

**FINANCIAL, SOCIAL AND SPORTING ASPECTS OF DEAF SPORTS WORLDWIDE**

**Szerzők:**

Adam Michal Szulc (PhD.)  
Kazimierz Wielki University (Poland)

Javier Soto-Rey (PhD.)  
Autonomous University of Madrid (Spain)

Ildikó Balatoni(PhD.)  
University of Debrecen (Hungary)

Karol Görner (PhD.)  
Matej Bel University (Slovakia)

E-mail of the first Author:

[aszul@ukw.edu.pl](mailto:aszul@ukw.edu.pl)

**Lektorok:**

Magyar János (Prof. Dr. doctor of MTA)  
Debreceni Egyetem (Magyarország)

Szentesi Péter (PhD.)  
Debreceni Egyetem (Magyarország)

...and two anonymous reviewers

Adam Michal Szulc, Javier Soto-Rey, Ildikó Balatoni, Karol Görner (2021). Financial, Social and Sporting Aspects of Deaf Sports Worldwide. *Különleges Bánásmód*, 7. (3). 71-83. DOI [10.18458/KB.2021.3.71](https://doi.org/10.18458/KB.2021.3.71)

**Abstract**

There is a dynamic increase in the number of international sports competitions aimed for deaf athletes. More than 50 World and European championships are held every year in various sports disciplines. The participation and number of deaf athletes delegated to these sports competitions depend on the budget available to national sports federations (NSFs) of deaf athletes. Many times, NSFs have been forced to withdraw from participation in a competition owing to lack of financial resources. In numerous countries, NSFs have to conduct online fundraising dedicated to their representatives' involvement in sports competitions. The authors reviewed the source materials in internet on financing the sport of the hearing impaired. No scientific articles covering the funding aspect of national sports federations in the world were found. The authors relied on financial documents provided by the NSF (Poland, Hungary, Slovakia, Spain) and on websites indicated by these federations.

The aim of the article was to characterize selected national organizations gathering deaf athletes from Europe, Asia and Oceania, and North America in terms of the budget they had at their disposal in years 2013–2017, the number of athletes associated in the NSF, and the number of Olympic competitors and the country's medal position during the 2013 and 2017 Deaflympics. An overview of NSF websites with reference to "annual reports", "financial reports", "financial statements", "newsletter", "national teams of", "number of athletes of", demonstrated numerous deficiencies in the transparent presentation of the

financial situation of NSFs. The content of NSF activity reports also provides limited information on the number of athletes and clubs associated in these federations. The article constitutes an introduction to a discussion on the financing aspects and development of deaf people's sport worldwide.

**Keywords:** financial statements, deaf sports, Deaflympics, national sports federations

**Disciplines:** social sciences, sports sciences

### Absztrakt

#### *A SIKET SPORT PÉNZÜGYI, SZOCIÁLIS ÉS SPORTPOLITIKAI VONATKOZÁSAI VILÁGSZERTE*

Napjainkban dinamikusan növekszik a siket sportolóknak szóló nemzetközi sportversenyek száma. Évente több mint 50 világ- és Európa-bajnokságot rendeznek a különböző sportágakban. Ezekre a sportversenyekre delegált sportolók részvétele és száma a siket sportolók Nemzeti Sportszövetségeinek (NSF) anyagi helyzetétől függ. Az NSF-ek sokszor a pénzügyi erőforrások hiánya miatt kénytelenek visszalépni a versenyen való részvételtől. Számos országban az NSF-eknek online adománygyűjtést kell folytatniuk, amelynek célja a sportolók részvételének biztosítása a sportversenyekben. Szerzők áttekintették a hallássérültek sportjának finanszírozásáról szóló internetes forrásokat. Nem találtak tudományos cikkeket, amelyek a nemzeti sportszövetségek finanszírozási aspektusát ismertetnék. Jelen tanulmány négy NSF (Lengyelország, Magyarország, Spanyolország, Szlovákia) által rendelkezésre bocsátott pénzügyi dokumentumokra és az ezen szövetségek által megjelölt weboldalakra támaszkodik.

