

Review

## Sports activities and psychophysical health of deaf and hard of hearing people

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### Summary

The participation of deaf and hard of hearing people in sports activities contributes to the improvement of the quality of life in all its domains, and compared to people with some other types of disabilities, deaf and hard of hearing people achieve higher scores in sports activities. Practicing sports activities improves physical health, mental state, degree of independence and social relationships. Sports activities have a positive effect on building and strengthening the self-esteem of individuals. Subjective experience and individual perception have a great influence on the quality of an individual's life, therefore, self-esteem is a very important factor that contributes to this.

The aim of this paper is to review the literature from the period 2000–2021 on the impact of sports activities on the psychophysical health of deaf and hard of hearing people. The subject of interest was: to determine the role of sports activities in the quality of life of deaf and hard of hearing people, as well as how they affect their level of self-esteem. The following search engines were used for the literature search: Ebscohost, ScienceDirect, Wiley Inter Science and SpringerLink, KoBSON, Google Scholar. The results of the literature review showed that sports activities contributed to the preservation and development of the overall psychophysical health of deaf and hard of hearing people. Participation in sports activities, whether recreational or professional in nature, has proven to be a significant factor in raising the level of self-esteem, alleviating symptoms of anxiety and stress. Participation in sports activities leads to better social functioning among peers and building an inclusive society.

**Key words:** deaf and hard of hearing people, psychophysical health, quality of life, self-esteem, sports activities

## Introduction

Hearing impairment can lead an individual to a completely new specific state of overall functioning. The terms most often used to describe people who have some form of hearing impairment are hard of hearing and deaf. Hard of hearing is a term used to describe people with some degree of hearing loss who mainly communicate orally. This term is used mostly by people who see a certain hearing impairment primarily as a physical shortcoming or anomaly compared to hearing people. In contrast to them, the deaf, more precisely the culturally deaf,

use sign language and do not perceive deafness as a disadvantage [1].

Deaf and hard of hearing people and experts dealing with the phenomenon of deafness encounter various challenges through which they learn to adapt to new changes. Certain deaf and hard of hearing people will have problems accepting the fact that they have some kind of impairment, and it will be more difficult to cope with the present disability. On the other hand, there is also a large number of deaf and hard of hearing people who will not see deafness as the impairment and will use its framework to develop their own potential and improve their own quality of life. Throughout history, hearing loss has often been associated with “disability” and “handicap”, and the essential identity of the person as well as the degree of difficulty, which may or may not be related to the level of hearing, have not been taken into account. What was traditionally called “hearing impairment” is now defined in relation to social participation [2].

Quality of life represents the optimal level of mental, physical and social functioning in fulfilling different roles (work, friendship, family). Considering the fact that there is still no single accepted model of quality of life, researchers use different configurations of objective and subjective dimensions as components of quality of life. The World Health Organization (WHO) explained quality of life as an individual’s perception of his/her own position in life in the context of culture and system values in which he/she lives, as well as in relation to his/her own goals, expectations, standards and interests. It is a broad concept that is influenced by the individual’s physical health, mental state, degree of independence, social relationships and environment. The question of quality of life is not normative, because it does not define how we should live, it is neither empirical nor descriptive, because it cannot be clarified by empirical methods, but is a purely evaluative question [3].

Given that subjective experience and individual perception have a great influence on the quality of life of the individual, one of the important factors that contributes to this is self-esteem. There are different definitions of self-esteem in the literature. Coopersmith [4], one of the most prominent authors in this field, defines self-esteem as a set of qualities that the individual perceives in himself/herself. Self-concept consists of attitudes and assumptions that the person has in relation to himself/herself and his/her abilities, which are a guide to his/her behavior [5]. The distinction between how someone describes himself/herself (self-concept) and how he/she values himself/herself (self-esteem), according to most authors, is that the evaluative aspect is more susceptible to the influence of situational factors [6], and assumes the existence of global self-esteem, that is, what the individual thinks about himself/herself as the person [7]. Self-esteem is a very important aspect of self-image and has a strong influence on human cognition, behavior, emotions, and motivation [8].

