AN ANALYSIS OF THE RESULTS ACHIEVED BY DEAF MALE AND FEMALE ATHLETES FROM AROUND THE WORLD IN CERTAIN ATHLETIC DISCIPLINES

(Research note)

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Abstract
The aim of physical education in schools is to promote the all-encompassing development of each individual student. The conditions for physical training include: good health, proper physical development, the optimal level of motor skills, knowledge and abilities in the field of physical education, motivation and the development of the means (that is abilities) toward proper carrying out of health and fitness activities, along with sports ones. Running, jumping and throwing, as natural types of movements hold one of the most prominent positions in the physical education of school children. Running, jumping and throwing are characterized by a great variability in their realization and application in various contexts. Thus, they have a significant influence on the development of the first skills of coordination. At the same time, their great significance is based on the development of conditioned abilities (speed, speed-strength and the endurance). This paper analyzes the results which deaf junior athletes achieved at school competitions and compares them to the results achieved by their peers from several other countries. The results were processed using a descriptive-causal method and compared to the results from another eight countries scored at world junior competitions.

Keywords: physical education, sport, juniors, athletics, physical activity, Z-value

INTRODUCTION

In the modern world we live in important social, technical and biological transformations with daily occurrences. One of the most frequent problems of modern society is the creation of conditions for the development of an individual who would be a combination of social wealth, moral values and physical perfection. However, the introduction of new, more modern technologies have led the man into a state of physical inactivity, nervous and physical burden conditions, the occurrence of daily tension through stress (related both to professional work as well as one’s private life), metabolic disorders which lead to the mass occurrence of cardiovascular disease, and obesity under the influence of an inappropriate diet of unhealthy food (fast food).

The ideal program of physical education would be the one focused on all the aspects which lead to a lifelong participation in and enjoyment of physical activities. Often, physical education is equated with physical activity as the only activity which children are involved in during the day, since modern children spend more time at home, involved in the so-called “sedentary activities”. This also refers to children who are deaf. This is one of the reasons why schools need to include in their programs and extracurricular activities as many children as possible, toward promoting of healthy lifestyle, enjoyment of physical activities, development of physical fitness as well as the development of the motor skills of children. Our experience indicates that the means which are used for physical education and sport are used for the widespread solutions to the problem of increasing the level of public health and education among the younger generation and create a positive moral and psychological climate in society, especially in the deaf person’s population.

The loss of the hearing represents a complex problem and many researchers have indicated this point in their work (Morsh, 1936; Myklebust, 1964; Shein, & Delk, 1974); Schildroth & Karchmer, 1986). The definition of deafness varies from researcher to researcher, that is, depends on whether it represents an educational or medical problem. There is also a new “cultural definition”
which defines the cultural identity of the deaf who use
the sign language in their mutual communication as their
primary means of communication. The medical definition
of deafness is the loss of hearing which is so severe
that the individuals are not able to fully learn spoken
language without the help of a hearing aid or a cochlear
implant. The Gallaudet scale defines deafness according
to whether the person is able to hear and develop speech.
However, all these definitions agree on the point that
deafness represents hearing loss greater than 80 dB for
the simple reason that in that case even with a great in-
crease through individual hearing aids, one cannot hear
speech nor perceive the sound from their surroundings.
Stewart (1991) defines the sport among deaf in three
dimensions and spheres: the social, psychological and
educational. The socialization of the deaf and their in-
cclusion in the community represents the most important
goal for each deaf individual. Stewart further cites that
“...the nature of sport among the deaf population is to
promote the interaction between the deaf individuals”. 
Sport among the deaf population also encourages psy-
chological health in such a way that they identify them-
selves based on group membership and thus gain access
into systems of social support. In addition, sport among
the deaf population also has an educational component
and a value which manifests in the fact that deaf indi-
viduals together learn through sports activities and work
towards a goal in communion. Stewart further cites that
sport also offers a joint basis for almost all ethnic and
social groups over the world, and the deaf community
does not represent an exception. The school sports teams
or the municipality-city teams represent an important
source of identification for each individual among the
deaf population. In addition, sport among the deaf popu-
lation also enables socialization among and between the
groups of deaf individuals, since athletes in their desire
to win override all other previously established preju-
dice and focus on the similarities between the deaf and
hearing individuals and groups.

