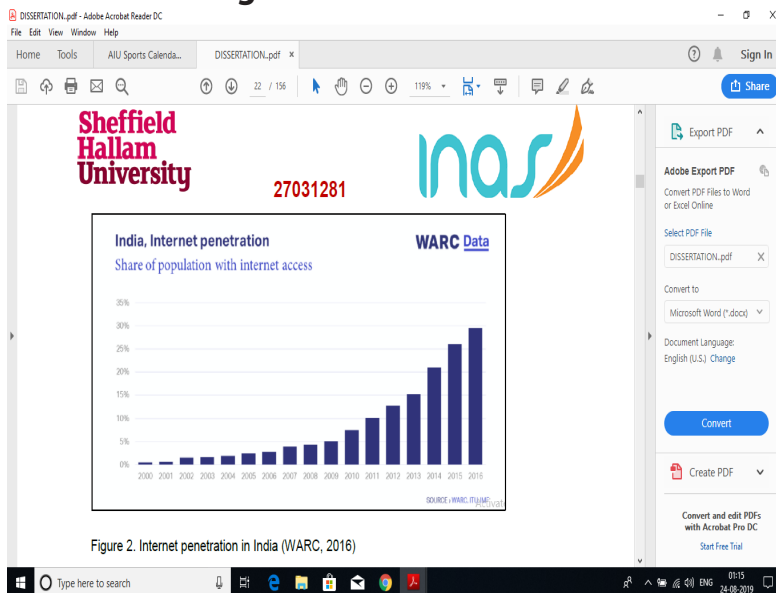


With the broadcasting rights reaching up to USD 510.0 million for 2018-2022 (figure 1), the total value of the IPL ecosystem increased from USD 3.3 billion to USD 6.3 billion from 2014 to 2018 (Duff and Phelps, 2018) which clearly shows the success of IPL. Later, two more sports leagues named Indian Super League (ISL) for football and Pro Kabaddi league (PKL) were launched in the market in 2014. Again, two leagues showed tremendous growth in the past few years. With 2 billion USD gross revenue target for ISL season-4, and 3 billion USD worth 5-year contract in 2017 for PKL, the profit is outstanding for non-cricket sports (Khanna, 2017). Later Badminton Premier league (BPL) and Hockey India League also came into market. However, despite shuttlers like Saina Nehwal, P.V. Sindhu and Srikant dominating the international market, the sport could not catch the attention of Indian public through BPL (Khanna, 2017). Same can be said for Hockey India League as the 2018 league was cancelled due to different controversial incidents (Khanna, 2017).

On the other hand, athletes from different individual sports displayed outstanding performance at international level. 19-year-old, Hima Das clinching 5 gold medals in July 2019 during different International tournament (News18, 2019) was one of the most trending news of the year. Additionally, Adidas endorsement deal with her doubled due to her phenomenal performance from Rs. 30-35 lacs to Rs. 60 lacs per year (Bhushan, 2019). Likewise, Boxer MC MaryKom winning her 6th World Championship title, Manika Batra bringing home the first Gold medal from table-tennis discipline during Asian games and Shuttler P.V. Sindhu winning the BWF World Tour finals in 2018 (Nithya, 2019) are some of many international achievements by Indian athletes. With the flow of sponsorship deals for these athletes, Indian sports market has benefitted from individual sports as well. It is important to note that with the implementation of programmes like

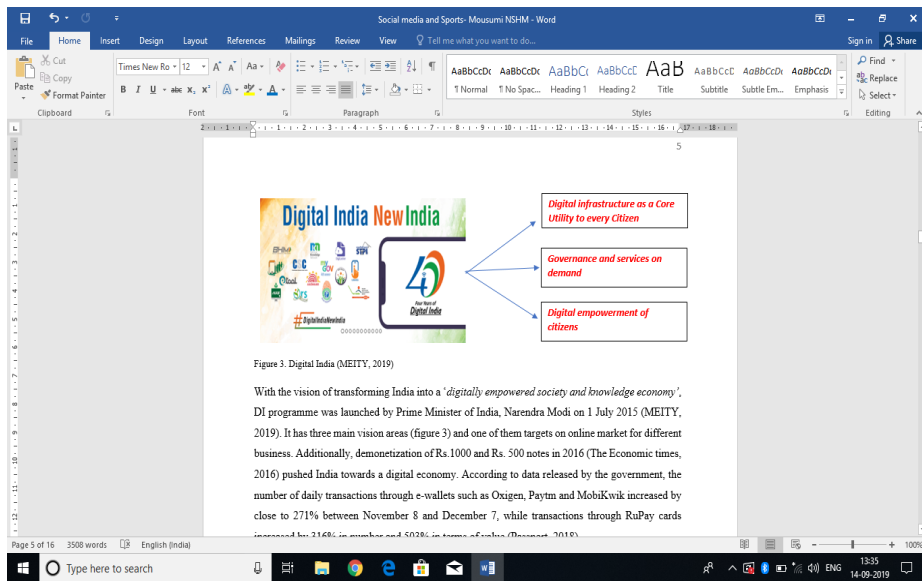
Target Olympic Podium (TOP) and Khelo India by Government of India (MYAS, 2019), there are lot of opportunities for sports managers across the country.

## Internet Penetration and Digitalization in India



According to WARC (2017), 29.5% of the Indian population (386.8 million people) had internet access which increased from 3.5% in 2000 to 29% in 2015 (Figure 2). Additionally, growth in internet penetration has averaged to 3.9% points over the last five years from which it can be predicted that it will increase in the next few years at a constant rate.

Moreover, from 2012-2017 the time spent daily by users increased from 01:44min to 02:27min which is 43 minutes more per day. Furthermore, share of mobile internet subscriptions in total mobile subscription will rise to 47.6% by 2020. Competition among multiple operators has reduced tariffs and increased voice penetration while young and tech-savvy urban consumers have driven mobile internet and smartphone uptake, new player Reliance Jio, which is providing data services at the cheapest rates (Passport, 2018). These factors play a very important role towards the efficient and effective implementation of Digital India (DI) programme.

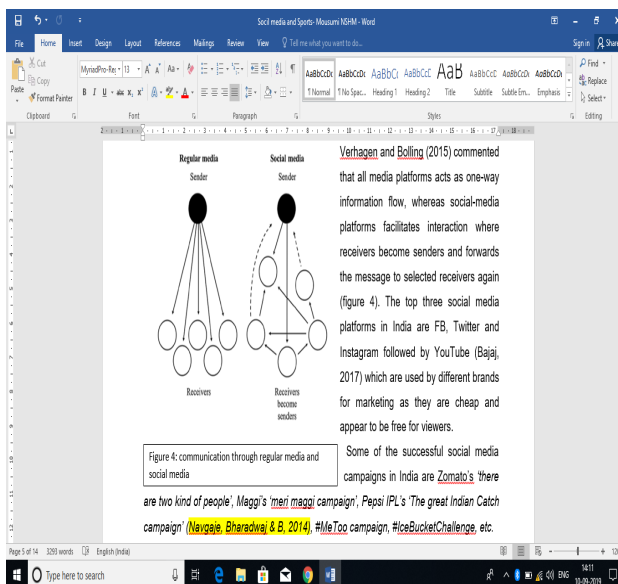


With the vision of transforming India into a ‘digitally empowered society and knowledge economy’, DI programme was launched by Prime Minister of India, Narendra Modi on 1 July 2015 (MEITY, 2019). It has three main vision areas (figure 3) and one of them targets on online market for different business. Additionally, demonetization of Rs.1000 and Rs. 500 notes in 2016 (The Economic times, 2016) pushed India towards a digital economy. According to data released by the government, the number of daily transactions through e-wallets such as Oxigen, Paytm and MobiKwik increased by close to 271% between November 8 and December 7, while transactions through RuPay cards increased by 316% in number and 503% in terms of value (Passport, 2018).

## Social Media Marketing and Sports : Fan Engagement & Branding

According to literatures on sports marketing, Sports consumers and their favourite team shares a unique relationship (Abosag, Roper, & Hind, 2012). These extreme level emotional attachment, team identification and fandom for their sports clubs have been related with term ‘engage’ (Yoshida, Gordon, Nakazawa, & Biscaia, 2014). For example, reading team related news, positive word-of-mouth, displaying fandom, interactions between consumer-to-consumer (Ahearne, Bhattacharya, & Gruen, 2005; deRuyter & Wetzels, 2000). This unique pattern of behaviour in spectator sport beyond product purchase can be considered as important exhibition of Customer Exhibition Behaviours (CEB) as a result of motivational drive (Vale and Fernandes, 2017). Keeping the fan base and their sport fandom in mind, sport organizations can ideally benefit from Social Media (McCarthy, Rowley, Ashworth, & Pioch, 2014). Social media changed the way followers engage with athletes, sport teams and other fans (Ioakimidis, 2010). Functions of Facebook (FB), Instagram and Twitter like comments, shares, posts,

and uploading stories which is (added recently where short videos or pictures stays up to 24hrs on the page), retweet, might lead to more complete CEB perceptions (Vale and Fernandes, 2017).



Verhagen and Bolling (2015) commented that all media platforms acts as one-way information flow, whereas social-media platforms facilitates interaction where receivers become senders and forwards the message to selected receivers again (figure 4). This creates a chain among the audience and works as two-way communication for the companies. The top three social media platforms in India are FB, Twitter and Instagram (Bajaj, 2017) which are utilized by different brands for marketing as they are cheap and appear to be free for viewers. Additionally, in 2017, among the 29.5% of internet users, 98% were between the age 16-64 years and operate social media (WARC, 2017). Focusing on the increasing internet reach, social media marketing can be beneficial for Sports companies and athletes. Similarly, Moore commented that the hike of broadband and mobile network made videos popular portion in the experience of internet users' (cited in Jarboe, 2011). Some of the successful social media campaigns in India so far were Zomato's 'there are two kind of people', Maggi's 'meri maggi campaign', Pepsi IPL's 'The great Indian Catch campaign' (Navgaje, Bharadwaj & B, 2014).

In this paper, engagement level of athletes and sports related organizations on social media will be compared between Indian and European market. Recommendations for sports managers will also be provided on how to boost their marketing via social media.



## Methodology and Findings

For this study, use of different social media platforms by European and Indian region were compared where Fan engagement, Branding and marketing strategies practiced by sports governing bodies, athletes and sports clubs were analysed. FB, Instagram and Twitter were focused in this study. Availability of official page, number of followers and total number of posts shared were compared for all the categories.

National Governing Body (NGB): From Indian market, NGB of the most famous sports like Cricket, Football, Hockey Badminton, Boxing and Kabaddi were selected (Das, 2019) Ministry of Youth affair and Sports- India, Olympic and Paralympic committee, Sports Authority of India (SAI) which are the government authorised sport organizations were also included in the study. From European market, International Olympic and Paralympic committee (since they are based in Europe), Paralympics GB, GB Hockey were selected randomly.

Name of sport company/association/athlete	Likes on FB page	Followers on Instagram	No. of post on Instagram	Followers on twitter	Total tweets
BCCI	No official page	No official page	N/A	9.5M	803.2k
Hockey India	4M	63.5k	5,273	292k (July 2012)	28.8k
Indian Football	1M	541k	4,505	505k (Dec 2013)	58.7k
Badminton Association of India	108k	24.5k	1,367	No official page	N/A
Amateur Kabaddi Federation of India		No page	-	No official page	N/A
Boxing Federation of India	55k	13.2k (not verified)	1,059	3,128 (not verified)	5,803
Indian Olympic committee	517k	No official page	N/A	-	N/A
Ministry of Youth affairs and sports	42k	No official page	N/A	63k (June 2016)	10.9k
SAI	45k	No official page	N/A	43.7k (Oct 2014)	17.3k
Paralympic committee of India	No official page	No official page	-	5,064 (Feb 2010)	1,019
Olympic games	19M	2.3M	3,167	6.13M	8,401
Paralympics games	67.8k	109k	2636	242k	32.2k
Paralympics GB	230k	23.4k	1,268	229K	18.6K
GB hockey	91k	48.2k	1,379	42k (Feb 2012)	19.3K

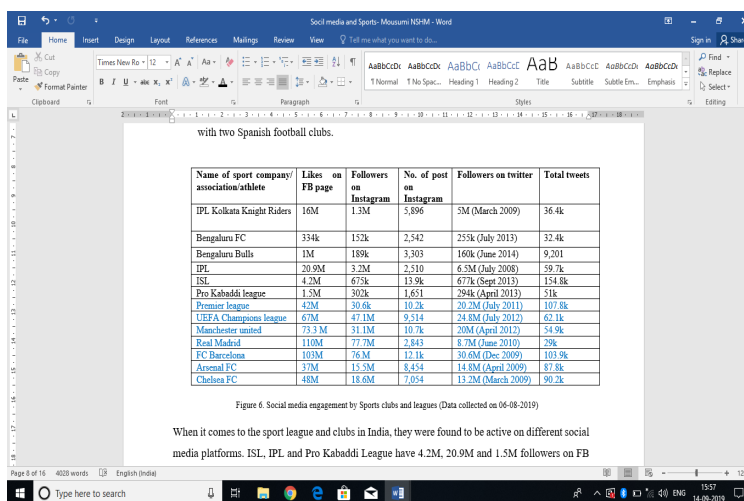
Figure 5. Social media engagement data of different Sport Governing bodies

Fan engagement through sports governing bodies in India was found to be very poor (figure 5). In a country which worships Cricket like a religion, no official page of BCCI on FB and Instagram will be disappointing for its followers. Likewise, no official page on Instagram was found for Indian Olympic committee (no twitter page as well), Paralympic committee of India (no FB page also), Ministry of Youth affairs and sports and Sports Authority of India which are the most important parent organizations for majority of the national governing bodies of different sports. Similarly, Boxing is one of the most popular sport in India and during Commonwealth games at Gold Coast 2018, Indian Boxers topped the medal tally. Surprisingly, Boxing Federation of India does not have verified Instagram and Twitter page. As there are many fan-made pages existing on different social media

platforms nowadays, getting an official page verified is one of the very basic step an organization should complete first. This ensures delivery of authentic and official information related to that particular sports directly to the viewers. Kabaddi being one of the indigenous and popular sport in India, not having an official page on any social media platform was totally unexpected.

