

BEHAVIOURAL CHARACTERISTICS OF INDIAN MALE AND FEMALE KABADDI PLAYERS AT THEIR NATIONAL LEVEL PARTICIPATION

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ABSTRACT

The goal of the current study was to compare and examine the personality traits of male and female national level Kabaddi players. The sample included 100 National Level Kabaddi players (60 Males and 40 Females) from various Indian States who competed in National Level Competitions in the 2020–2021 academic year. Male and female national level Kabaddi players' mean ages and standard deviations were 20.13 2.57 and 19.86 1.69, respectively. Eysenck and created the Eysenck's Personality Questionnaire-R (E.P.Q.-R). To assess the four personality traits of national-level Kabaddi players, Eysenck was chosen. Means and standard deviations, t-ratios, and analysis of variance (ANOVA) on the dependent variable for all the participants considered together and individually for both the gender were computed to analyse the four personality traits of male and female Kabaddi players. The study's findings showed that, overall, participants at the national level of Kabaddi shared similarities in psychoticism, neuroticism, and social desirability personality traits but differences in extraversion. Male Kabaddi players had higher levels of extraversion, social desirability, and psychoticism than their female counterparts. Kabaddi trainers are advised to adjust their training regimen in accordance with the players' personalities.

Key words: National, Senior, Kabaddi, personality, Male, Female

1. INTRODUCTION

In schools and the sporting world, physical education and athletics are crucial to a person's personality development. The overall and overall growth of the child is the primary goal of education in schools. A separate syllabus and programme are employed for that method. Education includes physical education. Without athletics, there is no value in any school. It is required in school not only for the involvement of chosen players in competition but also because it helps men develop as people (Cratney, 1989).

Sport is a psycho-social activity. It has both psychological and social dimensions, besides physical, physiological and technical aspects. In the modern era of competition, the psychological preparation of a team is as much important as teaching the different skills of a game on the scientific lines. The teams are prepared not only to play the games, but to win the games. And for winning the games, it is not only the proficiency in the skills which bring victory but more important is the sprint of the player with which they play and perform their best in the competition (Silva & Weinberg, 1984).

A psychosocial activity is playing sports. Along with physical, physiological, and technical components, it also has psychological and social characteristics. In the present era of competition, a team's psychological preparation is just as crucial as teaching the various game skills according to scientific principles. The teams are ready not just to compete in the games, but also to prevail. And for winning games, a player's sprint, or the way they play and perform at their best during the competition, is more crucial than just their talent level (Silva & Weinberg, 1984)

Sports engagement boosts self-confidence, intellectual ability, personality development, and extraversion because these traits lead to greater success in athletic endeavours, which is highly regarded in one's community. Sports and physical activity are essential components of the complex development patterns that make up human life on the physical, intellectual, emotional, and social levels. People participate in sports competitions because it allows them to gauge how well they connect with their surroundings. People of various skill levels have the option to compete in order to find their enforcements that appeal to them and to improve some aspects of their self-evaluation (Sinha, 1986).

There are many different aspects of personality, some of which may be studied and quantified since they are objective, observable, and measurable. Physical traits, such as body size, physique, and elements that affect movement speed and strength, aptitudes and abilities, both physical and intellectual, habits, behaviour patterns, and manner of action are among the objective aspects of personality. Motives, feelings, ideas, attitudes, and commitments are examples of subjective components that direct an individual's manner of thinking, feeling, and acting. Thus, traits and particular behaviours' attributes are organised and combined to form personality patterns. The 'core' or sense of self and the 'spokes of the wheel', or qualities, are the two main facets of personality.

People on the playing fields and in professional journals frequently explore the relationship between personality and performance in athletic or sport talent. People who are placed in situations that require action typically expose more of themselves than they do in less dynamic circumstances. The qualities of the complete personality complex or movement characteristics have been theorised by some (Cratty, 1989).

Success in sports appears to be partially influenced by psychological health and personality qualities. Using an athlete's personality profile along with prior performance data,

coach evaluations, anatomical and physiological traits, and other factors can improve forecast accuracy in a variety of sports (Morgan, 1986).

Solomon (2001) discovered that, among the issues covered and examined in the survey responses from the participants, the coaches' expectations for the athletes were the only factor significantly predicting athletic performance.

According to Reiss, Sherman, and Wiltz (2001), the motivating component "enjoyment of physical exercise" had the strongest association with sports and motivation. Furthermore, they discovered that the definition of a "athlete" could be reduced to the simple phrase "someone who enjoys physical activity". Sports performance can be predicted by personality,

According to Erdheim and Wangs' 2007 research. Furthermore, we may assert that people who have high scores on personality traits related to goal-setting, such as high expectations from coaches, are more likely to meet their established sports goals.

Yanada and Hirat (1970) discovered that these students were more hypomanic and less neurotic than those who dropped out. They reasoned that success in athletics would depend on having low trait anxiety and neuroticism, while anxious or neurotic people might avoid or give up on sports.

Meclaney (1959) found that the high fitness group exhibited a tendency towards self-sufficiency. Additionally, the participants in the high fitness group appeared to be more trustworthy and unjestful. Conversely, those with poor fitness levels appeared to be more dubious and self-centered.

The objective of the current study was to examine and analyse the personality traits of National level male and female Kabaddi players. The four personality traits would not significantly change between male and female Kabaddi players both collectively and individually.

2. METHODOLOGY

2.1 Selection of Subjects

The sample included 100 National Level Kabaddi players (60 Males and 40 Females) from various states of India who competed in National Level Competitions from 2020 to 2021. The mean age and standard deviation of male and female national-level Kabaddi players, which were 20.13 ± 2.57 and 19.86 ± 1.69 , respectively respectively. Players that were in training ranged in age from 1 to 6 years.

2.2 Description of Questionnaire

Eysenck and created the Eysenck's Personality Questionnaire-R (E.P.Q.-R).Eysenck was chosen to assess the four personality traits of national-level Kabaddi players. The questionnaire has 90 items total, 90 of which measure the players' extraversion, psychoticism, neuroticism, and social desirability, the three dimensions of personality.

Overall test-retest reliability with regard to gender and age was.for Extraversion,.86 for Neuroticism,.86 for Psychoticism, and.84 for Social Desirability.

At the national level competition and training centre, the subjects were personally approached and asked for their sincere collaboration. Respondents were summoned at a public location. Once a group of participants finished the questionnaire. The Kabaddi players' completed questionnaires were gathered, and it was confirmed that no question was left unanswered.

2.3 Statistical analysis

The statistical analysis included means and standard deviations, t-ratios, analysis of variance (ANOVA) on the dependent variable for all the subjects, and data on the four personality traits of

psychoticism, extraversion, neuroticism, and social desirability collected on 100 male and female National level Kabaddi players.

3. RESULTS

To assess the four personality characteristics of male and female Kabaddi players of national level, means and standard deviations, t-ratio and analysis of variance (ANOVA) on dependent variable for all the subjects taken together and separately for both the gender were computed and data pertaining to this have been presented in table 1 to 5.

TABLE 1
DESCRIPTIVE STATISTICS ON FOUR PERSONALITY CHARACTERISTICS OF NATIONAL LEVEL MALE AND FEMALE KABADDI PLAYERS

S. No.	Personality Dimensions	Male (N=40)		Female (N=60)	
		M	SD	M	SD
1	Psychoticism	8.19	2.01	7.99	1.87
2	Extraversion	9.99	1.88	8.02	2.99
3	Neuroticism	10.13	2.89	9.81	2.78
4	Social Desirability	7.47	2.51	7.21	1.97

Table 1 shows the mean scores on behavioural characteristics of Indian male and female Kabaddi players at national level participation.

TABLE 2
ANALYSIS OF VARIANCE ON PERSONALITY FACTORS OF NATIONAL LEVEL MALE AND FEMALE KABADDI PLAYERS

S.No	Variables	Source of Variance	df	Sum of Squares	Mean Square	F- Value
1	Psychoticism	Between Groups	1	5.37	5.37	0.69
		Within Groups	98	777.52	7.93	
2	Extraversion	Between Groups	1	6.04	6.04	0.70
		Within Groups	98	847.19	8.64	
3	Neuroticism	Between Groups	1	11.29	11.29	3.61*
		Within Groups	98	307.15	3.13	
4	Social Desirability	Between Groups	1	2.49	2.49	0.47
		Within Groups	98	522.05	5.33	

*Significant at .05 level,
F.05 (1, 98) = 3.94.

Table 2 makes it clear that there were significant variations in the neuroticism factor of personality among male and female national level Kabaddi players because the obtained F-values of 3.61 were higher than the needed F.05 (1, 98) = 3.94. Their three personality traits—psychoticism, extraversion, and social desirability—did not differ since the derived t-values of 0.69, 0.70, and 0.47, respectively, fell below the necessary F.05 (1, 98)=3.94.

TABLE 3
ANALYSIS OF VARIANCE ON FOUR PERSONALITY FACTORS OF NATIONAL LEVEL MALE KABADDI PLAYERS

Source of Variance	df	Sum of Squares	Mean Square	F- Value
Between Groups	3	317.22	105.74	11.69*
Within Groups	236	2.133.77	9.04	
Total	239	2548.95		

*Significant at .05 level,
F.05 (3, 236) = 2.65.

Table 3 makes it clear that there were substantial differences among male national level Kabaddi players in all personality categories, since the obtained F-values of 11.69 were much higher than the necessary F.05 (3, 236) = 2.65.

TABLE 4
ANALYSIS OF VARIANCE ON FOUR PERSONALITY FACTORS OF NATIONAL LEVEL FEMALE KABADDI PLAYERS

Source of Variance	df	Sum of Squares	Mean Square	F- Value
Between Groups	3	317.22	105.74	9.65*
Within Groups	156	1708.67	10.95	
Total	159	1729.22		

*Significant at .05 level, F.05 (3, 156) = 2.66.

Because the obtained F-values of 9.65 were significantly higher than the required F.05 (3, 236) = 2.66, Table 4 clearly shows that there were significant differences among male national level Kabaddi players in all personality categories.

TABLE 5
SIGNIFICANCE OF DIFFERENCES BETWEEN MEAN SCORES OF NATIONAL LEVEL MALE AND FEMALE KABADDI PLAYERS ON FOUR PERSONALITY FACTORS

S.No	Variables	Sex	Mean	MD	σ DM	t-ratio
1	Psychoticism	Male Female	8.19 7.99	0.20	0.44	0.45
2	Extraversion	Male Female	9.99 8.02	1.97	0.47	4.19*
3	Neuroticism	Male Female	10.13 9.81	0.32	0.31	1.03
4	Social Desirability	Male Female	7.47 7.21	0.26	0.24	1.08

*Significant at .05 level t.05 (98) = 1.98.

Table 5 makes it evident that only the extraversion personality trait was the source of the significant difference between male and female National level Kabaddi players, as the resultant t-value of 4.19 was higher than the necessary t.05 (98)=1.98. Their three personality traits—psychoticism, neuroticism, and social desirability—did not differ because the actual t-values, which were 0.45, 1.03, and 1.08, respectively, were lower than the necessary t.05 (98)=1.98.

DISCUSSION

A comparison of national level Kabaddi players revealed no appreciable variations in any of the four dimensions of personality traits, with the exception of extraversion. This may also be the result of similarities in how the objective, strategy, and game play are established.

Whether male national level Kabaddi players provided a statistically meaningful analysis of variance on the four dimensions of personality traits. The similarity in game style, attitude, and competitive orientation of male players who competed at the national level level may be the cause of this similarity in personality structure of the same level competition. Female Kabaddi players at the national level were likewise shown to significantly differ from one another on all personality variables.

.When male and female national-level Kabaddi players were matched one to the other across the four dimensions of personality, only extraversion showed any discernible variations. Compared to their male counterparts, women exhibited less extroversion. This might also result from differences in intellectual capacity for setting particular goals.

The four personality traits of male and female Kabaddi players would not significantly differ from one another. They only significantly differed in the extraversion dimension, and they did not significantly differ in the other dimensions of personality traits, hence this theory has been partially accepted.

The four personality traits would not significantly change between male and female Kabaddi players both collectively and individually. This theory has been adopted due to the large personality differences in both genders of Kabaddi players, which may be caused by differences in training ages and skill levels.

CONCLUSIONS

The following findings are listed within the constraints of the current study:

1. Players at the national level of Kabaddi players shared similar levels of psychoticism, neuroticism, and social desirability, but their extraversion was different.
2. Male Kabaddi players were discovered to be more outgoing than their female counterparts.
3. Only differences in extraversion were noted by national level male and female Kabaddi players collectively.
4. Compared to their national female counterparts, national level male Kabaddi players were more neurotic in nature, extraverted, socially desirable, and psychotic.

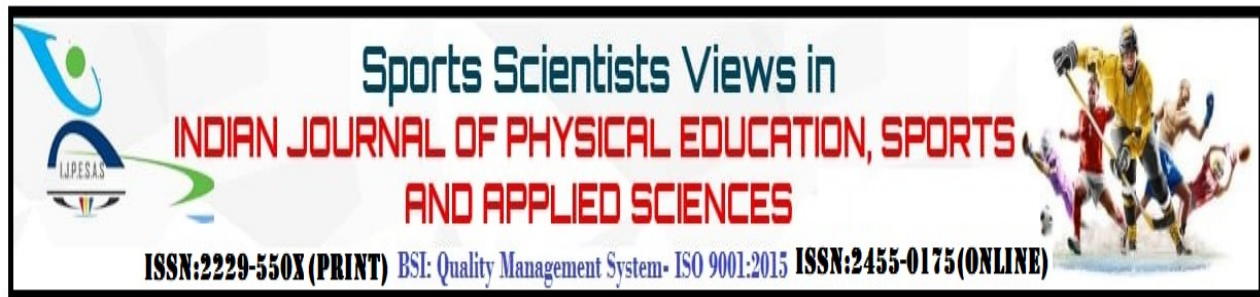
RECCOMENDATION

It is advised that Kabaddi trainers adjust their training regimen in accordance with the players' personalities.

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EFFECT OF SPATIAL AWARENESS AND VISUAL MOTOR COORDINATION ON SKILL ABILITY OF INTER-COLLEGIATE MALE KABADDI PLAYERS

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ABSTRACT

The objective of the present study is to assess the effect of spatial awareness and visual motor coordination on the skill ability of intercollegiate male kabaddi players. To conduct the study 100 intercollegiate male kabaddi players were selected. The average age of these subjects was 21.91 years and they represented their respective colleges in intercollegiate kabaddi tournaments organized in Chhattisgarh state. Purposive sampling was used for the selection of subjects. To assess spatial awareness in male intercollegiate kabaddi players of Chhattisgarh, a test standardized by Cesaroni (2007) was used. Reaction time in selected intercollegiate male kabaddi players was recorded with the help of Nelson's simple reaction time test. A mirror drawing test was used to assess the hand-eye coordination of male intercollegiate kabaddi players. The apparatus designed by Johnson and Nelson (1974) was used for the assessment of depth perception. The skill ability of the selected intercollegiate male kabaddi players was judged through the subjective ratings of three judges. Results reveal a significant impact of spatial awareness, reaction time, hand-eye coordination, and depth perception on the skill ability of male intercollegiate kabaddi players with all these variables accounting for 33.4% variance. Based on the results, it may be concluded that spatial awareness and visual motor coordination namely reaction time, hand-eye coordination, and depth perception plays a significant role in determining the skill ability of male kabaddi players. It may also be concluded that spatial awareness and visual motor coordination need special attention while preparing a training plan to enhance the skill ability of the male kabaddi players.

Keywords: Spatial awareness, visual and motor coordination, skill, kabaddi

INTRODUCTION

Visual motor skills denote the combined effort of the visual system and motor movements. It is also referred to as visual motor integration. In visual motor skills, the information provided by the visual system is interpreted by the brain and accordingly the signals are sent for necessary motor actions. In simple terms, when a ball is thrown and someone tries to catch it with their hands is visual motor integration.

Coordinated motor movements are based on visual motor integration. The interpretation of information from our eyes is crucial and if not done so it may result in a faulty motor response. Similarly, if the time taken to process visual information takes longer, the motor response is also delayed that much. Visual-motor integration is also essential for spatial awareness, efficient motor tasks, or speed of movement. It also involves gross as well as fine motor skills.

It is evident from the scientific literature that fine motor skills are dependent upon information gathered by our eyes. In the larger perspective, visual motor coordination is the key to participating and excelling in many sports because it is also a reflection of cognitive abilities.