The influence of using high technology to help in-
dividuals with hearing impairment was extensive, es-
pecially in the social sphere. It made life for the deaf
person much more comfortable and easier, and enables
them to adapt to their environment and the modern life.
There are a great number of people who are suffering
from some form of hearing impairment (in the whole
world there are approximately 70 million of them, in
the US approximately 39 million, and in Russia almost
12 million, while in Serbia there are almost 100,000 of
them) and whom the modern science can help. Some can
be helped through the hearing aids usage, while the oth-
ers cannot be helped in this way with any effectiveness,
and in those cases hearing function can only be regained
through the use of the cochlear implants.

METHODS

In the paper it’s been used a descriptive-causal met-
 hod or a technique of document analysis in particular.
The sample of variables consisted of the results achieved
by male and female school children in seven athletic
disciplines: the 60 m run (100 m run female juniors)
and 200 m run (300 m run female juniors) among the
female school children, the 100 and 400 m run for the
male school children; the depth jump, the high jump and
the ball throw.

When processing the data, a descriptive statistics
were used, including: measures of the central tendency
and dispersion measures (\(Z\) – the value of the best result,
\(S\) – standard deviation, \(V\) – the result variation coef-
ficient and \(Zx\) – the value of the standard deviation of the
best results from the means and \(Sx\) – the standard devia-
tion of the arithmetic means. The \(Zx\) value was used in
the paper to compare different units and obtain the most
valuable result for each of the analyzed competitions
(the higher the \(Zx\) value, the more valuable the achieved
result).

The processed results refer to the competitions for
male and female juniors, carried out in 2012, and were
published on the official websites of the school compe-
tition boards of the following countries: Serbia, Serbia
for deaf juniors, Montenegro, Croatia, Slovenia, Turkey,
Macedonia, the USA, Bulgaria and the world athletic ju-
nior competition.

First and foremost we offer a table reviewing the
participation of deaf children of the pioneer and junior
age group (elementary and high schools for deaf chil-
dren) who participated in sports competitions, which
served as a reference point for the number of participants
in other competitions (we take the number of students in
certain countries based on the number of inhabitants).
The extensive participation of deaf children in relation
to the number of school children from “special schools”
for deaf children is clear, but at the same time we have
also found very good results scored in comparison to the
hearing population.

In this part of the result analysis we processed the
number of school children who participated in national
level competitions for the deaf in athletic disciplines in
the period between 2002. and 2012. (Table 1.). If we
were viewing the numbers in terms of categories and
disciplines, we would be able to conclude the following:

Elementary schools: the pioneers competed most in
the depth jump and ball throw disciplines (a total of 97)
and least in the 60 m and 100 m run disciplines (35 in
all). Generally speaking, most of the pioneer male or fe-
male participants took part in the disciplines of either the
depth jump, high jump or the ball throw (a total of 265
participants) and in the sprinting disciplines, there was
a total of 190 participants. Almost the same number of
male pioneers (206) and female pioneers (209) took part
in the competitions.

High schools: The male juniors mainly participat-
ed in the depth jump discipline (46 participants) while
much fewer of them participated in the discipline of the
100 m run (30 participants), the female juniors mostly
participated in the ball throw (45 participants), and the
fewest of them participated in the same discipline as the
male juniors (100 m run, 22 female participants). Generally speaking (both the male and female juniors), most of the participants took part in the ball throw discipline (90 participants) and the fewest of them in the 100 m run (52 participants).

Overall, in the pioneer age group there were (for both genders) 415 participants, and in the junior age group there were (for both genders) 367 participants, which is a total of 782 participants, 400 of whom were male and 382 of whom were female.

RESULTS AND DISCUSSION
Table 2. shows the results which were achieved by the deaf female juniors from the schools for the deaf from Serbia and are compared to the achieved results in school competitions held in other countries. We can see that for the Zx value, that the values of the standard deviation from the highest score from the means is in relation to the result, among the deaf the value is 0,65 and represents a poor result since the best results were achieved by the Turkish female juniors where the Zx has a value of 3,17. A higher Zx indicates the quality of the race. However, from the table we can see that Montenegro and the USA achieved lower values of the Zx when compared to the deaf female juniors from Serbia (0,47 and 0,28), so that within the dispersion of the results for the Zx of these two countries, our deaf participants were classified in a lower category of running ability, since almost 6 countries have a Zx within the boundaries of 1 to 2 degrees of tolerance and only Turkey stands out with its 3,17 value.

