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A Comparative Study of the Optimum Health and Health-Related Physical Fitness Level of State Level Players Boys and Girls at MBSPSU, Patiala

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Abstract

The study's goal was to compare state-level player girls' and boys' optimal health and health-related physical fitness. Thirty individuals, including male and female state-level players from the Patiala district of Punjab, India, were chosen via purposeful random sampling. There were two distinct groups formed: There were fifteen participants in each group (15 females and 15 boys), with Group 1 being made up of girls and Group 2 being made up of boys. The variables of Optimum Health and Health-Related Physical Fitness were used to compare the two independent groups. A standardized Optimum Health Scale questionnaire was used to measure optimal health, and the AAHPER test was used to measure health-related physical fitness. The statistical technique used was the independent t-test with a confidence level of 0.95. The results showed that there was no discernible difference in Optimum Health between boys and girls at the state level, indicating that both groups retain a comparable degree of social, emotional, and mental well-being. Health-related physical fitness, on the other hand, showed a notable variation that may be explained by physiological variations, training intensity, and demands unique to a certain sport. Male athletes frequently exhibit greater levels of muscular strength and aerobic ability, but female athletes may excel in flexibility and balance, according to earlier studies. Fitness results can also be influenced by elements including diet, the caliber of coaching, and training facility accessibility.

Keywords: Comparative study, gender comparison, health-related physical fitness, optimum health, sports performance, state-level players

INTRODUCTION

The idea of health and fitness has become extremely important in the current era of physical education and sports science, particularly when it comes to competitive sports. Health is now seen as a multifaceted concept rather than just the absence of illness [1–11]. The World Health Organization [12]. (1948) defines health as a state of whole physical, mental, and social well-being. This notion emphasizes that psychological stability and social adaptation are just as important to an athlete's performance as physical strength. To continually perform at greater levels, athletes must reach optimal health. This perspective is further reinforced by the notion of health-related physical fitness. According to Caspersen C. J., Powell K. E., and Christenson G. M [5]. (1985), physical fitness is a collection of characteristics that people have or attain that are connected to their capacity

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for engaging in physical activity. Cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition are some of these characteristics. Maintaining these elements at their best is essential for athletes' long-term engagement in sports, injury prevention, and performance enhancement.

Furthermore, health-related fitness is strongly linked to general wellness and quality of life, according to Corbin C. B. and Welk G. J [6]. (2018). They proposed that regular exercise enhances psychological and physical well-being, which eventually leads to improved athletic performance. According to Kenney W. L., Wilmore J. H., and Costill D. L [8]. (2015), an athlete's capacity to maintain high-intensity activities is mostly dependent on physiological efficiency, which includes oxygen uptake, muscle strength, and energy metabolism. The idea of optimal health incorporates several aspects, including emotional, social, and spiritual well-being, in addition to overall fitness. The Optimum Health Scale was created by Kumar P. and Bala L [7]. (2016) to assess these various aspects, highlighting the fact that genuine health encompasses more than just physical fitness. This all-encompassing strategy is especially crucial for athletes who deal with stress, competitive pressure, and rigorous training regimens. Additionally, gender disparities in health and physical fitness have been extensively documented in sports studies. According to Bouchard C., Shephard R. J., and Stephens T [4]. (1994), performance outcomes between males and females are greatly influenced by biological factors such hormonal variations, muscle mass distribution, and aerobic capacity. Similarly, Bompa T. O. and Buzzichelli C [3]. (2019) emphasized the significance of creating gender-specific training regimens to optimize athletic potential and lower injury risk. Comparative research is, therefore, necessary to comprehend the differences between male and female athletes' optimal health and health-related physical fitness. Coaches, trainers, and physical educators can use these studies' insightful findings to create training programs that are grounded in science. Additionally, they support a balanced approach to sports development at the competitive level, enhance performance, and preserve athlete health.

