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**Original Article**

# Sports Activities as a Factor in Socialization of Deaf Students

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**Abstract:**
Regular physical activity and physical fitness is especially important to maintain health and well-being of people of all ages. Research clearly shows that almost all individuals, including those with disabilities, have better health if they have regular physical activity. In many studies that examined estimates of the level of physical activity among young people with disabilities, deaf or hearing impaired people have the highest level of physical activity in relation to other people with disabilities. This is primarily because they attended schools for deaf children and young people where the school provided extracurricular physical activity program as well. Students who attend high school for deaf children maintain this level of activity through schooling which is held at multiple levels. In order to achieve physical health that is posed as the main objective of the action in a nation, there is still the need to improve levels of physical activity for all children including deaf persons who reside outside the school system of active physical education and competitive sports programs and competitions. Promoting different ways of life, physical activity and opportunities, including the acceptance of the concept of "active life", a modern way of life that integrates physical activity into daily routines, this way of life should become primary objective of health. Paper studies and compares the results achieved for deaf high school students in New Serbia with deaf children of the same age in the United States.
**Key words:** Sports activities, statistically significant, competition, frequency rate, physical activity, population, obese, social skills, physical education, pioneers, social maturity

## Introduction

Sport for children with disabilities is observed from various aspects. It can be considered a means for understanding and interaction among the deaf, an instrument of their rehabilitation that is a utensil of socialization and social identification with the hearing population that is not easy to achieve through other socio-cultural forms. Sport leans on perspective defined by the deaf themselves for their pattern of behavior with social surroundings. Today's society tends to focus on consequences of deafness and difficulties faced by those people and through sport the deaf define themselves as equal to the hearing. "Sport for the deaf represents social institution within which deaf people claim their right to make a choice through organization, competition and socialization of other deaf people participating in sport activities" Stewart, (1991) (according to: DePauw and Gavon, 1995).

Arthur,Sue,Finch,Helen (1999) concluded that people with disabilities can recognize physical and social benefits resulting from their participation in physical activities, especially sports when they take part with other people in their community. However, the same authors assert, fear of being unsuccessful, as well as inconsistence and small scope of necessary physical activities contributes to very modest participation of people with disabilities in those activities. Recent study concerning sports in England carried out by Finch et al. (2000) concluded that young people with disabilities have far less chance to participate in extracurricular sports activities (that is outside regular school classes, but in school's organization) or to participate outside the sports at school. For instance, 16% of sample consisting of young people with disability participated in extracurricular sports activities in comparison to 45% of general sample including young people and 47% of young people with disabilities participated in certain sports activities during the weekend in comparison to 74% of general population going in for certain sports activity during the weekend. Main reasons cited in Finch's research that prevent young people with disabilities to participate in sports activities are identified as follows:

Lack of money (37%)
I am limited by my health condition (37%)
Local facilities are not suitable (37%)
No local sports facilities in close environment (34%)
Difficult transportation to sports facilities (32%)
Local clubs have no understanding for my disability (32%)
I do not want to go by myself (25%)

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Regardless the reason for children not to participate in physical activities, we can consider results of researches during last couple of years, Hellmich (1997) in the newspaper USA Today from 1st July 1997, concluded that merely 22% of children is physically active on daily basis, 49% of them is moderately kinetically active and only 34% of them attend physical education classes in their schools, while nearly 23% of children do not have these lessons for various reasons (health, disinterest or no reason at all). He identified that almost 54% of children at the age of 6 to 11 are obese and rate of obesity is increasing by the day. It is also deducted that physical activity represents an integral part of learning process in schools on all levels and that incapable children, that is, children not engaged in sports have very low self esteem, dislike group activities and become asocial. Children involved in sports activities feel better, fit the group more easily and are less likely to become obese later in life. Psychically, sports stimulations help intellectual development, sharpen motor skills, grow better emotional and social development in children and help at depression appearance and increase self-confidence in children. Inactive child activated in sports competitions and activities improves self-esteem and develops better communication. This is especially important in deaf children who are limited in communication for the reason of undeveloped speech.

