

A Study of the Physical Fitness of the Middle School Students of Naghadeh City as Compared to Local and National Standards

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ABSTRACT

The purpose of the present research was to compare the physical fitness of the middle school students of Naghadeh City with local and national standards. 825 male students were selected as sample using cluster sampling (275 sixth grade, 275 seventh grade, and 275 eighth grade students). Then, the physical fitness factors of the students were measured: cardiorespiratory endurance was measured by 540-m run, trunk flexor endurance was measured by sit-ups, shoulder girdle muscle endurance was measured by pull-ups, and flexibility was measured by the Sit and Reach Test. The results showed that the six grade students' scores in 540-m run was significantly less than local and national standards. The mean sit-ups scores were significantly higher than local and national standards. Moreover, there was no significant difference between the students' pull-ups scores and local standards, but these scores were higher than national norms. Finally, the students scored significantly higher than local standards and significantly less than national standards in the flexibility test. In seventh grade students, the mean 540-m run scores were less than local and national standards. The mean sit-ups scores were higher than local standards but not significantly different from national standards. Further, the pull-ups scores were not significantly different from local standards, but significantly higher than national norms. Finally, the mean flexibility scores were significantly higher than local standards and significantly lower than national standards. In eighth grade students, the mean 540-m run scores were significantly lower than local and national standards. The mean sit-ups scores were significantly higher than local standards and significantly lower than national norms. Moreover, the mean pull-ups scores were significantly lower than local standards but not different than national standards. Finally, the mean flexibility scores were significantly higher than local norms and significantly lower than national norms.

Keywords: physical fitness, local and national standards, Naghadeh City, middle school students

INTRODUCTION

The advances in physical education and sports have raised awareness of the importance of these issues and most people and organizations use the advantages of sports in furthering their social and cultural goals. One of the ways of achieving a healthy, strong, and lively society is to promote physical education and enhance the physical fitness factors of the people. The Ministry of Education has also incorporated sports and physical education in different

syllabi so that students can benefit the advantages of physical as well as educational development [4]. One of the main goals of education in schools is to increase the physical fitness of students. Physical fitness of children and adolescents is a fundamental issue that guarantees the wellbeing of the society and the only way to enhance it is through physical education and motor activities. Educational experts are of the opinion that physical education course can be used as an effective method for achieving the goals of general education due to its different methodology and its adaptability with the innate needs and interests of students [6]. Physical education can offer physical fitness, well-being, and emotional, social, spiritual, and psychological health of the students. A physical education program must pay attention to the development of physical fitness of each child and to provide opportunities for satisfying their individual needs. A desirable level of physical fitness is required for satisfaction of one's individual and social problems [4]. Lack of knowledge regarding the quality and quantity of physical activities in children can present a serious problem for planners and education officials. It has also been shown that maintaining a desirable level of physical fitness factors such as cardiovascular endurance, muscle strength and endurance, body composition, and flexibility can be effective in reducing physical and psychological diseases. Thus, many research studies have focused on the measurement of physical abilities in different populations. In order to have a better understanding of the physical fitness of individuals, especially students, specialists try to compare their physical fitness with standards [2]. Lack of understanding of the current condition of physical education and physical fitness of students in different cities is one of the obstacles on the way of development, for students constitute a large portion of the population and are the cornerstones of the future of the country. Meanwhile, Naghadeh is one of the deprived cities of Iran, both in terms of in-school and out-school sport facilities and equipment, and the importance of the course of physical education is not much appreciated in the schools of the city. Thus, the researcher tried to compare the physical fitness of middle school students of the city with local and national standards.

MATERIALS AN METHODS

Participants

The present research is descriptive, carried out as a field study, where the physical fitness of the male, middle school students (sixth, seventh, and eight grade students) of Naghadeh City is studied through such tests as cardiorespiratory endurance, abdominal muscle endurance, shoulder girdle muscle endurance, and Sit and Reach and the results are compared with local and national standards. The population of the research consists of 2731 male, middle school students of Naghadeh City who studied during the period 2011-2012. Using Morgan's table and cluster sampling, 825 students were selected as sample which are equal to 30.21 percent of the population.

