

IMPACT of SPORTS in RURAL INDIA



A Brief Report of the baseline data collected from ASA's grassroots program to analyse the impact of sport on the participating children's physical, social and emotional development.



The Anantapur Sports Academy (ASA), an initiative by Rayalaseema Development Trust, is considered to be one of the largest sports for development programs in India. Operating in the rural district of Anantapur (Andhra Pradesh) the program reaches out to 11,136 children on a weekly basis and provides them with infrastructure, education, coaching and nutrition. Apart from promoting sports amongst the underprivileged youth of Anantapur, the program also contributes towards their socio-educational development.



Pro Sport Development (PSD) is an award-winning social enterprise dedicated to using sport for the holistic development of children and youth, through direct implementation of sporting programs, training of sports trainers and supporting grassroots sports administration. Since 2013, PSD has directly reached out to 7,198 children and youth and delivered training workshops for 694 grassroots coaches and community trainers, across 12 states in India.

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Introduction & Rationale

The Anantapur Sports Academy (ASA) has been actively operational for more than a decade yet data available about the program, particularly on its impact on the participating children and youth, is basic and sparse. While the influence sport has on children in the local community is fairly perceptible and various stakeholders and local communities vouch for it, there is as yet no regional data or hard evidence to back the claim.

The aim of this survey was to analyse and study the impact an organized sports program has on the holistic development of rural children. Focusing on the data set collected from children in the ASA program, this survey took into consideration how ASA's regular access to sport is helping rural children develop physically, socially and emotionally.

Methodology

The survey was conducted in two parts. The first part involved a questionnaire, which was self-answered by children. It is important to note that though the questionnaire was self-answered, children had staff present at all times to help them address doubts.

The questionnaire was sub-divided into sections. The first section was devoted to basic information like age, gender and name. The second section focused on general questions regarding the frequency of participation, time in the program and feedback on the program. The third section was an 18-question likert-scale style questionnaire, which was designed to determine the emotional and social development of the respondents. This was roughly based on Professor Fred Coalter's Sport-in-Development: A Monitoring and Evaluation Manual.

The second part of the survey focused on the physical development of children using tests for three basic Fundamental Movement Skills - agility, balance and coordination.

The three tests conducted were:

- One foot balance test
- Three hop test
- Zig-Zag test

All the physical tests were conducted three times for each child (three times on each foot for the balance and hop tests) and the averages were used in the final datasheet.



Sample Data

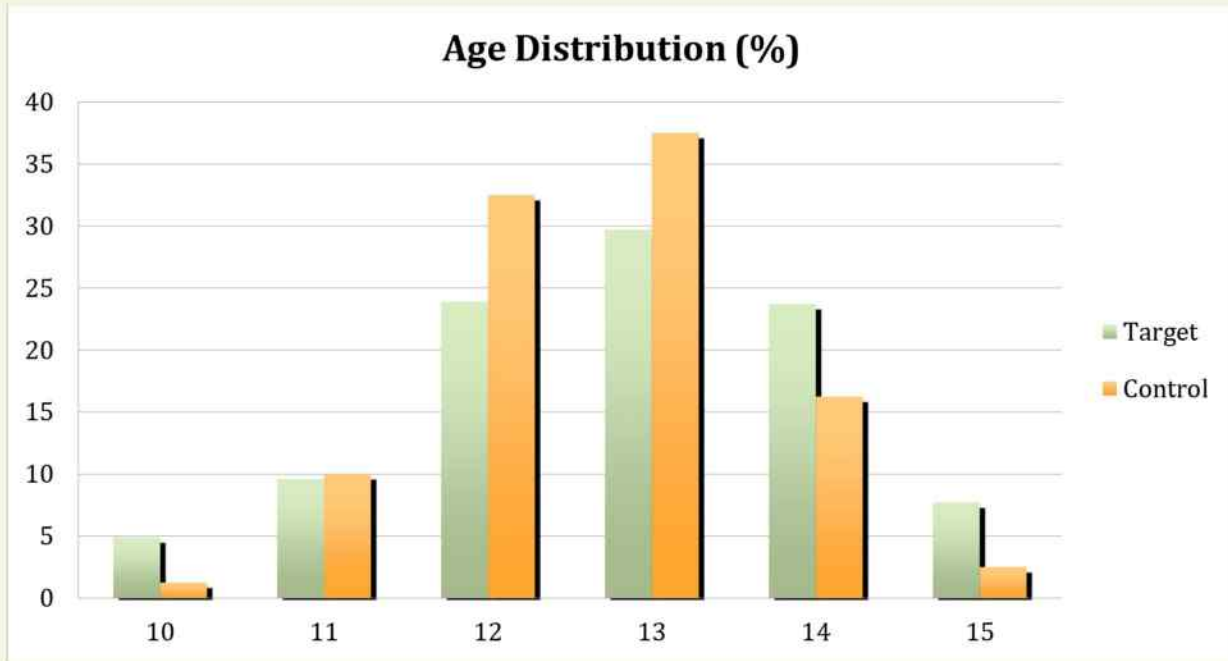
The dataset described in this report was collected specifically for the purpose of this study. Using a population of the 11,136 children who participate weekly in the ASA sports program in the Anantapur District, the survey focused on a sample of 468 children, taken from 17 different centres. The children that participated in the study were all between the ages of 10-15. They are part of six different sports which include football, hockey, cricket, tennis, judo and kabaddi.