Additionally, Hockey India and Indian Football association page on FB with 4M and 1M likes, and 292k and 502k followers on Twitter respectively, the fan counts changes drastically which shows that Twitter is preferred by most of the supporters. One of the reason could be that only 280 characters are allowed on Twitter which keeps the post short and to-the-point (Digitalspy, 2017).

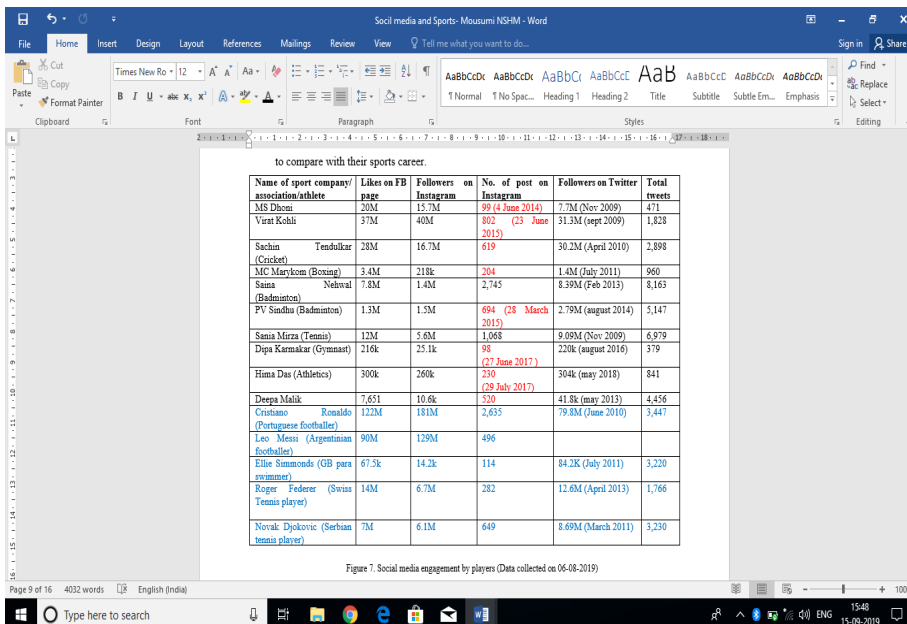
Fan engagement by clubs/leagues: From India, leagues like ISL, IPL, Pro Kabaddi league, and the winning team/club of all these leagues from recent season were included. From Europe, the top three English premier league clubs according to their ‘all-time premier leagues stats’, Manchester United, Chelsea and Arsenal were selected (Premier league, 2019) along with two Spanish football clubs.



When it comes to the sport league and clubs in India, they were found to be active on different social media platforms. ISL, IPL and Pro Kabaddi League have 4.2M, 20.9M and 1.5M followers on FB which is quite high as compared to their Instagram and Twitter page (figure 6). Similarly, Premier football league clubs like Manchester United, FC Barcelona also had high number of followers on FB than Instagram or Twitter. Additionally, European clubs & leagues were active on both Twitter and Instagram as per their total number of tweets and posts whereas Indian clubs/leagues were more active on Twitter (figure 6). Moreover, being consistent with updates can significantly gain more followers. For example, ISL and IPL joined Twitter in Sept 2013 and July 2008 respectively (figure 6). Despite

joining Twitter 5 years later, ISL tweeted 154.8k times, i.e. 95.1k times more than IPL (figure 6). On the other hand, IPL being able to gain more followers despite of being less active displays transfer of field and market success of the league. But, considering the population of India exposed to internet and the sport fans, the number of followers on social media is surprisingly less. Furthermore, Premier league clubs' pages were found to be active throughout the year using different fan engagement contests and updates from on and off field news while the Indian sport league pages were found to be more active during the league season.

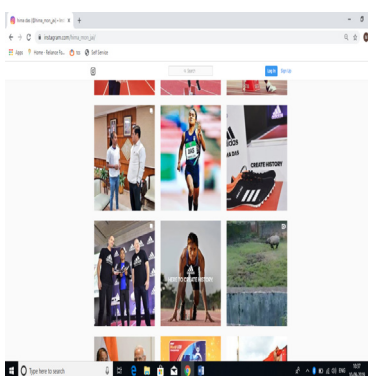
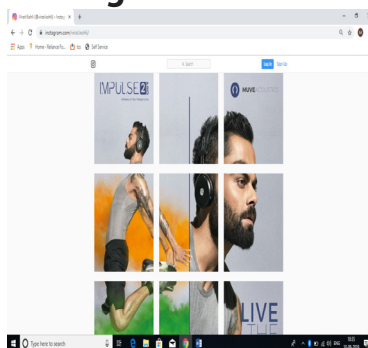
Fan engagement by athletes: In terms of athletes, famous players from different sports were selected randomly from Indian and European sports who gained popularity since the last 2 decades. The first post uploaded in case of athletes with less than 1000 posts on Instagram and Twitter account opening date was also recorded to compare with their sports career.



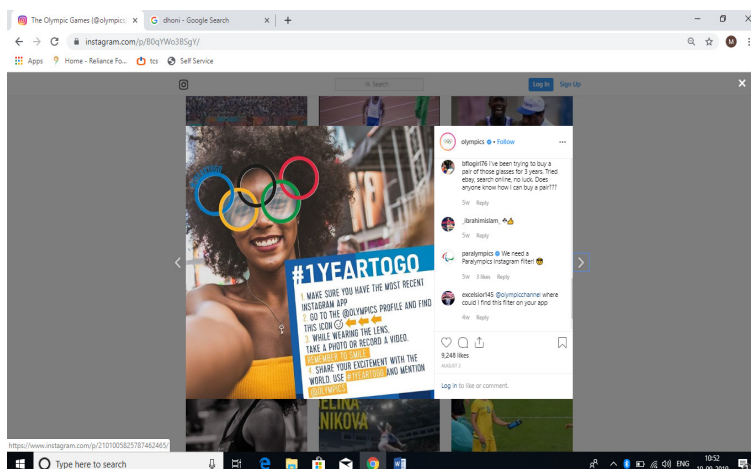
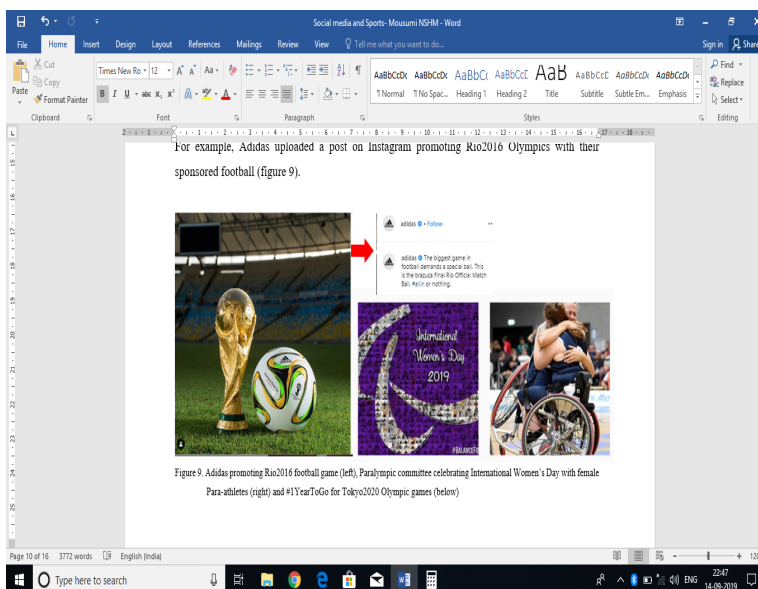
In terms of fan engagement by Indian athletes, players displaying remarkable performance from 2000s gained large number of followers on different social media platforms like Virat, Hima, PV Sindhu, Saina (figure 7). They were also more active as compared to senior athletes such as Sania and Dhoni. For example, Saina was found to be the most active with 3-4 tweets per day while Dhoni was the most inactive with only 4 tweets per month approximately since they joined twitter (figure 7). The European athletes such as Ronaldo, Djokovic and Ellie were found to be most active on Twitter. It is important to note that audience follow their sport icons to know about their off the field activities mostly. But, sadly it has also become a platform where celebrities get trolled where offensive comments on their personal life and views are made by public. For example, Commonwealth

games Gold medallist Jwala Gutta, was regarded as ‘anti-national’ as her mother is from China (FP sports, 2017). Calling an athlete who is representing India at International tournaments can be very stressful and discouraging for any athlete which can severely affect their psychological health which is vital for their performance. Similarly, Hima Das confessed being anxious and stressed due to trolls which lead to her disqualification from 200m race and the athlete shared a video urging people not to give negative comments as it affects players were mentally affecting her and putting negative psychological pressure (Kanwar, 2018).

## Branding and Marketing Strategies on Social Media Platform



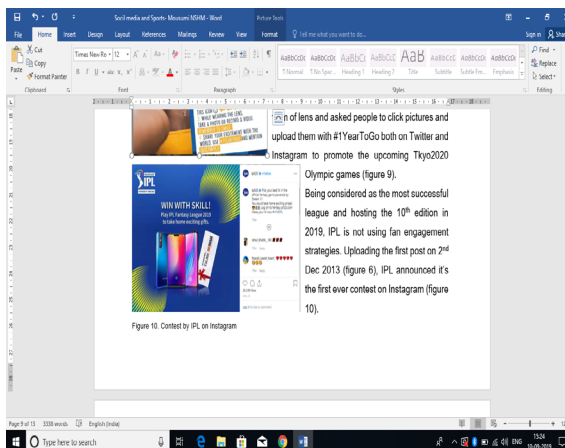
Indian players were noticed promoting companies endorsing them on their social media platforms like Virat- Impulse2Pro headphones, Hima- Adidas (figure 8). This trend is widely used across European market as well such as Ronaldo supporting Nike football boots (figure 8) which is a paid partnership as it shows in the picture above. Likewise, sports companies also shared the events they were sponsoring. For example, Adidas uploaded a post on Instagram promoting Rio2016 Olympics with their sponsored football (figure 9).



Additionally, it is important to note that keeping the audience engaged is very vital for any form of marketing. Online contest, win giveaway prizes by tagging friends, uploading a picture with specific Hashtags are commonly used social marketing strategies. Many companies also introduce their unique Hashtags

before special events or occasions to increase participation. For instance, Olympic committee made a frame with Olympic rings in the form of lens and asked people to click pictures and upload them with #1YEARTOGO both on Twitter and Instagram to promote the upcoming Tokyo2020 Olympic games (figure 9).

Being considered as the most successful league and hosting the 10th edition in 2019, IPL is noticed not using fan engagement strategies. Uploading the first post on 2nd Dec 2013 (figure 6), IPL announced it's the first ever contest on Instagram in 2019 (figure 10). This clearly shows lack of using innovative strategies for fan motivation and engagement.



Moreover, international sport apparel and goods company like Puma, Reebok and Asics made separate accounts on Instagram for Indian market which has gained 332K, 289K, 46.9K respectively already. They are noticed using the fame of renowned Indian Bollywood celebrities and sportspersons to boost their regional market. A two-way fandom exchange was identified in these cases. Similar strategy is utilized in leagues like IPL, ISL and PKL where the owners of the teams were well-known businessman, Bollywood stars, or public figure (ISL, 2019; IPL, 2019 and Pagar, 2019). This helped both the parties to attack each other's audience.