Vast majority of deaf children never reach speech and lingual abilities for academic and professional achievements. All researches conducted by now affirm this opinion. As a dominant reason of low success in language and speech adoption the inability of speech and language perception via hearing sense, that is lack of information reaching brain by means of this sense (Kovačević,Arsić,2009).

All advocates of oral and sign and combined method in education of the deaf, agree upon one issue: Communication and academic learning requires a lot of effort from the deaf children. For that reason one class of deaf children has 4-10 students, all existing remnants of hearing are used as well as hearing aids that are capable of amplifying intensity of sound waves reaching the student.

Along with low threshold of student-teacher relation in deaf children education there is the need firstly for relation one on one (need for teacher's assistant) in order to develop communication (oral and sign) in parallel. If the following four factors exist: Good rapport between student and teacher; teacher's assistant; individual development of speech and participation of parents, there is enough space for talking about successful development of communication and academic skills in deaf children (Slavnić,Kovačević,2005). Unfortunately, there are neither sufficient resources nor enough energy for realization of these tasks. Great number of parents tries to learn sign language in order to communicate with their children neglecting oral communication.

Beside communication development, deaf students develop motor skills differently, in the research conducted by Lieberman, 1965 (according to Arsić,2007) it is concluded that deaf children of deaf parents achieve better academic results, having better language development as well as social relationships than deaf children whose parents are not deaf. In locomotors relations 78.6% of deaf children with deaf parents and 73.3% of deaf students with hearing parents reached or exceeded average level of performance for their age. This indicates that speech-language development in deaf children does not influence motor skills development. Also it indicates that there are no differences between deaf children with deaf parents and hearing parents.

Sport is one of the powerful bonding forces in the world of the deaf. Love for sport is nurtured in boarding schools for deaf children and creates rivalry amongst other schools. Sport becomes rapidly a powerful means of acculturation for deaf child, exchange of experience, cause of pride for the deaf (Marković,Arsić,2009). Thus it happens that over competitions organized on the level of all Serbia, deaf children get to know each other, exchange experiences, create healthy habits and develop their social skills.

"Sport for the deaf represents social institution within which deaf people actuate their right to make a choice through organization, competition and socialization of other deaf people participating in sports activities" Stewart, (1991) (according to DePauw and Gavron,1995).

First international games of deaf people were held in Paris, 1924. These sports games, as response to Olympic Games, were founded by Frenchman Eugen Rubens Alcais (1884-1963) and was called "International Silent Games". 9 nations with 148 sportsmen participated and competed in 6 sports and athletics. There were 31 events in total and sports disciplines were: Athletics, cycling, diving, soccer, shooting, swimming and tennis. National teams that participated were as follows: Belgium, France, Great Britain, Hungary, Italy, Lithuania, Netherlands, Poland and Romania, our country did not take part in these games. It is interesting to mention that women performed only in 100 m back crawl swimming discipline. These games we attended as participants for the first time in 1949 with 35 competitors and first medals were won only in 1957 in Brussels, when we won first place in soccer. This first place we also take in Helsinki 1961, Washington 1965 and Belgrade 1969, when we take first place in handball both in male and female competition. It is important to emphasize that until 1973 we had had absolute primacy in soccer and later we were not able to win any medal in this sport.

First competitions of deaf and hard of hearing school children (primary and secondary school) after World War II were organized in Subotica, back in 1948 (15-27th June 1948) by the name of "First gymnastic gathering of deaf youth of Yugoslavia". Initiators and creators of this gathering were Professor Desimir Ristovic, at the time principle of school for deaf children in Subotica and Nikola Muskinja, physical education teacher in school for deaf children in Subotica. Around 600 students from all schools for deaf children in

Yugoslavia at that time were present on that first gathering actively participating. It should be pointed out that according to the data of Serbian Deaf and Hard of hearing Association, there were also 600 deaf young men and women from all Yugoslavia who participated on a gathering called "Deaf Youth Gathering" held only three more times after this gathering in Subotica.