Control data was also collected from children not participating in the ASA program. While it could not be ascertained whether these children participate in any physical activity in their own time, it was established they do not participate in the structured sports programs provided by ASA. It was also confirmed that they are from the same schools, villages and communities as the children who

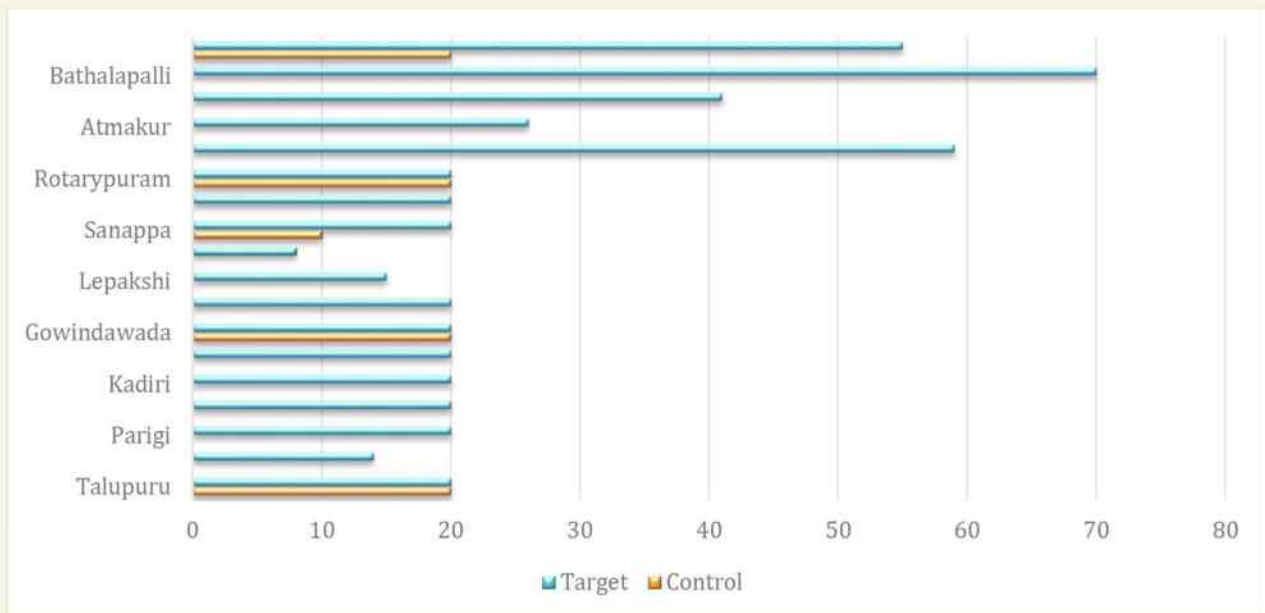
were part of the original sample. The control group sample had a total of 80 children who come from similar socio-economic backgrounds as the children part of ASA's sports programs.

A few graphs presented below detail the data collected for the study.

