Anusandhanvallari
Vol 2024, No.1
December 2024
ISSN 2229-3388

Comparative Evaluation of Health and Fitness Levels Between Athletes and Non-Athletes

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Abstract: Physical fitness and health are also constituent features of human health and plays a crucial role in regard to an active disease-free life. Regular sports and physical exercises facilitate cardiovascular endurance, body composition, flexibilities and muscular strength besides improving mental health. Compared to non-athletes, athletes have been found to engage in organised training regimes where athletes are taken through enhanced body fitness besides non-athletes having more or less a sedentary lifestyle that may have severe effects on their health statuses. The present study is undertaken in a bid to identify the variation in health and fitness in athletes and non-athletes which would assist in determining what impact the sports on the physical state is due to the regular engagement of sports.

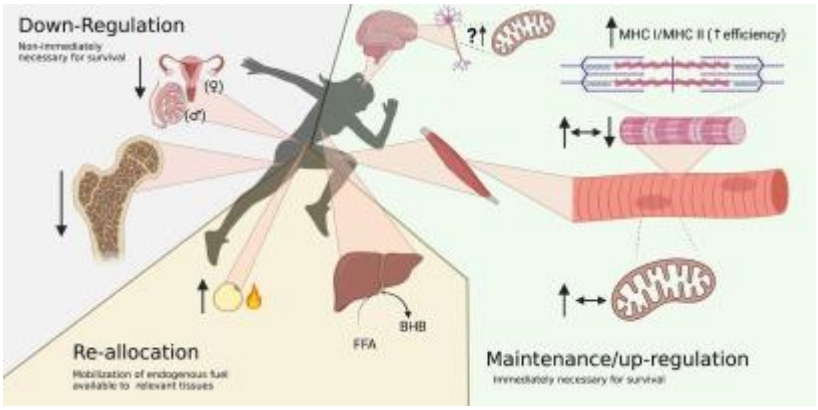
It is expected that the research results will show that athletes are more well-equipped and possess a greater number of health-related indicators compared to none-athletes due to frequent workouts of the body and highly-structured lifestyles. The article exudes the importance of adopting frequent physical activities and raising individuals to active lifestyles to improve bodily and psychological health.

Keywords: Health, Physical Fitness, Athletes, Non-Athletes, Cardiovascular Endurance, Muscular Strength, Flexibility, Physical Activity, BMI, Sports Participation

Introduction:

Fitness and health are human attributes that significantly participate in physical performance, mental stability and the quality of life. Obesity and cardiovascular diseases, diabetes and other health problems have become so prevalent in industrialized times when the population is less active owing to the breakneck technological development and the sedentary lifestyle. Exercise and sports activities have been perceived as the convenient means of being physically fit and staying healthy.

Physical fitness is the ability of an individual without experiencing excessive tiredness as well as the availability of enough energy to enjoy leisure activities and have enough energy to cope with any unexpected circumstances. It has some aspects, not excluding cardiovascular Individuals participating in and undertaking sports and well-systematic exercises are more likely to accrue more of these the elements of fitness.



Athlete training programs are systematic and improve physiologic and psychological capabilities of the athlete. The regular exercise of the body enhances the performance of the heart and lungs, muscle building, coordination, balance and flexibility. Quite to the contrary, non-athletes may not engage in consistent exercises and this may result in them being less fit and unhealthy. The comparison of athletes and non-athletes provides us with certain useful information related to the benefits of such a habit as physical activity and sport games.

The increasing contradiction surrounding the problem of lifestyle diseases has made the concept of studying the relationship that exists between sport participation and health statuses a crucial one. The awareness of the differences in the health and fitness levels of the athletes and non-athletes can inform educators, coaches, health professionals and policymakers. Therefore, the given study will steer towards evaluating and comparing the health and fitness of according to athletes and non-athletes.

Literature Review:

Fitness, health and physical activity interaction is a subject that has raised numerous studies among various researchers in the world. Studies have revealed before that regular contribute immensely in keeping fit, healthy heart and muscles, and healthy. The literature review that follows reveals that there are substantial literature in the area of health and fitness of athletes and non-athletes.

Lars Bo Andersen et al. (2006) conducted a study with the objective to study the relationship between cardiovascular risks and physical activities among children. According to the researchers, cardiovascular risk factors compared to their peers who did not engage in such activities. The researchers then concluded that routine exercise is significant to promote cardiovascular fitness and reduce complications of health at an early age. The outcomes emphasized the necessity to pursue active lifestyles, in order to be economically healthy and physically fit on the long-term basis.