Unlike most other sports, athletics is very flexible sport so children who begin to run later do not lack key skills developed with years of age, since majority of athletic disciplines is natural thing for children (such as running, jumping and throwing). Age, maturity of children and their possibility to follow instructions determine events suitable for them. For instance, racing with hurdles, longer racecourse and some athletic disciplines are not recommended for small children, but they should definitely take part in races such as 60 and 100 meters, high jump and long jump. Realization of ATHLETICS contents program enable students to learn firstly to walk naturally and correctly, run, jump and throw. Apart from that students are allowed to develop their internal potentials and increase speed, endurance, strength and general ability. In physical capability development the success shall depend on good planning that is load dosage. Dosage is planed according to individual capabilities of students and average capabilities of class or group. Demands are always somewhat greater than capabilities of students and must comply with gender, age, health condition and actual disposition. Dosage is achieved by change of tempo, tempo is increased or decreased (faster, even faster), rhythm, alternant tension and relaxing of muscles, change of weight (instrument).

Competitions for deaf students in Serbia are organized within school fields (with minimum use of sports fields and local administration halls) with referees from local administration and students compete in following disciplines:Athletic disciplines: 60m race (female pioneers) and 100m (female youth); 100 m (male pioneers and youth); 200m (female pioneers) and 300m (female youth) and 400m (male pioneers and youth); high jump; long jump; sphere throwing;Group sports: mini soccer; basketball and volleyball.

Research sample: Research sample is performed of primary school students for children with hearing impairment.

Criteria for creating the group were: hearing impairment existence, age of students 7-16 years and IQ in normal limits.

Altogether 52 hearing impaired students were selected. Examinees were divided into two groups. First group of examinees (group of children accommodated in boarding school of deaf children institution) includes 26 students, both genders, using boarding school accommodation by schools for hearing impaired children. Second group of examinees (group of children accommodated in family in course of education) includes 26 students with hearing impairment, both genders, not using boarding school accommodation but staying with their families in course of schooling. Groups are balanced according to number, gender, age, time of genesis and grade of hearing impairment, IQ and manner of education (special schools).

**Materials and methods**

Basic method applied in this research (comparative analysis) determined the way of formulating fundamental assumptions, that is, general, special and individual hypothesis. Namely, all hypotheses are given in form of so called zero hypotheses, which means we began from the assumption that there are no differences between the two groups regarding examined variables and variable indicators.

Statistic data processing included application of following methods and procedures:

Frequency rate: Frequencies and percentages

Central tendency rate: Calculating arithmetic mean and standard deviation

Procedures for identifying statistic significance between arithmetic means

For little independent samples

For little dependent samples

Hi-square and procedures for identifying significance of Hi-square

Variance analysis

**Results**

Different physical activities (collective games, group activities and in general taking part in social life) represent one of very important indicators of social development of children. In accordance with previously determined strategy of analyzing comparative achievements of children from boarding school and children from families, obtained results are shown concerning social skills development for younger and older subgroups.

In terms of social maturity, there is significant development discrepancy of hearing impaired children compared to children from mass population, regardless the condition especially emphasized in this study: Institutional or non-institutional accommodation in course of education. On the other hand, although intergroup differences were not registered having in mind overall level of social maturity in groups of hearing impaired children from boarding school and children from families, on certain subscales statistically significant difference in average achievement was confirmed. Moreover, positive course of differences is alternately registered in favor of children from institution and then in children accommodated in their own families in course of education in special schools. Findings related to assessment of social skills and knowledge, social interests and

autonomy domain (autonomous movement) are consistent to this general finding supporting conclusion that there is no absolute advantage of the family in encouragement of social development and hearing impaired children becoming independent.