Age Distribution: Target vs Control

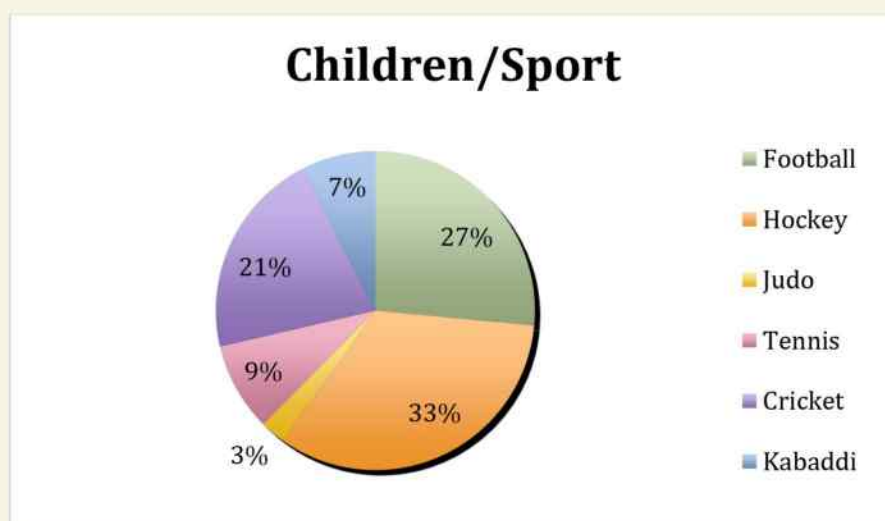


Number of Children per Centre: Target & Control Group

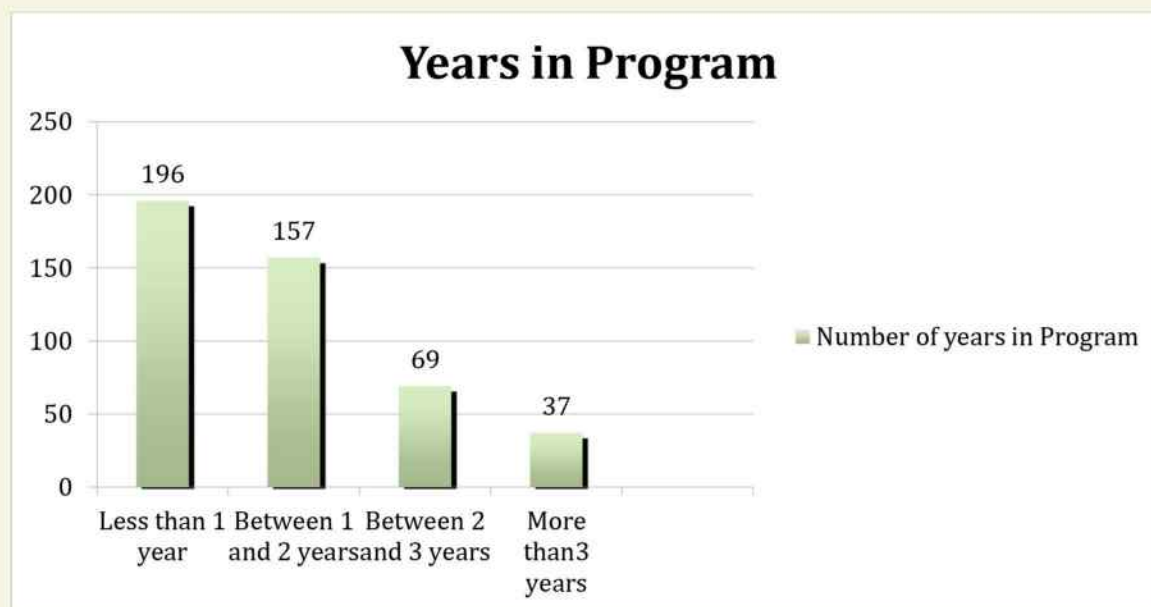




Number of Children per Sport (Target Group)

