

# **Impact of Age Birth Order and Qualification on Women in Sports Participation Levels in Tamil Nadu and Pondicherry**

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## **Abstract**

This research is to examine whether the age, order of birth and qualification of women have any impact on women's participation in sports among Tamil Nadu and Pondicherry at different levels. The subjects were randomly selected from 2 colleges in Cuddalore (30 players), Tamil Nadu state and 2 Colleges from Karaikal (30 players), Pondicherry state. The selected subjects were with a brief questionnaire, to find out their level of sports participation, age, order of birth and qualification. Data obtained were subjected to find out statistical significance among the means using 3 (levels - district, state and national participations) x 2 (states -Tamil Nadu and Pondicherry) Factorial analysis. The results proved that there were significant differences in age and qualifications of the different level of women players. There was no significant difference in order of birth both at different levels. There was no significant difference between the Tamil Nadu and Pondicherry in age, order of birth and qualifications of the women players. It was concluded that age and qualification play vital role in the participation level of women players.

**Key Words:** Different levels of players, Tamil Nadu, Pondicherry, Age, Order of birth, Qualifications.

## **Introduction**

As a consequence of the women's efforts achieve equality in all aspects of life; many questions have been raised regarding the physical ability of girls and women to perform. Women have certain physiological and anatomical differences, which may affect their performance in sports when compared with men of the numerous sex differences in body size and shape, the most striking of these arise at adolescence: the man's greater height and wider shoulders and the women's proportionately wider hips and larger layer of subcutaneous fat. Sex differences in the adolescent growth spurt produce the characteristic sexual dimorphism seen in adulthood. Broadening of the shoulders relative to the hips is a characteristic of male adolescence, whereas broadening of the hips relative to the shoulders and waist is characteristics of female adolescences. (Laila Das)

Birth order is the chronological order of sibling births in a family. Alfred Adler(1870 – 1937) was a pioneer in the study of birth order. His research suggested that the position a child had by the order of birth significantly affected the child's growth and personality. Research in the late twentieth century and early twenty-first century shows even greater influence, contributing to intelligence, career choice, and, to a certain degree, success in adulthood.(Franz, Janie)

Age can affect stamina in sports by gradually taking away an athlete's overall muscle power. This is a result of the shrinking fast-twitch muscle fibers. Although the process occurs between the ages of 20 and 80, by age 40, half of that power is already gone. The nerves that activate muscle cells also begin to degenerate. This decreases the size and number of these specific muscle fibers. Aerobic exercise alone will not guarantee healthy muscle mass. It is the incorporation of some form of resistance training after the age of 40 that helps to maintain muscle strength, mass, power, etc. Adding endurance training will also promote healthy skeletal muscles.(Hurvitz M and Weiss R. 2009)

Jurj et. al. (2007) Studied on the inactivity is a modifiable risk factor for many diseases. Rapid economic development in china has been associated with changes in lifestyle, including physical activity. The purpose of this study was to investigate the patterns and correlates of physical activity in middle – aged and elderly women from urban. Methods of study population consisted of 74,942 chinese women, 40 – 70 years of age, participating in the baseline survey of the shanghai women's Health study (1997 – 2000), an ongoing population – based cohort study.

Osamo et.al. (2009) found that first-borns and only-children were demonstrated to have higher dependency on parents than later-borns. The father was fundamentally the primary socializing agent, and then was dethroned on the most significant socializing role model by entrustment his role to older like-sex siblings. There were two prominent features of interaction patterns between siblings that younger borns had reinforcing functions for their sport involvement of older borns, while older borns served as role models for later-borns' socialization into sport in the family.

Until the independence of India, Tamil Nadu was under the rule of British and Pondicherry was under the rule of French, which resulted in differences in cultural diversity, socio economic status and recognition for women participation

in sports and similar other factors. It is important for physical education and sport professionals to understand how these cultural and social factors of different groups of people, may influence a person from participating in sports.

The research purpose of this research was to find out whether age, birth order, and qualification of women of Tamil Nadu and Pondicherry states has any influence on the women participation in sports participation levels.

### **Methodology**

To achieve the purpose of this study, the investigator randomly selected 30 women players including athletes from Tamil Nadu and 30 women players including athletes from Pondicherry. The subjects were randomly selected from 2 colleges in Cuddalore, Tamil Nadu state and 2 Colleges from Karaikkal, Pondicherry state. To determine the level of participation of the subjects, a brief questionnaire was administered among them, eliciting, their name, age, birth order, qualification, college studying, name of the sport / event involved, number of years participating, achievements at school, inter-school, district, state, national levels, present sports participation at inter-collegiate, zonal, inter-university. Based on the responses obtained, the selected subjects were divided into three categories, namely, district, state and national level players. The players who played up to district level and participated at inter-collegiate sports meets were considered as district level players. The players who played up to state level and participated at University zonal level competitions were considered as state level players. The players who played in National level competitions and participated at All India University competitions were considered national level players for this study.