Social media and Sports- Moussumi KSHM - Word

Figure 11. Instagram, Twitter and Facebook Global engagement hours (Araia, 2019)

Instagram Global Engagement

- **Worst day:** Sunday has the least amount of engagement for Facebook during the week.
- **Lowest engagement:** Early mornings and evenings, before 7 a.m. and after 5 p.m. have the least amount of engagement per day.

The peak hours of engagement differ from one platform to another. For instance, best days to post on FB and Instagram was found to be Wednesday, and Tuesday and Wednesday for Twitter (figure 11). Similarly, late night and early morning time was found to be least

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Social media and Sports- Moussumi KSHM - Word

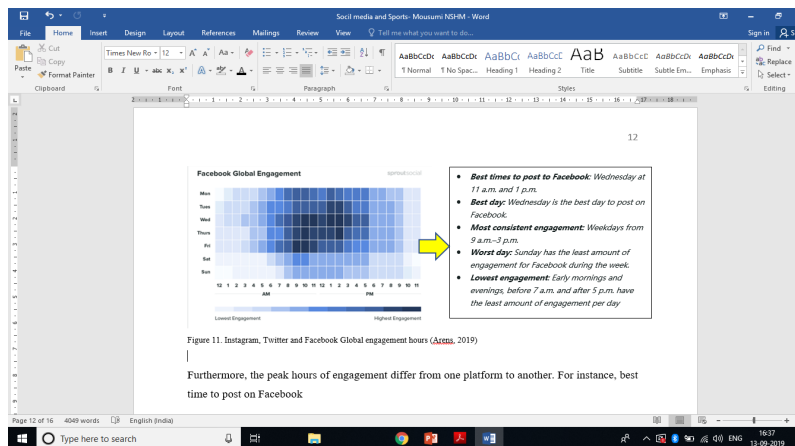
Twitter Global Engagement

- **Best times to post on Instagram:** Wednesday at 11 a.m. and Friday at 10-11 a.m.
- **Best day:** Wednesday is the overall best day to post to Instagram.
- **Most consistent engagement:** Tuesday through Friday, 10 a.m.-3 p.m.
- **Worst day:** Sunday receives the least amount of engagement on Instagram.
- **Lowest engagement:** Occurs during late night and early morning from 11 p.m.-3 a.m.

- **amount of engagement on Instagram**
- **Lowest engagement:** Occurs during late night and early morning from 11 p.m.-3 a.m.

- **Best times to post on Twitter:** Wednesday at 9 a.m. and Friday at 9 a.m.
- **Best days:** Tuesday and Wednesday are the best days to post on Twitter.
- **Most consistent engagement:** Monday through Friday from 8 a.m.-4 p.m.
- **Worst day:** Saturday gets the least engagement.
- **Lowest engagement:** Occurs every day from 10 p.m.-4 a.m.

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The peak hours of engagement differ from one platform to another. For instance, best days to post on FB and Instagram was found to be Wednesday, and Tuesday and Wednesday for Twitter (figure 11). Similarly, late night and early morning time was found to be least engaging for all three of them. The most effective time for marketing on these three platforms will be during weekdays approximately between 9am-3pm (figure 11). Special attention must be given to the time-zone difference in case of international markets.

## Discussion

Majority of the people across the globe are fascinated by different social-media platforms due to its features, connectivity and popularity. In India, 98% internet users operate social-media which can be the target group for marketing of sports on these platforms. With the increasing social media popularity, sports clubs are investing significant amount of time and resources to promote online engagement using their fan's nature of high involvement (Filo, Lock, & Karg, 2015; Hur, Ko, & Valacich, 2007). Sport market in India was found to be lacking behind in quite a few areas. Firstly, not having officially verified pages of governing bodies, being more active during particular season by clubs and not using different engaging methods. These problems can be rectified by confirming the official pages/accounts of governing bodies and uploading recent updates from time-to-time. This will ensure passing authentic news to public and keeping them engaged. It will also provide a two-way direct communication between the organization members/athletes and fans. Secondly, various occasions/events were utilized to boost customer participation. India is a culturally diverse country with 80.5% Hindu and 13.4% Muslim population (National Portal of India, 2019) which celebrates many festivals like Diwali, Holi, Dussehra, Eid, Christmas, etc. throughout the year. Sport organizations can benefit from these events to upsurge the engagement with audience. Third, as majority of the IPL, ISL or PKL league team owners are renowned personalities and Bollywood stars, their fame can be used very efficiently



and effectively in various marketing strategies.

In order to benefit from social media, clubs need proper guidance on how to manage their presence online, namely by gaining more insights about their fans, motivations and behaviours. Aboulhosn (2019) listed ten tips which can be practiced by marketing managers for all social media platforms. They are:

- ❖ Being consistent
- ❖ Prompt message reply
- ❖ Being updated with trending news
- ❖ Investing in video content
- ❖ Using different headlines/captions while sharing same post multiple times
- ❖ Joining/making communities
- ❖ Interacting with the audience
- ❖ Collaborating with micro-influencers or public figures
- ❖ Sharing behind the scene, core team pictures
- ❖ Posting during peak hours
- ❖ Specific recommendations according to platform's feature were also stated. Such as-
- ❖ FB- Use of Promoted posts and FB ads, going Live, community building with FB group, FB messenger utilization.
- ❖ Twitter- joining conversations, appropriate usage of hashtags and advertisement.
- ❖ Instagram- uploading more stories, hashtags, promoting IGTV were suggested.

Additionally, different online engagement strategies like play-to-win contest, like-share-comment, on-and-off field moment, behind-the-scenes, etc. can be used to attract viewers on their page and keep them involved. With right tactics and approach, Indian sport market can benefit a lot from Social media marketing. It will be quite interesting to see how future sports managers adapt their strategies with evolving technologies and yield its potentials to generate revenue from them.

## References

- ❖ Abosag, I., Roper, S., & Hind, D. (2012). Examining the relationship between brand emotion and brand extension among supporters of professional football clubs. *European Journal of Marketing*, 46, 1233–1251. doi:10.1108/03090561211247810
- ❖ Aboulhosn Sarah (2019). **SproutSocial** | Social media marketing tips for every platform. Retrieved from <https://sproutsocial.com/insights/social-media-tips/>
- ❖ Ahearne, M., Bhattacharya, C., & Gruen, T. (2005). Antecedents and consequences of customer-company identification: Expanding the role of relationship marketing. *The*

Journal of Applied Psychology, 90, 574–585. doi:10.1037/0021-9010.90.3.574

- ❖ Arens Elizabeth (2019). SproutSocial | Best times to post on social media for 2019. Retrieved from <https://sproutsocial.com/insights/best-times-to-post-on-social-media/#times-fb>
- ❖ Bhushan Ratna (2019). Economic times | Das Capital: Hima’s brand fees races ahead. Retrieved from <https://m.economictimes.com/industry/services/advertising/das-capital-himas-brand-fees-races-ahead/articleshow/70323816.cms>
- ❖ Das Sourav (2019). Top 10 Most Popular Sports in India. Retrieved from <https://sportsshow.net/most-popular-sports-in-india/>
- ❖ deRuyter, K., & Wetzels, M. (2000). With a little help from my fans: Extending models of prosocial behaviour to explain supporters’ intentions to buy soccer club shares. *Journal of Economic Psychology*, 21, 387–409. doi:10.1016/S0167-4870(00)00010-6
- ❖ DigitalSpy (2017). Twitter is expanding its character count to 280 for (almost) everyone. Here’s why you might think you don’t have it yet. Retrieved from <https://www.digitalspy.com/tech/a842525/twitter-280-character-count-launches/>
- ❖ Duff and Phelps (2019). IPL brand valuation report. Retrieved from <https://www.duffandphelps.com/-/media/assets/pdfs/publications/valuation/ipl-brand-valuation-report-2018.ashx>
- ❖ Filo, K., Lock, D., & Karg, A. (2015). Sport and social media research: A review. *Sport Management Review*, 18(2), 166–181. <https://doi.org/10.1016/j.smr.2014.11.001>
- ❖ FP sports (2017). First post sports | Jwala Gutta left fuming after Twitter user brings up ‘Chinese mother’ to call her ‘anti-national’. Retrieved from <https://www.firstpost.com/sports/jwala-gutta-left-fuming-after-twitter-user-brings-up-chinese-mother-to-call-her-anti-national-3874573.html>
- ❖ Hur, Y., Ko, Y., & Valacich, J. (2007). Motivation and Concerns for Online Sport Consumption. *Journal of Sport Management*, 21(4), 521–539. <https://doi.org/10.1123/jsm.21.4.521>
- ❖ Ioakimidis, M. (2010). Online marketing of professional sport clubs: Engaging fans on a new playing field. *International Journal of Sports Marketing & Sponsorship*, 12, 271–282. doi:10.1108/IJSMS-11-04-2010-B002
- ❖ IPL (2019). Indian Premier League | Home. Retrieved from <https://www.iplt20.com/>
- ❖ ISL (2019). Indian Super League | Home. Retrieved from <https://www.indiansuperleague.com/clubs>
- ❖ Kanwar Shweta (2018). The North East Today. Assam’s star Hima Das and the dark side of ‘Social media trolls’ & ‘Undue Hypes’. Retrieved from <https://thenortheasttoday.com/assams-star-athlete-hima-das-and-the-dark-side-of-social-media-trolls-undue-hypes/>
- ❖ Khanna Ashish (2017). 2017: Indian sports leagues’ commercial report card. Retrieved from <https://www.insidesport.co/2017-indian-sports-leagues-commercial-report-card-626122017/>
- ❖ McCarthy, J., Rowley, J., Ashworth, C., & Pioch, E. (2014). Managing brand presence through social media: The case of UK football clubs. *Internet Research*, 24, 181–204. doi:10.1108/IntR-08-2012-0154
- ❖ MEITY (2019). Ministry of Electronics and Information technology, Government of

- India | About the programme. Retrieved from <https://digitalindia.gov.in/content/about-programme>.
- ❖ MYAS (2019). Ministry of Youth Affairs and Sports, Government of India | Department of Sports. Retrieved from <https://yas.nic.in/sports>
  - ❖ National Portal of India, 2019. Profile. Retrieved from <https://www.india.gov.in/india-glance/profile>.
  - ❖ Navgaje Ashutosh, Bhardwaj Divyanshu and B. Manoj B (2014). Decoding Digital Marketing: Indian Social Media Marketing Campaigns. Retrieved from <https://www.ijltemas.in/DigitalLibrary/Vol.3Issue9/25-27.pdf>
  - ❖ News18 (2019). Hima Das Wins Fifth Gold of the Month as She Returns to 400m Event. Retrieved from <https://www.news18.com/news/sports/hima-das-wins-fifth-gold-of-the-month-as-she-returns-to-400m-event-2239365.html>.
  - ❖ Nithya (2019). Top 10 Indian sports achievement in 2018. Retrieved from <https://www.news18.com/news/sports/hima-das-wins-fifth-gold-of-the-month-as-she-returns-to-400m-event-2239365.html>.
  - ❖ Pagar Chinmay (2019). Kreedon | All about the Pro Kabaddi owners and coaches of all 12 teams. Retrieved from <https://www.kreedon.com/all-about-the-pro-kabaddi-owners-and-coaches-of-all-12-teams/>
  - ❖ Passport. (2017b). Digital Payments in India - Not a Distant Dream. Retrieved from <http://www.portal.euromonitor.com.lcproxy.shu.ac.uk/portal/analysis/tab>
  - ❖ Passport. (2018). Digital consumer in India. Retrieved from: <http://www.portal.euromonitor.com.lcproxy.shu.ac.uk/portal/analysis/related>
  - ❖ Premier League (2019). Premier League | All time stats. Retrieved from <https://www.premierleague.com/stats/all-time>.
  - ❖ The Economic times (2016). What is demonetization and why was it done? Retrieved from <https://economictimes.indiatimes.com/news/economy/policy/what-is-demonetisation-and-why-was-it-done/articleshow/55326862.cms?from=mdr>.
  - ❖ Vale, L., & Fernandes, T. (2018). Social media and sports: driving fan engagement with football clubs on Facebook. *Journal of Strategic Marketing*, 26(1), 37–55. <https://doi.org/10.1080/0965254X.2017.1359655>
  - ❖ Verhagen, E., & Bolling, C. (2015). Protecting the health of the @hlete: how online technology may aid our common goal to prevent injury and illness in sport. *British Journal of Sports Medicine*, 49(18), 1174–1178. <https://doi.org/10.1136/bjsports-2014-094322>
  - ❖ WARC. (2017). An overview of social networking in India in 2017. Retrieved from [https://www-warcom.lcproxy.shu.ac.uk/content/article/warc-datapoints-gwi/india\\_social\\_engagement/112738](https://www-warcom.lcproxy.shu.ac.uk/content/article/warc-datapoints-gwi/india_social_engagement/112738).
  - ❖ Yoshida, M., Gordon, B., Nakazawa, M., & Biscaia, R. (2014). Conceptualization and measurement of fan engagement: Empirical evidence from a professional sport context. *Journal of Sport Management*, 28, 399–417. doi:10.1123/jism.2013-0199.