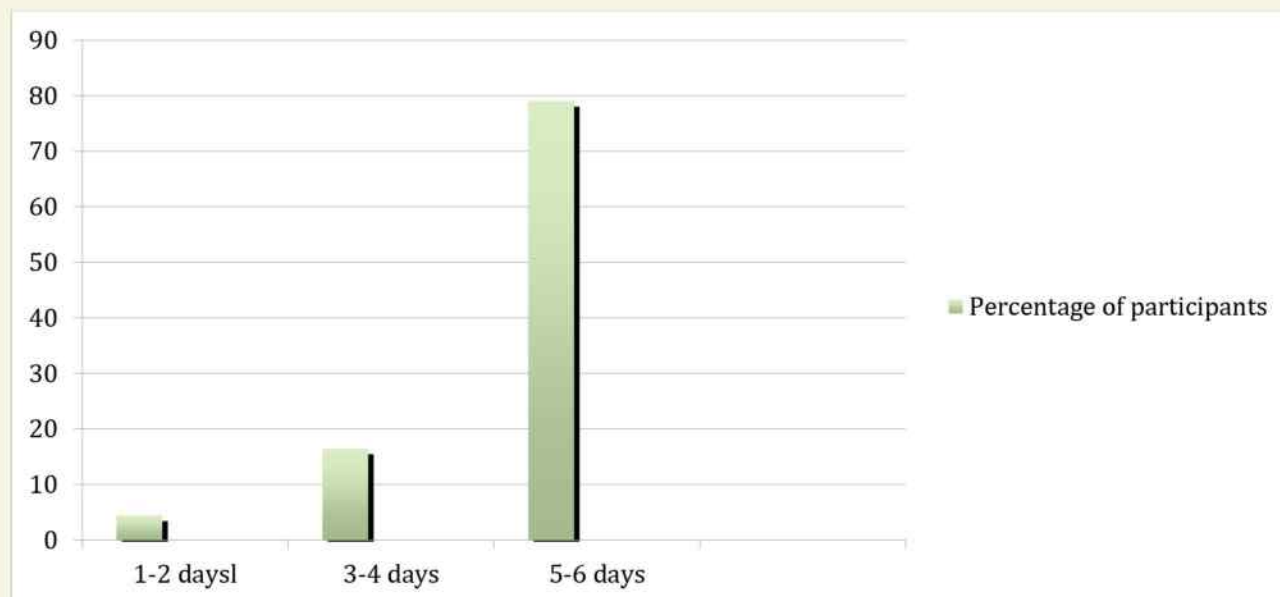


The figure below illustrates the number of years respondents have spent in the ASA program:



It is clear that most children in the sample have only been in the program between one and two years. However, it is important to note that children usually join the program between the age of nine and 10 years and our sample only considered children between the ages of 10 and 15 years. Though they have not been in the program for very long, the statistics for attendance clearly show that children, on the most part, are attending sessions almost daily; with 79% attending 5-6 days a week and 16.4% attending 3-4 days a week.