While the age and order of birth of the subjects were ascertained numerically, data on the qualifications of the subjects were obtained either as students studying in graduate courses (B.A., B.Sc., B.Com., etc) who are numerically scored '1' and pursuing post graduate courses (M.A, M.Sc, M.Com etc) are numerically scored '2'.

The data collected from the subjects were treated statistically using  $3 \times 2$  Factorial Analysis of Variance through SPSS (Version 11.0). The socio economic status of the two states, namely, Tamil Nadu and Pondicherry at three different levels, namely, district, state and national levels were compared for significant differences. In all cases, 0.05 level confidence was fixed for the purpose of this study.

**Results**

**Table-I**  
**Descriptive Statistics on Age of the Subjects Studied**

Level	State	Mean	Std. deviation	N
DISTRICT	Tamil Nadu	19.23	1.013	13
	Pondicherry	19.00	0.577	13
	Total	19.12	0.816	26
STATE	Tamil Nadu	20.71	1.326	14
	Pondicherry	20.21	0.579	14
	Total	20.46	1.036	28
NATIONAL	Tamil Nadu	22.00	1.000	3
	Pondicherry	21.67	0.577	3
	Total	21.83	0.753	6
Total	Tamil Nadu	20.20	1.472	30
	Pondicherry	19.83	1.020	30
	Total	20.02	1.269	60

**Table-II**  
**3 x 2 Factorial Analyses on Age of the Subjects**

Source	Type III sum of squares	df	Mean square	F	Sig.
Model	24088.811	6	4014.802	4693.779	0.000
Level	46.532	2	23.266	27.201	0.000
State	1.175	1	1.175	1.374	0.246
Level * State	0.246	2	0.123	0.144	0.866
Error	46.189	54	0.855		
Total	24135.000	60			

**Table-III**  
**Scheffe's Confidence Interval Test on Age of the Subjects**

Means			Mean difference	Level of significance
District	State	National		
19.12	20.46		1.35*	0.000
19.12		21.83	2.72*	0.000
	20.46	21.83	1.37*	0.007

\* Significant

**Table-IV**  
**Descriptive Statistics on Birth Order of the Subjects Studied**

Level	State	Mean	Std Deviation	N
District	Tamil Nadu	2.00	1.000	13
	Pondicherry	3.92	2.813	13
	Total	2.96	2.289	26
State	Tamil Nadu	1.93	0.997	14
	Pondicherry	3.29	2.840	14
	Total	2.61	2.200	28
National	Tamil Nadu	2.00	1.000	3
	Pondicherry	1.67	1.155	3
	Total	1.83	0.983	6
Total	Tamil Nadu	1.97	0.964	30
	Pondicherry	3.40	2.724	30
	Total	2.68	2.151	60

**Table-V**  
**3 x 2 Factorial Analysis on Birth Order of the Subjects**

Source	Type III sum of squares	df	Mean square	F	Sig.
Model	475.625	6	79.271	18.662	0.000
Level	6.510	2	3.255	0.766	0.470
State	9.014	1	9.014	2.122	0.151
	6.281	2	3.141	0.739	0.482
Error	229.275	54	4.242		
Total	705.000	60			

**Table-VI**  
**Descriptive Statistics on Qualification of the Subjects Studied**

Level	State	Mean	Std Deviation	N
District	Tamil Nadu	1.15	0.555	13
	Pondicherry	1.57	0.514	13
	Total	1.67	0.577	26
State	Tamil Nadu	1.40	0.563	14
	Pondicherry	1.31	0.630	14
	Total	1.14	0.363	28
National	Tamil Nadu	2.00	0.000	3
	Pondicherry	1.30	0.535	3
	Total	1.23	0.587	6
Total	Tamil Nadu	1.36	0.488	30
	Pondicherry	1.83	0.408	30
	Total	1.35	0.547	60

**Table-VII**  
**3 x 2 Factorial Analyses on Qualification of the Subjects**

Source	Type III sum of squares	df	Mean square	F	Sig.
Model	112.729	6	18.788	71.092	0.000
State	0.0036	1	0.0036	0.013	0.908
Level	1.773	2	0.886	3.354	0.042*
Level* Stat	1.456	2	0.728	2.755	0.073
Error	14.271	54	0.264		
Total	127.000	60			