Ezen túlmenően jellemezni kívánták az Európa, Ázsia és Óceánia, valamint Észak-Amerika siket sportolóit tömörítő nemzeti szervezeteket a 2013–2017-es években rendelkezésükre álló költségvetés, az NSF-hez kapcsolódó sportolók száma, a siket olimpiai versenyzők száma és az ország 2013. és 2017. évi siket olimpián szerzett érmes helyezések alapján. Az NSF webhelyeinek áttekintése az „éves jelentések”, „pénzügyi jelentések”, „pénzügyi kimutatók”, „hírlévi”, „nemzeti csapatok”, „a sportolók száma” keresőszavak alkalmazásával számos hiányosságra mutatott rá. Az NSF tevékenységi jelentéseinek tartalma korlátozott információt nyújt a szövetségekhez kapcsolódó sportolók és klubok számáról és anyagi helyzetükhöz kapcsolódó adatokról.

**Kulcsszavak:** pénzügyi jelentés, siket sport, siket olimpia, nemzeti sportszövetség

**Diszciplína:** társadalomtudomány, sporttudomány

### Introduction

A dynamic development of competitive deaf sport is being observed with increasing number of disciplines being included. Each calendar year, there are about 50 European and world level championship events. Summer and Winter

Deaflympics Games are held every 4 years. A constant increase in the number of participants in the Summer Deaflympics Games is also noted, e.g. 32 countries, 1150 athletes in 1977; 52 countries, 1679 athletes in 1993; 67 countries, 2208 athletes in 2001; 86 countries, 2873 athletes in 2017. The

dynamic development of deaf sports requires the commitment of ever greater financial resources for the organization of recreational and competitive sports of the hearing impaired. The raising of funds essentially involves the national sports federations (NSFs), and the available amount is usually incomparable to the needs. In numerous countries, funding for the NSF activity comes mainly from governmental or ministerial sources, but in many cases it is based on donations and fundraising. Insufficient funding makes deaf national teams withdraw (often at the last minute) from international tournaments, despite earlier declarations.

The main statutory objectives of the NSFs for the deaf are: organizing, popularizing, and developing deaf sport; representing, protecting the rights and interests of all members; promoting various forms of deaf sport; and, above all, organizing the participation of the country's representatives in international events, including Deaflympics. The content of available NSF activity reports provides limited information on the number of athletes and clubs associated in these federations. This article constitutes an introduction to a discussion on the financing aspects and development of deaf people's sport worldwide.

### Material & methods

The authors reviewed the source materials on the internet on financing the sport of the hearing impaired. No scientific articles covering the funding aspect of national sports federations in the world were found. The authors relied on financial documents provided by the NSF (Poland, Hungary, Slovakia, Spain) and on websites indicated by these federations. The authors reviewed NSF websites for; "Annual reports", "financial reports", "financial statements", "newsletters", "national teams", "numbers of athletes". The most comprehensive financial

information describing the activities of the NSF were found in the case of sports federations of USA, Canada, Korea, England, and Australia. Although the authors did not receive direct responses from these federations to their questions, the information found on the corresponding websites of these countries allowed for a coherent definition of the financing aspects of these sports federations. For other National Federations there is a lack of source material for this manuscript. For sports federations with the best-documented funding for their activities, information was gathered on social aspects in the countries concerned, *e.g.* the number of people with hearing problems, the number of deaf athletes, *etc.* In addition, the sports successes were reviewed at Deaflympics in 2013 and 2017.

### Deaf people worldwide

It is impossible to provide the exact number of all deaf people in the world. There is also a difficulty in quantifying the number of deaf people in particular European countries.

In accordance with the 2016 data, the World Federation of the Deaf (WFD) obtained through national federations (unions) of the deaf, there are about 71 million deaf and hard-of-hearing people from 135 countries around the world (World Federation of the Deaf, World Federation of the Deaf Report 2015-2018, wfdeaf.org). This means, statistically speaking, that there are more than 526,000 deaf people on average per each WFD-associated country.

Statistics in Poland estimates that there are about 850,000 people aged 15–70 years with hearing impairment (2.2% of population), of whom about 100,000 (0.3%) speak sign language (Ombudsman 2014).

By comparison, the National Statistical Institute (INE) 2008 data imply that in Spain, the percentage of population with disabilities reaches 8.5% (3.8 million people) (ine.es) and there are 1,064,100 hard-of-hearing individuals (cnse.es).