Muscular movement and response are structured. Just like a normal human being an athlete process information regarding space and environment through sensory organs which are then processed in the central nervous system to be able to do appropriate motor movements. In this regard, the main sensory organ is our eyes which gather information and play a significant part in implementing the command of the central nervous system to produce the required motor movements. The perceptual-motor performance model of Welford (1960) also emphasizes that perceptual responses are the results of input from sensory organs.

The nature of some sports is very demanding in terms of the strain it puts on the visual system. To return a tennis serve, blocking a penalty in soccer, or negating the effort of a raider in kabaddi to earn points are a few examples. Scientifically the importance of visual motor coordination has been highlighted by researchers namely Gregory, 1997 and Yarrow et al., 2009. These studies have highlighted that elite athletes with their superior ability to detect perceptual cues can react accurately to precise motor movements.

Spatial ability is a process for understanding the space surrounding us by processing the information provided by our sensory organs with the help of the brain. Psychomotor abilities are part of visual motor integration and these abilities are eye-hand coordination, reaction time, and depth perception. The reaction time is the time taken to respond to a sensory stimulus while hand-eye coordination also uses proprioception. With depth perception dimensionality of the space can be understood.

Visual motor coordination is also important to form spatial awareness which is often considered a sub-domain of cognition. Visual perception, mental folding and awareness, and mental rotation are part of spatial ability. It is the ability to pinpoint the position of the body concerning other objects present in the space.

The role of visual-motor coordination and spatial awareness in sports have attracted many researchers to work on this topic. Scientific inquiries in this regard have shown that visual system and perceptual motor movements are interrelated and are a vital cog in performance in many sports such as tennis, basketball, cricket, handball etc. Kabaddi is no exception to it because the offensive and defensive skills used in this sports require a fair amount of visual motor skills. Skills such as toe touch, foot touch, kicking, ankle hole, waist hold, etc require quick movements. But despite being a popular sport in India, no study has been conducted in

which the contribution of spatial and visual motor skills have been assessed on the skill ability of kabaddi players. Hence the present study was planned.

Savelsbergh et al. (2002) in their study reported that skilled soccer goalkeepers have superior searchability and they can predict the direction of the ball with efficient motor movements. Shim et al. (2005) studied anticipatory visual clues in highly skilled tennis players. It was found that highly skilled tennis players have a special ability to predict the shots to be played by the opponent through movement pattern information. This gives them added advantage in the form of less reaction time to execute the motor response. Hucinski et al. (2007) in their study investigated the contribution of psychomotor efficiency toward the execution of defensive basketball skills. They reported that psychomotor efficiency is the prerequisite for successfully carrying out defensive skills in basketball. Deveraju and Needhiraja (2013) in a study reported that physical and motor abilities are essential to properly execute basic kabaddi skills. Singh and Singh (2013) reported that the playing ability of kabaddi players is strongly linked to their efficiency in the execution of motor skills. Chowdhary et al. (2014) in their study reported that performance in kabaddi is largely dependent upon players' rhythmic ability and reaction time. Singh and Moriya (2017) in their study found that the dimensions of motor fitness namely agility, reaction time, balance, coordination, and power are significantly correlated with kho-kho playing ability. Haryanto and Amra (2020) in their study reported that the accuracy of backhand backspin serve is strongly correlated with hand-eye coordination and balance of the players. Mohanakrishnan and Murukesan (2021) reported that the offensive skills of kabaddi players are significant predictors of their playing ability.

The objective of the present study is to assess the effect of spatial awareness and visual motor coordination on the skill ability of intercollegiate male kabaddi players. It was hypothesized that spatial awareness, reaction time, hand-eye coordination, and depth perception will be added to the prediction model for the skill ability of intercollegiate male kabaddi players.

2. METHODOLOGY :-

The following methodological steps were taken to conduct the present study.

2.1 Sample

To conduct the study 100 intercollegiate male kabaddi players were selected. The average age of these subjects was 21.91 years and they represented their respective colleges in intercollegiate kabaddi tournaments organized in Chhattisgarh state. Purposive sampling was used for the selection of subjects.

2.2 Tools

2.2.1 Spatial Awareness:

To assess spatial awareness in male intercollegiate kabaddi players of Chhattisgarh, a test standardized by Cesaroni (2007) was used. This test is divided into two phases. During the 1st part, execution, the blindfolded subject has to carry out a command given by an examiner, memorize them and imagine the route taken to get back to the starting point. During the 2nd part, reproduction, the subject has to reproduce on paper the route taken. Points are awarded according to each successful maneuver.

2.2.2 Reaction Time:

Reaction time in selected intercollegiate male kabaddi players was recorded with the help of Nelson's simple reaction time test. In this test reactions of subjects toward visual stimuli are used to calculate reaction time with the following formula :

$$t = \sqrt{2d / g}$$

d = the distance ruler fell in meters, g = 9.8/m² acceleration of gravity, t = Time

2.2.3 Hand-eye coordination:

A mirror drawing test was used to assess the hand-eye coordination of male intercollegiate kabaddi players. In this experiment, subjects have to trace a star-shaped object without touching its boundaries by looking at its image in the mirror. The higher the error lesser the magnitude of hand-eye coordination in the direction of scoring.

2.2.4 Depth Perception:

The apparatus designed by Johnson and Nelson (1974) was used for the assessment of depth perception. There are three rods in this box and the subject can only see these rods against the backdrop of the illuminated white portion. The examiner moves the middle rod and asks the subject to predict when the three rods are in the same line. The deviation is recorded automatically and gives the depth perception score of the subject.

2.2.5 Skill ability:

The skill ability of the selected intercollegiate male kabaddi players was judged through the subjective ratings of three judges. Each judge was asked to rate individual players performance based on skills namely toe touch, foot touch, leg thrust, kicking, rotation, ankle hold, thigh hold, knee hold, waist hold, and blocking. For each skill, the judge has to give marks on a 0-5 mark scale.

Procedure:

100 male intercollegiate kabaddi players from Chhattisgarh were selected. The skill ability of these male kabaddi players was assessed through the subjective rating of 03 judges during a match. The assessment of spatial awareness and visual motor coordination was done according to the tests mentioned in the tools section. The scores on skill ability, spatial awareness, reaction time, hand-eye coordination, and depth perception were tabulated for each subject. Step-wise regression was used for data analysis.

3. RESULT AND DISCUSSION

To predict the kabaddi skills of intercollegiate male players based on spatial awareness and visualmotor coordinative abilities, a step-wise regression model was prepared.

TABLE 1
STEP-WISE REGRESSION - SKILL ABILITY OF INTERCOLLEGIATE MALE
KABADDI PLAYERS BASED ON SPATIAL AWARENESS, REACTION
TIME, HAND-EYE COORDINATION AND DEPTH
PERCEPTION

Model Predictors Variables Entered	R	R ²	Adjusted R Square	R Square Change	F Change
Spatial Awareness	.404 ^a	.163	.154	.163	19.06, p<.01
Reaction Time	.489 ^b	.239	.223	.076	9.70, p<.01
Depth Perception	.543 ^c	.294	.272	.055	7.53, p<.01
Hand-eye Coordination	.578 ^c	.334	.305	.039	5.57, p<.01
F (Final Model) = 11.88, p<.01					

^a Predictors : Spatial awareness

^b Predictors : Spatial awareness, reaction time

^c Predictors : Spatial awareness, reaction time, depth perception

^d Predictors : Spatial awareness, reaction time, depth perception, hand-eye coordination

TABLE 2
COEFFICIENTS IN FINAL MODEL

Model	Model	Unstandardized B	Standardized Beta	t
1	Constant	19.133		6.80, p<.01
	Spatial Awareness	1.025	.404	4.36, p<.01
2	Constant	24.388		7.67, p<.01
	Spatial Awareness	1.102	.434	4.86, p<.01
	Reaction Time	-43.452	-.278	-3.11, p<.01
3	Constant	28.695		8.30, p<.01
	Spatial Awareness	.965	.380	4.29, p<.01
	Reaction Time	-42.870	-.274	-3.17, p<.01
	Depth Perception	-3.381	-.241	-2.74, p<.01
4	Constant	33.554		8.48, p<.01
	Spatial Awareness	.845	.333	3.75, p<.01
	Reaction Time	-37.959	-.242	-2.84, p<.01
	Depth Perception	-3.411	-.244	-2.83, p<.01
	Hand-eye Coordination	-.193	-.205	-2.36, p<.01

Results shown in Tables 1 and 2 indicate that all the dimensions namely spatial awareness, reaction time, depth perception and hand-eye coordination were able to predict the skill ability of male kabaddi players. The F=11.88 reported in the final regression model gives support to this finding with .01 level of statistical significance.

The R² for the final regression model was 0.334 and it indicates that these variables have accounted for a 33.4% variance in the skill ability of male intercollegiate kabaddi players.

A detailed analysis of statistical figures reported in table 1 and 2 gives the following additional information

Spatial awareness was included in model 1 and accounted for a 16.3% variance in the skill ability of male intercollegiate kabaddi players (R² change = 0.163). The result also gets support from standardized Beta coefficient of 0.404 with a statistical significance level of p<.01.

Reaction time and spatial awareness were included in model 2 and both of them accounted for a 7.6% variance in the skill ability of male intercollegiate kabaddi players (R² change = 0.076). The result also gets support from the standardized Beta coefficient of 0.434 for spatial awareness and standardized Beta coefficient of -0.278 for reaction time with a statistical significance level of p<.01.

Depth perception was included in model 3 along with spatial awareness and reaction time. They have accounted for a 5.5% variance in the skill ability of male intercollegiate kabaddi players (R² change = 0.055). The result also gets support from the standardized Beta coefficient of .380 for spatial awareness, standardized Beta coefficient of -.274 for reaction time and standardized Beta coefficient of -.241 for depth perception with a statistical significance level of p<.01.

Hand-eye coordination was included in the final model 4 along with spatial awareness, reaction time and depth perception. They have accounted for a 3.9% variance in the skill ability of male intercollegiate kabaddi players (R^2 change = 0.039). The result also gets support from standardized Beta coefficient of .333 for spatial awareness, standardized Beta coefficient of -.242 for reaction time, standardized Beta coefficient of -.244 for depth perception and standardized Beta coefficient of -.205 for hand-eye coordination with a statistical significance level as $p < .01$.

4. DISCUSSION

Results reveal that spatial awareness was the single best predictor of skill ability of male intercollegiate kabaddi players. The next best predictor was reaction time combined with spatial awareness. The next best predictor was depth perception combined with spatial awareness and reaction time. The final model was the inclusion of hand eye coordination. Hence spatial awareness and dimensions of visual motor coordination namely reaction time, hand eye coordination and depth perception were able to create a substantial variance of 33.4% in the skill ability of male intercollegiate kabaddi players.

Results reveal a significant impact of spatial awareness, reaction time, hand-eye coordination and depth perception on the skill ability of male intercollegiate kabaddi players with all these variables accounting for 33.4% variance. The basic nature of kabaddi demands anticipation because the player's movements are very fast. A raider and defensive players need to have spatial awareness about the relative position of other players on the mat and this requires good visual-motor coordination. Ceciliani (2005) reported that motor skills need good support of spatial awareness while Ramadan et al. (2011) reported the influence of eye-hand coordination on layup shooting skills in basketball. Hence the results of the present study are not surprising.

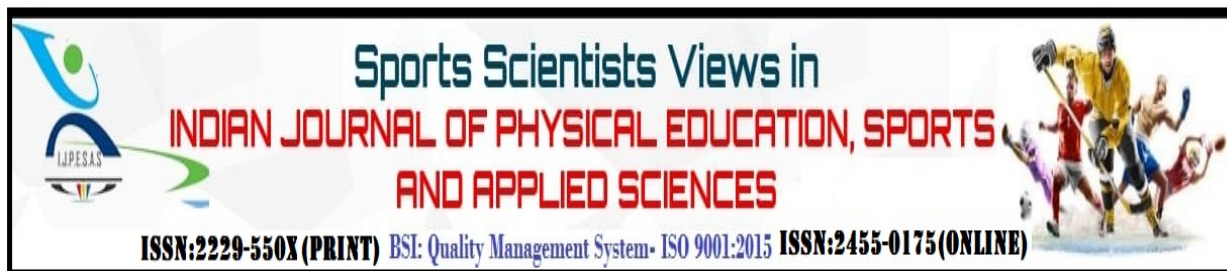
5. CONCLUSION

Based on the results, it may be concluded that spatial awareness and visual motor coordination namely reaction time, hand-eye coordination and depth perception play a significant role in determining the skill ability of male kabaddi players. It may also be concluded that spatial awareness and visual motor coordination need special attention while preparing a training plan to enhance the skill ability of the male kabaddi players.

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EFFECT OF PHYSICAL AND MOTOR FITNESS COMPONENTS ON PLAYING ABILITY OF MALE CRICKET PLAYERS

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ABSTRACT

Traditionally fitness is not considered an essential element in cricket because it is believed that the game of cricket is 90% mental and 10% physical with tactical and technical skills being more important than physical prowess. In the last 20 years, things have changed and physical fitness is considered an integral part of cricket. Hence the present study was planned to assess the association between selected physical and motor fitness components on the playing ability of male cricket players. To conduct the study 150 male cricket players from Himachal Pradesh were selected. The sample includes Ranji trophy probable, interuniversity and intercollegiate level male cricket players and the age range of the sample was 19 to 32 years. The power Test (Vertical Jump) was conducted with the help of a wall-mounted board. Speed testing was done with the help of a 20-meter and 40-meter speed trial. Run a three was used to assess the agility of the subject while repeated sprint ability was used to assess the anaerobic capacity of the subjects. Push-ups and chin up were measured with the standard procedure while Yo-Yo intermittent recovery test was used to assess the aerobic capacity of the selected subjects. The playing ability of cricket players was evaluated by three judges panel on a scale ranging from 0 to 10. The judges gave ratings to the performance of each player in an actual match-like situation. A significant correlation was observed between the playing ability of male cricket players with their performance on vertical jump, 20m run, 40m run, run a three, repeat sprint, push up and Yo-Yo test whereas the association of chin up was not observed on playing ability of male cricket players. It was concluded that selected physical and motor fitness variables are essential aspects of the playing ability of male cricket players and thereby a scientific fitness training plan is necessary for male cricket players for the betterment of their playing ability.

Keywords: Cricket, physical and motor fitness, playing ability

1. INTRODUCTION

Being an intermittent sport, the physical demands of cricket are different from other outdoor sports. But when we consider the T-20 this notion is not true because it requires high-intensity physical movements for a relatively short duration as compared to a five-day Ranji or Test match. Cricketers often want to participate in all three formats of the game and for that certain level of physical and motor fitness is essential. It has been reported in studies that test cricket requires fitness suitable for low-intensity movements. Due to ever-increasing popularity, attention has been paid to determining factors that affect the playing ability of cricket players. In this context, physical and motor fitness variables come in the list but their effect on the playing ability of cricket players is not consistent. Hence the present study was planned to assess the association of selected physical and motor fitness variables on the playing ability of male cricket players.

Logeswaran et al. (2022) reported that endurance training is useful in enhancing the aerobic capacity of cricket players. Vaka and Vijaymohan (2022) reported that batting performance is not influenced by some of the motor fitness components namely speed, strength, agility and endurance. Khan et al. (2019) in a study that aerobic capacity is higher in cricket players from high-altitude regions as compared to low-altitude regions. Suresh Kumar et al. (2019) reported that speed, agility, shoulder movement and strength, explosive strength of the upper extremity and quickness were found to be contributing significantly to the performance index of cricket players. Prakash (2018) did not report any significant association between playing ability and motor fitness of cricket players. Dar (2016) reported that aerobic training can be used to enhance aerobic fitness in cricket players. Nunes (2006) in a study reported that physical-motor ability contributes immensely to a batsman's success.

The objective of the present study was to evaluate the association between selected physical and motor fitness variables with the playing ability of male cricket players. In the present study, it was hypothesized that selected physical and motor fitness variables will show a significant association with the playing ability of male cricket players.

2. METHODOLOGY

The following methodological steps were taken to conduct the present study.

2.1 Sample -

To conduct the study 150 male cricket players from Himachal Pradesh were selected. The sample includes Ranji trophy probable, interuniversity and intercollegiate level male cricket players and the age range of the sample was 19 to 32 years. Random sampling was used for the selection of the sample.