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# A Survey on Indigenous Sports of Tribal Communities in Tripura

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## Abstract

The purpose of the present study was to identify the indigenous sports of tribal communities in Tripura state. For this study six (6) indigenous games & sports of six most populous sub community tribes of Tripura (according to 2011 census) one (1) each from Tripuri (Debbarma), Reang (Bru), Jamatia, Chakma, Halam and Mogwere purposively selected. The data were investigated by a survey from the local experts, leaders and other renowned or experienced persons of all the six sub tribes inhabitant in Tripura through interview (personal and telephonic) considering all the instructions and guidelines were quite reliable. The secondary data sources had been collected from the books, e-books, journals, e-journals, articles, scholars, educationist etc. that describing different tribal communities and ethnic groups. Descriptive statistical technique was used to justify the indigenous sports & games of different tribal communities of Tripura.

**Key words:** Indigenous, games & sports, tribes, Tripura etc.

## Introduction

Nowadays sport has become a part and essential of life. Millions of fans follow different sports events all over the world with an enthusiasm bordering on devotion. Many people participate in sports and games for fun, happiness, pleasure for health and fitness. Sports play a vital role in social and cultural functions and the importance of it can hardly be exaggerated. In Tripura, there are 19th Clung in different sub-caste living since the Yayati dynasty, near about 5000 years before. The tribes are namely Tripuri, Reang, Jamatia, Khasia, Chakma, Uchai, Lushai, Kuki, Munda, Bhil, Noatia, Orang, Halam, Garos, Santal, Mog, Chaimal, Bhutia and Lepcha. Basically, the Indigenous people of Tripura they survive their life by Jhum cultivation, that why for the survivable they face so many struggle with wild life in the cave and jungle, from the beginning they hunting in jungle by bow and arrow, stone, kolonga, etc. It was the tradition of their lives they had trained themselves and also trained up to youth. It is known as games. Like many other ethnic groups of the world, the Tripuri children and youths have their traditional

games and sports. However, it deserves mention here that the traditional sports of the Tripuris games and sports are almost in common with other Tripuri speaking tribes of Tripura i.e., Debbarma, Tripura, Reang, Jamatia, Kalai, Rupini, Murasing, Noatia and Uchai, Molsom, Kaipeng. Now-a-days, though the Tripuri children have adopted the other castes' games and sports, they till in this last part of the twentieth century, played their traditional sports and games at least once in a blue moon. Out of many traditional sports and games of the Tripuri community, some are detailed here. The Tripuris call the games as 'Thwngma'.

The contribution of sports towards the overall welfare of the human society may be capsuled sports provides ample and healthy means for recreation and relaxation of human mind and body. It also provides opportunities for social interaction thereby fostering peace and understanding among different peoples, nation, race and religions. Apart from this, it provides healthy and socially acceptable opportunities for the peoples and nations to compete against each other. Participation in sports activities creates physical fitness among the peoples and this physical fitness is the sum total of five motor abilities namely strength, endurance, speed, flexibility and coordination. Tripura is a north-eastern state of India. The state comprises of only 0.3% of India's total population. The peoples of this state are very fond of traditional games and sports. The state government also contributes to enhance the indigenous games & sports of Tripura. The Tripuri community has its own traditional sports, which are called Thwngmung in the Kokborok, the Tripuri language. In recent years, these traditional sports are being gradually abandoned as more people become attracted to modern games and sports, but some of the sports are still played today and preferred in rural Tripura. Some of these sports are listed below. For many years it was believed that performance in games and sports depends on skill perfection, technique, psychological and physiological components. Now it is believed that besides all there, proper play-field is required for every game for higher level of achievement. It has been fully recognized by the scientists too.

## **Objectives**

- ❖ Identification of indigenous communities of Tripura.
- ❖ Identification and collection of indigenous games and sports for tribal communities of Tripura.
- ❖ Evaluation of selected indigenous games and sports of Tripura.
- ❖ Generalization of indigenous games and sports of Tripura.

## **Methodology**

1. **Selection of Indigenous Sports:** For this study six (6) indigenous games & sports from six most populous sub tribes (as per 2011 Census) of Tripura were purposively selected, one (1) each from Tripuri (Debbarma), Reang (Bru), Jamatiya, Chakma, Halam and Mog respectively and games & sports

are very popular among these selected tribes.

- 2. Sources and Collection of Data:** The data has been collected from the experts, leaders and others known or experienced persons of all the six sub tribes out of nineteen (19) sub tribes' inhabitant in Tripura through interview (personal and telephonic) by considering all the instructions/ guidelines properly. The secondary data has been collected from the books, e-books, journals, e-journals, articles, internet, researchers and educationist etc. about the different tribal communities and groups inhabiting in different peripheral part of Tripura.

## Discussion

### *Tribal Indigenous Games and Sports of Tribal Communities:*

The children and youths of tribal communities of Tripura have their own traditional games and sports like many other ethnic groups of the world. However, it deserves mention here that the traditional games and sports of Tripuri community are almost common with other Tripuri speaking tribes of Tripura. They play or organizing their traditional sports and games at least once in a blue moon and also organize time to time in their cultural and traditional occasions and festivals out of many traditional sports and games and about the selected sub-tribes of the tribal communities, are detailed here.

**Table: 1.**

***Collections of games & sports of selected communities.***

Name of the Tribes	Games and Sports
Tripuri	1. AchugwiPhanSohlaimung 2. Bumanikotor 3. DwkhwiSotonmung 4. PhanSohlaimung 5. Kaldong or Kadong 6. LongoiChokmung 7. MuphukSagwnang 8. MustaSeklaio 9. Sohlaimung 10. Bopang 11. Daksha-Sai 12. BukangBailaiHuhnai 13. RihuiNai 14. Makal Kana 15. IchingBiching 16. Kit kit 17. Takla 18. Makhra 19. Terijuri 20. HuiJakNai 21. Tukka 22. Eka-Guti 23. Dasguti 24. Matham/swimming 25. Khori 26. Pia 27. BongbraiBirma 28. Chur (Top) 29. Ri-kothe 30. Teng Dang 31. Cooking game 32. Hi Do-Do.
Reang (Bru)	1. Khulpali Tisa Mo 2. Taokhuo Ba Sa Mo 3. NailyaWasa 4. YanglaBahar Mo 5. Singhai-Ma-Ma 6. Tawla-Ba Mo 7. Thaili-Chara-Kari-Mo 8. Pepra-Sakhou-Mo 9. Wa Susa Mo 10. Kerang-Ma-Mo 11. Manda-E-Ma-Mo 12. Wakhram-Ka-Mo 13. Tawla-Tamo Lai Mo 14. Wabai Fan Solai Mo 15. YakfaMokhlai-Ma 16. DinkiKa-Mo 17. Badul-Thwnglai-Mo 18. Chu 19. Chokha Ma Khosama 20. YakhromKamo
Jamatiya	1. Mailao-May-Sekmani 2. RomorNormani 3. Hari 4. Matha 5. Bagakana 6. Kakwraymwng 7. MaymwySwngmwng 8. DekheDere 9. Mankha De Bamak(Bama) 10. Achiyng Jang 11. Sikram 12. SukuyChwla 13. BwrwyragSukuy 14. AytwkMwylakTwylak
Chakma	1. GhilaKhara 2. NadengKhara 3. Kani-Dola-Mela-MeliKhara
Halam	1. BasectAnkei 2. RotuonAnsun 3. Puontethor 4. ReisongAnher 5. Masuianbuon 6. Ngo Le Seram 7. KekAndai 8. SampakAnqam.
Mog	1. Da 2. Gadu 3. Dou 4. Yeang,

- 1. Trpuiri (Debbarma):** Tripuris are the largest tribal community in Tripura.

They have first migrated in this territory and could be introduced as aboriginal tribe of Tripura. Tripuris are numerically highest in number(as per 2011 Census they are 592,255people) among all the tribal groups. Tripura was under rule of Tripuri Kings till it is merged with Indian Dominion in the year 1949. Ethnically Tripuris belong to Indo-Mongoloid origin and linguistically within the Tibeto-Burman family. They speak in Kok-Borok as like as other 7(seven) tribal groups of Tripura. Tripuris are mainly Hindus. They have colorful folk dances like, Garia, Lebang, MusakSurmani, Tangbiti and Mamita.

- 2. Games & Sports :** The Tripuris Call the Games as Thwngma.
- 3. Kaldong or Kadong :** The Kaldong or Kadong is one of very popular game among Tripuri community and this is also very interesting and pleasure game among the children's & youths of Tripuri community specially youth boys. A small foot step is tied on two pieces of bamboo (moli) about two (2) feet above the ground level and the height of two pieces bamboo is 6 to 7 ft. Then the children's or youths climb on the knots holding the bamboo with their hands and walk or run faster on field or remain on the kaldong longer without falling from it. They also play with this kaldong run, pickup needle from the ground and fight with another fellow by one leg lift up position and also show their skill each other like surjyanamaskar by standing in a place 10 to 15 minute without moving.
- 4. Reang :** Reangs are the second largest tribal community of Tripura. They are recognized as one of the 75 primitive tribes in India. Reangs are firstly come from Shan State of upper Burma (now Myanmar) in different weaves to the Chittagong Hill Tracts and then Southern part of Tripura. Similarly another group entered Tripura via Assam and Mizoram during 18th Century. Reangs belong to Indo-Mongoloid racial stock. Their language has affinity of Austro-Asiatic groups under Tibeto-Burman family. Ethnically Reangs are divided into 2(two) major clans (i) Meska and (ii) Molsoi. Their language is known as "Kaubru" which have a tonal effect of Kuki language though broadly it is Kok-Borok (language of men). Reangs are still a nomadic tribe and a large numbers among them maintain their livelihood involving Top Hill Jhum Cultivation and other food gathering activities like collection of jungle fruits, leaf, plants, fishing in stagnant water in hill slopes, hunting of wild animals and birds etc.

## **Games & Sports**

- 1. Chu :** Chu is most popular game among the reang youth. Individual or group player can play this game.
- 2. Procedure:** Firstly, make a circle at around 3 meters radius (may increase or decrease the size of the circle according to the number of players), the

participants stand outside of the circle with their chu. The first person through the chu inside the circle and other person try to hit the chu in the circle. If he succeeds then he will be declared as a winner, if not then the game will start again and this process will continue until unless a winner is decided.

- 3. Jamatia:** Jamatia is another tribal group of Tripura, having distinct feature of Mongoloid Origin. Their language is also similar with that of Tripuris. Therefore, they speak in Kok-Borok, which is a language of Tibeto-Burman family. As per 2001 Census their population in Tripura is 74,949 and treated as 3rd largest tribal group of Tripura. Jamatia were the major strength of Royal Army of Tripura kingdom for which they were exempted from the house taxes during princely- state. Earlier Jamatias had to live on Jhum Cultivation. However, among the tribal of Tripura they accustomed themselves with plough cultivation after the Tripuris.