In their article, regarding explained the strong correlation of physical activity with the human health. The authors highlighted that routine physical activities increase the efficiency of the heart rate, muscle muscles, flexibility and mental health. The other point that came out in their work is that they are less prone to obesity, diabetes, heart diseases compared to physically inactive subjects, due to their regular sporting activities.

The authors, Charles J. Caspersen, Kenneth E. Powell and Gregory M. Christenson (2005) have covered the notion of physical activity, exercise and physical fitness in the context of health research. The study elucidated that physical fitness directly depends on the routine physical activities and exercise habits. The scientists also pointed out that individuals who engage in regular physical exercises develop good endurance, strength, and flexibility, which have a positive impact on the general health condition.

Avery D. Faigenbaum et al. (2009) analyzed the issue of resistance exercise of youths. Their analysis determined that the structured strength training programmes were incredibly instrumental in improving the muscular strength, endurance as well as the bodily performance in the youths. One of the conclusions made by the authors was that there are certain positive effects of the regular trainings, which are conducted with appropriate supervision, on the physical fitness development and prevention of injuries.

Beth Hands and others (2009) explored the theme of sex difference in the benefits one realizes in terms of health, through physical exercises. They documented that the habits of physical activities have benefited both genders both physically and psychologically. However, the extent of improvement varied the exercise. The study revealed that to develop effective exercise programs, there is need to adjust the exercise program to the needs of the individuals in question.

The subject of a systematic review study Janssen and Allana G. LeBlanc (2010) conducted. Their review revealed that the regular exercising improves the heart state, physical state, bones, and psyche. The study also reported that physically active children find it hard to contract any obesity and lifestyle-related disease.

Duck-chul Lee et al. (2010) studied the mortality trends of the general population. The findings indicated that majority of individuals with superior cardiorespiratory fitness had less chances of perishing at younger age and exposing themselves to the chances of contracting chronic illnesses. The scientists insisted that to remain physically fit is essential in order to experience long-term health and life survival through frequent exercises.

Robert M. Malina (2005) addressed the crosslinking between childhood and adulthood on relationships between physical activity and fitness. The study was concerned with the fact that with more physical activity at an earlier age, the better the chances of a fitness and healthy person in the old age. As well, this research revealed that engaging in sports at an early stage positively affects future physical development.

The results of the study by Francisco B. Ortega, Jose R. Ruiz and their colleagues (2008) revealed that another important predictor of health during childhood and adolescence is physical fitness. Their study showed that the more fit you are, the more heart coordinates your cardiovascular health, less fat in the body and improved metabolism. The researchers recommended physical activity interventions as a means of enhancing health among the young people.

The authors (Russell R. Pate and co-researchers, 2006) studied indicated that the physically active individuals could do better when it came to endurance activities than the inactive individuals. The study also showed the significance of aerobic training with respect to increasing cardiovascular endurance and physical performance.

Jose R. Ruiz et al. (2009) conducted a systematic review of predictive value of health-related fitness on the youth. The scientists assisted to a conclusion that a better physical fitness at adolescent level would be translated into healthier future. The researchers suggested that the indicator of the fitness could be an effective parameter that informs about the health situation and the prevention of illnesses by Justin J. Smith and others (2014) are provided. The study discovered that body composition, mental and bone well-being were significantly enhanced by muscular fitness. The researchers came up with a conclusion that strength related exercises are essential both in the healthy development and the bodily development.

The article by William B. Strong et al. (2005) was investigating they discovered that an exercising program makes one more cardio vascularly fit, more muscular, mentally healthier, and academically better. The study was a great promoter of daily engagement in physical exercise among children and adolescents.

This paper by Sadia Tahira (2022) aimed to research the connection between physical fitness and sports participation. The team of research determined that the participants, who practiced sports activities, were far

more physically fit than the non-participants. The study determined that sport activities are positive in terms of endurance, strength, flexibility and overall health of the body.

Grant R. Tomkinson, among others (2007) established performance the authors found out that the fitness performance of less active populations continued to worsen in the period. The researchers have pointed out that physical activities and insufficiency of exercises or the unwillingness to be involved in any activity is one of the main reasons behind the worsening fitness levels.

Darren E. R. Warburton, Crystal W. Nicol and Shannon S. D. Bredin (2006) reviewed the scientific evidence. Their study found out that routine bodily exercise reduces the risk of cardiovascular malady, obesity, high blood pressure, depression and diabetes. The researchers emphasized that exercise is demanded as a form of improving.