Table 3. shows the results for the high jump. We can

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Male pioneers</th>
<th>Female pioneers</th>
<th>Overall pioneers</th>
<th>Male juniors</th>
<th>Female juniors</th>
<th>Overall juniors</th>
<th>Overall per category</th>
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<tr>
<td>300 m</td>
<td>41</td>
<td>-</td>
<td>41</td>
<td>37</td>
<td>34</td>
<td>71</td>
<td>112</td>
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<td>200 m</td>
<td>-</td>
<td>39</td>
<td>39</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>39</td>
</tr>
<tr>
<td>100 m</td>
<td>35</td>
<td>-</td>
<td>35</td>
<td>30</td>
<td>22</td>
<td>52</td>
<td>87</td>
</tr>
<tr>
<td>60 m</td>
<td>-</td>
<td>35</td>
<td>35</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>35</td>
</tr>
<tr>
<td>Depth jump</td>
<td>46</td>
<td>51</td>
<td>97</td>
<td>46</td>
<td>41</td>
<td>87</td>
<td>184</td>
</tr>
<tr>
<td>High jump</td>
<td>38</td>
<td>33</td>
<td>71</td>
<td>36</td>
<td>31</td>
<td>67</td>
<td>138</td>
</tr>
<tr>
<td>Ball</td>
<td>46</td>
<td>51</td>
<td>97</td>
<td>45</td>
<td>45</td>
<td>90</td>
<td>187</td>
</tr>
<tr>
<td>Per category</td>
<td>206</td>
<td>209</td>
<td>ES = 415</td>
<td>194</td>
<td>173</td>
<td>HS= 367</td>
<td>782</td>
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</table>

<table>
<thead>
<tr>
<th>No</th>
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<th>Z</th>
<th>S</th>
<th>V</th>
<th>Zx</th>
<th>Sx</th>
<th>N</th>
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<tbody>
<tr>
<td>1</td>
<td>Montenegro</td>
<td>13,26</td>
<td>0,4143</td>
<td>2,98</td>
<td>0,47</td>
<td>0,2392</td>
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<tr>
<td>2</td>
<td>Serbia - the deaf</td>
<td>16,25</td>
<td>0,6473</td>
<td>3,98</td>
<td>0,65</td>
<td>0,2894</td>
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<tr>
<td>3</td>
<td>Serbia</td>
<td>13,81</td>
<td>1,6696</td>
<td>0,12</td>
<td>1,39</td>
<td>0,7466</td>
<td>14</td>
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<tr>
<td>4</td>
<td>Croatia</td>
<td>13,93</td>
<td>0,8705</td>
<td>6,24</td>
<td>1,21</td>
<td>0,2512</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>Slovenia</td>
<td>13,48</td>
<td>3,7785</td>
<td>2,80</td>
<td>1,01</td>
<td>0,8906</td>
<td>18</td>
</tr>
<tr>
<td>6</td>
<td>Turkey</td>
<td>15,64</td>
<td>1,6893</td>
<td>10,80</td>
<td>3,17</td>
<td>0,4685</td>
<td>13</td>
</tr>
<tr>
<td>7</td>
<td>Macedonia</td>
<td>15,65</td>
<td>1,2469</td>
<td>0,07</td>
<td>1,73</td>
<td>0,3924</td>
<td>17</td>
</tr>
<tr>
<td>8</td>
<td>The world</td>
<td>13,20</td>
<td>0,5689</td>
<td>4,31</td>
<td>1,53</td>
<td>0,1340</td>
<td>18</td>
</tr>
<tr>
<td>9</td>
<td>USA</td>
<td>11,66</td>
<td>0,1452</td>
<td>1,24</td>
<td>0,28</td>
<td>0,0459</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>Bulgaria</td>
<td>13,29</td>
<td>0,6652</td>
<td>5,00</td>
<td>1,47</td>
<td>0,1487</td>
<td>21</td>
</tr>
</tbody>
</table>

Table 1. An overview of the participation of deaf school children based on the disciplines for all categories at national competitions in the period between 2002. and 2012.

Table 2. The results achieved on the 100m run – female juniors

Table 3. The high jump – female juniors
once again see that the results achieved by the deaf female juniors were very modest (the Zx is only 7,15) in comparison to the large group of the results (the Zx ranges from 11,67 to 25,00). The best results were achieved by the deaf juniors at world competitions, which were expected due to the strong competition, but we can see that good results were also achieved by the juniors from Croatia and Turkey.