## **Games & Sports**

- 1. Sukuy Chwla:** This is very popular game among the Jamatias since time immemorial.
- 2. Procedure:** The rules and regulation of the games are very complex and interesting. The game is played between two team and each team consists of 5 to 6 members. There are different stages in this game and each part has to go through all the stages in order to complete the games and to decide winner or loser. Both chwlarang (boys) and the bwrwyrag (girls) can play this game. Originally it was played with sukuy, it is the seed of a kind of plant (*mimosa nscandens*) but now days the girls play with the natural sukuy and the boys play with sukuy made of wood. These wooden sukuy are little bigger. The boys game consists of eleven (11) steps, namely 1. Dan 2. Yachu 3. Falka 4. Karay 5. Mwkter 6. Fatwk 7. Suku 8. Fangchul 9. Kal 10. Khar 11. Marang. And the girls game consists of thirteen (13) steps namely 1. Khukbuk 2. Chau 3. Yak Rap 4. Jantibara 5. JantiKalak 6. Siryng 7. Yakheyng 8. Sal 9. Suy 10. Chakaybara 11. Chakaykalak 12. Musal 13. Raytwy. The rules & regulations are similar to boys, little difference is only in methods of throwing of the sukuy. The girls cannot throw the sukuy as the boys do rising their legs. The team that completes the last stage first will wins the game.
- 3. Chakma:** They are one of the 4th major tribes of Tripura according to their population strength (according to 2011 census). Chakmas are known to be a tribe of South-East Asia. They have first migrated to Arakan Hills of Bruma and then Chittagong Hill Tracts to Tripura. A major part of them however migrated to Mizoram and Arunachal Pradesh in course of time from their original homeland. Among Chakma there are 3(three) major groups like (i)



Anokia, (ii) Tandugia, and (iii) Mangla. Linguistically Chakma language is mixed with loan words of Indu-Aryan language, Tibeto-Chinese and mainly Arakan language. Their language also is described as broken Bengali and Assamese language. Chakma have their own script in Burmese Alpha bets, though not in use rather Bengali script is being used and easy to learn

## **Games & Sports**

- 1. Ghila Khara:** This is the most popular game among the Chakma youths. It is generally played during the Bizhu festival by the boys and girls. In this regard it is worth mentioning here that there are vivid descriptions of playing this typical game in the folk ballad of the Chakmas, named "Radhamon-Dhanpudi Pala". It is most popular game since beginning. This game is played with large bean-like seed of thick, woody creeper (Botanical name-*Entada scandens*). This bean-like seed is called 'ghila' by the chakmas. But in some items of the same game the boys used the wooden or horn-made ghila in lieu of this indigenous seeds. This game is generally played in an open field or in a large courtyard in group wise. It has different kinds of items of game like- 1. ChondiKhara 2.TagalKhara 3.JhumKhara 4.BiyongKhara 5.NokkkrukKhara etc., so among all these items only 'ChondiKhara&TagalKhara are played by both the boys & girls. The other items are exclusively for the boys only due to its hard technique. Every item of the game is codified with respective rules & regulations and directed with different stages or steps. The players should go through all the stages in order to complete the games and to decide victory or defeat.
- 2. Halam:** Ethnically, Halam belong to the Cocase-Mongoloid origin of Kuki-Chin tribes. Their language is also more or less similar to that of Tibeto-Burman family. Halams are also known as Mila Kuki, though they are not at all Kukis in terms of language, culture and living style. Halams are divided into several sub-clans which is referred as "Barki-Halam". Major sub-clans of Halams are (1) Kaloi, (2) Kor-Bong, (3) Keipeng, (4) Bong, (5) SakaChep, (6) Thangachep, (7) Dab, (8) Bongser (9) Rupini, (10) Hrangkhawl, (11) Chorai, (12) Langai, (13) Kaireng, (14) Ranglong, (15) Naveen and (16) Khulang. Among these tribes, as per 2001 Census their total population is 47,261 and distributed throughout the State. Halams are basically Hindus and followers of Sakti-cult though Vaishnavism is spreading among some of the sub-clans like Murasingh, Rupini and Kaloi. But Christianity is also being embraced by Halams.

## **Games & Sports**

- 1. Masuianbuon:** This is the most popular game among the halam community. This game is played between two players and both of them face each other. This game is played on ground or on a plane surface. Both the players have

to catch their palm and their ankle should be touched on ground and from that position the player who is able to fall down opponents hand on ground is awarded as winner.

2. **Mog:** In Tripura as per 2001 Census the population of Mogs is 37,893. Their major concentrations are at Subroom and Belonia. Mogs are Arakan tribe and migrated to Tripura through Chittagong Hill Tracts. By religion they are Buddhist. Their language is grouped under Tibeto-Chinese family, which has also linked with Assam-Burmese section of language. Mogs are depends on Jhum Cultivation. There is a combination of folk songs and dance during this festival. In fact Mog’s social culture and belief are centralized with Burmese culture.
3. **Khyang Dou:** It can be played individual or team also and both male & female are allowed to participate in the game. This game is very famous among the Mog community.
4. **Procedure:** A marked line is drawn and then placed some target from a certain distance from the marked line (distance depends on the level of the game). Those targets are made by the wood or part of tree. There are many target which depends on the organizer but generally 5 to 10 target is used and each target have their own points. Then a player from a team will throw the target and at a time only one will be allowed. Each player will get three (3) chances at a time and individual or team who scored more points will be the winner.

**Table: 2.**

***Games & sports experts of all the six (6) selected communities***

Sl. No.	Tribes/Communities	Name	Address
1	Tripuri	Upendra Debbarma Ranjit Debbarma	Lembuchara, ManikBhander, Kamalpur, Dhalai, Tripura-799287
2	Reang	Mangal Joy Reang Gola Ch. Reang	Garji, Dalham Para, East Garji,
3	Jamatia	Ananda Jamatia and Satish Chandra Jamatia	Killa, Udaipur, Gomati, Tripura
4	Chakma	Amrit Chakma Susanta Chakma	Longtarai Valley, Dhalai, Tripura
5	Halam	Jotham Halam and Shurjocharan Halam	Soitang, Dharmanagar, North Tripura  Santibazar, salema, dhalai Tripura.
6	Mog	KramfruMog ChelafuMog	Vill- Kalabaryiya, Sabroom, South Tripura

**Table: 3. Distribution of Population(As per the 2011 Census)**

Sl. No.	Tribes/Community	2001	2011
1	Tripuri	543848	592,255
2	Reang	165103	188,220
3	Jamatia	74949	83,347
4	Chakma	64293	79,813
5	Halam	47245	57,210
6	Mog	30385	37,893

## Conclusion

In modern era, the games & sport played very vital role to maintain good health and fitness that has become most essential part of everyone's life. In Tripura there are nineteen (19) tribal communities are living and they have many indigenous games & sports (around 80 – 90 according to survey till now), which are very interesting, attractive and also play a vital role in social and cultural functional changes and having traditional values of their own self among the tribes. Some indigenous games & sports are common among all the major tribes. Tripuri community have the highest number of traditional games & sports, followed by Reang and Jamatia respectively. The researcher tried to find proper explanations of the games & sports (like origin, aim and objective, equipments, procedure, rules and regulations etc.), but corrected and fixed systematically after proper investigation and interpretation of data collectively. All the indigenous games & sports were linked with their past culture or livelihood. Nevertheless, it has been recommended to all the people of tribal communities to organize the indigenous games and sports in formal competition purposes and attract for mass participations as well as maintain their own sake of culture and tradition.

## References

- ❖ Mitra Mukesh, Mapping of Sports Talent among Tribes of Tripura, Tribal Research Cultural Institute, Govt. of Tripura, Agartala, 2017.
- ❖ Dev Varman S.B.K, The Tribes of Tripura a Dissertation, Tribal Research and Cultural Institute, Govt. of Tripura, Fourth Edition, 2012.
- ❖ Gan-Chaudhuri Jagadis, A Cultural History of Tripura, Tribal Research and Cultural Institute, Govt. of Tripura, 2nd Edition, 2017.
- ❖ Agashe C.D. and Karkare Ajoy (2003), "Comparative study between Tribal and non-tribal Sportsperson of Chhattisgarh related to their motor fitness" Tribal health bulletin, vol. 9 (1 & 2), pp.46 to 51.
- ❖ Gan-Chaudhuri Jagadis, The Reangs of Tripura, Tribal Research and Cultural Institute, Govt. of Tripura, 2nd Edition, 2011.
- ❖ Bhattacharjee Prodip, The Garos of Tripura, Directorate of Research Tribal Welfare

Department, Govt. of Tripura, 1987.

- ❖ Paul Chandra Dipendra, RupkatharAangikeReangJanajatderKheladhula, Tribal Research and Cultural Institute, Govt. of Tripura, 2004.
- ❖ AgrawalkumarYogesh and DiwankumarAshish (2014), “A comparative study of competitive behaviour between Tribal & Non-tribal male Archers”, Indian Journal of physical education, sports and applied science Vol.4, No.4, pp. 01 – 03.
- ❖ NathBhattacharjeeProdip, TheJamatiyas of Tripura, Tribal Research and Cultural Institute, Govt. of Tripura, 1983.
- ❖ Chakraborty M., Dasgupta M. and Sircar B., A Study on the Lushais of Jampui Hills in Tripura, Tribal Research and Cultural Institute, Govt. of Tripura, 1988.
- ❖ SutradharJaharlal, Indigenous, Music and Culture of Tripura, Tribal Research and Cultural Institute, Govt. of Tripura, 2014.
- ❖ Singh SaratchandraLourembam, “A history of indigenous games in Manipur”, Singh Unpublished PhD Thesis, Manipur University, Kanchipur, Imphal, 1998.
- ❖ Mangi Y., “Development of Physical Education and Sports in Manipur (1947 –Das 1990)”, Unpublished PhD Thesis, Manipur University, Kanchipur, Imphal, 1995.
- ❖ Manoshi, Tribal Food Habit Tripura Tribes, Tribal Research and Cultural Institute, Govt. of Tripura, 2017.
- ❖ Darlong L., TheDarlongs of Tripura, Tribal Research and Cultural Institute, Govt. of Tripura, 1996.
- ❖ Ssndys EF., History of Tripura (Reprint), Tribal Research and Cultural Institute, Govt. of Tripura Singh Budha W., Indigenous Games of the Meitei’s, Imphal, 1992.
- ❖ Wakharkar G. D., Manual of Physical Education, Poona, August, 1967.





# Effect of Physical Activity on Cognitive Development of Autistic Children

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## ABSTRACT

The purpose of the study is to find out the Effect of Physical activity on Cognitive Development of Autistic Children of Roshni Ramakrishna Ashrama, Gwalior (M.P.). Five (N=5) subject were selected for the purpose of present study (mix group, boys= 03 & girls=02), age ranged from nine (9) to fifteen (15) years, according to Ashrama record, walking, carrying, balancing, cleaning, engaging in novel play, pushing, pulling, rotation, bending, and locomotion, and recreational activities are consider as Physical Activity to measure the Cognitive Development through Trail Making Test (TMT) Parts- A & B (consists 25 circle, A=number 1 – 25, B= both numbers & letters 1 – 13, A – L), before and after the Trail Making Test. In order to find out the effect of physical activity on Cognitive Development of autistic children, pre-test and post-test data was collected. Comparison was done by the means of paired 't'-test. Significance difference was found at .05 level of significance.

**Keywords:** Trail Making Test (TMT), Cognitive Development, Physical Activity, Autistic Children.

## Introduction

Autism is a disorder that is associated with deficiencies in three related domains. The first is language and communication. To be classified as autistic there must be a delay during the developmental period in the acquisition of language. If the individual exhibited no delay but shows other deficiencies associated with autism, then the individual is typically classified as having Asperser syndrome especially when those other conditions are mild. A severely autistic individual will never acquire language. Such individuals are typically not able to function in society independently and eventually require Institutionalization of one sort or another. More mild autism is typically associated with eventual language acquisition, but typically the individual shows clear deficiencies in the pragmatic or social use of language. Back and forth conversation is difficult and the individual will frequently discuss one or two topics of interest in an obsessive fashion. There are also a range of other related problems concerning various issues including that facial

expression and gestures frequently do not match what is being said. The second related domain is social interaction. Not surprisingly, given the deficiencies in pragmatic language skills, even high functioning autistic individuals typically find social interaction difficult. In addition, there are also a number of other aspects of the disorder that make social interaction difficult. First, autistic individuals have difficulty making appropriate eye contact during social interaction. Second, there is typically a deficiency in interpreting subtle social cues such as smiles, winks, and grimaces. Third, autistic individuals frequently exhibit what is referred to as mind blindness, i.e., they lack a conceptual understanding of what other individuals are thinking. This last characteristic can lead an autistic individual to make unintentional comments that the listener finds insulting. The final major way in which autistic individuals show deficiencies is in terms of repetitive behaviours and obsessive interests. This set of deficiencies takes a number of different forms. One specific way this deficiency manifests itself is in terms of odd repetitive motions such as flapping arms or walking on toes. Another is in terms of a desire for consistency or sameness of everyday routines. For example, an autistic child may demand that he or she leave for school at exactly the same time every day and that exactly the same route be taken, where any deviation concerning either of these dimensions can cause the child to become extremely agitated. The last way this deficiency is manifested is in terms of obsessive interests. For example, an autistic child may become obsessed with a narrow interest such as vacuum cleaners or train schedules or wasps and want to learn everything he or she can about the topics.

From the early 1900s, autism referred to range psychological conditions. But where the term did comes from. The word “autism” which has been used for about 100s year, comes from the Greek word “autos” meaning “self”. The term describes condition in which a person is removed from social interaction-hence an isolated self. Eugen Bleuler, a Swiss psychologist, was the first person to use the term. He started using it around 1911 to refer to one group of symptoms of schizophrenia. In the year 1940s, researcher in the United State began to use the term “autism” to describe children with emotional or social problems.

Autism and schizophrenia remains linked in many researcher minds until the 1960s. It was only then that professionals began to have separate understanding to autism in children.