Evidence in the articles is that regular participation in sports and activities that involve physical interactions impacts health and physical fitness positively. The cardiovascular endurance, muscle, and flexibility tend to be much higher and athletic artists usually have a strong body than the non-athletes. Exercising and active lifestyles have received substantial backing in the literature as a determinant of their correlation in enhanced health outcomes and quality of life.

Objectives of the Study:

- To compare the general health condition of athletes and non-athletes.
- To compare the physical fitness factors like strength, endurance, flexibility and agility of the athletes and non-athletes.
- Purpose To examine the effect of regular sports involvement on the physical health and fitness performance of people.

Research Methodology:

The research carried out was based on searching the difference between the fitness and health of non-athletes and athletes. In this regard we adopted a descriptive comparative research design which was considered the best method to be able to determine the differences in the variables in health and carried out in an 80 sample 40 of which were athletes and 40 non-athletes. The sample population included college, university and sports academies and was stratified in between the age groups of 18-25 years. The athletes in the study were already undergoing frequent sport training and even in diversionary activities compared to the non-athletes who did not undergo any organized sport or some form of physical training or exercises.

The selection of the subjects to be used in the study was done through purposive sampling method in order to have the right balance between the two classes, flexibility and agility variables were selected to be measured. The data were gathered through the standardized fitness tests which were administered to the participants. Body Mass Index was recorded in order to measure body composition.

All the participants received proper demonstrations and instructions before the tests to obtain the appropriate performance and understanding of the testing products. In suitable sports field and in a fitness environment, the tests were under standard conditions. The scores and measures that have been measured were systematised to be further analysed. Statistical processing of collected data on the completion of the data collection was then done independent t-test to see the level of what the difference is between the athletes and the non-athletes in respect to the chosen variations in health and fitness.

Analysis of the study:

Table 1: Comparison of Body Mass Index (BMI) Between Athletes and Non-Athletes

Group	Number of Participants	Mean	Standard Deviation	t-value
Athletes	40	21.48	1.82	3.21
Non-Athletes	40	24.76	2.15	
Level of Significance				0.05

Analysis

The mean body mass index of the athletes was found out to be less significant compared to non-athletes which indicates the healthy body make-up of the athletes. The resulted t-value (3.21) was greater than the tabular value of 0.05. healthy body weight and body composition can be maintained through normal participation in sporting activities.

Table 2: Comparison of Cardiovascular Endurance Between Athletes and Non-Athletes

Group	Number of Participants	Mean	Standard Deviation	t-value
Athletes	40	2450 meters	185.40	5.42
Non-Athletes	40	1865 meters	210.65	
Level of Significance				0.05

Analysis

The table shows the differences in cardiovascular endurance of athletes and non-athletes as far as the Cooper 12-Minute Run Test is concerned. Athletes were found to have a better mean score than non-athletes that indicated that they possessed a better endurance capacity. The t-value obtained (5.42) shows that there is some show that athletes have an improved cardiovascular performance because of frequent physical training and exercise.

Table 3: Comparison of Muscular Strength Between Athletes and Non-Athletes

Group	Number of Participants	Mean	Standard Deviation	t-value
Athletes	40	38.25	4.12	4.76
Non-Athletes	40	27.80	5.08	
Level of Significance				0.05

Analysis

The above table describes the comparison of muscular strength undertaken by the athletes and the non-athletes with the use of Push-Up Test. The average score of athletes was significantly greater than non-athletes. The t-value was higher than the planned level of significance (4.76) indicating truth that exercising in sports at all times causes the rise in muscles strength and power.