Study Focus

The primary focus of this research is to bridge the gap in understanding how gender correlates with health and fitness in competitive university-level sports. The study is centered on the following key objectives:

- *Comparative assessment:* To quantitatively compare the levels of Optimum Health and Physical Fitness between male and female state-level players.
- *Health profiling:* To evaluate the holistic health status (physical, mental, and social) using a standardized Optimum Health Scale, moving beyond simple medical check-ups.
- *Fitness quantification:* To measure specific physical attributes—such as speed, agility, and endurance—through the globally recognized AAHPER (American Alliance for Health, Physical Education, and Recreation) Youth Fitness Test.
- *Institutional analysis:* To observe how the specialized training environment at MBSPSU, Patiala, influences the fitness standards of its athletes across different genders.
- *Scientific contribution:* To provide data-driven insights that can assist coaches, physical educators, and sports scientists in designing gender-specific training and nutritional interventions to optimize player performance.

METHODOLOGY

Research Design

The sample for this study was chosen using random sampling, a probability sampling technique. This study include health related fitness test. C optimal health scale (Questionnaire). The sample is selected randomly state level player from BPES and MPES class students of The Maharaja Bhupinder Singh Punjab Sports University, Patiala district. Using a random sampling technique, a total of thirty students make up the study's sample. Physical, mental, emotional, social, and spiritual well-being

were all measured by the optimal health scale. Health relate fitness test item for state level players boys and girls, 50m run for both boys and girls, Broad jump for both boys and girls, 4×10 M shuttle-run for both boys and girls, 600meter run/walk for both boys and girls, pull up for boys and Flexed-Arm Hang for girls, sit-ups for both boys and girls of state Level players from the department of physical education (Table 1)

Population and Sample

SAMPLE SIZE: The sample of the present study is 30 students Group 1, 15 subjects (15) boys) from BPES and MPES C Group 2, 15 subjects (15) girls) from BPES and MPES. The sample is selected through the random sampling technique (Table-2).

Sampling Technique

To fulfill the purpose of the study probability sampling technique is used (simple random sampling) so that every subject get the equally chance to get select as a sample for the present study. The sample was chosen at random from the Maharaja Bhupinder Singh Punjab Sports University's physical education department in Patiala (Table-3).

Tools of the study

To measure the physical fitness test, items were selected for data collection through The AAHPER health related fitness test battery for adults. To check the result of present physical fitness test C feasibility of the standardized Test items for state level players students, only six test items got selected (Table-4).

Selection of the Test Items

The present study is compared the two groups boys group N-30 (1:15 boys)] C 2 girls group N-30 (15 girls)] on optimum health C health related fitness level of state level players. For the present study health related fitness test will be use for data collection through AAHPER health related fitness test battery for adults. For the requirement of the study and feasibility of the researcher test item for state level players only six test item is selected for the assessment of health related.

Table 1. Aahper Test.

S.N.	Test items	Measure	Author C year of construction	Data recorded
1	Optimum health scale	Optimum health	Dr. Pravin Kumar C Dr. Loveleen Bala, 2016	
2	Pull-Ups (boys)	Upper body strength	American Association for Health, Physical Education, and Recreation (AAHPER) 1958	Total count (pull-ups)
3	Flexed-Arm Hang (girls)	Upper body strength	AAHPER 1958	Time in sec. (hang)
4	Sit-Ups	Abdominal strength and endurance	AAHPER 1958	Total number of correct repetiton
5	Shuttle Run (10×5 yards)	Speed and agility	AAHPER 1958	Time to the nearest 10^{th} of a sec.
6	Standing Broad Jump	Leg power	AAHPER 1958	Distance from take-off line to closest heel
7	50-Yard Dash	speed	AAHPER 1958	Time to the nearest 10^{th} of a sec.
8	600-Yard Run/Walk	Cardiovascular endurance	AAHPER 1958	Time minutes and sec.

Table 2. Comparison of Optimum Health (OH). This measures the holistic health of the 15 boys and 15 girls.

Gender	N	Mean	S.D.	t-value	Result(p<0.05)

Girls	15	171.0	6.57		
Boys	15	170.0	12.25	-0.279	Not significant

Table 3. Component-wise Analysis of Physical Fitness (AAHPER Test).