From the quoted Table 1 it is visible that examinees from the first group accomplished overall average achievement of 2.03 points, with SD 0.54. Simultaneously, examinees from the second group have overall average achievement of 1.90 points with SD 0.62. Recorded difference between overall average achievements of examined groups is not statistically significant (t = 0.790-not significant). Statistically significant difference between examined groups was recorded on three parameters (plays child games-level p<0.01, rides bicycle-level p<0.01 and attends matches-level<0.05). Very characteristic data is that ratio of differences between examined groups is changed in favor of one or the other group depending on examined parameter.

The displayed results show that overall average achievement of examinees from the first group amounts to 2.17 points (SD 0.51). At the same time examinees from the second group accomplished overall average achievement on the level of 2.20 points (SD 0.52). On the overall level difference between examined groups was recorded in favor of examinees from the second group. This difference is not significant statistically (t = 0.206-not significant.). Statistically significant difference between examined groups was recorded on the level of single parameters (parameters 1, 8 and 12). Characteristic are different achievements on certain parameters depending on examined group. On one set of parameters better achievements are accomplished by examinees from the first group and on the other by examinees of the second group.

Table 1: Comparison of average achievements by examinees of first and second age group from 7-11 years

| | Group 1 | | | Group 2 | | | |
|---|---|---|---|---|---|---|---|
| Parameters | AS | SD | N | AS | SD | N | Sig |
| Takes part in play* | 1.60 | 0.52 | 10 | 1.69 | 0.48 | 13 | 0.418; p>0.05 |
| Plays football | 1.50 | 0.85 | 10 | 1.85 | 0.99 | 13 | 0.160; p>0.05 |
| Plays basketball | 1.50 | 0.71 | 10 | 1.69 | 0.85 | 13 | 0.322; p>0.05 |
| Plays child games* | 2.90 | 0.32 | 10 | 2.54 | 0.78 | 13 | 0.005; p<0.01 |
| Road trips | 2.40 | 0.70 | 10 | 2.46 | 0.66 | 13 | 0.867; p>0.05 |
| Rides bicycle | 1.70 | 0.48 | 10 | 1.92 | 0.28 | 13 | 0.006; p<0.01 |
| Plays harder child games* | 2.00 | 0.82 | 10 | 2.08 | 0.76 | 13 | 0.879; p>0.05 |
| Knows the rules | 1.70 | 0.48 | 10 | 1.77 | 0.44 | 13 | 0.488; p>0.05 |
| Participates athletic team | 1.00 | 0.00 | 10 | 1.08 | 0.28 | 13 | 0.071; p>0.05 |
| Attends matches | 1.20 | 0.42 | 10 | 1.46 | 0.66 | 13 | 0.045; p<0.05 |
| Participates in game with ...* | 2.50 | 0.85 | 10 | 2.62 | 0.51 | 13 | 0.077; p>0.05 |
| Participates in game because ... | 1.80 | 0.42 | 10 | 1.85 | 0.38 | 13 | 0.587; p>0.05 |
| Total | 2.03 | 0.54 | 10 | 1.90 | 0.62 | 13 | T = 0.790; not significant |

Table 2: Comparison of average achievements by examinees of first and second age group from 11-16 years