According to the data of the 2011 census, there are 63,014 hearing impaired and 8571 deaf people in Hungary, of whom 2.8% are under 14 and 66.4% are over 60 years. They constitute 0.7% of the Hungarian population (KSH 2011). In contrast, according to the Association of the Deaf and researchers of the subject, there are about 200,000 hearing impaired and 30,000 deaf people in Hungary (Bokor et al. 2017).

The Slovak Association of the Deaf estimates that there are approximately 220,000 deaf and hard-of-hearing people in Slovakia (4.0%), including ca. 15,000 (0.3%) of those who use sign language (teraz.sk 2018).

In the United Kingdom, in 2016, approximately 11 million people (16.7%) suffered from a hearing impairment, 6.7 million of whom should have used hearing aids. About 900,000 (0.14%) people present severe hearing loss. It is also estimated that there are ca. 50,000 deaf children and young people in the United Kingdom. Studies indicate that only 9.7% of deaf and hard-of-hearing people practise sport at least once a week (compared with 39.9% of the non-disabled) (UK Deaf Sport 2015-2016).

In Australia, there are 4,277,383 deaf and hard-of-hearing inhabitants (16.7%), including ca. 30,000 with severe hearing loss (0.12%) (Disability statistics). According to the data of Korean Deaf Association in 2014, there were about 300,000 people with hearing loss in Korea (0.6% of the country population) (Kim 2003). Severe hearing loss, above 60 dB, was observed in 237,273 Koreans in 2015 (Im et al. 2018).

It is estimated that there are approximately 10 million deaf and hard-of-hearing people in the USA (30.7%) (half of them are aged over 65 years and 4% are under 18 years old), of whom ca. 1.0 million speak the US sign language (0.3%) (Mitchell 2006). In Canada, there are about 3.21 million deaf and hard-of-hearing inhabitants (8.7%), including 357,000 people speaking the Canadian sign language (0.1%) (cad.ca).

### **Activity of international and national sports federations**

The central organization for deaf athletes is the International Committee of Sports for the Deaf (ICSD), the main operator of world sports events for deaf people. At present, the number of national federations participating in ICSD membership has reached 113–116 (International Committee of Sports for the Deaf facts, deaflympics.com history).

In Europe, European Deaf Championship level events are organized by the European Deaf Sports Organization (EDSO), which has been in existence since 1983. EDSO currently associates 40 European countries with 50,000 athletes and about 1000 sports clubs, and runs championships in 29 sports disciplines in different age categories. In each of the 40 countries, there is an NSF comprising deaf athletes (eud.eu).

For both ICSD and EDSO, no annual reports on their statutory activity have been found. There is no information on the financial resources available to both organisations, as well as on inflows and expenditure associated with the organization of sports competitions at the level of European or world championships or Deaflympics.

In Poland, sports activity of deaf people is organized by the Polish Deaf Sport Association (PDSA) (pzs.n.pl), in Spain, it is the domain of the Spanish Federation of Sports for the Deaf (FEDS, Federación Española de Deportes para Sordos) (feds.feds.es). At the national level, FEDS is a member of the Spanish Olympic Committee and the Spanish Paralympic Committee (CPE, Comité Paralímpico Español), whereas PDSA is an organization independent of the Polish Olympic Committee. In Slovakia, sport for deaf people is organized by the Deaflympic Committee of Slovakia (DVS, Deaflympijský výbor Slovenska) (deaflympic.sk).

PDSA, in accordance with its statute, organizes activities in 17 sports disciplines (athletics, basketball, volleyball, swimming, football/futsal,

table tennis, judo, wrestling, bowling, badminton, cycling, karate, taekwondo, chess, sailing, skiing, snowboarding). In the case of FEDS, these are 16 sports disciplines, including e.g. fishing, pétanque, rowing, tennis (fed.feds.es).

There are sports modalities not yet recognized by the FEDS statute, e.g. darts. Moreover, some sports are recognized in the FEDS statute but still not practised by deaf people; these include billiard, boxing, beach volleyball, handball, judo, orienteering, surfing, shooting, taekwondo, volleyball, water polo, wrestling, and several winter sports.