S.N.	Fitness components	Girls (mean)	Boys (mean)	t-value	Result
1	Arm hang & pull-ups	5.76	9.07	3.27	Significant
2	50m Dash	9.93	7.53	-5.57	Significant
3	Shuttle Run	20.76	15.99	-6.63	Significant
4	Sit-ups	37.0	46.6	3.35	Significant
5	Broad jump	1.49	2.24	8.62	Significant
6	600-Yard run/walk	3.03	2.73	-2.52	Significant

Table 4. Data (Boys).

S.N.	Name	50m Dash	Sit-ups	Broad jump	Pull-ups	600Yard Run/Walk	Shuttle run	Optimum health
1	A	6.91 sec	50	2.06mtr	6	2.13 min	15.33 sec	170
2	B	9.46 sec	39	2.18mtr	7	3.04 min	15.73 sec	177
3	C	8.16 sec	39	2.30mtr	5	3.06 min	15.94 sec	187
4	D	6.64 sec	62	2.45mtr	13	3.05 min	16.52 sec	157
5	A	6.81 sec	45	1.96mtr	6	2.50 min	15.89 sec	161
6	B	6.20 sec	54	2.46mtr	10	2.10 min	16.54 sec	165
7	C	7.50 sec	36	2.10mtr	10	2.36 min	16.09 sec	177
8	D	7.68 sec	49	1.96mtr	8	2.30 min	16.25 sec	144
9	A	7.20 sec	57	2.21mtr	12	3.07 min	16.00 sec	164
10	B	6.95 sec	60	1.91mtr	5	2.54 min	16.54 sec	183
11	C	8.53 sec	33	2.40mtr	20	3.06 min	15.32 sec	172
12	D	8.55 sec	37	2.40mtr	10	3.06 min	15.70 sec	163
13	A	6.71 sec	49	2.12mtr	7	2.58 min	16.07 sec	181
14	B	7.42 sec	50	2.74mtr	10	3.04 min	16.00 sec	162
15	C	8.26 sec	39	2.39mtr	7	3.10 min	15.94 sec	187

Data Collection

To measure the physical fitness test, items were selected for data collection through The AAHPER health related fitness test battery for adults. To check the result of present physical fitness test C feasibility of the standardized Test items for state level players students, only six test items got selected.

Administration of Data Collection (Optimum Health)

This is likert five point scale, which have five dimensions as Physical Health, Mental Health, Social Health, Emotional Health and Spiritual Health. This questionnaire 1. Strongly Agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree. Before fill this includes 45 test items. This questionnaire has one statement and each statement have five options questionnaire the subject has to read carefully and tick on one option from five as per his/her opinion.

Scoring: Questionnaire includes positive and negative test items. Positive test items scoring is 5.4.3.2.1 and negative test items scoring is 1.2.3.4.5. The total of 45 test items is compared with the standardized norms. (Table-5).

Statistical Tool

The data collected for the study were statistically analyzed using the independent t-test to determine the significant differences between state-level male and female players. For both variables, descriptive statistics like Mean and Standard Deviation were computed. To test the hypotheses, the significance threshold was chosen at 0.05 (Table-2).

RESULTS

Table 5. Data (girls).