| | Group 1 | | | Group 2 | | | |
|---|---|---|---|---|---|---|---|
| Parameters | AS | SD | N | AS | SD | N | Sig |
| Takes part in play* | 2.00 | 0 | 16 | 1.92 | 0.28 | 13 | 0.022; p<0.05 |
| Plays football | 2.19 | 0.91 | 16 | 2.69 | 0.75 | 13 | 0.084; p>0.05 |
| Plays basketball | 3.00 | 0 | 16 | 3.00 | 0 | 13 | |
| Plays child games* | 2.75 | 0.68 | 16 | 2.69 | 0.75 | 13 | 0.669; p>0.05 |
| Road trips | 2.88 | 0.34 | 16 | 2.77 | 0.44 | 13 | 0.152; p>0.05 |
| Rides bicycle | 1.94 | 0.25 | 16 | 1.92 | 0.28 | 13 | 0.771; p>0.05 |
| Plays harder child games* | 2.56 | 0.63 | 16 | 2.54 | 0.52 | 13 | 0.527; p>0.05 |
| Knows the rules | 2.00 | 0 | 16 | 1.92 | 0.28 | 13 | 0.022; p<0.05 |
| Participates athletic team | 1.31 | 0.48 | 16 | 1.31 | 0.48 | 13 | 0.958; p>0.05 |
| Attends matches | 1.69 | 0.60 | 16 | 1.85 | 0.55 | 13 | 0.315; p>0.05 |
| Participates in game with ...* | 2.75 | 0.58 | 16 | 2.77 | 0.44 | 13 | 0.685; p>0.05 |
| Participates in game because... | 1.69 | 0.48 | 16 | 1.92 | 0.28 | 13 | 0.001; p<0.01 |
| Total | 2.17 | 0.51 | 16 | 2.20 | 0.52 | 13 | t = 0.206; not significant |

Respondents older (11.01 to 16.00 years) showed slightly higher average achievement than those in younger age groups, respectively - have a higher index of social maturity. At this age is also recorded differences between the groups in favor of boys during the school located in the family (second group) as compared to subjects placed in a boarding institution for deaf children (first group). The resulting difference between groups was not statistically significant based on testing the overall average achievement (t = 0.206 - not significant). Statistically significant difference between the groups was obtained for individual parameters (part of the game - the level of $p < 0.05$, knows the rules - the level of $p < 0.05$ to participate because of ... - the level of $p < 0.01$) . For this age group are typical of different parameters on individual achievement of social skills, depending on the membership of the group. At some parmetrima respondents realize greater achievements of the first group while the other - to achieve the second group of respondents (Table 2.).

Table 3: Comparison of average achievements by examinees of first and second age group from 7-16 years

| | Group 1 | | | Group 2 | | | |
|---|---|---|---|---|---|---|---|
| Parameters | AS | SD | N | AS | SD | N | Sig |
| Takes part in play* | 1.85 | 0.37 | 26 | 1.81 | 0.40 | 26 | 0.473; p > 0.05 |
| Plays football | 1.92 | 0.93 | 26 | 2.27 | 0.96 | 26 | 0.594; p > 0.05 |
| Plays basketball | 2.42 | 0.86 | 26 | 2.35 | 0.89 | 26 | 0.620; p > 0.05 |
| Plays child games* | 2.81 | 0.57 | 26 | 2.62 | 0.75 | 26 | 0.049; p<0.05 |
| Road trips | 2.69 | 0.55 | 26 | 2.62 | 0.57 | 26 | 0.493; p > 0.05 |
| Rides bicycle | 1.85 | 0.37 | 26 | 1.92 | 0.27 | 26 | 0.085; p > 0.05 |
| Plays harder child games* | 2.35 | 0.75 | 26 | 2.31 | 0.68 | 26 | 0.458; p > 0.05 |
| Knows the rules | 1.88 | 0.33 | 26 | 1.85 | 0.37 | 26 | 0.426; p > 0.05 |
| Participates athletic team | 1.19 | 0.40 | 26 | 1.19 | 0.40 | 26 | 1.000; p > 0.05 |
| Attends matches | 1.50 | 0.58 | 26 | 1.65 | 0.63 | 26 | 0.825; p > 0.05 |
| Participates in game with ...* | 2.65 | 0.69 | 26 | 2.69 | 0.47 | 26 | 0.245; p > 0.05 |
| Participates in game because... | 1.73 | 0.45 | 26 | 1.88 | 0.33 | 26 | 0.005; p<0.01 |
| Total | 2.07 | 0.59 | 26 | 2.05 | 0.61 | 26 | t = 0.117; not significant |

Similar distribution of results is obtained when comparative analysis is done for sample in whole including ages from 7-16 years of age (Table 3).