Procedure

Before beginning the test, the researcher made the necessary arrangements with the school managers and a briefing session was held for the examiners. The students were also instructed about the test procedures and the correct way of performing each of the movements. The tests were administered after a short warm-up. Cardiorespiratory endurance was measured by 540-m run; trunk flexor muscle endurance was measured by sit-ups; shoulder girdle muscle endurance was measured by pull-ups; and flexibility was measured by the Sit and Reach Test.

Data analysis

The collected data was analyzed using descriptive statistics such as mean, percentage, tables, and graphs. Moreover, one-sample t-test was applied for hypothesis testing.

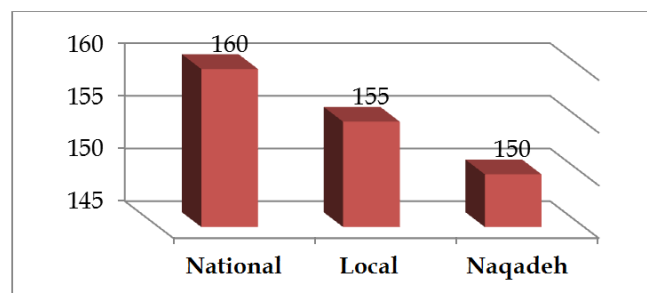


Figure 1. A comparison of the mean 540-m run score of 6th grade students (in seconds) with local (2007) and national (2008) standards

RESULTS

As shown in Figure 1, the mean 540-m run score of the sixth grade students is less than local and national standards. The results showed that the mean 540-m score of the sixth grade students is significantly lower than local ($t(275) = -6.64, p < 0.05$) and national standards ($t(275) = -12.91, p < 0.05$).

As shown in Figure 2, the sit-ups scores of the sixth grade students are higher than local and national standards. The results showed that the mean sit-ups score of the sixth grade students is significantly higher than local ($t(275) = 8.11, P < 0.05$) and national ($t(275) = 3.42, P < 0.05$) standards.

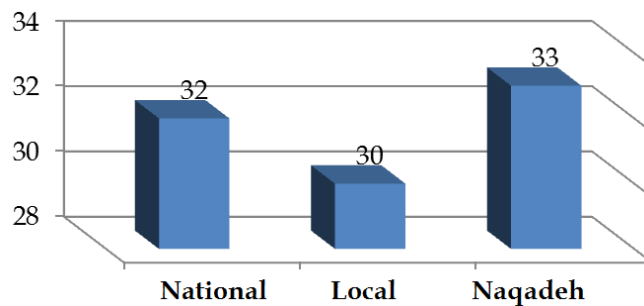


Figure 2. A comparison of the mean sit-ups score of 6th grade students with local (2007) and national (2008) standards

Figure 3 indicates that the pull-ups scores of sixth grade students are higher than local and national standards. The results showed that the mean pull-ups score of sixth grade students is not significantly different from local standards ($t(275) = 1.28, P < 0.05$), but significantly higher than national standards ($t(275) = 7.28, P < 0.05$).

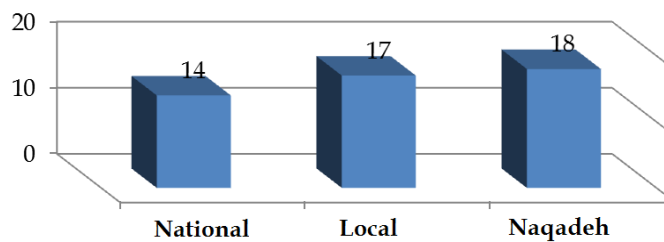


Figure 3. A comparison of the mean pull-ups score of 6th grade students with local (2007) and national (2008) standards

The data presented in Figure 4 shows that the mean flexibility score of the sixth grade students is significantly higher than local standards ($t(275) = 18.03, P < 0.05$), but significantly lower than national standards ($t(275) = -2.27, P < 0.05$).