The Hungarian Association of the Hearing Impaired is a non-governmental organization operating as an association. Its aim is to bring together leisure and competitive sports organizations for hearing-impaired athletes, to ensure the participation of members in national and international sports, to organize competitions, to create and coordinate conditions for sports activities, to organize national championships and to prepare for and participate in international competitions. It helps to integrate people with disabilities into society (hdfs.hu).

The organization connects 16 sports: table tennis, athletics, bowling, curling, judo, cycling, handball, football (futsal), volleyball, chess, skiing, sport fishing, sport shooting, orienteering, tennis, swimming.

In Slovakia, DVS organizes sports activity within 13 disciplines (deaflympic.sk Sporty).

In years 2004–2017, the number of Polish sports clubs for deaf people increased from 17 to 35. The Polish Ministry of Sport and Tourism finances the activity of PDSA and sports clubs for the deaf: 29 deaf clubs in 2013 and 2014, and 30 deaf clubs in 2015. In 2013, 1545 competitors, including 46 youth athletes and 646 juniors, with 451 women, were registered in deaf sports clubs. In 2014, 1800 competitors (503 women) were members of sports

clubs, including 400 juniors and 109 children (Statistics Poland 2015).

In 2015, these were 1730 athletes. In Poland, in years 2013–2015, as part of recreational sport, 15,380 deaf people took part in the activities of club sports sections, in sports events, and in camps (Supreme Audit Office 2016).

The effects of the implementation of recreational sport tasks in Poland were, among others: improvement of physical fitness, increase of social awareness and self-esteem, and participation in province and national sports competitions. The sports training courses and events arranged by PDSA in the period of 2013–2015 involved 15,338 recreational sport participants (5172 in 2013, 5152 in 2014, and 5056 in 2015) and 759 competitive sport athletes representing Poland (172 in 2013, 304 in 2014, and 185 in 2015). In 2013, 281 athletes were members of the PDSA national teams, including 94 women and 101 juniors. In 2014, 286 athletes represented Poland, including 89 women and 115 juniors (Statistics Poland 2015).

In Spain, according to the National Sports Council (CSD, Consejo Superior de Deportes), the number of licences issued by FEDS in the 2011–2012 season amounted to 733, without those granted by the regional federations, since they do not have a single licence format (licences issued by the regional federations directly bound with the Spanish federation), and were distributed in 80.35% among men and in 19.65% among women. In the season of 2012–2013, the difference between men and women was essentially unaltered: in this case, 615 licences were registered, 79.35% among men and 20.65% among women (csd.gob.es).

If one compares the 615 sports licences granted by FEDS in the 2012–2013 sports season with the population of deaf people in Spain (their number equals 1,064,600 according to the latest survey of the National Statistics Institute), it turns out that only 0.057% practise competitive sport. The total

number of FEDS licences and clubs was the following: 615 athletes and 31 clubs in 2013; 325 athletes and 25 clubs in 2014; 1043 athletes and 42 clubs in 2015; 1079 athletes and 47 clubs in 2016 (csd.gob.es.)

In Slovakia, according to the information provided to the authors by DVS, there were 16 sports clubs registered in 2013, 18 sports clubs registered in 2014, and 12 sports clubs registered in 2015.

#### **Financing of national sports federations in 2013–2016**

The PDSA statutory activity is almost entirely financed from the Ministry of Sport and Tourism subsidies in Poland. In years 2013–2015, PDSA utilized the amount of PLN 18,006,686 (EUR 4.3 million) to promote recreational and competitive sport, including PLN 5,654,911 for recreational sport (PLN 1,970,182 in 2013; PLN 1,723,769 in 2014; PLN 1,960,960 in 2015) and PLN 8,030,581 for competitive sport (PLN 2,415,560 in 2013; PLN 2,559,000 in 2014; PLN 3,056,021 in 2015). The decreasing amount of subsidies (from EUR 132.7 thousand in 2013 to EUR 95.6 thousand in 2015) for Polish national recreational sports events resulted in a drop in the number of participants from 1818 in 2013 to 1315 in 2015. In years 2013–2015, PDSA placed particular emphasis on financing events of the Poland Championships and Poland Cup level (in 2015, there were 17 such sports events in various sports disciplines). The funding equalled EUR 112.4 thousand in 2013 and EUR 143.5 thousand in 2015. Owing to the increased financial resources for competitive sport, 1341 athletes took part in the events in 2013, 1526 in 2014, and 1628 in 2015 (Supreme Audit Office in Lublin 2016).