\* Significant

**Table-VIII**  
**Scheffe's Confidence Interval Test on Qualifications of the Subjects**

Means			Mean difference	Level of significance
District	State	National		
1.23	1.36		0.13	0.667
1.23		1.83	0.60*	0.043
	1.36	1.83	0.48	0.231

\* Significant

### Discussions

Of the 30 subjects studied, 13 were district level players, 14 were state level players and 3 were national level players both in Tamil Nadu and Pondicherry. As shown in Table 1, the mean age of the district level women players were 19.23 for Pondicherry, 19.00 for Tamil Nadu players. The mean age of the state level women players were 20.71 for Pondicherry and 20.21 for Tamil Nadu. The mean age of the national level women players were 22 for Pondicherry and 21.67 for Tamil Nadu.

The mean differences were subjected to test statistical significance using 3 x 2 Factorial Analysis of Variance and the results presented in Table 2. It was found that there was significant difference in age of different levels of women players as the obtained F value of 27.01 was significant at 0.000, which was much higher than the level fixed for the study, 0.05 level. The obtained F value for different states was 1.374. And the obtained F value for interaction (Level and State) was 0.144. These were significant at 0.246 and 0.866, which were much lower than the level fixed for this study, that is, 0.05 level. Hence, the obtained F values for State and Interaction (Level and State) were not significant.

Since significant mean differences were obtained among district level women players in their age, the results were subjected to post hoc analysis using Scheffe's confidence interval and the results presented in Table 3 proved that there was significant differences between district and state, district and national and state and national level players. The means of age proved that national level players have 21.83 followed by state players 20.46 and district players 19.12 and the mean differences were significant. It was found that the mean differences between states, Pondicherry 20.20 and Tamil Nadu 19.83 were not significant and the interaction between level and state was also not significant as the obtained F values were not significant.

Results presented in Table 4, the mean birth order of the district level women players were 2.0 for Pondicherry, 3.92 for Tamil Nadu players. The mean birth order of the state level women players were 1.93 for Pondicherry and 3.29 for Tamil Nadu. The mean birth order of the national level women players were 2.0 for Pondicherry and 1.67 for Tamil Nadu.

3 x 2 Factorial Analysis of Variance results presented in Table 5 showed that there was no significant difference in birth order of different levels of women players as the obtained F value of 0.766, F value for different states was 2.122, F value for interaction (Level and State) was 0.735 and were significant at 0.470, 0.151 and 0.482 respectively, which were much lower than the level fixed for this study, that is, 0.05 level. Hence, the obtained F values for different levels, State and Interaction (Level and State) were not significant. The results proved that there was no significant difference in women players at different levels, that is, district, state and national and thus the order of birth did not significantly influence the women players represented at different levels.

Table 6, shows the mean qualification of the district level women players were 1.15 for Pondicherry, 1.31 for Tamil Nadu players. The mean qualification of the state level women players were 1.57 for Pondicherry and 1.14 for Tamil Nadu. The mean birth order of the national level women players were 1.67 for Pondicherry and 2.00 for Tamil Nadu.

3 x 2 Factorial Analysis of Variance results presented in Table 7 showed that there was significant difference in qualifications of different levels women players as the obtained F value of 3.354 was significant at 0.042 which was higher than the required level 0.05 fixed for this study. There was no significant difference between the states, namely, Pondicherry and Tamil Nadu and interaction (level and state) as the obtained F values 0.013 and 2.755 were less than the required significance levels 0.05. The post hoc analysis using Scheffe's confidence interval and the results presented in Table 8 proved that there was significant difference between district and state in qualification of the women players. The results showed that most of the women players of district level were students of graduate level and when they began to take part at state level and national level competitions they were mostly studying at post graduate courses. The results also confirmed with the findings on age, which proved that as the age increased, the level of their competition had also increased from district to state and national.

Osamo et.al. (2009) found that first-borns and only-children were demonstrated to have higher dependency on parents than later-borns and older borns served as role models for later-borns' socialization into sport in the family. However, the findings of this study proved that there was no significant influence on level of participation of the women players both in Pondicherry and Tamil Nadu. However, this study proved as the age increased, the qualification of the players improved and their level of participation also improved significantly.

### **Conclusions**

It was concluded that age and qualification play vital role in the participation level of women players. And order of birth failed to influence the women participation in sports.

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