In Table 3 there is illustration of comparison of obtained average achievements by examinees from first and second group of age 7-16 years of age on the span in the area of Social skills. Overall achievement of examinees from the first group amounts to 2.07 points with SD 0.59. At the same time examinees from the second group accomplished overall average achievement on the level of 2.05 points with SD 0.61. Differences between examined groups are generated by belonging to a group and sort of examined parameter. Obtained difference between examined groups is not statistically significant (t = 0.117-not significant). Statistically significant difference between examined groups is recorded in parameters 20-($p < 0.01$) and parameter 5-($p < 0.05$).

**Discussion**

In this study, we investigated the effect of family and institutional accommodation of deaf elementary school children to develop their social maturity. Our research has shown that the given hypothesis, which is expected that there is no statistically significant difference in the social skills of respondents residing in the institution during the school compared with the patients placed in the family. The results showed that do not support the thesis of the negative effects of institutionalization of deaf children. In fact, one big dilemma that stuck occupied the attention of researchers: is it stimulating environment for the development of a deaf child with normal hearing families or institutions in which the child is placed together with their deaf peers and in which obtained the education and upbringing of the family can not provide him.

The experience of belonging to the group as an important factor of socialization are much easier to form than in an institution within the family. This is primarily due to the facilitation of mutual communication of the deaf, although the movements of parents and the introduction of the inclusion and full social integration of deaf children believe that the regular social environment more stimulating for the social development of institutional accommodation. Our research has shown equal importance to families and institutions in the social integration of deaf children. Also, there is little research that directly deal with the problems of the relationship between social context in which deaf children grow up and achieve social maturity. Review of the literature confirms the lack of which is systematically examined the effects of specific social contexts (family or institutional environment) on the development and processes of socialization of deaf children. Although we do not have the answer to the question: how the environment (social context of living) can be stimulating or hindering factor of social maturity. Our study aimed to show how through sport can affect the social maturity of deaf children and in what form the social environment can give priority in development. The answer to this question has practical implications with regard to the reform processes related to inclusive education.

**Conclusion**

It is not easy to establish the "right" time for a child to engage in organized sports events. Beside concentration capability, level of maturity and strength vary in different ages and there is no concrete way to determine whether a child is ready for physical efforts awaiting them on competitions. Nowadays, children are more interested in television, computers and video games and parents are often afraid to let their children on the street. Children are simply not interested in physical activity nowadays.

Competition is important means of motivation in children with increase of their potentials in many areas during education. The final aim of competition is challenge and improved feeling of own capabilities and at the end oneself, result does not matter and children feel good and show what they can do best. Competition, winning or losing are sports aspects that can be used in character structuring and gaining higher grade of self-awareness in little children. Team work, persistence, dedication, commitment, competitiveness, loyalty, self-discipline and empathy are all positive traits children learn while competing.

However, difference obtained between groups is not statistically significant on the basis of testing overall average achievements ($t = 0.206$-not significant). Statistically significant difference between examined groups obtained on the level of single parameters (takes part in play-level$<0.05$, knows the rules of the game-level $p<0.05$ and participates in game because...-level $p<0.01$). Conclusion to be made from our study indicates that going in for sport and sports activities is very important for all children and that for right socialization of children with hearing impairment being familiar with these skills is essential. Reason for this conclusion lies in the natural tendency which appears in children while developing all possible skills. In deaf children less impact on socialization results from impossibility to communicate, but is compensated through various sports activities that encourage deaf children to socialize with their peers.

Globally observed, results of this research do not support the theses of adverse effects of institutionalization. On the basis of obtained results general assumption is confirmed that there are no statistically significant differences between students accommodated in boarding schools during special education and students accommodated in families in terms of general indicators of social maturity.

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