Movement, that is, physical activity, along with energy, oxygen and water, is one of the basic biotic needs of humans sustaining life [9]. Since its inception, sports and free time have been in a complex relationship. And not only because, on the one hand, sports was related to free time, and on the other hand, as a professional exercise for working time, but because from the very beginning, as a spectacle, it was aimed as much at leisure as at idleness [10]. When it comes to sports activities of deaf and hard of hearing children, for methodological reasons, it primarily includes recreational sports. In sports activities conceived in this way, the pleasure of the game and fun are more important than the results, and the activities themselves take place according to formal requirements that are not so strict and where the persons often adapt them to the conditions of the game, available time, etc.

Sports activities and exercise are important factors for the development of the individual

and his/her integration in society in general. Sport is a phenomenon which positive effects through physical activity contribute to raising the quality of life, not only for people without disabilities, but also for those with disabilities. Through physical activity, children can be largely protected from the harmful effects of a sedentary lifestyle, which results in the appearance of many chronic degenerative diseases of the modern age, such as: obesity, high blood pressure, diseases of the heart and blood vessels, disorders of fat metabolism, etc. [11, 12]. Practicing sports activities improves physical health, mental state, degree of independence, and social relationships. When we talk about deaf and hard of hearing people, it was found that participation in sports activities leads to the improvement in the quality of life and the achievement of better results compared to people with some other types of disabilities [13]. The popular portrait of sports among people with disabilities is best described by the sentence “ability counts, not disability” [14]. In addition, participation in various sports activities and competitions provides the opportunity for deaf and hard of hearing people to overcome psychological and physical problems, as well as to raise the level of subjective experience of the quality of life [13].

The aim of this paper was to review the literature from the period 2000-2021 on the impact of sports activities on the psychophysical health of deaf and hard of hearing people. The role of sports activities in the quality of life of deaf and hard of hearing people, as well as how they affect their level of self-esteem, was investigated in more detail.

## Sports activities as predictors of the quality of life of deaf and hard of hearing people

According to Obradović, generally valid principles for sports activities must be represented in the physical education of the deaf,

such as: management of classes, trainings and competitions by professional and competent persons, but also the absolute supervision of a doctor. In a word, the sports activities of the deaf in essence, as well as in terms of content and goal, must not differ in any way from the basic intentions of physical education of people with preserved hearing. Unfortunately, in practice, the sports activities of the deaf often take place without sufficient preparation of the participants themselves, which means that the necessary systematicity and organization are lacking in the management of the sports activities of the deaf. By choosing the right sports activity, the complete formation of the personality is achieved, not only the strengthening of physical condition and the development of motor skills [15].

Physical education teachers have the most significant and key role not only in involving deaf and hard of hearing students in physical activities, but also in highlighting and promoting their abilities that should facilitate their integration in the school environment. It is extremely important how physical education teachers approach students with hearing loss and what strategies they use in working with them. Strategies and programs of physical activities should not be passively demonstrated and implemented in classes, but rather, it is necessary to apply them through interaction with these students. Also, in such work, the individual characteristics, needs and potential of students must be respected [16], which is also confirmed by Živanović in his research, where he points out that teaching physical education would have a greater effect on the health and physical abilities of students and it is necessary to individualize work in classes as much as possible, to intensify physical education classes, to make maximum use of existing working conditions and class time, to introduce novelties into classes that would encourage and motivate students to work [17].

Sports activities that can be practiced by deaf people, and which can be equated with

sports activities intended for hearing people, are: floor gymnastics, running, jumping, basketball, volleyball, handball, tennis, table tennis, football, hockey, golf, bowling, shooting, hiking, walking, swimming, rowing, skiing, skating and sledding. Rhythmic exercises and folklore, as well as the performance of pantomimes, also have a great influence on shaping the rhythm of the entire organism and on the overall development of the organism [15].

When it comes to the perception and evaluation of physical activities and physical education in general, the research results showed that students with hearing impairment compared to students without hearing impairment, perceived physical education classes as very important, and found it difficult when physical education was omitted from teaching [18].

Xu et al. research is related to the health aspect of physical activities directly affecting the physical and psychological health of children and adolescents with hearing impairment. According to the obtained results, they emphasize the contribution to the development and preservation of the cardiovascular system, the skeletal and muscular system, the regulation of body mass, raising the level of self-esteem, and alleviating the symptoms of anxiety and stress. Participation in sports activities leads to better social functioning among peers and society in general. With more self-confidence and security, social skills and friendships develop [19].