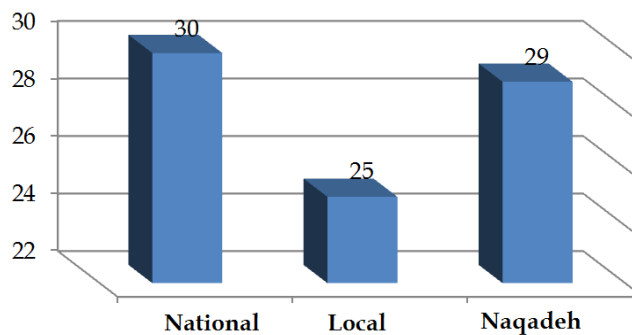


Figure 4. A comparison of the mean flexibility score of 6th grade students with local (2007) and national (2008) standards

The results also showed that the mean 540-m run score of the seventh grade students is significantly lower than local ($t(275) = -4.55, P < 0.05$) and national ($t(275) = -12.99, P < 0.05$), standards.

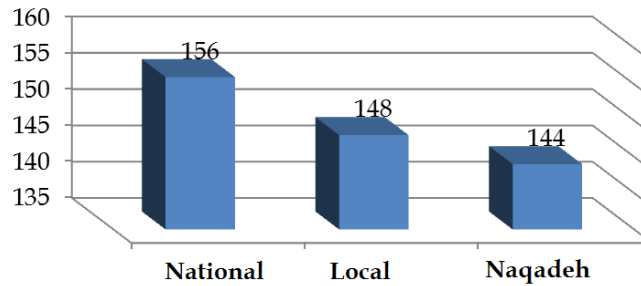


Figure 5. A comparison of the mean 540-m run score of 7th grade students with local (2007) and national (2008) standards

As shown in Figure 6, the mean sit-ups score of the seventh grade students is significantly higher than local standards ($t(275) = 4.96, P < 0.05$), but not significantly different from national standards ($t(275) = -1.50, P < 0.05$).

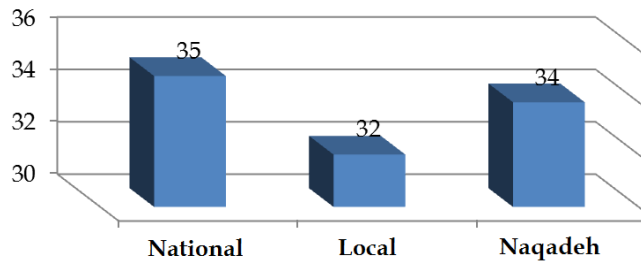


Figure 6. A comparison of the mean sit-ups score of 7th grade students with local (2007) and national (2008) standards

Figure 7 shows that the mean pull-ups score of the seventh grade students is not significantly different from local standards ($t(275) = 1.88, P < 0.202$), but significantly higher than national standards ($t(275) = 3.74, P < 0.05$).

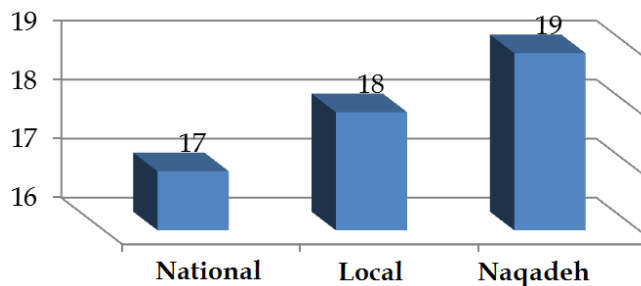


Figure 7. A comparison of the mean pull-ups score of 7th grade students with local (2007) and national (2008) standards

As shown in Figure 8, the mean flexibility score of the seventh grade students is higher than local standards ($t(275) = 6.13, P < 0.05$), but lower than national standards ($t(275) = -2.91, P < 0.05$).