2.2 Tools

2.2.1 Physical and Motor Fitness Tests

Power Test (Vertical Jump) was conducted with the help of a wall-mounted board. Speed testing was done with the help of a 20-meter and 40-meter speed trial.

Run a three was used to assess the agility of the subject while repeated sprint ability was used to assess the anaerobic capacity of the subjects.

Push-up and chin up were measured with the standard procedure while Yo-Yo intermittent recovery test was used to assess the aerobic capacity of the selected subjects.

2.2.2 Playing Ability

The playing ability of cricket players was evaluated by three judges panel on a scale ranging from 0 to 10. The judges gave ratings to the performance of each player in an actual match-like situation.

2.2.3 Procedure

150 male cricket players were selected and put into the abovementioned physical and motor fitness test batteries. Scores on each battery is tabulated and the Pearson correlation coefficient was computed. Results are given in Table 1 along with the coefficient of determination.

3. DATA ANALYSIS

TABLE 1
VALUE OF CORRELATION (R) BETWEEN PHYSICAL FITNESS VARIABLES AND PLAYING ABILITY OF CRICKET PLAYERS (N=150)

Physical Fitness Variables	Playing Ability of Cricket Players		Coefficient of Determination
Vertical Jump	'r'	0.503**	0.253
20m Run	'r'	-0.161**	0.025
40m Run	'r'	-0.140**	0.019
Run a Three	'r'	-.486**	0.236
Repeat Sprint	'r'	0.483**	0.233
Chin-up	'r'	0.018	0.0003
Push-up	'r'	0.105*	0.015
YoYo Test	'r'	0.491**	0.241

** Significant at .01 level; r(df=148) = 0.10 at .05 level; 0.11 at .01 level.

A perusal of Table 1 gives the following inferences :

The Pearson correlation coefficient 'r' between vertical jump and playing ability of male cricket players was computed and it comes out to be 0.503. It shows that an increase in vertical jump scores also sees an increase in the playing ability of male cricket players at .01 level of statistical validation. The coefficient of variation (0.253) denotes that vertical jump creates a 25.3% variance in the playing ability of male cricket players.

The Pearson correlation coefficient 'r' between 20-meter run timings and the playing ability of male cricket players was computed and it comes out to be -0.161. It shows that an increase in 20-meter run timings invariably decreases the playing ability of male cricket players. The coefficient of variation (0.025) denotes that 20-meter run timings create a 2.5% variance in the playing ability of male cricket players.

The Pearson correlation coefficient 'r' between 40-meter run timings and the playing ability of male cricket players was computed and it comes out to be -0.140. It shows that an increase in 40-meter run timings invariably decreases the playing ability of male cricket players. The coefficient of variation (0.019) denotes that 40-meter run timings create a 1.9% variance in playing ability of male cricket players.

The Pearson correlation coefficient 'r' between run a three timings and the playing ability of male cricket players was computed and it comes out to be -0.486. It shows that an increase in timings in run a three test invariably decreases the playing ability of male cricket players. The

coefficient of variation (0.236) denotes that run a three timings creates a 23.6% variance in the playing ability of male cricket players.

The Pearson correlation coefficient 'r' between repeat sprint scores and the playing ability of male cricket players was computed and it comes out to be 0.483. It shows that an increase in repeat sprint scores invariably increases the playing ability of male cricket players. The coefficient of variation (0.233) denotes that repeat sprint creates a 23.3% variance in the playing ability of male cricket players.

The Pearson correlation coefficient 'r' between chin-up scores and playing ability of male cricket players was computed and it comes out to be 0.018 and indicates statistically non-significant validation at the significance level.

The Pearson correlation coefficient 'r' between pushup scores and the playing ability of male cricket players was computed and it comes out to be 0.105. It shows that an increase in pushup scores invariably decreases the playing ability of male cricket players at .05 level of statistical significance. The coefficient of variation (0.015) denotes that pushup scores create a 1.5% variance in the playing ability of male cricket players.

The Pearson correlation coefficient 'r' between Yo-Yo test scores and the playing ability of male cricket players was computed and it comes out to be 0.491. It shows that an increase in Yo-Yo test scores invariably increases the playing ability of male cricket players. The coefficient of variation (0.241) denotes that Yo-Yo test scores create a 24.1% variance in the playing ability of male cricket players.

RESULTS

1. The lower body power was found to be significantly correlated with the playing ability of male cricket players. Hence increase in lower body power also increases the playing ability of male cricket players.
2. The explosive ability, rate of force development, and maximal running velocity was found to be significantly correlated with the playing ability of male cricket players. The negative correlation shows that improved timings on 20 meter and 40 meters happen to improve the playing ability of male cricket players.
3. Agility was found to be significantly correlated with the playing ability of male cricket players. Hence increase in agility also increases the playing ability of male cricket players.
4. The anaerobic power was found to be significantly correlated with the playing ability of male cricket players. Hence increase in anaerobic power also increases the playing ability of male cricket players.
5. Upper body strength was found to be significantly correlated with the playing ability of male cricket players. Hence increase in upper body strength also increases the playing ability of male cricket players.
6. Endurance was found to be significantly correlated with the playing ability of male cricket players. Hence increase in endurance also increases the playing ability of male cricket players.
7. The aerobic capacity was found to be significantly correlated with the playing ability of male cricket players. Hence increase in aerobic capacity also increases the playing ability of male cricket players.

DISCUSSION:

In the present study, aerobic capacity, anaerobic power, lower body power, maximum running velocity and upper body strength were found to be significant predictors of the playing

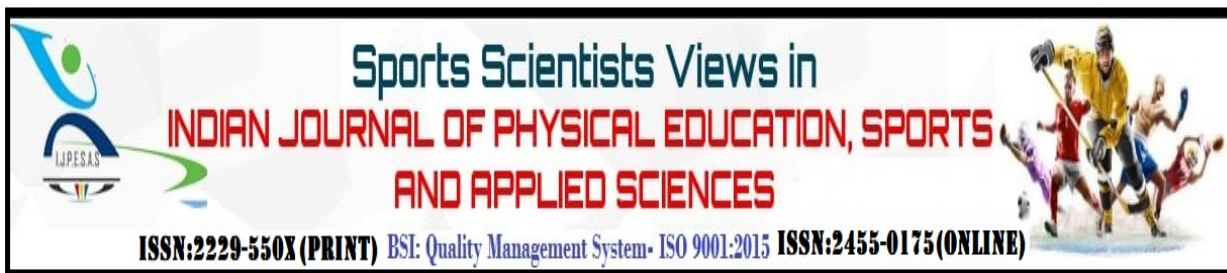
ability of male cricket players. Vaka and Vijaymohan (2022) reported no significant association between fitness variables with sports performance. Suresh Kumar et al. (2019) reported that speed, agility, shoulder movement and strength, explosive strength of the upper extremity and quickness were found to be contributing significantly to the performance index of cricket players. The result of the present study is consistent with that of the study conducted by Suresh Kumar et al. (2019) which is not surprising because modern-day cricket needs speed, power and stamina to execute game-related technical and tactical skills.

CONCLUSION

Based on the results, it was concluded that selected physical and motor fitness variables are essential aspects of the playing ability of male cricket players and thereby a scientific fitness training plan is necessary for male cricket players for the betterment of their playing ability.

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IMPLEMENTATION OF SEGMENT SPECIFIC TRAINING MODULES, A PART OF SPORT SCIENCE TECHNOLOGY WITH YO-YO TEST AS A BENCHMARK

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ABSTRACT

The purpose of the discovery was to assess the progress and performance of Fitness during the national camp for cricketers under nineteen years of age. For this purpose. the strength specific training modules with Yo Yo test were implemented as a benchmark for cricketers belong to National cricket academy, Bangalore. NCA camp was conducted for 3 weeks at the National Cricket Academy in the month of April-May 2019, During this camp 25 athletes underwent YoYo Test at the beginning of the camp and during the end of the camp. Segment Specific Training was implemented and the results were recorded to assess the progress and performance of Fitness during the camp. The results of the study indicated the good improvement among cricketers in Yo Yo test and overall strength levels .

Keywords: Strength, Conditioning, Training, Sport,, Rhythm, Lifting, LTP and MTP

1. INTRODUCTION

The following system of training is on U-19 NCA cricketers who have first taken up their Assessments and Tests to identify their current fitness levels. Based on their current level of fitness and their workload of Skill ie Batting, Bowling and Fielding the training programs were made.

Strength and Conditioning Programs and the Skill sessions were split into 3 Strength and Conditioning Sessions along with 3 Skill Sessions with 1 day Rest. The idea behind this format was that the players can give their best effort even in training and also in their skill session as it was an U-19 National Camp.

This method of training works best for Sports in Specific as the Workload of the players in Cricket or Football or Tennis is not fixed, What we mean to say is in a test match a bowler does not know how many overs he/she is going to bowl, A batsmen does not know whether he will get a double century or get out for a duck. A tennis player does not exactly know for how long their rally will take place. A football player does not know how many metres he/she is going to cover in a 90 minute Football game.

Structural Lifting for Sport involves selective Multi Joint Exercises where the Lower Extremities are fixed and the Spine is loaded while performing the Full range of motion. Performing the activity is always under the supervision of a Qualified Strength and Conditioning Specialist until the athlete has learnt and mastered these movements.

The mechanism of Jumping in a controlled environment is known as Plyometrics. This involves the Stretch Shortening Cycle of the working muscle and whole body is in motion during this activity.

A form of exercise which involves rapid contraction of the muscles designed to improve Strength, Speed and Athleticism of the players. This sort of action is common in all Sporting activities.

Conditioning or Outdoor Running with a Specified Distance to improve the rhythm. The benefits of rhythm runs are - 1..An increase in work capacity (bowler would be able to bowl the extra over or too in a spell in his usual speed. 2. Reduces the risk of stiffness related injuries amongst athletes.3. More work with less energy spent (Learn how this is done during SST or I-7 workshops). 4.An increase in speed endurance with reduced GRF (ground reaction force). 5. Strength meets Speed Rhythm meets Speed Endurance (How and Why can be cleared in SST Workshops)

2. METHODOLOGY

2.1 Sample

The respondents were divided into 3 batches for training, based on their skill i. e. Batsman, Spinners and All rounder and Fast bowlers. The duration of the session was around 60 minutes inclusive of Strength + Conditioning sessions. , During this camp 25 athletes underwent YoYo Test at the beginning of the camp and during the end of the camp

2.2 Training Session

The timing of Strength and Conditioning Sessions were either held in the morning or in the evening. Players were given a break of 5 minutes after completion of a Strength segment and then were followed by Conditioning.. The intensity and the Workload was decided based on the recovery and readiness to train for athletes.. Segment Specific Training is the key for designing a proper Program Design which is flexible and specific.

Activity	Strength+ Conditioning
Activity	Strength+ Conditioning
Activity	Strength+ Conditioning
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Activity	Strength+ Conditioning
Activity	Strength+ Conditioning

2.3 Equipments Used

The Olympic Barbells , Bumper Plates , Kettlebells , Medicine Ball , Sports Training Platform and Plyo Boxes were taken for the purpose of study.

2.4 Training Protocol

Segment Specific Training takes all these into consideration and Strength and Conditioning Programs are prepared to suit the needs of the athletes. The Players were divided into 3 Batches and First few sessions were spent on Coaching the right technique of Lifting and Running as these were relatively unfamiliar to them but the players did pick up the methods at a good pace.

**TABLE 1
DESCRIPTION OF EXERCISES AND TIME PERIOD FOR WARMING UP,
STRENGTH SESSION, CONDITIONING SESSION AND COOL DOWN
FOR FIRST BATCH**

Type of Session	Exercises	Duration
Warm Up	Warm up and Dynamic Stretching	12 minutes
Strength Session	Strength, Structural Strength Session, LTP	25-30 minutes
Conditioning Session	Rhythm Runs	15 minutes
Cool Down	Jog	5 minutes

**TABLE 2
DESCRIPTION OF EXERCISES AND TIME PERIOD FOR WARMING UP,
STRENGTH SESSION, CONDITIONING SESSION AND COOL DOWN
FOR SECOND BATCH**

Type of Session	Exercises	Duration
Warm Up	Warm up and Dynamic Stretching	12 minutes
Strength Session	Strength, Structural Strength, MTP	25-30 minutes
Conditioning Session	Rhythm Runs	15 minutes
Cool Down	Jog	5 minutes

**TABLE 3
DESCRIPTION OF EXERCISES AND TIME PERIOD FOR WARMING UP,
STRENGTH SESSION, CONDITIONING SESSION AND COOL DOWN
FOR THIRD BATCH**

Type of Session	Exercises	Duration
Warm Up	Warm up and Dynamic Stretching	12 minutes
Strength Session	Strength, Structural Strength, MTP	25-30 minutes
Conditioning Session	Rhythm Runs	15 minutes
Cool Down	Jog	5 minutes

2 4 Administration of Instrument

Complete readiness to train like an athlete/cricketer. The boys played 10 matches with a break of just one day, The players have trained and recovered well to play the matches in full swing.. YoYo scores of the players have improved as shown in the statistical analysis. Overall ability to execute the Strength and Conditioning of the players have improved . Execution and Understanding of the players about their own bodies have improved. Players who were not keeping well or had a niggle on that day of the test were being made to rest. The Yo Yo test was administered by a Qualified Strength and Conditioning Coach.

2 5 Statistical Analysis

Observational analysis was performed on the basis of secured score during the period of 21 days. Yo Yo scores were counted on 20/4/2019 and 11/5/2019 of all the selected athletes for the purpose of present investigation.

3. RESULTS

TABLE 4

SCORE INDICATION OF UNDER 19 YEARS OF AGE GROUP DURING TWENTY ONE DAYS CAMP OF FOURTH BATH ANNCA BATCH 4 ATHLETES AT BANGLORE KARNATAKA, INDIA

SL No	Name	20/4/19 YoYo Score	11/5/19 YoYo Score
1	Karan lal	16.1	16.5
2	Vatsal Sharma	16.1	16.6
3	Ayush Pandey	16.1	16.7
4	Prabhat Maurya (Recovered from Back Injury)	17.1	17.2
5	Taken	16.5	15.8
6	Aman Mokhade	17.6	17.8
7	Mandar Mahale	16.5	17.2
8	Swastik Samal	16.3	16.8
9	Rajvardhan Hangarekar	16.1	16.1
10	Sameer Rizvi	16.4	Fever
11	Pankaj Yadav	17.4	18.5
12	Rajath Chaudhary	16.1	17.3
13	Vamsi Krishna	16.2	16.8
14	Amit Shukla	16.2	16.3
15	Shivam Sharma	16.4	18.1
16	Anirudh Chaudhary	16.1	17.5
17	Sarukh Hossain	16.5	17.3
18	Salil	16.8	16.8
19	Nidish R	16.2	17.3
20	Jaymeet Patel	15.5	16.6
21	Priyesh Patel (Shoulder)	15.5	16.4
22	Suved Parkar	15.1	Ankle Injury
23	Pragnesh Khanpillewar (Recovered from his hamstring Injury)	15.1	16.1
24	Atharva Ankolekar (Recovered from Plantar Fasciitis)	15.2	16.1
25	Yuvraj	15.5	16.3

Table 4 reveals that segment specific training modules with yo yo test shown excellent improvement in strength and conditioning. Among cricketers of Serial . Number - 16, 17, 23, 24, 25, 19. But the serial number 4, 10 and 22 athletes were suffering with back injury, fever and ankle injury respectively, did not exhibited improvement. Rest of athletes did not exhibited good improvement in their strength and conditioning

4. DISCUSSION

From the results of analysis of data, it was noticed that each and every athlete had shown good improvement in Yo Yo test and overall strength levels except injured and ill athletes, .

5.CONCLUSION

Segment Specific Training, a part of Sports Science Technology has worked well on the players as the players have followed and learnt the right way to train and stay fit. The Players have played 10 matches of 50 overs each with a break of just one day between matches following the skill and fitness camp. The Segment Specific Training Programs were well learnt, followed by the players and have the matches in full swing.