Attendance at Sports Centre's in %



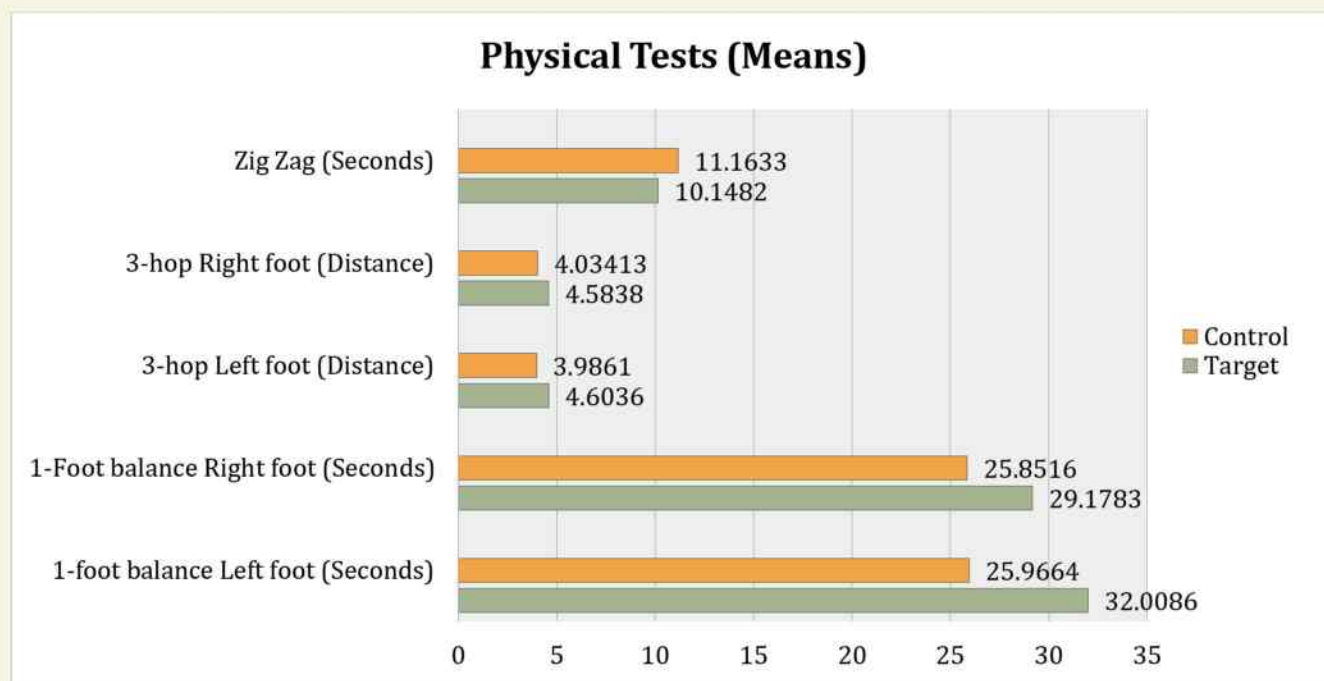


Analysis

The study is underlined by the hypothesis that “*Participation in an organized sports program has a positive impact on the physical, emotional and social development of children and youth*”.

Basic descriptive statistics portray a clear difference between the target and control groups. The children in the target group score significantly better in every physical test than the children in the control group. Even the results for the likert-scale lean towards the children part of ASA’s sports programs showing better progress in their social and emotional indicators, than children in the control group. Factors such as happiness and confidence are key differences among the two groups. Yet, it is difficult to take these numbers into any conclusive consideration because of the unequal sizes of the samples. It brings to front biases such as age and gender ratios.

Basic Comparison Results of Physical Tests (Target Vs Control) in Averages



(In the 'Zig-Zag test', a higher mean is not a positive as the test is based on the least amount of time in which children can complete the course)

Comparison of Modes for Likert-Scale Questions (Target Vs Control)

S.No	Questions	ASA Program	Control Group
1	I feel happy	4	3
2	I am positive	3	2
3	I feel satisfied	3	3
4	I don't get sad often	3	2
5	I laugh a lot	3	3
6	I believe in my ability to succeed	4	3
7	What others think of me doesn't matter	3	2
8	I enjoy making new friends	4	4
9	I often confide in my friends	3	3
10	I enjoy talking to other children	4	3
11	I like listening to what others have to say	3	4
12	I like listening to my teacher in class	4	4
13	I prefer to do things on my own	3	3
14	I often speak to members of the opposite gender	3	3
15	I have many friends of the opposite gender	3	3
16	I enjoy working with others	4	4
17	I believe everyone is equal	4	4
18	I prefer to do things as a team	4	4

(*1=Strongly disagree, 2=Disagree, 3=Agree, 4=Strongly agree)



The gender ratio is 60:40 in the target group and 50:50 in the control group and age distribution also varies in both groups. This can mean that any potential difference between the groups could be because of the differences in gender and age.

However, in order to work around the biases and various other potential issues surrounding unequal sample sizes (target vs control) that could affect the analysis, this study used weighted averages to analyse the final data. Grouping ages 10-12 years and 13-15 years along with gender, we multiplied the data with coefficients so that both groups had a 50:50 ratio in both gender and those two age groups. With the age and gender ratios already quite similar, the coefficients required for weighting were extremely small, thus making it possible to use this method.

This largely eliminated effects of any biases related to both gender and age.

After using the weighting averages system, the study utilised the **T-test** in IBM SPSS to compare and analyse the results of the physical tests for the target and control groups.

In order to determine the impact of sports on the emotional and social development of children, we analysed the likert-scale data. For this, the study utilised the **Pearson’s chi-square test** in IBM SPSS. The results of the analysis for both sets of data are given in the next section.

Results

Physical Tests Results

The results of the T-test in SPSS showed us that at 0.05 level of significance, there is in fact a significant statistical difference between the two groups when it comes to the ‘three hop test’ for coordination and the ‘zig-zag test’ for agility. This lends evidence to the part of our hypotheses that argues sports has a positive impact on the physical development of children.