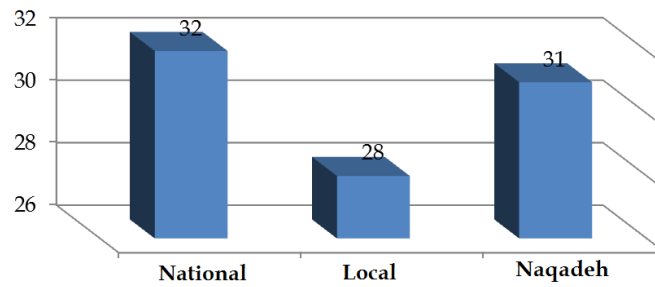


Figure 8. A comparison of the mean flexibility score of 7th grade students with local (2007) and national (2008) standards

Figure 9 shows that the mean 540-m run score of the eighth grade students is lower than local ($t(275) = -2.74, P < 0.05$), and national ($t(275) = -8.87, P < 0.05$) standards.

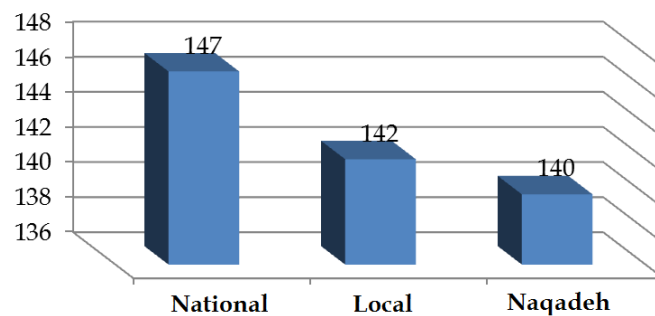


Figure 9. A comparison of the mean 540-m run score of 8th grade students with local (2007) and national (2008) standards

As shown in Figure 10, the mean sit-ups score of the eighth grade students is significantly higher than local standards ($t(275) = 4.30, P < 0.05$), and significantly lower than national standards ($t(275) = -3.84, P < 0.05$).

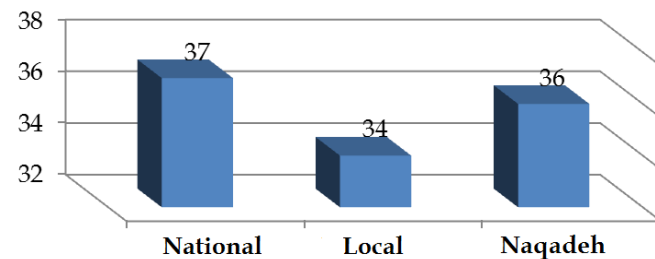


Figure 10. A comparison of the mean sit-ups score of 8th grade students with local (2007) and national (2008) standards

The data in Figure 11 indicates that the mean pull-ups score of the eighth grade students is significantly lower than local standards ($t(275) = -3.90, P < 0.05$), but not significantly different from national standards ($t(275) = 6.68, P < 0.94$).

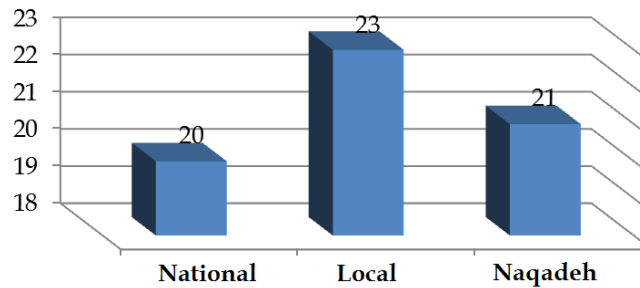


Figure 11. A comparison of the mean pull-ups score of 8th grade students with local (2007) and national (2008) standards

As shown in Figure 12, the mean flexibility score of the eighth grade students is significantly higher than local standards ($t(275)=9.20, P<0.05$) and significantly lower than national standards ($t(275)=-3.17, P<0.05$).