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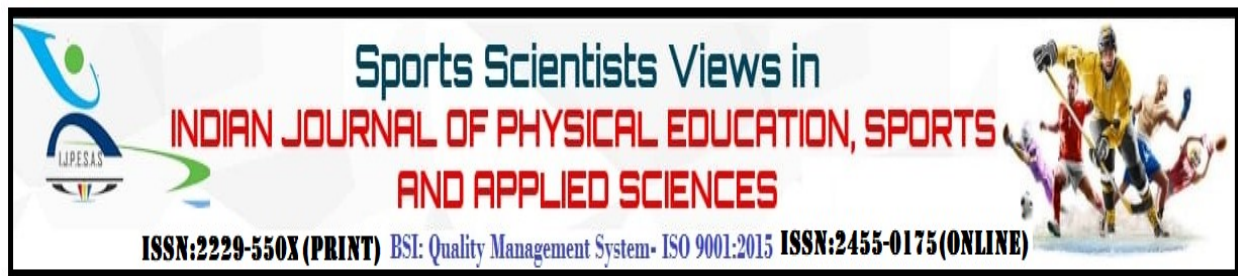
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https://cdn4.sportngin.com/attachments/document/0053/4586/positive_conditioning_booklet.pdf

Courtesy: Sports Science Technology, Developed by Prashant Pujar, Indian Strength and conditioning expert, Bangalore



ANALYSIS OF SOCIO-ECONOMIC STATUS AND PSYCHOLOGICAL FACTORS POTENTIAL OF THE PLAYING ABILITY OF SCHOOL BOYS OF INDIAN SCHOOLS IN OMAN

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Students' playing skill is significantly impacted by their socioeconomic status. Someone's or a group's socioeconomic standing is determined by factors such as his or her level of education, job, and parental income. A person's socioeconomic status (SES) and way of life are both connected with their level of health. This research analyzed how socioeconomic status (SES) affected the respondents' overall health. We also investigated if and how one's way of life can moderate the connection among socioeconomic status and health. There were substantial beneficial benefits on both physiological and mental health from the way of life. Further, the connection between socioeconomic status and health was mediated by one's way of life. This study investigates the association between the socio-economic position and psychological factors and their potential impact on the playing ability of school boys from Indian schools in Oman. The aim of the research is to identify the socio-economic factors and psychological characteristics that may influence the performance and abilities of these students in sports activities. The questionnaires assess variables such as family income, parental education level, access to resources, self-esteem, motivation, and self-efficacy. These factors are hypothesized to have an influence on the playing ability of the participants. The qualitative phase involves conducting in-depth interviews with a subset of the participants to gain deeper insights into their experiences, perceptions, and attitudes towards sports and the impact of socio-economic and psychological factors on their abilities. The interviews provide a more nuanced understanding of the underlying factors that contribute to or hinder their playing ability. The findings of this study are expected to contribute to the existing literature on the relationship between socio-economic status, psychological factors, and sports performance among school boys. Additionally, the results may inform educational institutions, policymakers, and sports organizations in developing strategies and interventions to enhance the playing ability and overall well-being of students from Indian schools in Oman.

Keywords: socioeconomic status, Sports activity, Indian schools, psychological factors, playing ability.

1. INTRODUCTION

Participation in sports and physical activities plays a vital role in the holistic development of children and adolescents. It not only promotes physical fitness but also fosters social skills, teamwork, discipline, and mental well-being. Understanding the factors that contribute to the playing ability of school boys is crucial for optimizing their sports performance and overall development. This study focuses on analyzing the socio-economic status and psychological factors that may influence the potential playing ability of school boys from Indian schools in Oman. Socio-economic status (SES) encompasses various dimensions, including family income, parental education level, and access to resources. These factors have been found to have a significant impact on an individual's opportunities, lifestyle, and overall well-being. In the context of sports, socio-economic disparities can affect access to quality training facilities, coaching, equipment, and participation in competitive events. Furthermore, SES can indirectly influence psychological factors such as self-esteem, motivation, and self-efficacy, which, in turn, can affect an individual's sports performance.

Psychological factors are integral components of an athlete's overall performance and success. Self-esteem, a person's perception of their own worth and competence, plays a crucial role in shaping their motivation and confidence levels. Motivation, encompassing intrinsic and extrinsic factors, drives individuals to engage in sports and strive for excellence. Self-confidence is the confidence in one's own abilities to do given tasks successfully, influences an individual's willingness to take on challenges and persist in the face of obstacles. These psychological factors interact with socio-economic factors and contribute to the playing ability and performance of school boys in sports. Despite research shows the correlation between income and health, psychological factors, and sports performance in various contexts, there is a dearth of research specifically focused on the school boys of Indian schools in Oman. Understanding the unique socio-economic and psychological factors that influence their playing ability can aid in tailoring effective interventions and strategies to enhance their sports performance and overall well-being.

Socioeconomic status (SES) has long been hypothesized to have an effect on health. In the 1960s, scholars widely assumed that health disparity would decrease, at least in developed nations, as a result of advances in medical technology and economic growth [1]. Black showed, however, that health disparities in Britain had not only persisted but worsened since the 1980s [2]. This result, that those with greater socioeconomic status had better health than those with lower SES, has been validated by studies showed in the United States and Europe. [3,4]. These investigations established the significant effect of SES on health, while the mechanism behind this phenomenon remains controversial. Social causality theory and health selective theory are two schools of thought put forth by academics [5]. The former implies that socioeconomic differences are the primary reason for health disparities [6]. On the other hand, the latter implies that healthier people tend to be better off financially [7]. Notwithstanding these worries, there is growing understanding that socioeconomic status (SES) significantly affects health due to everyday decisions [8]. To rephrase, the level of health is determined by the efforts and positive habits of an individual [9]. What forms a healthy lifestyle depends on the individual's goals, societal norms, abilities, and knowledge of what comprises sound, stress-relieving, or pleasurable behaviors [10]. Unhealthy habits include things like smoking, drinking excessively, and not getting enough exercise [11,12]. On the other hand, engaging in regular exercise, meaningful social relationships, effective stress management, and personal development are all examples of positive lifestyle choices. The results of several studies have shown a correlation between individuals' health and their personal and professional choices about their lifestyle.

The fundamental purpose of this research is to investigate the effects of socioeconomic and mental factors that have the potential to influence the playing ability of school boys from Indian schools in Oman. By examining these factors, this research aims to provide insights into the underlying determinants of sports performance among this specific demographic. The findings of this study can inform educational institutions, policymakers, and sports organizations in designing targeted interventions and programs to foster the development of school boys' sporting abilities. In conclusion, our investigation explored the connection among socioeconomic position, psychological factors, and the playing ability of school boys from Indian schools in Oman. The insights gained from this research can contribute to a better sympathetic of the multifaceted issues that shape their sports performance and inform strategies for their optimal development in the sporting domain.

2. REVIEW LITERATURE

The existing literature highlights the significant impact of socioeconomic factors on students' academic performance. These factors play a vital role in shaping students' educational outcomes and can help identify the socioeconomic and cultural influences affecting academic achievement. Disparities in access to educational resources and varying levels of investment in education within households often lead to inequalities in academic achievements among students. Several empirical studies have demonstrated that students from lower socioeconomic backgrounds tend to have intellectual stagnation in comparison with students from wealthier families. Therefore, kids from disadvantaged backgrounds are less likely to are more likely to experience cognitive and academic development challenges, as well as language difficulties [13]. Factors such as illiteracy among parents, their limited professional opportunities, low income, poor health conditions, and Students' learning achievement suffers when they cannot get the education they need [14].

In contrast, a study [15] results showed no substantial gender disparities in pupils' academic performance. However, a study focusing on the socioeconomic factors and academic achievement of secondary school students indicated that there were noteworthy disparities in academic performance among groups with different socioeconomic and demographic backgrounds. Additionally, another study [16] emphasized a high school pupils' academic success is strongly correlated with their family's socioeconomic level, with male students outperforming their female counterparts. Interestingly, the study also revealed showed students in urban and rural areas did not differ significantly in their academic achievement. It is important to note that the association between socioeconomic status and educational performance is influenced by the quality of the schools. Unfortunately, even in high-income nations, educational disparities remain with significant socioeconomic factors, posing a significant challenge for developing countries striving to provide equitable access to education for all children [17].

Moreover, previous academic achievements, academic experiences, and work status were found to have a stronger influence on students' academic performance compared to their socioeconomic status [18]. Children from more privileged backgrounds were more likely to succeed academically than those from disadvantaged families [19]. Socioeconomic status was positively associated with academic performance in language and mathematics subjects, indicating a positive relationship between socioeconomic factors and students' achievements in these subjects [20]. Furthermore, a study [21] discovered a significant correlation between the location of students' homes and their academic performance at the secondary level. Previous studies examining the correlation between childhood obesity and socioeconomic status in school-aged children have failed to provide conclusive findings. Children of lower socioeconomic status

have been shown to be more likely to be overweight or obese in research conducted in North America, Australia, and Europe [22], although this association has not been shown in studies conducted in Brazil or Korea [23]. Studies conducted in South America [24], the Arab world [25], and Africa [26] revealed inverse trends. This indicates that kids from affluent families showed more signs of being overweight and obese than kids from poorer families. This discrepancy in studies has been attributed, in part, to the fact that the rate at which economic and social interconnectedness is expanding in various parts of the world varies greatly [27].

There is a common belief that children from poorer socioeconomic backgrounds have motor developmental delays [28-30] when researchers examine the link between SES and motor ability. However, as was said in the previous paragraph, the correlation between socioeconomic status and facets of mental health appears to vary by culture. South African (SA) children's FMS performance is typically better than that of their peers from higher socioeconomic backgrounds [34], despite the fact that a positive association between SES and FMS was found in children from pre-school age onward in advanced or Western countries [31-33]. Furthermore, Armstrong [36] reported that the only manipulation construct-specific variable for which an inverse association between SES and FMS was detected was ball kicking. Furthermore, it is essential to recognize that FMS development during the preschool and school years is obviously sex related. Across countries of varying prosperity, girls tend to excel at locomotion, whereas boys are more adept at manipulating objects [37]. This trend was also seen by Pienaar et al. [41] among South African first graders who came from low- and middle-income homes. Surprisingly when taking into account age, the association between FMS and SES in females is inverted, as was seen in studies of pre-school and school-aged children [39, 40].

These findings highlight the complex interplay between socioeconomic factors and academic performance among students. It is crucial for educational institutions and policymakers to address the challenges associated with socioeconomic disparities to ensure equal educational opportunities and foster positive academic outcomes for all students. The major goal of this study is to examine whether or not there is a connection among socioeconomic position and extracurricular physical activity. The central hypothesis is that children from low-income homes are less likely to participate in extracurricular activities that include physical activity. That's because kids from middle- and lower-income households typically don't have as much disposable cash to spend on extracurricular activities. Two presumptions form the basis of the theory.

First, it's considered that kids who want to play sports outside of PE could benefit from having an adult guide them through the process, such as taking ballet or karate lessons. These activities often require specialized training or guidance, which may come at an additional cost that could be a barrier for children from lower-income households. Secondly, it is postulated that certain sports outside of the curriculum may demand expensive equipment or access to specialized facilities. For instance, engaging in activities like roller-blading or ice-skating might require specific equipment or access to ice rinks, which may not be readily available or affordable for children from lower-income backgrounds.

Further support for the argument regarding the potential financial constraints associated with non-curricular sports is provided by prior research. Previous research has shown that children from low-income households had less sporting possibilities than their middle- and upper-class contemporaries. This discrepancy extends to the exposure to different types and a greater number of sports, reflecting a disparity in the sporting experiences available to children from different socioeconomic backgrounds. By examining the association between income and

involvement in voluntary physical activities beyond the school curriculum, this study aims to shed light on the potential barriers faced by children from lower-income families. The findings can help build a stronger comprehension of the factors influencing access to sports and inform strategies for promoting inclusivity and equal opportunities in physical activity participation among children of diverse socioeconomic backgrounds.

3. METHODS AND MATERIALS

3.1 Participants

For this study, a random selection process was used to choose five public Indian schools to participate. Consent was obtained from the respective kindergartens to involve their students in the research. All parents/guardians of students enrolled in the five selected kindergartens were invited to participate in the study. There was a very high response rate, with 1124 parents out of a possible 1200 voluntarily filling out and returning the consent forms and surveys. Each school gathered anything from 100 to 200 valid surveys. Table 1 provides detailed information about the participants involved in the study, including the breakdown of participants from each kindergarten. The table presents relevant demographic characteristics and other pertinent information that will be utilized in the analysis and interpretation of the study's findings. The data from the participants will contribute significantly to understanding the relationship between the variables under investigation.

**TABLE 1
PARTICIPANTS SURVEY DETAILS**

		Age -7	Age - 8	Age – 9	Age - 10
Gender	Male	62%	62%	60%	52%
	Female	38%	48%	40%	48%
Father’s age	25 and below	1%	2%	1%	1%
	30 to 40	75%	78%	70%	72%
	40to 50	24%	20%	28%	25%
	51 and above	0	0	1%	2%
Mother’s Age	25 and below	1%	5%	10%	6%
	30 to 40	80%	83%	78%	80%
	40to 50	19%	12%	11%	13%
	51 and above	0	0	1%	1%
Parental Education	Middle school	5%	8%	10%	20%
	High school	70%	65%	67%	60%
	Graduation -Bachelor	15%	10%	12%	10%
	Graduation- Master	10%	17%	11%	10%
Family monthly income	\$1000 and below	30%	35%	32%	30%
	\$2000 and above	45%	40%	43%	45%
	\$3000 and above	10%	12%	13%	15%
	\$5000 and above	15%	13%	12%	10%

It is important to note that the process of random selection and the high response rate for the consent forms and questionnaires enhance the representativeness and reliability of the study's results. The large sample size and diversity of participants from different kindergartens add to

the robustness and generalizability of the findings. The table provides a breakdown of the participants' characteristics based on age, gender, parental age, parental education, and family monthly income. These variables are important in understanding the demographic profile of the participants and their potential influence on the research outcomes. The table presents the distribution of participants across different age groups, specifically ages 7, 8, 9, and 10. The percentages indicate the proportion of Male and female individuals of all ages. The table further breaks down the participants by gender, showing the percentage of male and female participants within each age group. Age section illustrates the distribution of participants based on their fathers' age. It provides the percentage of participants whose fathers fall into different age ranges, such as 25 and below, 30 to 40, 40 to 50, and 51 and above. Similar to father's age, Mother's Age section displays the distribution of participants according to their mothers' age. The table shows the percentage of participants whose mothers fall into different age ranges, including 25 and below, 30 to 40, 40 to 50, and 51 and above. Parental Education part highlights the educational background of the participants' parents. It indicates the percentage of participants whose parents have completed different levels of education. Family Monthly Income section examines the distribution of participants based on their family's monthly income. It presents the percentage of participants falling into different income brackets, including \$1000 and below, \$2000 and above, \$3000 and above, and \$5000 and above.

The information provided in the table offers insights into the demographic characteristics of the participants, which can help in understanding the potential impact of these factors on the research outcomes. It allows for a comprehensive analysis of how variables such as age, gender, parental age, education, and income might relate to the study's focus on socio-economic status and other relevant factors.

3.2 Student's play behaviour

The Children's Play Behavior Scale is detailed here, along with its history of creation and verification. There are twenty-one categories on the rating system that measure different aspects of children's play that contribute to their cognitive, emotional, and social growth. Parents were asked to rate these behaviors using a 5-point Likert scale ranging from "strongly disagree (1)" to "strongly agree (5)." To establish the structure of the scale, Exploratory Factor Analysis (EFA) was initially employed. The analysis revealed a four-factor structure, indicating that the items could be categorized into four distinct dimensions. Out of the initial 21 items, 15 items with factor loadings higher than 0.5 were retained to form the final scale used in the analysis. The dependability of the scale was assessed using Cronbach's alpha, resulting in a value of 0.933, indicating good internal consistency.

The four-factor structure of the scale was further validated using Confirmatory Factor Analysis (CFA) in a separate sample of 329 parents. The fit indices of the CFA model, including χ^2/df , CFI, RMSEA, RMR, GFI, AGFI, and IFI, were evaluated to assess the goodness of fit. The obtained fit indices suggest that the four-factor structure of the scale adequately represents the data in this sample. The four factors identified in the scale are as follows:

Imagination: Three objects represent young people's object replacement and situated imagination in play within this factor. It measures things like whether or not kids use blocks as cellphones or a paper box as an oven.

Approaches to Learning: This factor consists of three items ($\alpha = 0.838$) that measure children's perseverance and continued care during play. It assesses their ability to stay engaged in a game for an extended period.