As a result of PDSA cooperation with the Ministry of Sport and Tourism, the Polish Olympic Committee, and international organizations for

deaf athletes: ICSD and EDSO, Polish deaf athletes regularly take part in international competitions. In the Polish legislation, the significance of the disabled, including deaf, athletes' achievements were equated with that of non-disabled participants' accomplishments in 2010 (Act of June 25, 2010).

In 2013 and 2014, disabled athletes were awarded year-round scholarships for outstanding sports achievements in the amount of EUR 179.8 thousand (62 athletes) and EUR 291.9 thousand (36 athletes), respectively. The scholarship expenses increased to EUR 293.1 thousand (53 athletes) in 2015 (Supreme Audit Office in Lublin 2016).

FEDS receives financial support from different organizations, such as CSD, CPE, and the National Organization of Spanish Blind People (ONCE, Organización Nacional de Ciegos Españoles). Likewise, there are sponsoring companies that contribute to the achievement of its objectives and the implementation of its activities. FEDS utilized the amount of EUR 226,755.40 in 2013; EUR 199,707.78 in 2014; EUR 211,398.60 in 2015; and EUR 221,156.20 in 2016 to promote recreational and competitive sport. Change in the amount of subsidies from 2013 to 2016 is related with the number of international and national competitions that Spanish athletes participated in. Spanish deaf athletes regularly take part in international competitions. In the Spanish legislation, the significance of the disabled, including deaf, athletes' achievements have not been equated with that of non-disabled participants' accomplishments although deaf athletes received small financial support on the basis of the results from CSD and CPE (csd.gob.es.).

The funding sources of the Hungarian Deaf Sport Association (HDSA) include:

- a) membership fee
- b) income from economic and business activities (provision of services)

- c) governmental budget support
  - ca) governmental support received through an individual tender
  - cb) budget support from the European Union's Structural Funds and the Cohesion Fund
  - cc) support from the budget of the European Union or from another country, or from an international organization,
  - cd) the amount of a specified part of the personal income tax allocated in accordance with the taxpayer's order,
- d) revenue from public service subsystems in
- f) return for a public service contract,
- g) donations received from other organizations or individuals,
- h) income from investment activities.

The Hungarian Deaf Sports Association has 2 main state revenues, one from the Hungarian Olympic Committee and the other from the National Association of the Deaf and Hearing Impaired. Both organizations manage state budget resources. In comparison to the former, the amount of other revenues (membership fees, sponsorships, etc.) is negligible (2-4%).

The revenues of the Hungarian Deaf Sports Association between 2013-2018 were between HUF 20 million and HUF 62 million, significantly higher in the years of the Deaflympics (2013: 40,464,791 HUF; 2014: 19,779,084 HUF; 2015: 31,674,015 HUF; 2016: 14,892,016 HUF; 2017: 62,252,017 HUF) (birosag.hu).

The expenditures of the United Kingdom Deaf Sport (UKDS) on talent development and sports events equalled GBP 50,524 and GBP 136,630 in years 2013 and 2014, respectively (UK Deaf Sport 2014). The talent development expenditures were GBP 46,658 in 2015 and GBP 18,581 in 2016 (UK Deaf Sport, 2015-2016). Inclusive sport costs were

GBP 69,250 and GBP 86,427 in 2013 and in 2014, respectively (UK Deaf Sport 2014), GBP 144,867 in 2015, and GBP 110,814 in 2016 (UK Deaf Sport Annual Meeting 2015-2016).

In years 2013–2015, DVS received EUR 196,470 from the Ministry of Education, Science, Research and Sport of the Slovak Republic for its statutory activities. Revenues from the state budget amounted to EUR 516,219. In the period of 2016–2017, they equalled EUR 930,539 (Deaflympic Committee of Slovakia 2017, 2018).