S.N.	Name	50m Dash	Sit-ups	Broad jump	Pull-ups	600Yard Run/Walk	Shuttle run	Optimum health
1	A	9.40 sec	42	1.29mtr	5.77	3.13 min	20.34 sec	168
2	B	11.58 sec	33	1.55mtr	5.74	3.01 min	17.06 sec	179
3	C	7.82 sec	43	1.59mtr	5.88	2.53 min	22.78 sec	170
4	D	7.92 sec	49	1.67mtr	6.00	3.12 min	23.02 sec	175
5	A	10.03 sec	31	1.17mtr	5.76	3.10 min	21.49 sec	170
6	B	9.01 sec	39	1.70mtr	5.56	3.13 min	16.36 sec	160
7	C	10.58 sec	33	1.53mtr	5.13	3.22 min	23.35 sec	179
8	D	11.29 sec	31	1.27mtr	6.01	3.27 min	23.00 sec	160
9	A	8.69 sec	49	2.10mtr	6.02	2.51 min	16.64 sec	167
10	B	7.83 sec	33	1.63mtr	5.43	2.56 min	23.52 sec	167
11	C	9.97 sec	34	1.27mtr	6.05	3.22 min	19.43 sec	184
12	D	11.01 sec	35	1.27mtr	5.79	3.20 min	23.17 sec	172
13	A	10.61 sec	39	1.59mtr	5.61	3.12 min	21.01 sec	170
14	B	11.12 sec	34	1.24mtr	6.62	3.21 min	23.20 sec	173
15	C	12.01 sec	30	1.20mtr	6.02	3.25 min	17.00 sec	171

DISCUSSION OF THE RESULT

1. There was no significant difference between state-level (Punjab) girls and boys on Optimum Health.
2. There is significant difference found between state-level girls and boys on Arm hang and Pull-Ups.
3. There is significant difference found between state-level girls and boys on 50m dash.
4. There is significant difference found between state-level girls and boys on Shuttle run.
5. There is significant difference found between state-level girls and boys on Sit-Ups.
6. There is significant difference found between state-level girls and boys on Broad jump.
7. There is significant difference found between state-level girls and boys on 600-Yard Run/Walk.

CONCLUSIONS

The following conclusions were drawn from the results:

1. There was a significant difference in health-related physical fitness between male and female state-level (Punjab) athletes.
2. When it came to optimal health, there was no significant difference between male and female state-level (Punjab) athletes.

REFERENCES

1. Hunsicker PA, Reiff GG. AAHPER youth fitness test manual. American Alliance for Health, Physical Education, and Recreation; 1976,1-91 https://files.eric.ed.gov/fulltext/ED120168.pdf

2. Baechle TR, Earle RW, editors. Essentials of strength training and conditioning. Human kinetics; 2008. https://archive.org/details/essentialsofstre0000unse
3. Bompa TO, Buzzichelli C. Periodization-: theory and methodology of training. Human kinetics;2019,pp392 https://books.google.co.in/books/about/Periodization_6th_Edition.html?id=2f9QDwAAQBAJ&redir_esc=y
4. Bouchard CE, Shephard RJ, Stephens TE. Physical activity, fitness, and health: international proceedings and consensus statement. InInternational Consensus Symposium on Physical Activity, Fitness, and Health, 2nd, May, 1992, Toronto, ON, Canada 1994HumanKinetics Publishers. https://catalog.nlm.nih.gov/discovery/fulldisplay?docid=alma997795163406676&context=L&vid=01NLM_INST:01NLM_INST&lang=en&adaptor=Local%20Search%20Engine&tab=LibraryCatalog&query=lds56,contains,Physical%20Fitness%20--%20physiology,AND&mode=advanced&offset=30
5. Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. Public health reports. 1985 Mar;100(2):126–131.
6. Corbin CB, Welk GJ, Corbin WR, Welk KA. Concepts of fitness and wellness: A comprehensive lifestyle. entries after each workout. 2018. https://studentebookhub.com/wp content/uploads/2024/preview/9781264066674.pdf
7. Kumar P, Bala L. *Optimum Health Scale*. Agra: National Psychological Corporation; 2016. DOI:10.13140/RG.2.1.2410.8408
8. Kenney WL, Wilmore JH, Costill DL. Physiology of sport and exercise. Human kinetics; 2022. Pp-680
9. Malina Robert M. Growth, maturation, and physical activity. Human Kinetics; 2004. 553-584 DOI:10.5040/9781492596837
10. Nieman DC, Wentz LM. The compelling link between physical activity and the body's defense system. Journal of sport and health science. 2019 May 1;8(3):201–217.
11. Sharkey BJ, Gaskill SE. Fitness & health. Human Kinetics; 2013 Feb 25.
12. World Health Organization. Constitution of the World Health Organization. Geneva: WHO; 1948.