Sociality: This factor comprises five items ($\alpha = 0.897$) that assess children's cooperative, communicative, and problem-solving abilities during play. It evaluates how children handle conflicts with their peers and solve problems through discussion and negotiation.

Emotion Expression: This factor reproduces children's positive emotion appearance and communication in play and includes four items ($\alpha = 0.914$). It assesses behaviors such as clapping and dancing when children feel happy or excited during play.

These factors and their corresponding items provide a comprehensive framework for understanding and measuring children's play behaviors related to reasoning, expressive, and social expansion. The reliability of each factor, as indicated by Cronbach's alpha, suggests good internal consistency within each dimension of the scale.

3.3 Measures

3.3.1 Parental involvement

The best source for knowledge would be the parents themselves on their own levels of physical activity, but for various reasons, this was not possible. Firstly, due to the sheer number of children participating in the study, contacting individual parents would be an exceedingly time-consuming and, perhaps, costly undertaking. Second, not all parents will be able to or want to respond to inquiries about their involvement. Finally, parental involvement might have made it more difficult to guarantee the children's confidentiality. It was chosen to ask the kids if their parents worked out often because of these concerns. The kids were questioned, "

(a) Does your dad regularly participate in any sports or physical exercise?"

(a) Does your mom regularly engage in any sort of sport or physical activity?

It was expected that children aged 9-10 years old would be able to provide reliable information on their parents' exercise habits. However, the children who answered "unsure" were classified as missing data in order to improve the data's dependability, therefore the yes/no question was supplemented with a "unsure" alternative. In addition, children in single-parent households were asked to indicate by leaving that question blank whether or not that parent was present in their daily lives. The youngsters were also instructed that the term "physical exercise" referred exclusively to prearranged activity, and that the term "often" meant more than twice per week. One potential shortcoming of the aforementioned description assumed to the children is that the youngsters might not include 'walking' as a kind of workout, but the parents could have incorporated walking into their daily exercise regimen.

3.3.2 Socio-Economic status

In previous research, social economic status (SES) has been typically measured using one of three indicators: (i) labor market position, (ii) parental schooling, or (iii) family arrangement. However, for the current study, collecting data on SES from external agencies or schools would have been time-consuming and expensive due to the large sample size. Additionally, obtaining accurate data directly from young children, such as information on parental occupation or residential address, would have been challenging. A relatively overlooked measure of SES in the UK is the eligibility for free school meals (FSME), which serves as an indicator of social deprivation. This measure has not received as much attention as other indicators like parental profession, domestic size, or religious contextual. However, recent research suggests that relative to other occurrences, FSME is a better indication of social hardship at the learner level.

The decision to use FSME as an pointer of SES in this study is driven by practical considerations such as feasibility and cost-effectiveness. The availability of data on FSME eligibility from school records makes it a convenient and accessible measure for assessing social deprivation. The research comparing various measures of SES has indicated that FSME provides

valuable insights into the socioeconomic circumstances of students, highlighting the association between eligibility for free school meals and social deprivation. By employing FSME as an indicator of SES, the study aims to capture the socioeconomic diversity within the sample without incurring significant costs or burdening young children with complex data collection procedures. This approach allows for a comprehensive examination of the association between SES and other variables of interest in the study.

Since using FSME as an indication of social economic status will resolve the aforementioned issues, this course of action was adopted. since of the potential for negative reactions from students if asked directly about their eligibility for free school meals, and since some students might not even be aware of their status, it was decided to get this information via the classroom instructor instead. The lack of precision in calculating family income is a drawback of using FSME. Eventually, a family's income will be slightly beyond the threshold at which they become eligible for income support, so that their kid will not qualify for free school lunches despite their low income.

4. RESULTS

Children were divided into four categories: (a) those whose fathers engaged in regular physical exercise, (b) those whose mothers did, (c) those who qualified for free school lunches, and (d) those who did not. Evocative figures for the subsequent physical movement factors were then determined for every one of these categories: total time engaged in physical motion, time engaged in team sports generally incorporated into the curriculum (such as football and rounders), time engaged in individual sports typically encompassed in the curriculum (such as athletics and swimming), and time engaged in sports not for centuries comprised in the curriculum. We used independent t-tests, as well as multivariate and single-variate analyses of variance, to compare the boys' and girls' self-reported levels of exercise whose parents were active and inactive, as well as those qualified and not receiving free school meals. The kids were also divided into categories based on their degree of physical activity from the week prior. For their health, Children need to be physically active for at least 20 minutes, three times a week, at a medium to intense intensity.

This is on top of the daily or near-daily activity they should already be engaging in. For the purpose of developing suitable for your age exercise regulations for adolescents, a group of world-renowned researchers and medical professionals convened for the International Collaboration Conference on Physical Activity Instructions for Adolescents and came to the following suggestions. While the criteria provided in the consensus paper by Sallis and Patrick are some of the most up-to-date and well-informed, they are not the only ones that have been created. Less restrictive energy expenditure-based standards for vigorous exercise are one example that might be taken into account. It is recommended that kids burn at least 3-4 kcal/kg/day through moderate-to-vigorous physical exercise and, ideally, 6-8 kcal/kg/day. However, it is possible that the present study's measurement of exercise in terms of energy consumption was not only inaccurate, but also failed to distinguish between subsets of children who engaged in varying degrees of physical activity. Therefore, the present investigation used the stated recommendations to classify the youngsters into one of three categories. The kids in the 'high activity' group got the most out of the health benefits of physical activity. Those who engaged in some physical exercise but not enough were placed in the "low activity" category, while those who did not engage in any form of physical activity the week prior were placed in the "no activity" category. We used chi-square tests to compare the levels of physical activity

among boys and girls based on (a) parental engagement and (b) socioeconomic position (eligible vs. not qualified for free school lunches).

Out of the total 32 schools included in the study, data on students' eligibility for school dinners was missing for six schools. As a result, these six schools were excluded from the analyses that involved the variable of free school meals. Consequently, the analyses related to free school meals were conducted using a reduced sample size of 26 schools, comprising 315 students. Among the remaining sample, which consisted of students from the 26 schools, information on free school meal eligibility was available. Out of this sample, it was found that 93 children were eligible for free school dinners, with 42 being boys, 56 being girls, and one child not reporting their sex. On the other hand, 723 children were found to be ineligible for free school dinners, with 320 being boys, 401 being girls, and one child not reporting their sex. It is important to note that a larger sample size is generally associated with less variability and more precise results. However, in this particular study, the exclusion of six schools from the analyses involving the free school meal variable resulted in a smaller sample size. This reduction in sample size may have impacted the amount of variability in the data and consequently affected the precision of the study's results when examining the relationship between free school meals and other variables of interest.

Table 2 below displays the average number of minutes per week spent on exercises, team sports, sports for oneself, and non-PE sports, broken down by whether or not the father engaged in frequent physical activity. The data is further separated for boys and girls.

TABLE 2
MINUTES SPENT EXERCISING, DOING SPORTS, AND NOT PARTICIPATING IN PHYSICAL EDUCATION

Father's Participation in Regular Physical Exercise	Total Time (minutes)	Team Sports (minutes)	Individual Sports (minutes)	Non-PE Sports (minutes)
Boys				
Yes	450	120	100	230
No	380	80	90	210
Girls				
Yes	420	110	80	230
No	360	70	70	220

This paragraph presents the results of a chi-square study that looked at how children from different socioeconomic backgrounds ranked in terms of how much exercise they had the week before. Children who qualified for free school meals (n = 80) and those who did not (n = 622) were accounted for in the study's statistical evaluation. Note that the percentage of children who provided enough details on their level of physical activity was somewhat lower in each group (616 out of 622) owing to the absence of information.

4.1 BASED ON THEIR LEVEL OF PHYSICAL ACTIVITY

Here is a sample table representing the supply of children based on their level of physical activity and eligibility for free school meals:

TABLE 3
DISTRIBUTION OF CHILDREN BASED ON THEIR LEVEL OF PHYSICAL ACTIVITY

Level of Physical Activity	Qualification for Free Lunch Program (%)	Not Qualification for Free Lunch Program (%)
No Activity	25%	20%
Low Activity	35%	40%
High Activity	40%	40%

Table 3 shows the breakdown of children who are either eligible for or not eligible for free school meals based on their degree of exercise ('no activity,' 'low activity,' or 'high activity'). A chi-square test showed a lack of statistical significance between the distributions of children from high- and low-income households regarding their degree of physical activity in the week prior. The chi-square value was 1.72, with 2 degrees of freedom, and a p-value of 0.42. The lack of significance suggests that the proportion of children engaged in different levels of physical activity did not vary significantly between the lower income and higher income groups.

4.2 Based on economic status of parents

The table presents the distribution of children's sports activity levels based on the financial status of their parents. Low-income, middle-income earners and high-income people are the three tiers of financial standing. The sports activity levels are categorized as no sports activity, moderate sports activity, and high sports activity. The results show the distribution of children's sports activity levels based on their parents' economic status. Among children from low-income families, 20% did not participate in any sports activity, while 40% were engaged in moderate sports activity, and another 40% participated in high sports activity. In the case of middle-income families, 10% of children did not participate in any sports activity, 30% engaged in moderate sports activity, and the majority, 60%, participated in high sports activity. Among children from high-income families, a small percentage of 5% did not participate in any sports activity, while 20% were engaged in moderate sports activity. The majority, 75%, from high-income families participated in high sports activity. These findings suggest that higher economic status is generally related with a greater likelihood of children participating in sports activities. It highlights the disparities in sports engagement among different income groups, with children from higher-income families having more access and opportunities to engage in sports activities in contrast to their peers from less affluent backgrounds.

TABLE 4
THE CORRELATION BETWEEN PARENTAL INCOME AND THEIR KIDS' PARTICIPATION IN EXTRACURRICULAR SPORTS

Economic Status of Parents	No Sports Activity (%)	Moderate Sports Activity (%)	High Sports Activity (%)
Low Income	20%	40%	40%
Middle Income	10%	30%	60%
High Income	5%	20%	75%

These results indicate the correlation between parental income and their kids' participation in sports. Generally, as the income level increases, the percentage of children participating in sports activities also tends to increase. Children from high-income families are more likely to engage in sports activities likened to those from low-income relations. The data suggests that economic status can influence the opportunities and resources available for children to participate in sports.

Table 5. Sport Participation (%) based on gender and SES

Sex	SES	Year	No Participation	Participation
Male	Low	2020	30%	70%
		2021	25%	75%
		2022	28%	72%
	Middle	2020	20%	80%
		2021	15%	85%
		2022	18%	82%
	High	2020	10%	90%
		2021	8%	92%
		2022	5%	95%
Female	Low	2020	35%	65%
		2021	30%	70%
		2022	32%	68%
	Middle	2020	25%	75%
		2021	20%	80%
		2022	23%	77%
	High	2020	15%	85%
		2021	12%	88%
		2022	10%	90%

The result presents the percentage of sport participation based on sociodemographic characteristics, including sex, socioeconomic status (SES), and year. The table 5 provides an overview of the relationship between these factors and sport participation. The percentage of sport participation is reported separately for males and females. It shows the proportion of each gender group that participates in sports activities. Sport participation is analyzed based on different socioeconomic status categories, which may include low, middle, and high SES. The table presents the percentage of individuals within each SES group who participate in sports activities. The sport participation percentage is also reported for different years. This allows for the examination of any changes or trends in sport participation over time.



Figure 1. sport participation vs different sociodemographic characteristics

By examining the results in the table 5, one can assess how sport participation varies across different sociodemographic characteristics. For example, it may reveal differences in sport participation rates between males and females, or how sport participation varies among individuals from different socioeconomic backgrounds. Additionally, observing changes in sport participation over time can provide insights into any shifts or patterns in sport engagement within the studied population. Overall, this analysis provides valuable information as shown in the figure 1 about the relationship between sociodemographic characteristics and sport participation, shedding light on any disparities or trends that may exist in terms of who participates in sports activities based on factors such as sex, socioeconomic status, and year.

5. CONCLUSION

In conclusion, this study focused on investigating the relationship among socio-economic status (SES), psychological factors, and the playing ability of school boys from Indian schools in Oman. The research utilized a mixed-methods approach, combining quantitative questionnaires and qualitative interviews to gather data on socio-economic status, psychological characteristics, and their potential impact on sports performance. The study found that socio-economic characteristics, such as family income, parental education level, and access to resources, play a significant role in students' playing ability. Moreover, the findings demonstrated that lifestyle

factors have health benefits for both the body and the mind. Lifestyle was also identified as a mediator in the relationship between SES and health. The mixed-methods approach provided a comprehensive understanding of the underlying factors that contribute to or hinder the playing ability of the participants. The qualitative interviews offered deeper insights into the students' experiences, perceptions, and attitudes towards sports, as well as the effect of socio-economic and psychological factors on their abilities. The outcomes of this study contribute to the existing literature on the interplay between socio-economic status, psychological factors, and sports performance among school boys. The findings can be valuable for educational institutions, policymakers, and sports organizations in developing strategies and interventions to enhance the playing ability and overall well-being of students from Indian schools in Oman. Moving forward, it is recommended that further research be conducted to discover the influence of socio-economic and psychological factors on sports performance across different demographics and cultural contexts. By gaining a more comprehensive understanding of these dynamics, targeted interventions and support systems can be developed to promote sports participation, improve playing ability, and foster the overall well-being of students.

6. DECLARATIONS

6.1 Data Availability Statement:

The manuscript has no associated data.

6.2 Competing Interests and Funding:

The authors did not receive support from any organization for the submitted work.

6.3 Human Participants and/or Animals:

Not applicable

6.4 Conflict of Interest:

The authors have expressed no conflict of interest.

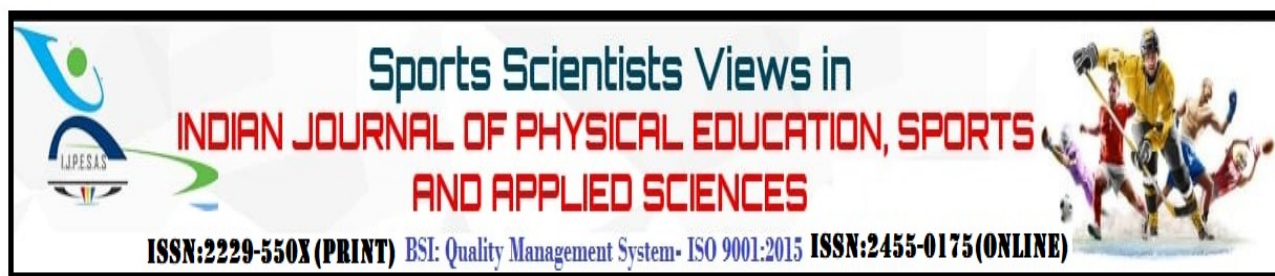
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PERFORMANCE ANALYSIS OF PHYSICAL EDUCATION MANAGEMENT AMONG SCHOLASTICALLY INTELLIGENT AND WEAK SECONDARY SCHOOL STUDENTS ON EMOTIONAL MATURITY OF J&K

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ABSTRACT

Recently, physical fitness, sports as well as recreation become more and more trending in between the secondary school students. PE is unrecognized since pupils lose encouragement as well as self-assurance in order to attend these classes. The majority of the PE syllabus in secondary schools are inefficient. Further, it cannot assure the accomplishment of educational objectives. A large number of students say that attending physical education classes cause strong negative feelings. Educators report that the educational circumstances do not offer the opportunities to attain the various objectives of PE. This issue cannot be sorted out by refining or upgrading the current school curriculum: this needs the entire replacement of the current PE framework in the secondary school education. The consequential crisis of PE in the secondary school is established in the absence of learning encouragement in students. The syllabus does not motivate the students to participate in PE classes, both during the extracurricular activities as well as within the training sessions. Planning the advanced curriculum should depend on the exceptional requirements of postmodern schoolchildren. This requires reconsidering the nature and behavior of PE in the secondary school education. This paper provides the significant research on the PE management among the secondary students of J&K on several aspects of Emotional Maturity.