T-test Results for Physical Tests

Tests	Target group	Control cell
Balance (Left Foot)		
Balance (Right Foot)		
Three hop (Right Foot)	B	
Three hop (Left Foot)	B	
Zig-Zag		A

The Capital letter ‘A’ or ‘B’ in a column represents the fact that the group has a statistically larger mean at a confidence level of 95%. **It is important to note that in the case of the ‘Zig-Zag test’, a higher mean is actually not a positive as the test is based on the least amount of time in which children can complete the course.**

Social & Emotional Questionnaire Results

The results from the chi-square test analysis of the likert-scale data were varied, but on the whole showed that in most cases, it was a larger proportion of the target group that strongly agreed or disagreed with the statements as compared to the control group. The results are as displayed in the table below:

Chi-Square Test Results for Likert-scale Data

Questions		Target group	Control group
1. I feel happy	Strongly Disagree		
	Disagree		A
	Agree		
	Strongly Agree	B	
2. I am positive	Strongly Disagree		
	Disagree		A
	Agree	B	
	Strongly Agree		
3. I feel satisfied	Strongly Disagree		
	Disagree		A
	Agree		
	Strongly Agree	B	
4. I don't get sad often	Strongly Disagree		
	Disagree		A
	Agree		
	Strongly Agree		
5. I laugh a lot	Strongly Disagree		
	Disagree		
	Agree		A
	Strongly Agree	B	
6. I believe in my ability to succeed	Strongly Disagree		
	Disagree		A
	Agree		A
	Strongly Agree	B	
7. What others think of me doesn't matter	Strongly Disagree		
	Disagree		A
	Agree	B	
	Strongly Agree		
9. I often confide in my friends	Strongly Disagree		
	Disagree		A
	Agree		
	Strongly Agree		
11. I like listening to what others have to say	Strongly Disagree		
	Disagree		
	Agree	B	
	Strongly Agree		A
14. I often speak to members of the opposite gender	Strongly Disagree	B	
	Disagree		
	Agree		A
	Strongly Agree		
15. I have many friends of the opposite gender	Strongly Disagree	B	
	Disagree		
	Agree		A
	Strongly Agree		
16. I enjoy working with others	Strongly Disagree		
	Disagree	B	
	Agree		
	Strongly Agree		

***Only the questions where significant statistical differences were found are displayed in this table.*

The capital letters 'A' or 'B' in the columns indicate a statistical difference between the two groups for that particular answer. It also reveals that the proportion of respondents who choose a particular answer to a question from a particular group was significantly larger than the other group.



Discussion

As seen in the results section, the analysis of the physical tests illustrated that there is a significant and positive difference among the children in the sports program as compared to the children in the control group, especially when it comes to the parameters measuring coordination and agility. However, in the balance tests, though the basic averages are greater for the target group, there is no significant difference between the two.

In this study we made advances to understand the reasons behind why children who play sports regularly are better coordinated and agile yet have little difference in balance with their non-sport playing peers.

One reason we found could be that the sports that they play, for example, football or hockey (27% and 33% of the target sample respectively) requires children to utilise agility and coordination more frequently. In both cases, children need to be able to accelerate, decelerate and change

directions at high speed to keep up with the game. Balance on the other hand, though an essential FMS, may develop similarly in children regardless of whether they play a certain sport or not. It is important to note that though there is no significant difference in the chi-squared test results, the simple averages for both samples certainly show a positive difference in favour of the target group. Moreover, when one looks at the best performers in the balance tests, they came from children who play cricket. Due to the nature of cricket, balance is key and this is perhaps why two cricketers at the Narpala centre performed extraordinarily better than all the other children.

A key learning of this survey is that while sports has a positive impact on physical development of children, we have understood clearly that sports is a difficult term and concept to generalise. Each sport promotes a different motor skill and each one of them provide a unique platform to children to develop their physical literacy.

In terms of the impact of sports participation on the emotional and social development of children, it has been difficult to ascertain any tangible impact. In our view, the stage is far too early to throw up conclusive and clinching evidence. To state our case more clearly, we saw no significant difference in the answers to four questions. And for others, such as Question 5, the control group had a larger proportion answering 'agree', but the target group had a larger proportion answering 'strongly agree'. Thus, we argue, it is difficult to claim a real difference here.