A total of 76 competitors participated in events of the Slovak Championship rank in 2013 and in 2014 each, and 123 athletes in 2015. DVS has allocated a total of EUR 142,875 for scholarships for the best Slovakian participants of Deaflympics 2017.

The Australian Deaf Sports Federation (DSA, Deaf Sports Australia) organizes sports competitions in 16 disciplines, including cricket, golf, netball, darts, and rugby (deafsports.org.au).

The main supporting partner of DSA is the Australian Sports Commission, a government agency responsible for promoting and investing in sport and physical activity. In 2014, DSA received AUD 179,440 of government subsidy for its statutory activities.

Donations and other contributions amounted to AUD 13,794. The total gross income equalled AUD 454,427 (Deaf Sport Australia Annual Report 2014).

In 2015, the respective figures were AUD 256,423; AUD 12,915; and AUD 310,718 (Deaf Sport Australia Annual Report 2015). In 2016, government subsidies and donations were similar to those in 2015 (AUD 252,422 and AUD 13,435), whereas the total gross income equalled AUD 697,257 (Deaf Sport Australia Annual Report 2015).

DSA regularly arranges the Active Deaf Kids program, which involved 400 students from 36 schools in 2011 (deafsports.org.au), 700 students in

2013, and 1300 students from 80 schools in 2016 (Deaf Sport Australia Annual Report 2015). In 2015, about 50 DSA competitors participated in Asia Pacific Deaf Games. The event engaged athletes from 23 countries. The Australian players took the 8<sup>th</sup> place in the medal classification, winning 2 gold medals, 2 silver medals, and 2 bronze ones. In 2016, DSA held Australian Deaf Games, which gathered over 1000 competitors in 15 sports disciplines (Deaf Sport Australia Annual Report 2014). The costs of organising the event equalled AUD 27,251 in 2013 and AUD 23,780 in 2014 (Saward and Dawson 2014).

The revenues of the Korea Deaf Sports Federation (KDSF) amounted to KRW 1,239,093,000 (appr. 1,074,800 USD) in 2017, with a donation of KRW 1,230,169,000 from the National Sports Fund. In 2018, KDSF revenues equalled KRW 181,970,000, including KRW 165,185,000 from the National Sports Fund. The increased funding in 2017 was related to the Korean participation in the 2017 Deaflympics (kdsf.koreanpc.kr).

The participation of deaf athletes affiliated with the USA Deaf Sports Federation (USADSF) in international competitions depends on the amount of funds collected from sponsors, as well as the funds raised for individual players.

In 2013, USADSF recorded a total revenue of USD 371,660, including USD 327,534 from membership fees and USD 15,895 from asset sales. The revenues equalled USD 55,836 in 2014 and USD 190,219 in 2015. Membership fee income amounted to USD 4794 in 2014 and USD 15,254 in 2015. A significant role in acquiring funds was played by the so-called program services, which totalled USD 32,604 and USD 163,362, respectively (projects propublica.org).

USADSF operates primarily on the basis of voluntary activity. The cost of volunteer work is estimated at USD 1 million per year.

In 2013, the income of the Canadian Deaf Sports Association (CDSA) involved CAD 395,400 of government subsidies and CAD 562,318 of donations. Total CDSA revenues amounted to CAD 1,002,942 (Canadian Deaf Sports Association Inc. Financial Report 2014)

In 2014, the respective figures equalled CAD 380,400 and CAD 443,336, with total revenues of CAD 940,903. In the 2017 budget year, revenues amounted to CAD 418,260, marketing activities generated a profit of CAD 160,000, and subsidies supported CDSA with CAD 21,500 (Canadian Deaf Sports Association Inc. Financial Report 2017).

In years 2016–2017, international competitions, such as Pan American Games or World Deaf Championships, as well as Canada Deaf Games involved 8 Canadian national teams in various sports disciplines. They won 4 medals (1 gold, 1 silver, and 2 bronze ones) (Canadian Deaf Sports Association Inc. Financial Report 2017). In the period of 2017–2018, approximately 230 deaf athletes participated in international and national sports events. Competitors preparing for international sports events (2016–2017) received CAD 33,700 of support to cover training camp travel expenses, and Olympic athletes before the Deaflympics in Samsun were supported with CAD 21,750 for training-related expenses (Canadian Deaf Sports Association Inc. Financial Report 2017).