Keywords: Curriculum, Emotional Maturity, Physical Education, Education, Sports & Fitness

1. INTRODUCTION

The progress of physical education (PE) in schools very much reliant up on the qualification and education level of teachers. The teachers as their realization for the importance of PE and good professionalization play the significant role in enhancing the quality of education and further students(Kostromin, Zaitsev, & Bobrov, 2019). It becomes authoritative to reinforce the curriculum of PE as per the qualification of teachers in order to build a strong infrastructure for the secondary education of J&K. Meanwhile, the teachers play the significant part in the growth of any nation. It becomes irreplaceable in endorsing the physical and psychological health of secondary level students. Recently, investigators researched on several aspects of the curriculum designed by PE teachers in the effectiveness of sports. This research work provides the best possible concept to straighten the PE curriculum. We will also theoretically deliberate the construction of teaching ability about PE, framework, connotation and aspects of existing conditions in the secondary education of J&K schools(Garcia, Bojos, & Sy,2021). Thus, this research work certainly will play a crucial part in the refinement of PE curriculum in J&K schools.

Recently, initially, several issues are existed in the pre-employment, employment and post-employment stages of PE in J&K. Also, PE experiences several issues in the training of teachers, skills, quality, curriculum pattern and learning ability for schools. In several schools, the enthusiasm for sport enhances due to which many issues arise such as;

1. Lacking of efficient and actual monitoring of PE quality,
2. Lacking of uniform guiding standards,
3. Arbitrary curriculum,
4. The postemployment training is in the form,
5. Lack of efficient teaching research, ,
6. The postemployment training
7. Serious consumption of the post-service PE teachers
8. Low employment rate of PE students
9. Uneven training strength of the unit
10. High number of enrollment as compared to number of teachers
11. Threshold for enrollment reduces,

Such issues occur at the great extent resulting as the nonexistence of advancement of PE curriculum in J&K. There is only onetime final assessment of the practitioner's qualifications even if the qualification certificate for teachers is attained. There is no contribution of such examination in the sustainable development of teachers. Presently, PE research has chiefly focused on universities and colleges only.

Children's physical and psychological progress, body composition (morphology) and functions (biomechanics and physiology), as well as the development and acquisition of motor skills, necessitate specific knowledge for efficient and safe PE instruction. Teaching PE necessitates extensive expertise in pedagogy—the science and teaching art—just like teaching any other subject. Additionally, teachers of PE and the classroom should be educated about the significance of physical activity for children's current as well as future psychological and physical health due to academic performance is linked to health.

Fitzclarence and Tinning (1990) suggested in the early 1990s that three issues remained problematic/unresolved regarding the growth of examinable PE among teachers and students alike. One of these issues was the place of physical activity within an examinable academic subject. According to Macfadyen and Bailey (2002), it was anticipated that the completion of

PE-related qualifications during fundamental curriculum PE lessons by all Key Stage Four students would increase the likelihood of accreditation. A decade later, Green (2008) discovered that GCSE PE took up some or all of the curriculum PE time in some schools. As a consequence of this, there was a worry that assessment courses would, "by adjusting to the prerequisites of a recommended schedule and evaluation methodology," hinder the physical experiences of students, which, as he argued, are the primary contribution that physical education makes to the entire educational process. Because of the way that examinable PE zeros in more on hypothesis than genuine games support, youngsters would be expected to invest more energy in study halls and less time participating in active work during their examples (Green, 2008).

Regarding this, PE educators recognized the following issues with examinable PE instruction: uninteresting theory classes with too much writing that "puts the kids off," not least due to classes often closely trail textbooks to cover the necessary material and get students to sit down, shut up, and get writing (Green, 2008; Salter Examinable PE became "somewhat off-putting to practically oriented students" as a result of this decreased emphasis on practical game contribution in favor of a more theoretical concentration (Green, 2008). Carroll, on the other hand said, "There is no great explanation for why the hypothesis work ought not be shown in a viable circumstance connected with practice or actual schooling." However, the methods of assessment used in academic PE qualifications may have led to such a situation. For instance, in Key Stage Five, A-Level PE now has a theoretical component of 80 percent and a practical component of 20 percent. Similarly, GCSE PE qualifications have traditionally been evaluated through a blend of an assessment and viable games execution, with understudies taking on jobs like entertainer, pioneer, and official as of late. Currently, students receive an examination that accounts for 40% of their complete grade and a controlled evaluation that accounts for 60% of their overall grade (based on four practical sports performances) (Balga, Antala, & Argajová, 2019).

The resulting crisis in secondary school physical education is evident in the decline of schoolchildren's motivation for learning. According to Gavrilov, Komkov, & Malinin (2005), the curriculum does not encourage students to participate in extracurricular activities or PE classes. The particular requirements of postmodern students ought to serve as the foundation for the new curriculum's design. Rethinking the nature of secondary school PE is necessary for this. Based on the standard, normative approach, the traditional class-lesson method of PE no longer adequately aligns pedagogical influences with student physical development regularities; According to Bogdanov (2007), ineffective teaching activities are demonstrated by PE educators functioning within the system who organize students' practical/theoretical actions appropriately.

2. METHODOLOGY

To concentrate on the individual and social change, actual wellness, scholarly accomplishment, and sports execution of rustic and metropolitan understudies of Srinagar, Kupwara and Rajouri to analyze the individual change of provincial and metropolitan understudies of Srinagar, to think about the social change of country and metropolitan understudies of Srinagar, to look at the individual change of rustic and metropolitan young girls of Srinagar, Kupwara and Rajouri to analyze the social change of rustic and metropolitan young female of locale Srinagar, Kupwara and Rajouri, to think about the individual change of country and metropolitan young male of regions Srinagar, Kupwara and Rajouri, to think about the social change of young male of areas Srinagar, Kupwara and Rajouri, to look at the actual wellness of

understudies of area Srinagar, Kupwara and Rajouri, to look at the actual wellness of country and metropolitan young female of locale Srinagar, Kupwara and Rajouri, to analyze the actual wellness of country and metropolitan young male of locale Srinagar, Kupwara and Rajouri, to look at the scholastic accomplishment of country and metropolitan understudies of locale Srinagar, to look at the scholastic accomplishment of country females of locale Srinagar, Kupwara and Rajouri, to analyze the scholastic accomplishment of provincial and metropolitan young male of Srinagar, Kupwara and Rajouri, to analyze the games execution of these region understudies, to analyze the games execution young female of regions Srinagar, Kupwara and Rajouri and to analyze the games execution among young male of areas Srinagar, Kupwara and Rajouri.

It is fundamental with respect to the scientist to test the viability of the examination apparatuses which are being utilized for the information assortment (Brusseu & Hannon, 2015). Thus, a scientist should really take a look at the usefulness, possibility, legitimacy, and dependability of a device prior to applying it for information assortment. The scientist likewise really look at the dependability and legitimacy of the test. Extraordinary consideration was taken to choose just those things which were dependable and substantial. In this review, two self-arranged devices were utilized.

The test is made out of three subjects, Arithmetic, English, and Science. This test was ready in meeting with the teachers. Each subject has 10 inquiries of 01 imprint each, involved low, medium, and high trouble levels. These inquiries depended on information, understanding, and application. The inquiries were taken from the prospectus of the eighth and ninth principles. No regrettable stamping was applied. Understudy, as well as Schools, was surveyed through the imprints acquired by the understudies in their different subject tests viz. Math, English, and Science. The test unwavering quality was built by the specialist with the assistance of the pre-test and post-test technique on the understudies and the pre-dependability was viewed as 0.83 on 169 Cronbach's Alpha scale by SPSS(AAHPER, 1965). This test was directed on 500 understudies. This test had 30 things. Following one month the scientist changed 10 things and the post dependability was viewed as 0.73 on Cronbach's Alpha scale through SPSS. The test has been found to group content validity as an action with the assistance of perspectives communicated by judges.

TABLE 1
DATA SAMPLE IN J&K SCHOOLS FROM THREE DIFFERENT DISTRICTS

Three Districts				
Group	Kupwara	Rajouri	Srinagar	Total
Students	125	125	250	500
Boys	72	61	125	258
Girls	59	58	125	242

Emotional Maturity Scale was utilized to quantify the profound development of offspring of Intelligent and weak auxiliary school understudies. It comprises of five elements close to home solidness, profound movement, social change, character mix and autonomy.

3. RESULTS

While characterizing the example in this review, both the understudies and educators should be thought of. The understudy populace comes from Secondary Schools of Kupwara, Rajouri and Srinagar in a metropolitan setting that reaches from Junior Kindergarten to Grade 12 (n = 500). This school exists in a rural working class city of roughly 250 000 individuals. Three secondary level classes (Grades 7, 8, and 9) partook in the review.

Seventy two educators partook in the review. Thirty two of the educators have post-secondary training in Actual Training (15 and 13 years of showing experience) and forty instructors took a Kinesiology class in secondary school yet has no further conventional preparation well defined for Actual Schooling (5 years of showing experience) beyond their general instructing capabilities. An underlying meeting was led with instructors to accumulate data connected with their showing experience, perspectives, and information connected with Actual Training as well as their evaluation practices and self-guideline draws near. Brief profiles were built for every one of the three taking an interest educators. The illustrative examination to gauge mean and standard deviation was directed to think about and research the connection among prepared and undeveloped PE educators.

TABLE 2
COMPARATIVE ANALYSIS OF SCHOLASTICALLY INTELLIGENT AND WEAK SECONDARY SCHOOL STUDENTS ON SEVERAL ASPECTS OF EMOTIONAL MATURITY

Variables	Group	N	Mean	S.D.	t-value	Level of Significant
Emotional Progression	Intelligent	250	22.66	5.45	11.18	Significant at 0.01 level
	Weak	250	18.53	3.37		
Emotional Stability	Intelligent	250	25.67	6.24	14.98	Significant at 0.01 level
	Weak	250	18.34	3.55		
Personality Integration	Intelligent	250	22.97	5.25	13.69	Significant at 0.01 level
	Weak	250	17.33	3.85		
Social Adjustment	Intelligent	250	24.04	8.38	7.08	Significant at 0.01 level
	Weak	250	20.03	4.75		
Independence	Intelligent	250	22.89	3.66	16.76	Significant at 0.01 level
	Weak	250	17.91	3.62		
Overall Emotional Maturity	Intelligent	250	120.83	17.04	21.79	Significant at 0.01 level
	Weak	250	95.20	12.54		

The table 2 shows the mean examination between scholastically intelligent and the weak secondary school students on different variables and composite score of Emotional Maturity. The table uncovers that scholastically intelligent and the weak secondary school students contrast altogether at 0.01 level on Independence, Personality Integration, Social adjustment, Emotional Progression and Emotional Stability and furthermore vary on composite score at 0.01 degree of profound development.

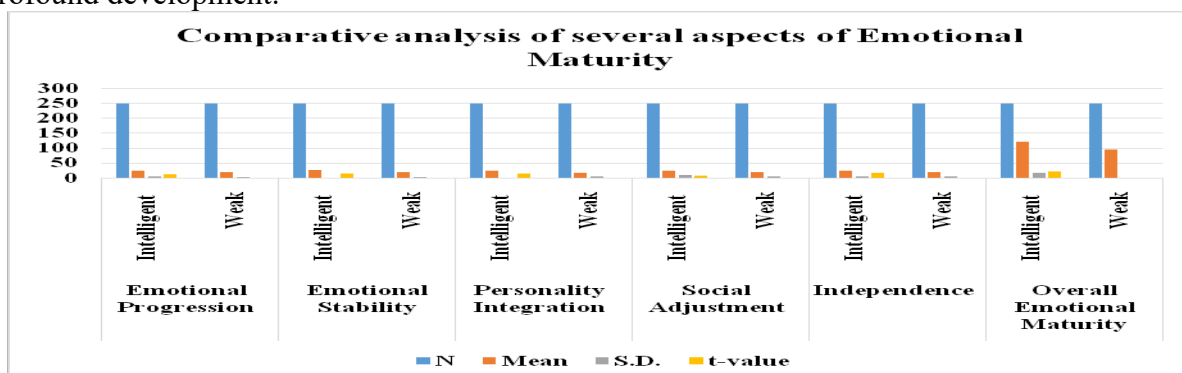


Figure-1: Comparative analysis of several aspects of Emotional Maturity among the secondary level students

This demonstrates that the scholastically intelligent understudies have been viewed as more sincerely progressive and stable, well socially changed, having dynamic intentions and inclinations, inventive and getting a charge out of independency though scholastically weak secondary school understudies have less genuinely steady, sensation of mediocrity, fretfulness, socially maladjusted and having misshaped feeling of the real world and goal interest. Consequently from the affirmation of the above table that scholastically brilliant secondary school understudies have generally speaking preferable Emotional Maturity over scholastically dull secondary school understudies. Thusly the hypothesis No.1 peruses as "Scholastically intelligent and weak secondary school understudies vary essentially on Emotional Maturity", stands acknowledged.

TABLE 3
COMPARATIVE ANALYSIS OF SCHOLASTICALLY INTELLIGENT AND WEAK (MALE) SECONDARY SCHOOL STUDENTS ON SEVERAL ASPECTS OF EMOTIONAL MATURITY

Variables	Group	N	Mean	S.D.	t-value	Level of Significant
Emotional Progression	Intelligent	128	24.69	5.58	7.96	Sig. at 0.01 level
	Weak	130	18.71	4.15		
Emotional Stability	Intelligent	128	25.42	5.96	12.12	Sig. at 0.01 level
	Weak	130	18.81	4.14		
Personality Integration	Intelligent	128	22.82	5.35	8.98	Sig. at 0.01 level
	Weak	130	18.16	3.75		
Social Adjustment	Intelligent	128	25.16	13.15	4.55	Sig. at 0.01 level
	Weak	130	18.98	4.38		
Independence	Intelligent	128	23.18	3.54	8.87	Sig. at 0.01 level
	Weak	130	19.37	3.47		
Overall Emotional Maturity	Intelligent	128	121.78	18.37	13.53	Sig. at 0.01 level
	Weak	130	93.76	11.78		

The table 3 shows the mean correlation between scholastically intelligent male and the weak male secondary school understudies on different variables and composite score of emotional maturity. The table uncovers that scholastically intelligent male and the weak male Secondary School understudies vary fundamentally at 0.01 level on Independence, Personality Integration, Social adjustment, Emotional Progression and Emotional Stability. The two gatherings likewise vary at 0.01 level on composite score of emotional maturity.

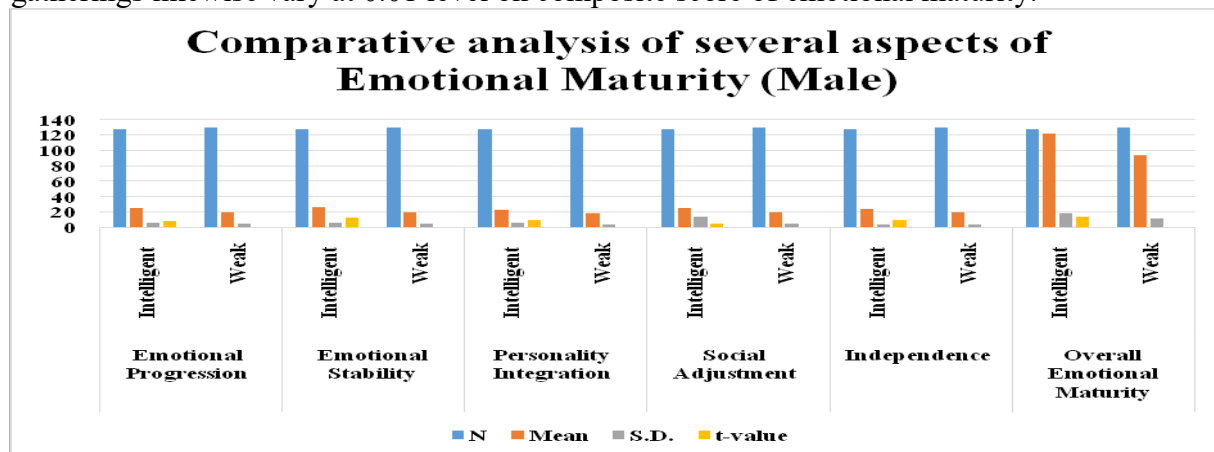


Figure-2: Comparative analysis of several aspects of Emotional Maturity among the secondary level students (Male)

This shows that the scholastically brilliant male understudies have been viewed as more emotionally stable and progressive, well socially adjusted, having dynamic motives and tendencies, creative minded and enjoying independency whereas academically dull male

secondary school students have less emotionally stable, feeling of inferiority, restlessness, socially maladjusted and having distorted sense of reality and objective interest. Consequently from the affirmation of the above table that scholastically intelligent male secondary school understudies have generally speaking preferable Emotional Maturity over scholastically weak male secondary school understudies. Consequently the hypothesis No. 2 peruses as "Scholastically intelligent male and weak male secondary school understudies vary altogether on Emotional Maturity", stands acknowledged.