From the 1960s through the 1970s, research into treatments for autism focused on medication such as LSD, electric shock, and behaviour change techniques. During the 1980s and 1900s use of high controlled learning environments emerged as the primary treatments for many form of autism and related condition.

## **Objective**

The purpose of the study was to compare Cognitive Development of Autistic

Children before and after six (6) week physical training activity.

## **Methodology**

### ***Selection of Subjects***

For the purpose of the study Five (N=5) subject (mix group, boys= 03 & girls=02), Autistic Children of Roshni Ramakrishna Ashrama, Gwalior (M.P.), were selected according to Ashrama record with age ranged from nine (9) to fifteen (15) years,

### ***Selection of Variable***

For the purpose of the study, Cognitive development was selected as a dependent variable which was measured with a valid & reliable test that TMT.

### ***Method and Tools***

Subjects were made aware of the purpose of the study and also about test and procedure to perform Trail Making Test (TMT). The Pre-test & Post-test data was collected from the selected Autistic Children of Roshni Ramakrishna Ashrama, Gwalior (M.P.). The Pre-test data was collected before engaged them in any physical activity and Post-test data was collected after the six (6) week physical activity at Roshni Ramakrishna Ashrama, Gwalior (M.P.). The tool & equipment's which was used during the data collection is Trail Making Trail (TMT) parts A & B, Stop watch, Pencil & Paper etc. Total duration of the training was six (6) week and training was given in every alternate days (three days in a week), duration of class is 45 minutes and three minutes recovery period in between the activities. The cognitive development measurement was done on the basis of time record in seconds to complete the Trail Making Test (TMT) Parts- A & B (consists 25 circle, A=number 1 – 25, B= both numbers & letters 1 – 13, A – L).

The overall score of TMT was taken as the sum of time in seconds of part A & B.

### ***Statistical Technique***

The data was analysed by employing paired t-test at .05 level of Significance. The SPSS statistical was used for calculation.

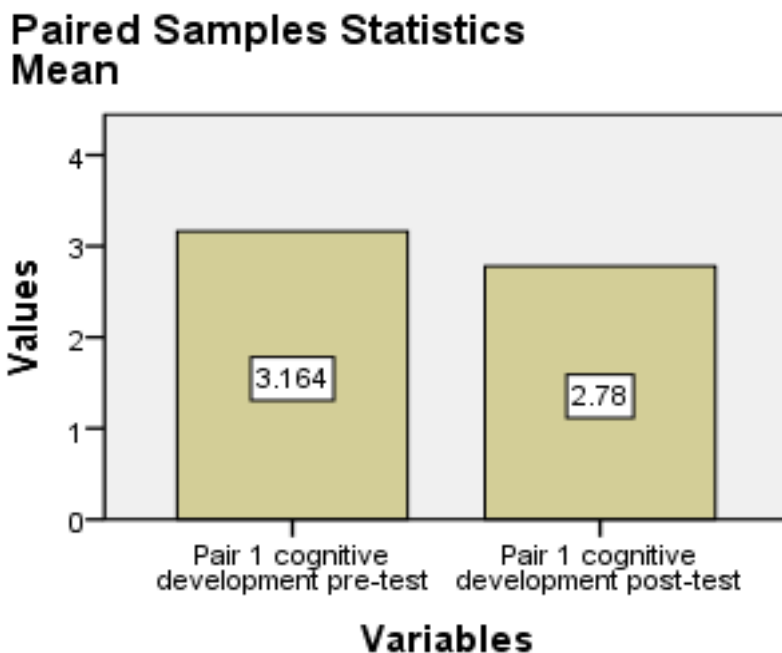
## **RESULTS**

The data was collected and analysed in order to draw a conclusion or to compare the pre and post status of the Cognitive Development of autistic children of Roshni Ramakrishna Ashrama, Gwalior (M.P.). The findings of descriptive statistical values are presented in the Table underneath.

**Table 1:**  
**Paired sample statistics for Cognitive Development**

Paired Samples Statistics		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	cognitive development pre-test	3.164	5	1.023	.458
	cognitive development post-test	2.780	5	.682	.305

Table 1 shows the value of mean, SD and standard error of the mean for the data on cognitive development in pre and post-testing as  $3.164 \pm 1.023$  &  $2.78 \pm 0.682$  respectively.



**Fig.1. Comparison of Mean Result in Pre-test and Post-test Cognitive Development of Autistic Children.**

The comparison of mean difference of pre-test cognitive development and post-test cognitive development of autistic children of Roshni Ramakrishna Ashrama, Gwalior, (M.P.).



**Table 2.**  
**Paired T-test between Pre and Post cognitive development.**

		Paired Samples Test					
		Paired Differences					
Mean		Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)	
Pair 1	Cognitive Development pre & post-test	.384	.418	.187	2.056	4	.109

Table 2 shows that obtained p-value (.109) is more than 0.05 thus indicating that there is no significance difference between Pre-test and Post-test cognitive development.

## Conclusion

The result of the study clearly conclude that there is no significant difference in pre and post test score. Comparative graph shows that there is improvement in cognitive development but they are not significant, so the researcher may conclude training was effective but requires to include some more ingredients and duration can also be increase to make the training more affective.

## Discussion

It has been noticed in the statistical analyses that there is no significant difference in pre and post-test of Trail Making Test of autistic children of Roshni Ramakrishna Ashrama, Gwalior, M.P., but in the graph it is showed that there is little difference in Mean value of pre and post-test (TMT), that means the physical training/activity period is need be to extended from 6 week to 8 -10 week and also increased the frequency (numbers of days per week) of the training, so that the Trail Making Test will be more effective to compare the Cognitive Development of autistic children of Roshni Ramakrishna Ashrama, Gwalior, M.P.

## References

- ❖ Claudia L. H., Allison Attal, J. R. Best, Timothy A. R., Pete T. and Diane M. C., (2015), Exergaming to Improve Physical and Mental Fitness in Children and Adolescents with Autism Spectrum Disorders: Pilot Study, International Journal of Sports and Exercise Medicine, ISSN: 2469-5718.
- ❖ Dawn Hendricks, (2010), Employment and adults with autism spectrum disorders: Challenges and strategies for success, Journal of Vocational Rehabilitation 32, 125–134 DOI: 10.3233/JVR-2010-0502 IOS Press.
- ❖ Francis T. Pleban & David Berne & Renae Burke, (2014), Physical Activity in Children with Autism Spectrum Disorders: Considerations for Educational Program Administration, Central European Journal of Sport Sciences and Medicine, Vol. 5, No. 1/15–26.
- ❖ Glen O. Sallows and Tamlynn D. Graupner (2005), Intensive Behavioural Treatment for Children with Autism: Four-Year Outcome and Predictors, American Journal on Mental

Retardation, Volume 110 (6): 417–438.

- ❖ Michael S. and Marian S. (2002), The Behaviours of Parents of Children with Autism Predict the Subsequent Development of Their Children's Communication, *Journal of Autism and Developmental Disorders*, Vol. 32, No. 2.
- ❖ Jane E M., Caitlin C. & Rachel McLeod(2012), Beneficial Effects of Clinical Exercise Rehabilitation for Children and Adolescents with Autism Spectrum Disorder (ASD), *Journal of Exercise Physiology online*, Volume 15.





# Physical Education and Sports Programs in Schools

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## Abstract

Physical Education is an indispensable of education as it contributes to the health, to the emotional and mental development of an individual. In the modern era we cannot undermine the importance of relationship between general education and physical education. These are complementary and supplementary to each other. Their aims and objectives lead towards common goal—the all-round development of personality, enabling the man to lead enriched, abundant and harmonious life. Therefore, physical education is an integral part of general education and their relationship cannot be ignored. They are inter-related and inter-dependent, and constitute an indivisible whole. Physical Education as an integral part of all educational programs, deserves to be appreciated. The outcomes of these programs extend much beyond the horizons of keeping fit and healthy. They become positive inputs for the development of multiuse proficiencies, neuro-muscular skills, values and attitudes, which have great potential as foundations for success in life. Activities like rhythmic, expressive movements, dance, mass-drill, flag salutation and singing of the National Anthem do in the course of celebrations of national days and other events certainly go a long way in strengthening national integration. It helps students to realize and appreciate the contributions of these activities in physical, mental, moral, social and emotional development.

**Key words:** physical education and sports etc.

## Introduction

Physical Education is an indispensable of education as it contributes to the health, to the emotional and mental development of an individual. In the modern era we cannot undermine the importance of relationship between general education and physical education. These are complementary and supplementary to each other. Their aims and objectives lead towards common goal—the all-round development of personality, enabling the man to lead enriched, abundant and harmonious life. Therefore, physical education is an integral part of general education and their relationship cannot be ignored. They are inter-related and inter-dependent, and constitute an indivisible whole. Physical Education as an integral part of all educational programs, deserves to be appreciated. The outcomes of these programs extend much beyond the horizons of keeping fit and healthy.

They become positive inputs for the development of multiuse proficiencies, neuro-muscular skills, values and attitudes, which have great potential as foundations for success in life. Activities like rhythmic, expressive movements, dance, mass-drill, flag salutation and singing of the National Anthem do in the course of celebrations of national days and other events certainly go a long way in strengthening national integration. It helps students to realize and appreciate the contributions of these activities in physical, mental, moral, social and emotional development.

### **Significance of the Study**

The study is to determine the physical education and sports programs in schools is total health system for healthy life style.

### **The Main Objectives of Physical Education Programmes Are**

- ❖ To develop the concept of good health, physical fitness, grace and poise.
- ❖ To develop healthy habits relating to sleep, food exercise and hygiene.
- ❖ To develop neuro-muscular coordination(bodily skills)
- ❖ To develop attitudes and values of cooperation, sports manliness, fair play and team spirit.
- ❖ To develop traits of character such as discipline, courage, self- confidence and a sense of responsibility.
- ❖ To develop the ability for making an enjoyable use of leisure.
- ❖ To promote talent in sports and to achieve international standards.

### **Free Movements**

Movements like walking, running, jumping, throwing are a part of movements education. For free movements and for exploration some improvised gadgets like hoops, old tyres, old boxes, old chairs, obstacles (prepared or existing) could be used. These activities facilitate free exploration, contributes to poise and body coordination and above all provide fund and enjoyment.

### **Rhythmic**

Dance and action songs come under this category. Dance is an excellent medium of free healthful activity through which students can express their emotions. They are – various stimuli for dancing are necessary at this stage. These may be provided by audio-stimuli for dancing are necessary at this stage. These may be provided by audio-stimuli like mouth sounds, clapping, drums and also visual stimuli like demonstration, community songs and some other poems and songs selected from language readers. Examples group dance, action songs, flag drill etc., these activities help develop an agile body, balance and physical poise, graceful movements, a sense of rhythm and above all they yield joy and satisfaction.

## **Small Area Games**

These are simple games played within a small area involving running, chasing, dodging etc., students could play these individually, in pairs or in groups. The interest of children could be sustained for a very long time through them. Lion in the well, follow the leader, thief and the Policeman etc., such games provides exercise to various muscles, help develop physical strength and neuromuscular coordination, foster a sense of cooperation and have fun and enjoyment.

## **Gymnastics**

Physically activities of this type should be so selected that the children, of the age-group in question, are able to perform without any special equipment, rabbit jumping, displaying the postures of standing, sitting lifting bending and stretching, forward, backward roll, monkey walk, cart wheel, wheelbarrow, shoulder roll, balance walk etc., Gymnastic activities help in body control and neuro-muscular coordination skills. They also impart strength, suppleness and balance to the body.

## **Simple Combative**

Simple combative like pushing, pulling, toppling help children in sublimating their aggressive drives and desires. Examples: drake fight, cock fight, lame duck fight, hand wrestle, pushing off the bench or the stool, stepping on toes, knee slap etc. These activities help children to know about their strength in relation to others and help develop courage and self-confidence.

## **Calisthenics**

These are exercise without apparatus. They involve continuous movements of the head, arms, trunk, and legs without any rigid positions being held. These developmental exercises have to be done in a formal prescribed way for a sufficiently long time. These are normally 6 to 8 exercises of 2 to 4 counts for this age-group. Calisthenics help develop coordination of bodily movements leading to the growth and development of the body and better postures.

## **Athletics**

Athletics play an important role in the programme of physical education. Activities in this area involve movements of running, jumping and throwing which are measurable and hence comparable. A healthy competition can be fostered through these activities because achievements can be measured and tested objectively where even an individual can compete with himself. Examples: Short Spirits (25 M), hopping (25-50 M), Endurance (200 M), throwing a cricket ball or football, jumping for distance and height. Athletic activities help develop fundamental motor skills, contribute to physical fitness and open up avenues for competition.