#### **Financing of national sports federations vs. sports achievements in 2013 and 2017 Deaflympics**

When analysing the revenues of selected NSFs for statutory activities in 2013–2017, one can observe a varied level of financing (Table 1).



Table 1. Effects of financing deaf sports on the basis of NSF's budgets in years 2013–2017

NSF	Deaflympics, Sofia, Bulgaria, 2013				Deaflympics, Samsun, Turkey, 2017			
	1	2	3	4	1	2	3	4
PDSA (Poland)	2013: 4 385 742 PLN [49]	72	18	G: 2 S: 1 B: 1	2014: 4,282,769 PLN [49]; 2015: 5,016,981 PLN [49]; 2016: 7,667,342 PLN [44], (4,740,000 PLN [49]); 2017: 8,900,246 PLN [45]	98	22	G: 1; S: 3; B: 7
FEDS * (Spain)	2013: 226 755 € [18]	11	38	G: 0 S: 1 B: 1	2014: 199,707.78 € [18]; 2015: 211,398.60 € [18]; 2016: 221,156.20 € [18]; 2017: 296,381 € [18]	18	44	G: 0 S: 0 B: 1
UKDS (UK)	2013: 119 744 £ [52]	48	33	G: 0 S: 2 B: 3	2014: 223,057 £ [52]; 2015: 206,295 £ [53]; 2016: 134,817 £ [34]; 2017: 122,476 £ [51];	62	14	G: 3 S: 1 B: 5
DVS (Slovakia)	2013: 119 865 € [35] (64 200 €)*	7	23	G: 1 S: 1 B: 1	2014: 199,735 € [35] 2015: 242,677 € [35] 2016: 384,450 € [35] 2017: 600,207 € [34]	10	15	G: 2 S: 2 B: 2
HDSA (Hungary)	2013: 40 464 791 HUF [19]	56	15	G: 3 S: 0 B: 1	2014: 19,779,084 HUF [19] 2015: 31,674,015 HUF [19] 2016: 14,892,016 HUF [19] 2017: 62,252,017 HUF [19]	27	44	G: 0 S: 0 B: 1
DSA (Australia)	2013: 249 340 AUD [33]	25	23	G: 1 S: 1 B: 1	2014: 454,427 AUD [33]; 2015: 310,718 AUD [34] 2016: 697,257 AUD [21] 2017: 190,618 AUD [28]	20	-	G: 0 S: 0 B: 0
KDSF (South Korea)	-	69	3	G: 18 S: 20 B: 14	2017: 1,230,169,000 KRW [22]	79	3	G: 19 S: 11 B: 12
USADSF (USA)	2013: 371 660 USD [23]	124	6	G: 9 S: 8 B: 12	2014: 55,836 USD [23]; 2015: 190,219 USD [23]; 2016: 49,411 USD [23]; 2017: 168,726 USD [23]	58	10	G: 5 S: 3 B: 8
CDSA (Canada)	2013: 1 002 942 CAD [30]	27	-	G: 0 S: 0 B: 0	2014: 940,903 CAD [30]; 2015: no data available 2016: 552,400 CAD [31] 2017: 561,500 CAD [31]	26	-	G: 0 S: 0 B: 0

1 – NSF budget; 2 – number of country representatives; 3 – place in the medal classification; 4 – number of medals won

G – gold medal; S – silver medal; B – bronze medal

\* DVS data

### Discussion

In 2013 (Deaflympics in Bulgaria), the discussed NSF's financing level, converted into USD (money.pl), equalled: USD 1,049,069.49 (PDSA);

USD 263,355.22 (FEDS); USD 125,440.85 (HDSA); USD 148,985.48 (UKDS); USD 130,257.30 (DVS); USD 162,744.22 (DSA); USD 371,660 (USADSF); USD 719,811.47 (CDSA).

In years 2014–2017, the level of deaf sports funding increased in Poland, Slovakia, and Australia compared with the resources available in 2013. However, the Australian Olympic teams did not receive government financial support in the 2017 Olympic year; therefore, fewer competitors took part in the Deaflympics in Turkey, which may have translated into the lack of medal winners in these Games (heraldsun.com.au). The increased budget of PDSA and DVS allowed to delegate more competitors to the 2017 Deaflympics; however, Slovakian representatives took a higher position in the medal classification than Polish. A considerable imbalance can also be observed in the number of athletes from both countries participating in the Deaflympics (Table 1).