TABLE 4
COMPARATIVE ANALYSIS OF SCHOLASTICALLY INTELLIGENT AND WEAK (FEMALE) SECONDARY SCHOOL STUDENTS ON SEVERAL ASPECTS OF EMOTIONAL MATURITY

Variables	Group	N	Mean	S.D.	t-value	Level of Significant
Emotional Progression	Intelligent	122	24.11	5.75	7.14	Sig. at 0.01 level
	Weak	120	19.98	3.35		
Emotional Stability	Intelligent	122	27.25	6.66	11.91	Sig. at 0.01 level
	Weak	120	19.84	3.72		
Personality Integration	Intelligent	122	22.98	5.42	8.96	Sig. at 0.01 level
	Weak	120	19.34	3.88		
Social Adjustment	Intelligent	122	23.74	4.54	8.01	Sig. at 0.01 level
	Weak	120	19.24	4.68		
Independence	Intelligent	122	24.98	4.74	12.14	Sig. at 0.01 level
	Weak	120	18.14	3.48		
Overall Emotional Maturity	Intelligent	122	119.88	14.57	17.14	Sig. at 0.01 level
	Weak	120	95.96	11.18		

The table 4 presentations the mean examination between scholastically intelligent female and the weak female secondary school understudies on different elements and composite score of Emotional Maturity. The table uncovers that scholastically splendid female and the dull female Secondary School understudies contrast essentially at 0.01 level on Independence, Personality Integration, Social adjustment, Emotional Progression and Emotional Stability. The two gatherings likewise vary at 0.01 level on composite score of profound development.

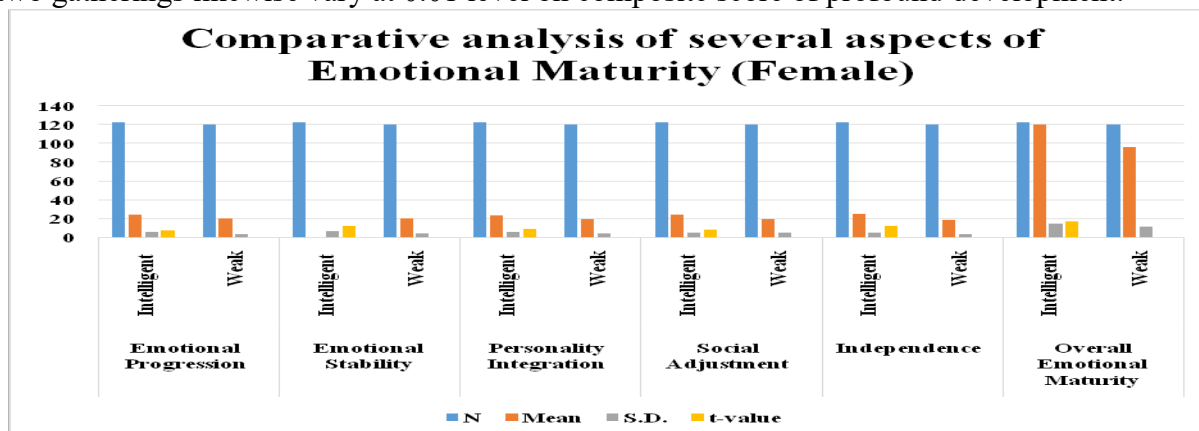


Figure-3: Comparative analysis of several aspects of Emotional Maturity among the secondary level students (Female)

4. DISCUSSION

The hypothesis is "Scholastically intelligent and weak secondary school understudies vary essentially on Emotional Maturity". This hypothesis is recognized due to the substantial differences were described in several constituents of emotional maturity between the young students of secondary school in Kupwara, Rajouri and Srinagar. This demonstrates that the scholastically intelligent female understudies have been viewed as more emotionally stable and

progressive, well socially adjusted, having dynamic motives and tendencies, imaginative and enjoying independency while scholastically dull female secondary school understudies have less emotionally stable, feeling of inferiority, restlessness, socially maladjusted and having distorted sense of reality and objective interest. Hence from the affirmation of the above table that scholastically intelligent female secondary school understudies have generally speaking preferred Emotional Maturity over scholastically weak female secondary school understudies.

Coherent association of information and use of important factual procedure is fundamental for exact and viable examination and translation. Investigation assists the researcher with fostering an adaptable, ready and receptive outlook finish of embraced study. The whole examination of information has been introduced to understand the various goals of the review. The investigation and understanding of information is of extraordinary ramifications. Information doesn't give significant establishment to any exploration work except if it is watchfully altered efficiently, grouped classified, experimentally dissected, shrewdly and judiciously finished up.

In Information examination specialist apply measurable coherent methods by which information is changed into the ends and subsequent outcomes are broke down. Examination is constantly made by either arrangements or recurrence circulation tables, reference diagrams, pie outlines and other measurable system. The examination of information gives educational and precise solutions to the exploration questions and helps in finding the secret truth. The fundamental significance of translation is to foster congruity in research through relating the consequences of given study with those of one more and development of a few new ideas.

In the current examination, the specialist has tried to concentrate on the Close to home development, self-completion, character change and review propensities for scholastically brilliant and dull secondary school understudies by utilizing different mental apparatuses and procedures. The data was gathered from secondary school understudies chasing after their schooling in various govt secondary schools of Kashmir region and was put to reasonable factual examination to come to significant end results in the radiance of goals and speculation. To test the speculations planned for the current examination, the information gathered by utilizing Mean, S.D, t-test and connection. Because of this the two gatherings of understudies scholastically brilliant and scholastically weak secondary school understudies were looked at on close to home development, self-completion, character change, concentrate on propensities. The measurable examination in light of this method has been introduced in a plain structure.

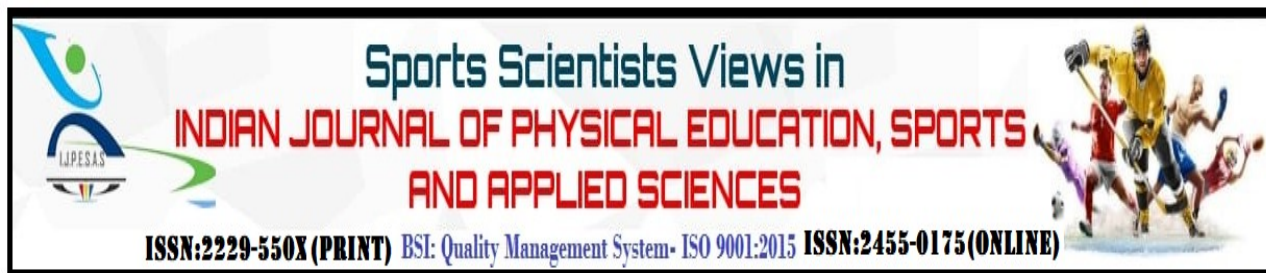
5. CONCLUSION

Our review displays that educators' greater capabilities in arranging as well as conveying PE examples decidedly contribute generally to kids' actual wellness and a smaller amount to their body piece. The outcomes propose that expert PE educators appear to be more viable than generalist instructors in conveying of PE illustrations, regardless of whether the learning climate, offices and accessible hardware are practically the same, assuming the educational program is indistinguishable, and even with a comparative number of youngsters per educator at PE examples. Expert PE instructors appear to convey more compelling PE illustrations of apparently greater power and affect youngsters' engine improvement, however not as critical an impact on their actual turn of events. The items in the educational plan are significant in such manner, and we expect that a more adjusted educational program, remembering accentuation for wellbeing objectives connected with the reduction of kid's corpulence, would impact the body synthesis of the semi test bunch.

In the current examination, the specialist has tried to concentrate on the Close to home development, self-completion, character change and review propensities for scholastically brilliant and dull secondary school understudies by utilizing different mental apparatuses and procedures. The data was gathered from secondary school understudies chasing after their schooling in various government secondary schools of Kashmir region and was put to reasonable factual examination to come to significant end results in the radiance of goals and speculation. To test the speculations planned for the current examination, the information gathered by utilizing Mean, S.D, t-test and connection. Because of this the two gatherings of understudies scholastically brilliant and scholastically weak secondary school understudies were looked at on close to home development, self-completion, character change, concentrate on propensities. The measurable examination in light of this method has been introduced in a plain structure.

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HEALTH-RELATED PHYSICAL FITNESS AMONG INDIAN HIGHER SECONDARY SCHOOL CHILDREN

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ABSTRACT

The main aim of the study was to assess the health-related physical fitness in Indian school children. For this purpose, a cross sectional purposive sample of 437 male children into seven age groups i. e. 12 (N=63), 13(N=59),, 14(N=63),. 15(N=63),, 16(N=63),, 17(N=63) and 18(N=63) years belong to middle (N=215) and higher secondary (N=222) schools. The random sampling method was employed for the purpose of data collection from various schools running in the tribal region of Sarguja division in the state of Chhattisgarh. For estimated body fat percentage of an individual, two skin-fold sites i.e. triceps and sub-scapular were measured by standard Skin-fold Caliper of all the male subjects in millimeters. The measurements were made while the children were wearing light clothes and no shoes. Health-related physical fitness was assessed through the sit-and-reach test for flexibility, modified sit-ups test in one-minute for strength/muscular endurance and nine-minute running/walking test for cardio-respiratory endurance. The subjects were tested within one month of their birthdays. All the subjects were tested in AAHPER health related fitness test items i.e. 1.5 mile run, modified bent knee sit-ups for one minute, sit and reach test and triceps and sub scapular skin folds to collect the data on cardiovascular endurance, strength and endurance of abdominal muscles, flexibility of back and hamstring muscles and amount of fat. From this study, it was concluded that the health related fitness of boys of twelve to eighteen years of age of Sarguja division declined in all age groups on flexibility with advancement of age except fifteen years of age and inclined in all age groups on abdominal strength/muscular endurance and body composition with advancement of age. Which, possibly, may be attributed to the lack of physical activity after the age of fifteen years. They unproved in cardio-respiratory function at twelve to fourteen years of age and later on, they improved significantly up to the age of eighteen years with some fluctuations in time.

Keywords: Health related physical fitness, tribal, school children, Body Mass Index

1. INTRODUCTION

Majority of the Indian population live in rural areas. They depend on agriculture for their livelihood. They carry out different types of physical activities in tribal regions. Various tribal communities are in different stages of development in India, but they are still backward than urban communities. These tribals are aborigines of our country. They have been studied from different angles in their active life. Different types of physical activities in their daily life help them for their physical development. Saha & Haldar (2012) noticed that a healthy body is necessary for increasing the working capacity and maintaining health-related physical fitness of an individual to perform his daily tasks vigorously and alertly, with left-over energy to enjoy leisure time activities. Bandyopadhyay and Bandyopadhyay (2007) investigated the better cardio-respiratory fitness among males than female college students. They also found the higher values of all the physical parameters of health-related fitness in males. Physical fitness is a significant indicator of the health of children and adolescents and also a good predictor of health in later life (Cvejic, Pejovic, Ostojic, 2013).

Physical fitness is defined as the ability of an individual to competently and capably perform everyday tasks without excessive fatigue, and with enough energy remaining to enjoy spending free time, as well as to resolve unusual situations of sudden and unforeseen emergency (Council of Europe, 1983). The cardio-respiratory fitness is one of the most important components of health-related fitness which reflects the total capacity of the cardiovascular and respiratory systems to supply oxygen during assessment of Physical Fitness in Children and Adolescents (Ruiz et al., 2006a). The higher levels of cardio-respiratory fitness in childhood and adolescence are associated with a healthier cardiovascular profile (Ruiz et al., 2009). Physical fitness is a significant indicator of the health of children and adolescents and also a good predictor of health in later life. In recent years interest in the evaluation of fitness has increased in the public domain (Cvejic, Pejovic, Ostojic, 2013).

Health-related physical fitness refers to cardio-respiratory fitness, muscular strength, speed-agility and body composition (Moliner-Urdiales et al., 2010). The components of health-related fitness depend on constitutional/genetic differences (Bouchard, 1993a), they are affected by habitual physical activity and are related to health status (Bouchard, 1993). The performance in cardio-respiratory fitness, muscular strength, speed-agility and body composition (health-related physical fitness variables) was generally higher in older girls. Interventions to promote health-related physical fitness should not only consider gender and age of schoolchildren, but also selected socio-demographic and behavioral factors (Bazyar and Shabani, 2014). Saha, G.C and Haldar, S (2012). showed the significant difference between rural and urban school-going children in all the health-related physical fitness components as well as the reaction ability. Rural school-going children were found better than urban school-going children. Deep, Singh and Kanchan (2012) showed that the static strength of rural children's was significantly higher than the urban school children. But there was no significant difference of speed, explosive strength, flexibility and cardiovascular endurance components between urban and rural primary school children. Taleja. (1986) resulted insignificant difference in the physical fitness between rural and urban high school students, and have no significant difference in physical fitness between rural and urban high school students

Interventions to promote health-related physical fitness should not only consider gender and age of schoolchildren, but also selected sociodemographic and behavioral factors, especially socioeconomic class and leisure activities (Guedes et al. 2012).

Dutt (2005) indicated the improper development of muscular strength endurance in boys which may be due to their habitual life style for an attractive physical appearance. Down fall of body fat percent was observed among boys in 8 to 13 years of age groups and Sharpe rise in body fat% was exhibited after the age of 14 years to 17 years of age.

Worldwide health planners have been reported the importance of the contribution of health Education and physical Fitness in the development of total fitness among children.(Knuttgen, 1961; Campbell & Pohndof, 1961; Sloan, 1966; Hebbelinck and Borms, 1969; Ruskin, 1978 and J (Ishiko, 1978).

Many researchers have been conducted studies on Health-related physical fitness which refers to cardio-respiratory fitness, muscular strength, speed-agility and body composition components of boys and girls in different age groups (Benhnke & Wilmore, 1974; Nelson and dorociak, 1982; Haywood, Clarke & Mayhew,1986; AAHPER, 1987; Shephard, Berridge & Montelpare, 1990; Cureton & Warren, 1990 Muhammad, 1998; Kumar and Sathe,1999).

2. METHODOLOGY

2.1 Selection of Sample:

The study has been conducted on a cross sectional purposive sample of 437 male children into seven age groups i. e. 12 (N=63), 13(N=59),, 14(N=63),. 15(N=63),, 16(N=63),, 17(N=63) and 18(N=63) years belong to middle (N=215) and higher secondary (N=222) schools. The random sampling method was employed for the purpose of data collection from various schools running in the tribal region of Sarguja division in the state of Chhattisgarh.

2.2 Criterion Measure:

For estimated body fat percentage of an individual, two skin-fold sites i.e. triceps and sub-scapular were measured by standard Skin-fold Caliper of all the male subjects in millimeters. The measurements were made while the children were wearing light clothes and no shoes. Health-related physical fitness was assessed through the sit-and-reach test for flexibility, modified sit-ups test in one-minute for strength/muscular endurance and nine-minute running/walking test for cardio-respiratory endurance.

2.3 Instrumentation :

The subjects were tested within one month of their birthdays. All the subjects were tested in AAHPER health related fitness test items i.e. 1.5 mile run, modified bent knee sit-ups for one minute, sit and reach test and triceps and sub scapular skin folds to collect the data on cardiovascular endurance, strength and endurance of abdominal muscles, flexibility of back and hamstring muscles and amount of fat.

2.4 Anthropometric and Physical Fitness Measurements:

Triceps skin-fold

The tester stood behind the participant and picked up the skin-fold about 1 cm above the midpoint mark over the triceps muscle (at the back of the upper arm), with the fold running downward along the midline of the back upper arm. The caliper jaws were applied at right angles to the neck of the fold just below the finger and thumb over the midpoint mark. While maintaining a grip on the skin-fold, the tester gently released the caliper handles and allowed the jaws to close on the fat fold for two seconds before taking the reading.