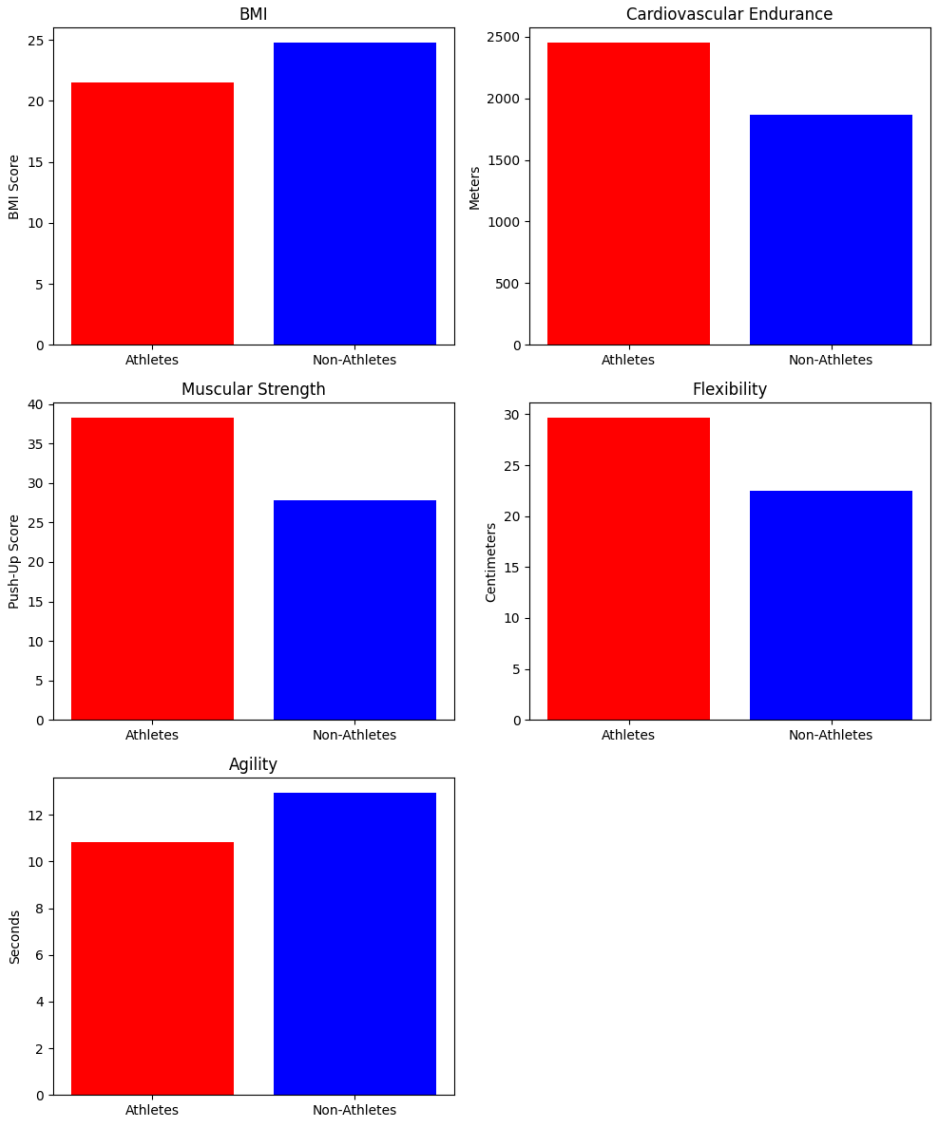


Table 4: Comparison of Flexibility Between Athletes and Non-Athletes

Group	Number of Participants	Mean	Standard Deviation	t-value
Athletes	40	29.64 cm	3.15	3.87
Non-Athletes	40	22.48 cm	4.02	
Level of Significance				0.05

Analysis

As illustrated in the table, the average of the scores of flexibilities of athletes and non-athletes using the Sit and Reach Test are compared. The performance of the flexibility was also rather higher among the athletes compared to the non-athletes. The obtained t-value (3.87) is significant enough to indicate that there is a substantial

difference between the groups at 0.05 level. What this means is that, frequency exercises of the sporting nature and stretching improves the flexibility and movement of the joints.

Table 5: Comparison of Agility Between Athletes and Non-Athletes

Group	Number of Participants	Mean	Standard Deviation	t-value
Athletes	40	10.82 sec	0.84	4.18
Non-Athletes	40	12.94 sec	1.06	
Level of Significance				0.05

Analysis

The table above shows the agility performance of athletes and non-athletes who were assessed using the Shuttle Run Test. Athletes were able to complete the test in a shorter period, which means that they have higher levels of agility and coordination skills. The t-value obtained (4.18) indicates that there is a significant difference between the two groups. The results have shown that agility is acquired more effectively by a continuous practice in sports and training based on movements.

Conclusion

In the present paper, the conclusion was made that the health and fitness of athletes is far superior to those athletes. Regular sports/physical exercise enhances the most important fitness parameters such as cardiovascular strength, muscle power, bendability, agility and overall physical effectiveness. Exercising regularly and maintaining strict lifestyles rudimentarily guarantee that the athletes maintain healthier body constructions and healthy physiological processes.

On the other hand, non-athletes depicted poorer performance in most of the health-fitness variables that demonstrate the detrimental conditions of absence of physical exertions and sit-down lifestyle. This study finding invites the importance of regular sporting activities, and physical exercise in maintaining fitness and good health.