## **Games**

Games though important in their own right, have to be suggested with the full awareness of the fact that, playground faculties and specialist coaches or instructors are not available in many schools. Children may be offered opportunities for playing “lead-up” games leading them finally to major games. Next, they may be encouraged to learn and practice a few fundamental skills and family, to play the games in the modified simple form. An exposure and opportunity is expected to finally enable students to select the games of their choice. Games help children to develop the ability to participate their choice. Games help children to develop the ability to participate in vigorous activities, to learn new skills, to cultivate an interest in games and to drive fun and enjoyment. Relays constitute a commonly practiced form of games. They could be simple relays, zig-zag relays, hop and run, potato race, three legged race, jumping over the stick etc., Lead up games are miniature forms of big games. In lead-up games of football or hockey, for example, there could be a small field with say 5 yr. 5 players. In a lead-up cricket children may play tennis ball cricket etc.,

## **Yogic Exercises**

Yoga is an Indian contribution to the field of Health Education. Yogic asana be performed in a calm atmosphere, produce desirable effects on the body mind and are an excellent carry over activity. It will develop the ability to concentrate, has a carryover effect for it contributes to physical fitness and is now being increasingly used for therapeutic to cure a number of ailments. Asanas, in which students could be trained at this stage, are Swastikasana, Veerasana, Bhujangasana, Ardhsalabhasana, Utkatasana, Tandasana, Vrikshasana Padahastasana and Shavasana.

## **Drill and Marching**

Drill and Marching are to be introduced at this state as a compulsory activity. They develop uniformity in orderly move sense of discipline and enable to formation of a habit for maintaining good posture leading to proper and effecting control of the body.

## **Swimming**

Very few schools have swimming pools. However, whenever, natural facilities like a river, a sea, a pond is available nearby, swimming could be made a core programme Children ought to be encouraged and guided to get over the fear of water through confidence drill consisting (step-by-step) of:

- ❖ Walking in waist deep water.
- ❖ Jumping on the spot, back and forth and opening the eyes in the water.
- ❖ Practice of aquatic breathing with the face above the water level, breath in through the mouth and breathing – out through the nose.

- ❖ Floating with the support of a partner-holding the partner's waist stretched in a horizontal position.
- ❖ Once the floating skill is achieved, an attempt should be made to introduce the free style, breast stroke, and the butterfly stroke.
- ❖ The basic skill to be acquired for all the strokes should be: Body position (horizontal) Leg action Arm action Breathing Coordination Swimming leads to the removal of the fear of water helps develops Confidence, fun and pleasure.

## **Discussion of the Study**

Scientists and doctors have known for years that substantial benefits can be gained from regular physical activity. The expanding and strengthening evidence on the relationship between physical activity and health necessitates the focus of the study brings to this important public health challenge. Although the science of physical activity is a complex and still-developing field, we have today strong evidence to indicate that regular physical education & sports will provide clear and substantial health gains.

We must get serious about improving the health of the nation by affirming our commitment to healthy physical activity on all levels: personal, family, community, organizational, and national. Because physical activity is so directly related to preventing disease and premature death and to maintaining a high quality of life, we must accord it the same level of attention that we give other important public health practices that affect the entire nation. Physical activity thus joins the front ranks of essential health objectives, such as sound nutrition, and the prevention of adverse health effects of tobacco.

The effort to understand how to promote more active lifestyles is of great importance to the health of this nation. Although the study of physical activity & sports determinants and interventions is at an early stage, effective programs to increase physical activity have been carried out in a variety of settings, such as schools, physicians' offices, and worksites. Determining the most effective and cost-effective intervention approaches is a challenge for the future.

## **Conclusion**

Opportunities ought to be provided to the children for learning and practicing the skills and playing the games with suitable modification in the school, as physical education is the integral part of the educational programme. The programme aim at promoting the development of the body and the mind and also develop the qualities in children that are essential for a happy and well adjusted for health and healthy life style in a free and democratic world. Therefore it can conclude that, there activities can develop the total personality of the child, to its fullness and perfection total health system for healthy life style.

## Reference

- ❖ Amar Ujjala (13th December 2007) National News Paper, Kanpur Edition.
- ❖ Dainik Jagran (07.02.2007) National News Paper, Kanpur Edition.
- ❖ Kansal D.K. (1999) Test and preventive and social medicine 11-20
- ❖ Kamlesh M.L. (2001-02), Health and Physical Education 3-4.
- ❖ Park.K. (1994) Text Book of Preventive and Social Medicine, 11-20.
- ❖ Rashtriya Sahara (28th April, 2007) National New Paper, Kanpur Edition.
- ❖ Sharma V.D (2003) Introduction to Physical and Health Education 1-15 Times of India (18th April 2007) National News Paper Kanpur Edition.







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# **Comparison of Explosive Strength Between Handball and Badminton Players**

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## **Abstract**

This study was to compare the explosive strength between handball and badminton players of state level or national level. For this study 30 players was selected, which consist of 15 players each from both the games. Independent 't' test was employed as statistical tool for finding the statistical significant difference among handball and badminton players of state and national players. The age of the players were ranging from 18 to 25 years. The data pertaining to this study were collected by using suitable test for explosive strength namely vertical jump on the selected subjects. To calculate an analysis data, independent 't' test was employed and the finding of the study revealed statistically that, there was insignificant in variable of explosive strength between the handball and badminton players of state level or national level players. Hence, the hypothesis was rejected.

## **Introduction**

Sports is all forms of usually competitive physical activities which through casual or organized participation, aim maintain or improve physical ability and skills while providing entertainment to participants, and in some cases, spectator. Every human being has a definite level of motor abilities. He/she is able to carry some weight to certain distance in a definite period of time. The motor abilities are the precondition for the physical Games and sports are very useful for health. Every human being has a definite level of motor abilities. He/she is able to carry some weight to certain distance in a definite period of time. The motor abilities are the precondition for the physical performance. The motor abilities of man are different in nature, which means that different events of the some movement have different motor abilities are interrelated and as a rule if somebody demonstrate one of them in highest degree, he cannot have a great success in another ability. Man has to participate in activities in order to achieve growth and development and also to maintain good health, muscular strength and flexibility and needed

for a good physique as well as excellence of the performance in any activity. The skill related physical fitness include physical qualities that enable a person to perform in sport activities, skill related physical fitness is strongly influenced by genetic make-up. Synonymous with skill related fitness is athletics fitness or motor fitness. The specific components of skill related physical fitness are agility, balance, coordination, power, speed and reaction time. Skill related fitness has been acclaimed as on his essential requirement. It is equally required for every human being and all spheres of life physical, emotional, mental and social factors which influence the health fitness and good health. It is generally related to good physique, good health and good organic developmental. Health related fitness really implies more than ability to do work without much effort, physical narrow process.

Badminton is a racquet sport played using racquet to hit a shuttle cocks across a net. Although it may be played with larger teams, the most common forms of the game are “singles” (with one player per side) and “doubles” (two players per side). Badminton is often played as a casual outdoor activity in a yard or on a beach; formal games are played on a rectangular outdoor court. Points are scored by striking the shuttlecock with the racquet and landing it within the opposing sides half of the court.

Handball is a team sport in which two teams of seven players each pass as ball using their hands with the aim of throwing it into the goal of the other team.

The world of games and sports has crossed many milestones, as a result of different achievements in general and their application in the field of sport in particular scientific investigation performance role to attain excellence of performance in different sports. Now the sportsman have been able to give outstanding performance because of involvement of new scientifically sustained training methods and means of execution of sports exercise such as sports techniques and tactics, improvement of sport grass, and equipment, as well as other components and condition of the system of sports training. The sports scientists and coaches are demanding full time involvement and round the year dedicated practice of sports to reach the pinnacle of their performance.

In this game and sports movement patterns characterized as intermittent and change continuously in response to different offensive and defensive situation in which anthropometric characteristic and high level of muscle of strength, muscle power, endurance capacity are the most important factors that give a clear advantage for successful participation in handball and badminton players. So the researchers wanted to Compare of explosive strength between handball and badminton players.

## **Statement of the Problem**

From the above surface of literature and background the researcher was interested to state the study as “Comparison of explosive strength between handball and badminton players.”

## **Objective of the Study**

The main objective of the study was to find out the explosive strength on the handball and badminton players.

## **Hypothesis of the Study**

The study might be significantly difference between the badminton and handball players on explosive strength.

## **Delimitation of the Study**

The study was delaminated to 30 male players i.e. 15 players each from handball and badminton players. Further the subject was range between 18-25 years of age.

The study was delimited further on explosive strength.

## **Limitation of the Study**

- ❖ Some of the subject might be lack of motivation to perform the explosive strength ability was considered as limitation of the study.
- ❖ Desire fitness may not be available to the subject it was also considered as limitation of the study.
- ❖ Some of the subject may not be available it was also considered as limitation of the study.

## **Definition and Explanation of the Term**

### ***Explosive Strength***

Standard explosive exercise use large muscle movement such as squats, power cleans, weighted or un- weighted vertical jumps and heavy ball throws or even hill sprinting smaller exercises likes bench presses or push-ups can also be used to build power but will limit the overall results to those muscle groups.

### ***Badminton***

Badminton is a racquet sport played using racquet to hit a shuttle cocks across a net. Although it may be played with larger teams, the most common forms of the game are “singles” (with one player per side) and “doubles” (two players per side). Badminton is often played as a casual outdoor activity in a yard or on a beach; formal games are played on a rectangular outdoor court. Points are scored by striking the shuttlecock with the racquet and landing it within the opposing sides half of the court.

## **Handball**

Handball is a team sport in which two teams of seven players each pass as ball using their hands with the aim of throwing it into the goal of the other team.

Modern handball is played on a court 40 by 20m with a goal in the centre of each of end. The goals are surrounded by a 6 meter zone where only the defending goalkeeper is allowed; the goal must be scored by throwing the ball from outside the zone or while “jumping” into it the sport is usually played indoors, but outdoor variants exist in the forms o field and Czech handball. The game is quite fast and includes body contact as the defenders try to stop the attackers from approaching the ball.

## **Significance of the Study**

1. The finding of the study may help to see the explosive strength ability of the badminton and handball players:
2. The finding of the study may help to find the exact figure of the explosive ability to the badminton and handball players.
3. The finding of the study may help to the coach and players regarding on the explosive strength ability.
4. The finding of the study may help to draw out remedial measures for the poor performance of explosive strength to the badminton and handball players.
5. The finding of the study may be help to the similar study of research.

## **Procedure Selection of the Subject**

For this study 30 subjects was selected as the subject of the study; 15 players each from handball and badminton who have represented state level or national level.

## **Selection of Variable**

The following variable was selected from the comparison between handball and badminton players on explosive strength.

## **Vertical Jump and Reach Test**

Administration of test and collection of data

The research scholar was administrated to the selected subject for the collection of data to the 30 subjects separately 15 from each game i.e. handball and badminton players, the vertical jump was administrate for the comparison of the explosive strength between handball and badminton players. Three trials are given to the selected subject. The best one will be recorded for the purpose of the study.

1. **Purpose:** To measure the power of legs in jumping vertically.
2. **Facilities and Equipment:** wall, marker (usually chalk on the finger tips

will do) and measuring tape.

- 3. Procedure:** In this method the athlete stand straight beside a high wall and raises their hand up. To measure their standing reach, then touch the wall as high as they can with their fingers. The chalk on the fingertips will leave a temporary mark on the wall.

The athlete then jumps as high as they can from a flat footed position and tries to touch the highest point on the wall they can.

- 4. Scoring:** The distance between the first mark on the wall (standing reach) and the highest point on the wall (point of highest jump) is the athlete's standing vertical jump height. The jump height is usually recorded as the score.

## **Statistical Procedure**

To compare the handball and badminton players on explosive strength t- test will be employed, the level of significance difference will be chosen 0.05

## **Analysis of Data, Results and Discussion**

### ***Statistical Analysis of Data***

The statistically analysis of the data was collected from 30 players, which is 15 players of each game who had participated in state level or national level. The statistical technique independent 't' test was adopted for finding the difference between the group means, independently.

### ***Level of Significance***

To test the hypothesis, the level of significance was chosen at 0.05 level of confidence, which was considered most adequate and reliable for the purpose of the study.

### ***Findings***

The data collected on 30 players, 15 each from handball and badminton, finding of the explosive strength between the players through pertaining data have been presented in the tables.

**Table -1**

***Descriptive Analysis of Vertical Jump (Explosive Strength) Between Handball and Badminton Players***

Group	N	Range	Max	Min	M	Sd
Handball	15	15.24	60.96	45.72	51.05	4.02
Badminton	15	13.97	59.69	45.72	52.02	4.71

From the above table -1, it reveals that the mean, standard deviation and range of vertical jump of handball and badminton were 51.05+ 4.02, 15.24 and 52.02+ 4.71, 13.97 respectively.