According to research by Martin and colleagues, the factor most influencing the participation of students with hearing loss in sports activities is social support, namely the support of family, friends and peers [20].

The published results of the scientific study by Kalgar and associates emphasize participation in physical activities and peer support, as factors that have a very positive effect on the physical development of adolescents with hearing loss. Those adolescents with hearing impairment, who participated in physical activities, have a significantly better physical

condition, i.e. physical condition and physical characteristics, compared to those adolescents who were not active [21]. The participation of students with hearing impairment in educational and sports activities is higher in those whose peers provided tutoring support. The obtained results of Kalgar and associates are confirmed by the research of Lieberman with co-authors where students who were taught by their peers, and who together with them went through the contents and challenges of physical activities had more positive experiences and progressed more through different levels of physical activities [22].

According to Tsai and Fung, the main factor that hinders and reduces the participation of students with hearing loss in sports activities is the lack of adequate information about physical activities and participation opportunities [23].

Crnković and Rukavina, examined whether there were differences in the quality of life of people with disabilities who were involved in sports activities and those who were not, considering the category which they belonged to. A total of 175 persons with disabilities participated in the research, divided into the following groups: persons with physical impairments, persons with hearing impairments, persons with visual impairments and the category of persons with intellectual disabilities. The respondents were classified into the group that was involved in sports for people with disabilities and the group that was not involved in sports for people with disabilities. To assess the quality of life, a questionnaire constructed by the World Health Organization - WHOQOL - BREF was used and it examined four domains of quality of life: physical and mental health, social relations and satisfaction with the environment. The research showed that respondents who were involved in sports activities achieved better results in terms of satisfaction with the quality of life compared to those who were not involved in sports activities, in all four investigated domains of quality of life. The results of

deaf and hard of hearing respondents did not differ statistically significantly from the other categories, except the category of respondents with intellectual disabilities. When it comes to domains of quality of life, deaf and hard of hearing respondents achieved the best results in the domain of mental health, then in the domain of physical health, satisfaction with the environment and finally achieved the weakest results in the domain of social relations. Weaker results in the domain of social relations could be attributed to barriers in communication that deaf and hard of hearing people encountered due to the inability to use oral speech and the misunderstanding of Sign Language by hearing people [14].

On the other hand, the authors Nemček and Mokušova aimed to examine the quality of life of deaf and hard of hearing people who played sports professionally, who played sports recreationally, and who did not play sports at all. Quality of life was examined with the Quality of life domains (QOLDs) questionnaire, which was adapted from the WHOQOL questionnaire of the World Health Organization. The questionnaire contained the following domains: general health condition, physical condition and degree of independence, psychological condition and spirituality, social relations, satisfaction with the environment and participation in sports activities. The results of the research showed that in the groups of deaf and hard of hearing respondents who played sports, either recreationally or professionally, the highest scores were in the domain of participation in sports activities. In the second place was satisfaction with social relationships, in the third place were physical condition and degree of independence, and in the fourth place was general health. The group of deaf and hard of hearing respondents who did not play sports showed the best results in the domain of social relations. In the second place was physical condition and degree of independence, in the third place was participation in sports activities, and in the fourth place were

psychological condition and spirituality. The results of this research show that sports activities contribute to the subjective experience of the quality of life in deaf and hard of hearing people, significantly in those who are actively involved in sports activities. Among those who are not so active and who rarely take part in some kind of sports activities, satisfaction in the domain of sports activities is in the third place [24].

### **The influence of sports activities on the self-esteem of deaf and hard of hearing people**

Nemček examined the status of self-esteem in sports-active and inactive deaf and hard of hearing people [13]. In this research, the sample consisted of 117 respondents, and the Rosenberg self-esteem scale [7] was used as the instrument to measure self-esteem. This scale contains 10 items describing positive and negative feelings related to one's own personality. The research results showed that sports-active deaf and hard of hearing people had a higher level of self-esteem than those who were not involved in sports activities. Deaf and hard of hearing people who were active in sports recorded the highest score on the Rosenberg scale on those statements indicating the capability of performing tasks as well as other people, feeling like persons of worth and who were equal, and not thinking about being not quite good at everything they do. Results indicating a low level of self-esteem in active deaf and hard of hearing people refer to statements indicating that they would like to have more respect for themselves and that they often tend to feel like a failure. It is interesting that although active deaf and hard of hearing participants showed a higher level of self-esteem in comparison to sports-inactive respondents, the maximum and minimum scores for both groups were found on the same statements.