However, our tables do prove the target group in general tended to be in agreement when it came to questions relating to happiness and confidence as compared to the control group, where a significantly larger portion of the sample tended to disagree with these statements. Our findings corroborate the findings in Janet A. Young's "A Systematic Review of the Psychological and Social Benefits of Participation in Sport for Children and Adolescents"¹, which similarly uses empirical evidence to confirm that sports has a positive effect on the self-esteem of children.

At this point it is pertinent to point that with regard to questions on relationships with the opposite gender, the control group fares better than the target group. There can be a number of reasons for this, including the background of children coming to particular centres, their schooling and upbringing. Sports in Anantapur has been a male-dominated field for a long time, however in recent years, ASA has been working to change that. The participation of girls across all sports and at various centres has been increasing at an incredible rate. For example, in the football program the participation of girls has increased by 295% in the last year itself. However, there is a long way to go for attitudes to change but it is hoped that during the collection of midline and end line data there will be a difference in children's attitude due to their participation in ASA's programs.

In sum, though it is tough to find concrete evidence of the impact of sports on the emotional and social development of children through this early analysis, we believe that data collected of the same target group in the future will give us a much better understanding of how sports has impacted the social and emotional development of children over a period of time.

¹ ijnpa.biomedcentral.com/articles/10.1186/1479-5868-10-98

Bibliography

- 1) "Revised International Charter of Physical Education, Physical Activity and Sport." *Universal Declaration on the Human Genome and Human Rights: UNESCO*, UNESCO, 17 Nov. 2015, portal.unesco.org/en/ev.php-URL_ID=13150&URL_DO=DO_TOPIC&URL_SECTION=201.html.
- 2) "Power of Play" *Dasra*, Mar. 2014, www.dasra.org/cause/leveraging-sport-for-development.
- 3) Janet A Young, et al. "A Systematic Review of the Psychological and Social Benefits of Participation in Sport for Children and Adolescents: Informing Development of a Conceptual Model of Health through Sport." *International Journal of Behavioral Nutrition and Physical Activity*, BioMed Central, 15 Aug. 2013, ijbnpa.biomedcentral.com/articles/10.1186/1479-5868-10-98.
- 4) Pandey, J.L. "Review of Magic Bus Materials from SRH Perspective." *www.magicbus.com*, Magic Bus, www.magicbus.org/cms/system/resources/W1siZiIsIjIwMTQvMDIvMjQvMThfMjIjMTJfNTc1X3Y2X1Jldmld19vZl9DdXJyaWN1bHVtX2Zyb21fdGhlX0FSU0hfUGVyc3BIY3RpdmUucGRmlldv6%20Review%20of%20Curriculum%20from%20the%20ARSH%20Perspective.pdf.
- 5) "Developing Physical Literacy: A Guide for Parents of Children Ages 0 to 12." *Sport for Life*, sportforlife.ca/portfolio-view/developing-physical-literacy-a-guide-for-parents-of-children-ages-0-to-12/.
- 6) "Fundamental Motor Skills: A Manual for Classroom Teachers." <https://www.education.vic.gov.au>, Department of Education, Victoria., May 1996, <https://www.education.vic.gov.au/Documents/school/teachers/teachingresources/social/phised/fmsteacher.pdf>.
- 7) Sopa, Ioan Sabin, and Marcel Pomohaci. "Study Regarding the Development of Agility Skills of Students Aged between 10 and 12 Years Old." *Timisoara Physical Education and Rehabilitation Journal*, vol. 9, no. 17, 2016, pp. 7–16., doi:10.1515/tperj-2016-0009.
- 8) "*Sportanddev.org*." Healthy Development of Children and Young People through Sport, <https://www.sportanddev.org/en/learn-more/education-and-child-and-youth-development/social-and-emotional-development>.
- 9) "Fundamentals Movement Skills: the Tools for Learning, Teaching and Assessment." *www.achperwa.org.au*, Government of Western Australia: Department of Education, 2013, <https://www.achperwa.org.au/wp-content/uploads/2017/10/FMS-FIRST022.pdf>.
- 10) Coalter, Fred. "Sport-In-Development: A Monitoring and Evaluation Manual." University of Stirling.