However, if we compare the best results expressed in cm we obtain very modest results which ranges from 107.85 cm reached by the deaf from Serbia to the top scores of 237.60 cm from the USA. In comparison to the world record with a value of 2,01 these results are quite modest.

Table 4. shows the results of the depth jump for the junior competitors. The results on the Zx indicate a very small dispersion of the results, which indicates equal quality in this athletic discipline. However, if we were to analyze the achieved results we can see that the weakest results were scored by the deaf junior females from Serbia, 3.36 m, and the best results were achieved by junior females from USA, 5.91 m. This record is even better than the results achieved at the world junior competition.

Table 5. shows the results which the female juniors achieved in the ball throw. In this case we can see that the Zx value of our deaf female juniors is greater than the values scored by the participants from Turkey, Macedonia and the USA, which indicates the quality of the results achieved by our female juniors in this discipline. These Zx results which indicate the quality of this discipline are in contrast with the best scores since the top scores were achieved by the junior females of the USA. However, collectively speaking the top Zx results were scored on the world competition (which was expected), by Slovenia and Montenegro (which is surprising) due to the number of participants and the quality of the participants in this athletic discipline.

However, as one of the reasons of why children do not participate in physical activities, we could present the research results published by Hellmich (1997) in the magazine USA Today dated on July 1, 1997, where he determined that almost 22% of all children are physically active every day, that 49% are moderately physically active, while almost 23% of children do not take part in any physical activities, nor do they attend physical education classes (medical reasons, disinterestedness or maybe even with no clear reason). In the magazine he wrote that almost 54% of children aged 6-11 suffer from obesity, with the fact that the rate of obesity increases daily. He also determined that physical activity (as a part of physical education classes) represents a constituent part of the process of learning in schools at all levels, that children who do not take part in sports have a very poor opinion of themselves, did not like team activities or working with other children and were increasingly asocial. Unlike them, children involved in sport, or those who take part in sports activities, feel much better, fit into the group and are exposed to far less risk of being obese later in life. Psychologically, sports stimulations help intellectual development, sharpen the child’s mo-
tor skills, and help toward better emotional and social development among the children. Sport helps in matters such as depression and leads toward increase in the self-confidence of children. An inactive child which participates in physical activities improves its self-esteem and develops much better child communication and socialization. This is especially important for children (including deaf children) who suffer from limited communication abilities due to underdeveloped speech.

It was also indicated that the parents of deaf children, who are also deaf, have a very positive opinion of the advantages of sports activities of their children, and their children participated more often in competitions than the children of hearing parents. Stewart (1991), (according to: DePauw & Gavon, 1995.) in his 1991 study indicated that deaf children which during the school time are housed in the dorms of “special” schools have much greater possibilities as well as a desires for physical activities in comparison to children which during their school days attends special schools but lives with their families. Stewart at the same time indicated that deaf children of hearing parents show a lot more restraints in physical activities in comparison to the children of deaf parents, with the justification of the danger involved in their activities in a playground or street due to “poor environmental circumstances” and the unsocialized behavior of their children.

Independently of these studies, in Serbia deaf children are viewed as equal to other children and numerous extracurricular activities are organized for them wishing to include them into the social environment they originated from. Many cases are known where people with hearing impairment who were athletes (even top athletes, such was the case with soccer player of the SC Rijeka, Damir Desnica, who played for the Yugoslav national team and even scored a goal at that time) and many cases are known where people with hearing impairment who were athletes (even top athletes, such was the case with soccer player of the SC Rijeka, Damir Desnica, who played for the Yugoslav national team and even scored a goal at that time) and wells who do not find any impediment to present any kind of obstacle for their desire to participate in sport.

CONCLUSION

Practically all the studies carried out so far have dealt with the comparison of the results which deaf children achieve and the results achieved by hearing children. Practically all the research has also compared the similarities which surfaced among deaf and hearing children of the same age, considering the fact that there are no significant differences in the psychomotor skills of both groups of children, but always with a comment on the differences which manifest themselves in the use of the sense of balance, that is, in sports disciplines in which this sense is dominant.

Finally, we can conclude with the words of Stewart who claims that “sports activities among the deaf represent a social institution within which the deaf realize their right to self-definition through organization, competition and socialization of other deaf individuals who often take part in sports activities” (Stewart, 1991., according to: DePauw & Gavon, 1995.).

REFERENCES


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