The research that also deals with the connection between the level of self-esteem and participation in sports activities among deaf and hard of hearing people, which we will mention, was carried out by the authors Mahmut Acak and Oktaj Kaja [25]. The authors examined the level of self-esteem of 95 hard of hearing footballers playing in the Premier League for the Hearing Impaired. The instrument used to examine self-esteem was the Coopersmith Self-Esteem Inventory. The inventory contains items that examine the individual's view of life and himself, as well as attitudes towards himself in the context of family and social relationships. The results obtained in this research also showed that the level of self-esteem among hard of hearing football players was at an average level without statistically significant differences when it came to their age, length of playing football and educational status.

## Conclusion

Based on the reviewed literature, we can conclude that participation in sports activities contributes to improving the quality of life of deaf and hard of hearing people in all domains, with a special emphasis on physical and mental health, social relationships and satisfaction with the environment. It is particularly noticeable in the aforementioned research that sports activities have the greatest impact on social relationships, where they

contribute to their development and consolidation in both children and adults with hearing impairment. In everyday life, deaf and hard of hearing people find it difficult to navigate social relationships, due to the existing communication barriers, while in sports activities, the communication aspect can be neglected, which has a positive impact on their psychological health.

When it comes to the level of self-esteem of deaf and hard of hearing people who participate in sports activities, the results show high and medium levels of self-esteem, which indicates that participation in sports activities raises the level of self-esteem of deaf and hard of hearing people, and thus affects the improvement of subjective experiences and individual perception of their quality of life.

A review of the literature reveals a lack of the necessary systematicity and organization in the management of sports activities. In most researches, in addition to the role of family and peers, physical education teachers are the ones who should play the significant and key roles not only in the inclusion of deaf and hard of hearing children in physical and sports activities, but also in highlighting and promoting their abilities that should facilitate their integration in a school environment.

We consider it important to point out that in these studies different instruments were used to examine self-esteem, which may cause controversy regarding the obtained results, but may also be the subject of a new and differently designed study.

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## Sportske aktivnosti i psihofizičko zdravlje gluvih i nagluvih osoba

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Učešće gluvih i nagluvih osoba u sportskim aktivnostima doprinosi poboljšanju kvaliteta života u svim njegovim domenima, a u odnosu na osobe sa nekom drugom vrstom invaliditeta, gluvi i nagluvi postižu bolje rezultate u sportskim aktivnostima. Praktikovanje sportskih aktivnosti poboljšava fizičko zdravlje, psihičko stanje, stepen samostalnosti i socijalne odnose. Sportske aktivnosti pozitivno utiču i na izgradnju i jačanje samopoštovanja pojedinaca. Subjektivno doživljavanje i individualna percepcija imaju veliki uticaj na kvalitet života pojedinca, stoga je samopoštovanje veoma bitan faktor koji tome doprinosi.

Cilj ovog rada odnosi se na pregled literature iz perioda 2000–2021. godine o uticaju sportskih aktivnosti na psihofizičko zdravlje gluvih i nagluvih osoba. Predmet interesovanja bio je da se utvrdi kolika je uloga sportskih aktivnosti u kvalitetu života gluvih i nagluvih osoba, kao i kako one utiču na njihov nivo samopoštovanja. Za pretraživanje literature korišćeni su sledeći pretraživači: Ebscohost, ScienceDirect, Wiley Inter Science i SpringerLink, KoBSON, Google Scholar. Rezultati nastali pregledom literature pokazali su da sportske aktivnosti doprinose očuvanju i razvoju celokupnog psihofizičkog zdravlja gluvih i nagluvih osoba. Učešće u sportskim aktivnostima bilo rekreativne, bilo profesionalne prirode pokazalo se kao značajan faktor u podizanju nivoa samopoštovanja, ublažavanju simptoma anksioznosti i stresa. Učešće u sportskim aktivnostima vodi ka boljem socijalnom funkcionisanju među vršnjacima i izgradnji inkluzivnog društva.

**Ključne reči:** gluve i nagluve osobe, psihofizičko zdravlje, kvalitet života, samopoštovanje, sportske aktivnosti