Therefore, the study notes that individuals should be wholly involved in physical behavior and sports programmes in order to achieve better health outcomes and prevent life-style diseases. Fitness and awareness of exercise among students and the general population in schools, coaches and health workers in the popularization of a healthy and active way of life have to be encouraged.

References:

1. Andersen, L. B., Harro, M., Sardinha, L. B., Froberg, K., Ekelund, U., Brage, S., & Anderssen, S. A. (2006). Physical activity and clustered cardiovascular risk in children: A cross-sectional study. *The Lancet, 368*(9532), 299□304. https://doi.org/10.1016/S0140-6736(06)69075-2
2. Bouchard, C., Blair, S. N., & Haskell, W. L. (2012). *Physical activity and health*. Human Kinetics.
3. Caspersen, C. J., Powell, K. E., & Christenson, G. M. (2005). Physical activity, exercise, and physical fitness: Definitions and distinctions for health-related research. *Public Health Reports, 100*(2), 126□131.
4. Faigenbaum, A. D., Kraemer, W. J., Blimkie, C. J., Jeffreys, I., Micheli, L. J., Nitka, M., & Rowland, T. W. (2009). Youth resistance training: Updated position statement paper from the National Strength and Conditioning Association. *Journal of Strength and Conditioning Research, 23*(5), S60□S79. https://doi.org/10.1519/JSC.0b013e31819df407

5. Hands, B., Parker, H., Larkin, D., Cantell, M., & Rose, E. (2009). Male and female differences in health benefits derived from physical activity: Implications for exercise prescription. *Journal of Women□s Health, 18*(9), 1485□1491.
6. Janssen, I., & LeBlanc, A. G. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity, 7*(40), 1□16. https://doi.org/10.1186/1479-5868-7-40
7. Lee, D. C., Artero, E. G., Sui, X., & Blair, S. N. (2010). Mortality trends in the general population: The importance of cardiorespiratory fitness. *Progress in Cardiovascular Diseases, 53*(1), 39□45. https://doi.org/10.1016/j.pcad.2010.05.002
8. Malina, R. M. (2005). Physical activity and fitness: Pathways from childhood to adulthood. *American Journal of Human Biology, 13*(2), 162□172.
9. Ortega, F. B., Ruiz, J. R., Castillo, M. J., & Sjöström, M. (2008). Physical fitness in childhood and adolescence: A powerful marker of health. *International Journal of Obesity, 32*(1), 1□11. https://doi.org/10.1038/sj.ijo.0803774
10. Pate, R. R., Wang, C. Y., Dowda, M., Farrell, S. W., & O□Neill, J. R. (2006). Cardiorespiratory fitness levels among children and adolescents. *Medicine & Science in Sports & Exercise, 38*(3), 592□600.
11. Ruiz, J. R., Castro-Piñero, J., Artero, E. G., Ortega, F. B., Sjöström, M., Suni, J., & Castillo, M. J. (2009). Predictive validity of health-related fitness in youth: A systematic review. *British Journal of Sports Medicine, 43*(12), 909□923. https://doi.org/10.1136/bjsm.2008.056499
12. Smith, J. J., Eather, N., Morgan, P. J., Plotnikoff, R. C., Faigenbaum, A. D., & Lubans, D. R. (2014). The health benefits of muscular fitness for children and adolescents: A systematic review and meta-analysis. *Sports Medicine, 44*(9), 1209□1223. https://doi.org/10.1007/s40279-014-0196-4
13. Strong, W. B., Malina, R. M., Blimkie, C. J., Daniels, S. R., Dishman, R. K., Gutin, B., & Trudeau, F. (2005). Evidence based physical activity for school-age youth. *The Journal of Pediatrics, 146*(6), 732□737. https://doi.org/10.1016/j.jpeds.2005.01.055
14. Tahira, S. (2022). The association between sports participation and physical fitness. *International Journal of Sport Studies for Health, 4*(2), e127001. https://doi.org/10.5812/intjssh-127001
15. Tomkinson, G. R., Olds, T. S., Kang, S. J., & Kim, D. Y. (2007). Secular trends in the performance of children and adolescents in physical fitness tests. *Medicine & Science in Sports & Exercise, 39*(4), 652□658.
16. Warburton, D. E. R., Nicol, C. W., & Bredin, S. S. D. (2006). Health benefits of physical activity: The evidence. *Canadian Medical Association Journal, 174*(6), 801□809. https://doi.org/10.1503/cmaj.051351