Sub-scapular skin-fold

The sub-scapular skin-fold is picked up on a diagonal, inclined inferior - laterally approximately 45° to the horizontal plane in the natural cleavage lines of the skin. The site is just inferior to the lower angle of the scapula. The caliper jaws were applied 1 cm inferior - lateral to the thumb and finger raising the fold

Sit and reach test

Purpose: The purpose of the sit and reach is to evaluate the flexibility (extensibility) of the low back and posterior thighs. Equipment: The testing apparatus of 12x12 inches made from ¾ inch plywood with a scale marked on the top of the box which extended an additional 9 inches (21 inches over all) towards the subject to be tested Procedure: The subject were asked to remove their shoes and place his feet against the testing box while sitting on floor with straight knees. The finger tips of the subject were on the edge of the top of box. The tester kept his hand on the knees of the subject to keep them straight not allowing any bending of the knees. The subject was instructed to lean forward and was asked to slide his hand along the measuring scale as far as possible without bouncing and to hold the farthest position for at least one second. Scoring: Each subject was given three trials and the best lean forward was considered as score nearest to a cm, was recorded and 9 inches (12.93 cm) subtracted from the recorded reading to obtain the flexibility scores

Modified Sit-ups

Purpose: To measure the abdominal strength and endurance. Equipment: Stop watch, Mat Procedure: The maximum number of sit-ups achieved in 60 seconds was recorded. The subjects were instructed to keep their arms across the chest while curling up to a sitting position until their elbows touched their thighs. This test gave us insight into abdominal strength and endurance. One trial was given.

1.5 mile run/walk

Purpose: The purpose of the one-mile run is to measure maximal functional capacity and endurance of the cardio-respiratory system. Equipment: One and half mile run can be administered on a 400 meter or 200 meter or on any other flat, measured area. Test Description: Students are instructed to run one mile in the fastest possible pace. The students begin on signal, "ready, start" as they cross the finish line elapsed time should be announced to the participants. Walking is permitted, but the objective is to cover the distance in the shortest possible time. Scoring: The one-mile run is scored to the nearest of a second and the performance should be recorded on the individual score card.

Statistical Analysis:

To analyse the Health-related physical fitness parameters and anthropometric characteristics of male school children, means and standard deviations were computed. For the computation of collected data, SPSS software 16.0 was used.

3 RESULTS AND DISCUSSION

To assess the health-related physical fitness on its four components and anthropometric characteristics of male school children ranging between twelve to eighteen years of age, means and standard deviations were computed. The data pertaining to this has been presented in table 1 and 2 and has been depicted in figure 1 to 4.

**TABLE 1
MEANS AND STANDARD DEVIATIONS OF HEALTH-RELATED PHYSICAL FITNESS
IN SCHOOL CHILDREN**

Age (Years)	Frequency (Subject)	Modified Sit-Ups (Numbers)	1.5 mile Run (Minute-Second)	Sit and Reach (cm.)	Body Composition
12	63	17.14 ±4.24	14.65 ±1.36	26.88 ±4.56	09.19 ±1.57
13	59	19.39 ±6.24	14.64 ±1.71	28.04 ±4.70	09.25 ±1.83

14	63	22.97 ±5.87	14.16 ±1.81	30.19 ±5.26	10.00 ±1.83
15	63	21.95 ±5.74	12.26 ±1.80	24.98 ±5.62	10.87±1.49
16	63	23.05 ±6.58	12.07±0.98	29.22 ±8.45	11.19 ±1.63
17	63	25.46 ±6.46	12.39 ±1.23	30.25 ±8.00	11.79 ±2.64
18	63	27.54 ±6.33	12.05 ±1.51	33.74 ±5.91	12.37 ±2.13

The mean scores of male school children ranging between twelve to eighteen years of age on different components of health-related physical fitness have been depicted in figure 1 to 4

TABLE 2
ANALYSIS OF VARIANCE ON FOUR COMPONENTS OF HEALTH RELATED PHYSICAL FITNESS OF MALE CHILDREN OF TWELVE TO EIGHTEEN YEARS OF AGE

Fitness Components	Sources of Variance	df	Sum of Squares	Mean Square	F-Value
Modified Sit-Ups	Between Groups	6	4582.19	763.69	21.44*
	Within Groups	430	15314.70	35.62	
Cardio-respiratory function	Between Groups	6	569.66	94.94	41.38*
	Within Groups	430	984.38	2.29	
Sit and Reach	Between Groups	6	2996.38	499.39	12.63*
	Within Groups	430	17002.61	39.54	
Body Composition	Between Groups	6	407.91	67.98	18.57*
	Within Groups	430	1574.65	3.66	

*Significant at .05 level

F.05 (6, 430)=2.12

From data presented in table 2, it can be observed that there were significant differences among the different age groups of male school children on different components of health related physical fitness i.e. cardio-respiratory function, modified sit-ups, sit and reach test and body composition, as the obtained F-values of 21.44, 41.38, 12.63 and 18.57 respectively were much higher than the require value of F.05 (6, 430)=2.12

As the F-ratio on four components of health related physical fitness was found to be significant, Scheffe’s Test of Post-hoc comparisons was applied to find out the significance of difference between ordered paired means of different age group and data pertaining to this , have been presented in table 4 to 8 and depicted in figure 1 to 4

TABLE 3
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS FOR BOYS OF TWELEVE TO EIGHTEEN YEARS OF AGE ON MODIFIED SIT-UPS

Age in Years								
12	13	14	15	16	17	18	MD	C.I.
17.14	19.39	-	-	-	-	-	2.25	3.86
17.14	-	22.97	-	-	-	-	5.83*	3.81
17.14	-	-	21.95	-	-	-	4.81*	3.81
17.14	-	-	-	23.05	-	-	5.91*	3.81

17.14	-	-	-	-	25.46	-	8.32*	3.81
17.14	-	-	-	-	-	27.54	10.40*	3.81
-	19.39	22.97	-	-	-	-	3.58	3.86
-	19.39	-	21.95	-	-	-	2.56	3.86
-	19.39	-	-	23.05	-	-	3.66	3.86
-	19.39	--	-	-	25.46	-	6.07*	3.86
-	19.39	-	-	-	-	27.54	8.15*	3.86
-	-	22.97	21.95	-	-	-	1.02	3.81
-	-	22.97	-	23.05	-	-	0.08	3.81
-	-	22.97	-	-	25.46	-	2.49	3.81
-	-	22.97	-	-	-	27.54	4.57*	3.81
-	-	-	21.95	23.05	-	-	1.10	3.81
-	-	-	21.95	-	25.46	-	3.51	3.81
-	-	-	21.95	-	-	27.54	5.59*	3.81
-	-	-	-	23.05	25.46	-	2.41	3.81
-	-	-	-	23.05	-	27.54	4.49*	3.81
-	-	-	-	-	25.46	27.54	2.08	3.81

*Significant at .05 level

The data in table 3 clearly reveal that mean difference between twelve - thirteen; thirteen - fourteen followed by fifteen and sixteen; between fourteen - fifteen followed by sixteen and seventeen; between fifteen - sixteen followed by seventeen; sixteen and seventeen and between seventeen - eighteen were not found statistically significant, as the confidence intervals were higher than the mean differences. The data clearly indicate that abdominal strength improved with age, till the age of 18 years.

TABLE 4
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS FOR BOYS OF TWELVE TO EIGHTEEN YEARS OF AGE ON CARDIO-RESPIRATORY FUNCTION

Age in Years								
12	13	14	15	16	17	18	MD	C.I.
14.65	14.64	-	-	-	-	-	0.01	0.275
14.65	-	14.16	-	-	-	-	0.49	0.271
14.65	-	-	12.26	-	-	-	2.39*	0.271
14.65	-	-	-	12.07	-	-	2.58*	0.271
14.65	-	-	-	-	12.39	-	2.26*	0.271
14.65	-	-	-	-	-	12.05	2.60*	0.271
-	14.64	14.16	-	-	-	-	0.48	0.275
-	14.64	-	12.26	-	-	-	2.38*	0.275

-	14.64	-	-	12.07	-	-	2.57*	0.275
-	14.64	--	-	-	12.39	-	2.25*	0.275
-	14.64	-	-	-	-	12.05	2.59*	0.275
-	-	14.16	12.26	-	-	-	1.90	0.271
-	-	14.16	-	12.07	-	-	2.09*	0.271
-	-	14.16	-	-	12.39	-	1.77*	0.271
-	-	14.16	-	-	-	12.05	2.11*	0.271
-	-	-	12.26	12.07	-	-	0.19	0.271
-	-	-	12.26	-	12.39	-	0.13	0.271
-	-	-	12.26	-	-	12.05	0.21	0.271
-	-	-	-	12.07	12.39	-	0.32	0.271
-	-	-	-	12.07	-	12.05	0.02	0.271
-	-	-	-	-	12.39	12.05	0.34	0.271

*Significant at .05 level

It is evident from table 4 that the mean difference between twelve - thirteen followed by fourteen; between thirteen - fourteen; and among fifteen to eighteen years of age was not statistically significant, as the confidence intervals were higher than the mean difference. The results clearly indicated that male school children do not differ in cardiovascular endurance from twelve to fourteen years of age. It means, it unproved at 12 to 14 years of age and later on, it improved significantly up to the age of eighteen years with some fluctuations.

TABLE 5
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS FOR BOYS OF TWELVE TO EIGHTEEN YEARS OF AGE ON SIT AND REACH

Age in Years								
12	13	14	15	16	17	18	MD	C.I.
26.88	28.04	-	-	-	-	-	1.16	4.07
26.88	-	30.19	-	-	-	-	3.31	3.99
26.88	-	-	24.98	-	-	-	1.19	3.99
26.88	-	-	-	29.22	-	-	2.34	3.99
26.88	-	-	-	-	30.25	-	3.37	3.99
26.88	-	-	-	-	-	33.74	6.68*	3.99
-	28.04	30.19	-	-	-	-	2.15	4.07
-	28.04	-	24.98	-	-	-	3.06	4.07
-	28.04	-	-	29.22	-	-	1.18	4.07
-	28.04	--	-	-	30.25	-	2.21	4.07
-	28.04	-	-	-	-	33.74	5.70*	4.07
-	-	30.19	24.98	-	-	-	5.21*	3.99

-	-	30.19	-	29.22	-	-	0.97	3.99
-	-	30.19	-	-	30.25	-	0.06	3.99
-	-	30.19	-	-	-	33.74	3.55	3.99
-	-	-	24.98	29.22	-	-	4.24*	3.99
-	-	-	24.98	-	30.25	-	5.27*	3.99
-	-	-	24.98	-	-	33.74	8.76*	3.99
-	-	-	-	29.22	30.25	-	1.03	3.99
-	-	-	-	29.22	-	33.74	4.52*	3.99
-	-	-	-	-	30.25	33.74	3.49	3.99

*Significant at .05 level

It is quite obvious from table 5 that mean difference between twelve - thirteen followed by fourteen, fifteen, sixteen and seventeen; between thirteen - fourteen followed by fifteen, sixteen and seventeen ; between fourteen - sixteen followed by seventeen and eighteen; between sixteen - seventeen years of age were statistically insignificant, as the respective confidence intervals were higher than the mean differences. It is observed that the flexibility of hamstring and back muscle did not improved up to eighteen years of age.

TABLE 6
SIGNIFICANCE OF DIFFERENCES BETWEEN ORDERED PAIRED MEANS FOR BOYS
OF TWELVE TO EIGHTEEN YEARS OF AGE
ON BODY COMPOSITION

Age in Years								
12	13	14	15	16	17	18	MD	C.I.
9.19	9.25	-	-	-	-	-	0.06	1.24
9.19	-	10.00	-	-	-	-	0.81	1.22
9.19	-	-	10.87	-	-	-	1.68*	1.22
9.19	-	-	-	11.19	-	-	2.00*	1.22
9.19	-	-	-	-	11.79	-	2.60*	1.22
9.19	-	-	-	-	-	12.37	3.18*	1.22
-	9.25	10.00	-	-	-	-	0.75	1.24
-	9.25	-	10.87	-	-	-	1.62*	1.24
-	9.25	-	-	11.19	-	-	1.94*	1.24
-	9.25	--	-	-	11.79	-	2.54*	1.24
-	9.25	-	-	-	-	12.37	3.12*	1.24
-	-	10.00	10.87	-	-	-	0.87	1.22
-	-	10.00	-	11.19	-	-	1.19	1.22
-	-	10.00	-	-	11.79	-	1.79*	1.22
-	-	10.00	-	-	-	12.37	3.73*	1.22
-	-	-	10.87	11.19	-	-	0.32	1.22
-	-	-	10.87	-	11.79	-	0.92	1.22
-	-	-	10.87	-	-	12.37	1.50	1.22
-	-	-	-	11.19	11.79	-	0.60	1.22
-	-	-	-	11.19	-	12.37	1.18	1.22
-	-	-	-	-	11.79	12.37	0.58	1.22

*Significant at .05 level

It is quite obvious from table 6 that mean difference between twelve - thirteen followed by fifteen; between thirteen and fourteen; between fourteen - fifteen followed by sixteen; between fifteen - sixteen ; between sixteen - seventeen; and between seventeen - eighteen years of age were statistically insignificant, as the respective confidence intervals were higher than the mean differences. It indicate that the amount of accumulated fat increased with age, though the increase was insignificant through age.

4. DISCUSSION

The present study investigated the health related physical fitness of male school children aged between 12 and 18 years, who regularly enrolled in the middle and higher secondary schools. The investigation was performed with a large sampling from selected tribal region of Sarguja in Chhattisgarh, The children of this region did not have a good socio-economic condition, which can affect the health of the children.

The male school children in all analyzed age groups resulted significant differences. A declined tendency was observed among male school children in all age groups on flexibility except fifteen years of age. It clearly indicates that the flexibility of hamstring and back muscle did not improved up to eighteen years of age..

The analysis of data using ANOVA, Scheffe's Test shows that variance exists among different age groups and male sex in health related physical fitness components.

The low levels of flexibility are especially of concern for the associated risks to low back pain and higher incidence of postural problems, besides a possible explanation for the low school performance (Hoekstra, et.al., 2008; Kwon, Bums and Janz, 2010). The children with low levels of flexibility in the school period reported more back pain in adulthood (Kwon, Bums & Janz, 2010). Similar data have been reported in research from other countries (Powell, et.al., 2009).

In case of abdominal strength/muscular endurance, statistically significant differences were observed among male school children in all analyzed age groups . A inclined tendency was seen among male school children in all age groups on abdominal strength/muscular endurance . It indicate that abdominal strength /muscular endurance improved with age. The inadequate levels of abdominal strength/ endurance may cause postural and articular problems, as well as musculoskeletal injuries (Plowman, 2005 and Plowman, et.al., 2006).

The results of the ANOVA revealed the significant differences among male school children of tribal region in their cardio-respiratory function. This was supported by Sharma (2003), Singh (2005), and Derri et al. (2004). They unproved in cardio-respiratory function at twelve to fourteen years of age and later on, they improved significantly up to the age of eighteen years with some fluctuations in time. The results clearly indicated that male school children of twelve to thirteen years of age do not differ significantly in cardiovascular endurance. This is a fact that low aerobic fitness is associated with high levels of cholesterol and triglyderides (Williams,2001, Myers, 2004) imbalanced blood pressure and insulin sensitivity (Moreira et.al., 2011) and higher obesity risk (Ortega et.al., 2008) This study was supported by Sharma (2003), Singh (2005), and Derri et al. (2004).

Results of ANOVA also indicated the significant difference among the different age groups of male school children on body composition component of health related physical fitness. The amount of accumulated fat increased with age. All male children were found under normal fat category. The excess body fat is linked with the risk of chronic diseases like blood

pressure, diabetes, hypertension etc.(Sourenson and Sonne, 1988; Mossberg, 1989). Fatty children become fat adults in their later part of life (Serdula et al.,1993).

Growth and body composition affects physical fitness in children (Pate et al., 1989; Taylor & Baranowski, 1991; Malina, 1995; Pejicic et. al., 2004). The fatness negatively affects health related physical fitness and performance related physical fitness (Malina, 1995)

5. CONCLUSIONS

1. Male school children of twelve to eighteen years of age differed significantly on all components of health related physical fitness i.e. cardio-respiratory endurance, abdominal strength and endurance, flexibility of back and hamstring muscles and body composition,
2. Abdominal strength of male school children improved with advancement of age.
3. The male school children of twelve to thirteen years of age do not differ in cardiovascular endurance. It unproved at fourteen and fifteen years of age and later on, it did not improve significantly up to the age of eighteen years.
4. The flexibility of hamstring and back muscles improved up to eighteen years of age, but declined in age of fifteen years.
5. Male school children were found to have tendency to accumulate the fat increased with advancement of age.

6. SUGGESTIONS

Thus, the authors emphasize the need for educational policies which consider the benefits of adequate levels of motor performance to health during the entire school life, promoting hence the development of these health indicators in school.

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