**Table -2**

Group	N	M	Sd	Md	SED	T
Handball	15	51.05	4.02	0.97	1.60	0.61
Badminton	15	52.02	4.71			

***Mean difference (independent t- test)***

***Insignificant at 0.05=2.048***

**Discussion of Findngs**

The main purpose of the study was to compare the explosive strength between handball and badminton players. It has been observed the result of the study that there was insignificant difference on variable of explosive strength (vertical jump) among these two groups.

The insignificant result is due to the similar nature of the game and utility of explosive strength in vertical jump by the players of these two games. Hence, there was insignificant difference in vertical jump (explosive strength) between the handball and badminton players of state level or national level.

**Discussion of Hypothesis**

In the beginning of the study it was hypothesized that there would be insignificant difference of explosive strength between handball and badminton players.

Further from the elaborate statistical analysis of the study revealed that, statistically there was insignificant in variables of explosive strength i.e. vertical jump between handball and badminton players of state level or national level. Hence, the hypothesis was accepted.

**Summary**

The aim of this present study was to compare the explosive strength between handball and badminton players of state level or national level. For this study 30 players was selected, which consist of 15 players each from both the games. Independent‘t’ test was employed as statistical tool for finding the statistical

significant difference among handball and badminton players of state and national players. The age of the players were ranging from 18 to 25 years.

The data pertaining to this study were collected by using suitable test for explosive strength namely vertical jump on the selected subjects. To calculate an analysis data, independent 't' test was employed and the finding of the study revealed statistically that, there was insignificant in variable of explosive strength between the handball and badminton players of state level or national level players. Hence, the hypothesis was rejected.

## **Conclusion**

Recognizing the delimitations and limitations of the present study and on the basis of statistical findings the conclusion can be drawn that there was insignificant in vertical jump between handball and badminton players in state level or national level players.

## **Recommendations**

After recording the results of the study, the researcher was able to provide the following recommendations for the future replica of the study.

- ❖ Similar study may be undertaken selecting other fitness components.
- ❖ A similar study may be conducted on trained athletes of different games and sports of state or national level.
- ❖ Similar study may be carried out by selecting of different ages and sexes other than those adopted in the study.
- ❖ Instead of taking normal condition taking during competition to make this study more study attractive and interesting.
- ❖ To make the study more detailed and valid the study may repeated on large samples.
- ❖ From the finding of the study it is also recommended that a study may be carried out with others players.
- ❖ It is also recommended that a similar study may be on high school level.
- ❖ It is recommended that similar study may be conducted on a large population for the other parts of the country.

## **References**

- ❖ Sports "retrieved from the online website; <http://in.wikipedia.org/wiki/sports>).
- ❖ "Value of games and sports" retrieved from the online website, <http://www.study mode.com/essay/value-of-games-sports-582579.html>.
- ❖ Baines singh, GJ Brar, RS Rathee.N. (2004) Essential of physical education, New Delhi, Kalyani publisher.
- ❖ Rai, R. (2003) Biomechanics. Mechanical aspects of human motion. Punjab: Agrim.

- ❖ Pangrazi P.R (1995) Dynamic physical education for elementary school children President council on physical fitness and sports physical fitness research digest july 1997.
- ❖ D.N. Ajmeer singh and other. "Essential of physical education" kalyani publishing,2006 p-519.
- ❖ Rex Headline (1985). Fitness of sports. Mari-borough: the crowood press.
- ❖ <https://en.wikipedia.org/wiki/badminton#cite-note-FOOTNOTEBoga2008-2>.
- ❖ <https://en.wikipedia.org/wiki/badminton#cite-note-FOOTNOTEGrice2008-2>.
- ❖ [http:en.wikipedia.org/wiki/badminton#cite-british India](http:en.wikipedia.org/wiki/badminton#cite-british%20India).
- ❖ [http:en,Wikipedia.org/wiki/badminton#cite](http:en.Wikipedia.org/wiki/badminton#cite).
- ❖ <Htt:en.wikipedia.org/wiki/handball>
- ❖ [Htt:www.indianet zone.com/19/handball Indian.htm](Htt:www.indianet%20zone.com/19/handball%20Indian.htm)







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# Effect of Interval Training Program on Skill Ability of Basketball Players

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## ABSTRACT

Basketball player is most effective when he can start quickly and move with “controlled speed” to a given spot on the floor. Basketball is more often a game of nimble and quick bursts of speed from side to side and fluent forward and backward movements on playing surface. Although much attention is usually given to the period of activity during an interval workout, the training stimulus associated with performing intervals occurs from a combination of work and recovery. This is what makes interval training different from continuous training. Therefore, the duration and nature of the recovery periods are also an important part of interval training. A very short recovery period may not allow the body to recover sufficiently to perform the next work interval at the desired intensity. The research methodology used for the study was an experimental design using three phases, viz. Pre-test, Treatment/training phase and Post-test. The Eighty subjects from different Schools in and around Wadala/Matunga area in Mumbai were selected using the simple random technique. The Subjects were divided into two equal groups, viz. Experimental group and Control group. The data was analyzed using the paired t-test statistical technique. The null hypothesis of equality of mean Skill variables viz, Dribbling, Shooting and Passing in experimental and control groups is rejected, and it may be concluded the average Skill ability of the boys in experimental and control groups in the interval training program is not the same. It may be concluded that the interval training program is effective for improving the Skill abilities of basketball players aged 12 to 14 years.

## Introduction

**B**asketball is a game where full speed is seldom achieved by a player and in fact very infrequently warranted. The player must always be ready to stop and change direction quickly and this suggests that a compromise must be reached between the use of out-right speed and the use of controlled speed so that he can drop quickly and change direction on demand. Basketball player is most effective when he can start quickly and move with “controlled speed” to a given spot on the floor. Basketball is more often a game of nimble and quick bursts of speed from side to side and fluent forward and backward movements on playing surface. <sup>1</sup>

Interval training is based on the premise that a greater amount of intense work can be accomplished if the work is interspersed with periods of rest. This has important implications for gains in fitness, since fitness is affected to a greater extent by the intensity of exercise than by either the duration or frequency.

During an interval workout, the exercise is performed at a greater intensity than during continuous exercise. Furthermore, interval training has been found to be more effective than continuous training in stimulating fatty acid oxidation in muscle mitochondria.<sup>2,3,4</sup>

Although much attention is usually given to the period of activity during an interval workout, the training stimulus associated with performing intervals occurs from a combination of work and recovery. This is what makes interval training different from continuous training. Therefore, the duration and nature of the recovery periods are also an important part of interval training. A very short recovery period may not allow the body to recover sufficiently to perform the next work interval at the desired intensity.<sup>5,6,7,8</sup>

## **Objectives of the Study**

1. To determine the effect of interval training program on selected fitness ability of Basketball players.
2. To understand the effect of interval training program on selected skill ability of Basketball players.
3. To see the comparative effect on two groups of the interval training program.
4. To provide guideline for training procedure for Basketball players and professionals.

## **Hypothesis**

1. **Ho**-The interval training program may have no significant effect on the Dribbling ability of basketball players.
2. **Ho**-The interval training program may have no significant effect on the Shooting ability of basketball players.
3. **Ho**-The interval training program may have no significant effect on the Passing ability of basketball players.

## **Research Methodology**

The research methodology used for the study was an experimental design using three phases, viz. Pre-test, Treatment/training phase and Post-test. The Eighty subjects from different Schools in and around Wadala/Matunga area in Mumbai were selected using the simple random technique. The basketball players aged 12 to 14 years were divided into two equal groups, viz. Experimental group and Control group.<sup>9</sup>

## Result and Discussion

**Table D-1 Comparison of Control and Experimental Group Mean Gains on Post Test of Dribbling**

Variable	Control Grp. Mean	Experimental Grp. Mean	tstat	P (two tailed)	df
Dribbling	25.475	28.475	6.4839	0.0004	39

It can be seen from the Table D-3 that the value of t-statistics is 6.4839. This t-statistic is significant as its corresponding p value is 0.0004, which is less than 0.05. Thus, the null hypothesis of equality of mean dribbling ability in experimental and control groups is rejected, and it may be concluded the average dribbling ability of the boys in experimental and control groups in the interval training program is not the same. However, in order to conclude whether the dribbling ability has increased or not, one tailed test should be used. The hypothesis that need to be tested in that shall be

❖  $H_0 : \mu_{\text{expt}} = \mu_{\text{cntrl}}$

❖  $H_1 : \mu_{\text{expt}} > \mu_{\text{cntrl}}$

For left tailed test, the value of tabulated at 0.05 level of significance and 39df can be seen from the Critical value Table, which is equal to 1.684. Since calculated value of t (6.4839) is more than the tabulated value t 0.05 (39)(1.684),  $H_0$  may be rejected, and it may be concluded that the interval training program is effective.

**Table E-2: Comparison of Control and Experimental Group Mean Gains on Post Test of Shooting**

Variable	Control Grp. Mean	Experimental Grp. Mean	tstat	P (two tailed)	df
Shooting	7.05	8.9	7.74096	0.0002	39

It can be seen from the Table E-3 that the value of t-statistics is 7.74096. This t-statistics is significant as its corresponding p value is 0.0002, which is less than 0.05. Thus, the null hypothesis of equality of mean shooting ability in experimental and control groups is rejected, and it may be concluded the average shooting ability of the boys in experimental and control groups in the interval training program is not the same. However, in order to conclude whether the shooting ability has increased or not, one tailed test should be used. The hypothesis that need to be tested in that shall be

❖  $H_0 : \mu_{\text{expt}} = \mu_{\text{cntrl}}$

❖  $H_1 : \mu_{\text{expt}} > \mu_{\text{cntrl}}$

For left tailed test, the value of tabulated tat 0.05 level of significance and 39df can be seen from the Critical value Table, which is equal to 1.684. Since calculated value of t (7.74096) is more than the tabulated value t 0.05 (39)(1.684),  $H_0$  may be

rejected, and it may be concluded that the interval training program is effective.

**Table F-3: Comparison of Control and Experimental Group Mean Gains on Post Test of Passing**

Variable	Control Grp. Mean	Experimental Grp. Mean	tstat	P (two tailed)	df
Passing	23.075	25.775	7.423	0.005	39

It can be seen from the Table F-3 that the value of t-statistics is 7.423. This t-statistics is significant as its corresponding p value is 0.005, which is less than 0.05. Thus, the null hypothesis of equality of mean passing ability in experimental and control groups is rejected, and it may be concluded the average passing ability of the boys in experimental and control groups in the interval training program is not the same. However, in order to conclude whether the passing ability has increased or not, one tailed test should be used. The hypothesis that need to be tested in that shall be

- ❖  $H_0 : \mu_{\text{expt}} = \mu_{\text{cntrl}}$
- ❖  $H_1 : \mu_{\text{expt}} > \mu_{\text{cntrl}}$

For left tailed test, the value of tabulated t at 0.05 level of significance and 39df can be seen from the Critical value Table, which is equal to 1.684. Since calculated value of t (7.423) is more than the tabulated value t 0.05 (39)(1.684),  $H_0$  may be rejected, and it may be concluded that the interval training program is effective.

## Conclusions

- ❖ The study shows significant improvement in the Dribbling Ability of the subjects, it may be concluded that interval training program is useful tool for improving the Dribbling Ability.
- ❖ The study shows significant improvement in the Shooting ability of the subjects, it may be concluded that interval training program is useful tool for improving the Shooting ability.
- ❖ The study shows significant improvement in the Passing ability of the subjects, it may be concluded that interval training program is useful tool for improving the Passing ability.
- ❖ The study shows that interval training program can be successfully used for improving the physical fitness and skill abilities of Basketball Players.

## References

- ❖ France Schaafsm; Basketball for Women. (Iowa: Brown Company Publishers, 1968), PP 2-3
- ❖ Bompa, Tudor “Theory and Methodology of Training- The Key to Athletic Performance”, Kendall/Hunt Publishing Company, Iowa, (1983).
- ❖ Bunn; John W. Basketball Methods (New York: The Macmillan Company, 1957).

- ❖ Deltow Dr.Boris et. al.; Basketball (G.D.R. Sportverlag,Berlin, 1984).
- ❖ Fleck, S.J. Interval training:Physiological basis. Natl. Strength Cond. Assoc. J. 5(5): 40. 1983.
- ❖ Moris Donald, Kentucky; High School Basketball (West Nyook, Purker Publishing Co. Inc., 1969).
- ❖ Reilly, T., N. Secher, P. Snell, and C. Williams.Physiology of Sports. New York: E. & F.N. Spon, 1990.
- ❖ Singh, Dr. Hardayal Science of Sports Training, D.V.S.Publications, New Delhi, (1997).
- ❖ Pandya S.R.;Educational Research(A.P.H. Publishing House, New Delhi,2010) (ISBN 978-81-313-0777-9).



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