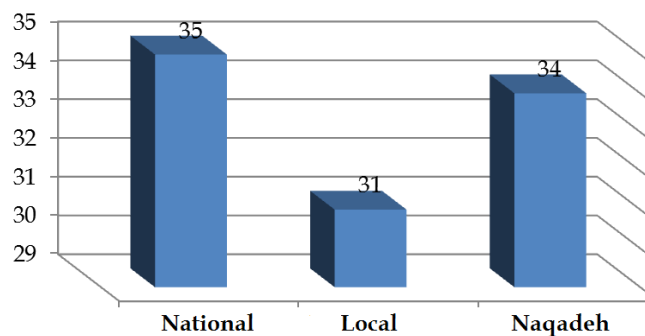


Figure 12. A comparison of the mean flexibility score of 8th grade students with local (2007) and national (2008) standards

DISCUSSION AND CONCLUSION

The results related to the 540-m run scores of middle school students of Naghadeh City are consistent with the findings of Jenabi (2010) in Shahryar City and Fazelifar (2006) and in Amol City, but they are inconsistent with the studies of Alavi *et al.* (2004), Mohammadi (2008), and Ghorbani (2004) carried out in Mahmudabad, Takab, and Eqlid respectively [2, 5, 6, 7]. One of the reasons for the favorable endurance of middle school children of Naghadeh is the geographical conditions of the city and the demands of farming. This city is located in a highly mountainous area and most of the students participate in farming activities; therefore, they have stronger lower-limb muscles. In addition, the physical education teachers in this area carefully monitor the training of students and try to incorporate strength and sprint exercises into the course activities. Moreover, the majority of students use bicycles as a means of transportation which significantly improves their general endurance.

The results related to sit-ups scores of the students are consistent with the findings of Mirkazemi (2001), Alavi *et al.* (2004), Ghorbani (2004), and Mohammadi (2008), but they are inconsistent with the findings of Jenabi (2010) and Sami'i (2011). The abdominal muscle endurance of the students of Naghadeh was significantly higher than that of the students of other cities in West Azerbaijan Province. One possible reason is the vicinity of the area to the famous river of the city, Godar, where the students of Naghadeh spend much of their leisure time rowing. But the scores of the students were slightly lower than national standards which can be attributed to differences in nutrition, weather, and sport facilities [2, 5, 7, 4]. The results related to pull-ups scores of the students are in line with the studies of Alavi *et al.* (2004), Jenabi (2010), Ghorbani (2004), and Sami'i (2011) [7, 2, 3], but inconsistent with the findings of Mohammadi (2008), Fazelifar (2006), and Mirkazemi (2000) [4, 5, 1]. The results showed that the students of Naghadeh have significantly higher shoulder girdle muscle endurance as compared to local and national standards. This can be attributed to the participation of students in highly demanding works, their interest in local games (tug of war, kabaddi, arm wrestling, etc.), and their zealous participation in wrestling and body-building.

The results of the flexibility test in the present research are consistent with the findings of Jenabi (2010) and Sami'i [2, 7], but inconsistent with the studies of Mohammadi (2008) and Fazelifar (2006) [1, 5]. The better scores of the students of Naghadeh in comparison with the local standards can also be attributed to the fact that they spend much of their leisure time swimming and rowing in the Godar River. However, the students of Naghadeh had slightly lower scores in flexibility than national standards and the physical education teachers and administrators must adopt plans for incorporating specific physiological and dynamic exercises into the course. Finally, future researchers are recommended to carry out a similar research on the female students of Naghadeh City.

REFERENCES

- [1] Fazelifar, S., *Journal of Movement*, **2003**, (28): 107-236.
- [2] Ghorbani, H., Master's Thesis, Central Tehran Branch, (Tehran, Iran, **2004**).
- [3] Jenabi, A., Master's Thesis, Central Tehran Branch, (Tehran, Iran, **2010**).
- [4] Mirkazemi, O., Master's Thesis, Giulan University, (Rasht, Iran, **1998**).
- [5] Mohammadi, M., Master's Thesis, Central Tehran Branch, (Tehran, Iran, **2008**).
- [6] Pouyanfard, A.R., Doctoral Dissertation, Central Tehran Branch, (Tehran, Iran, **1994**).
- [7] Sami'i, H., Master's Thesis, (Azadshahr, Iran, **2010**).
- [8] Seyed-Ameri, H., Master's Thesis, Tarbiat Modarres University, (Tehran, Iran, **1993**).