UKDS, like DSA, received lower financial support in 2017 than in preceding years. Notably, the increased financing of UKSD activity in the period of 2015–2016 may have positively impacted on the number of competitors presenting a high sports level, and thus on the increase in medal winners compared with the 2013 Deaflympics.

The revenues of the Hungarian Deaf Sports Association between 2013–2018 were significantly higher in the years of the Deaflympics in 2013 and 2017.

In 2017, KDSF had a high level of financing as per NSF standards (USD 984,135.20). The Korean national team once again won the 3<sup>rd</sup> place in the Olympic Games medal classification.

The income of USADSF presents an interesting profile. In years 2014–2017, a significantly lower budget can be observed than in 2013, and in 2014 and 2016, the revenues were around USD 50,000. The lower level of financing negatively influenced the number of participants at the 2017 Deaflympics, as well as the number of medals won and the medal classification.

The relatively high and balanced CDSA budget in 2016 (USD 396,457.48) and in 2017 (USD 402,988.55) did not result in an improvement in

medal winnings. Canadian athletes completed the 2013 and 2017 Deaflympics without any medals.

### Conclusions

The sport of deaf people is one of the most under-documented areas of sports competition. There is a lack of scientific reports concerning the sporting, as well as the biomechanical, sociological, and financial aspects. Only a few recent publications concerned with the financial and education aspects of sport (*i.e.* Kosztin et al. 2015, Muñoz-Llerena et al. 2018, Ciechan-Kujawa 2020, Walczak et al. 2020, Żołądkiewicz-Kuzioła et al. 2020) and with the role of financial sponsors (Górecka, 2020). The financial aspect determines the involvement of deaf people in sport, as well as the level of the participants. While analysing the data presented in Table 1, one can notice significant differences in the level of NSF's financing.

A high level of financing allows more athletes to participate in Deaflympics but does not necessarily affect their results. The sporting level and performance depend, among others, on the number of clubs targeting deaf people, the availability of training facilities, the number of deaf people involved in the sport for people with hearing loss, and, at the level of national teams, the number of training camps and their duration. The sporting level can be positively influenced by sports scholarships granted for sports achievements. Each of these aspects requires separate analysis. Unfortunately, obtaining information on the activity of sports organizations is strongly hindered by the lack of answers from NSFs to questions posed.

Nevertheless, on the basis of the presented data, the need is clear to promote sports among the hearing impaired, to expand those who practise competitive sports, and to incorporate their

presence in all sports fields (referees, technicians, athletes, trainers, *etc.*).

It is also likely that many athletes with hearing impairment regularly compete with non-disabled individuals, unaware of the existence of NSFs. Furthermore, the inclusion of deaf players in conventional sports clubs should also be encouraged (Soto-Rey et al. 2015)

## References

- 2015-2018 World Federation of the Deaf Report; Act of June 25, 2010 on sport; Ordinance of the Minister of Sport and Tourism on sport scholarships...).
- Australian Deaf Sports Federation Limited, ABN: 18 006 071 147, Financial Report For the Year Ended 30 June 2017
- Bokor, J.; Hámori, Á. & Nagyné Kiss, A. (2017). A magyarországi siketoktatás gyakorlatáról az iskolai vizsgálatok tükrében. In: *Élőnyelvi kutatások és a dialektológia. Erdélyi Múzeum-Egyesület (EME) (On the practice of deaf education in Hungary in the light of school research. In: Living Language Research and Dialectology)*, Kolozsvár, pp. 252-273.
- Canadian Deaf Sports Association Inc., Financial Report, March 31, 2014
- Canadian Deaf Sports Association, Annual Activity Report 2016-2017
- Ciechan-Kujawa, M. & Górniewicz, J. (2020). Success determinants of sports projects financed with donation crowdfunding. *Journal of Physical Education and Sport*, 20 (Supplement issue 5): 3046-3052. doi [10.7752/jpes.2020.s5414](https://doi.org/10.7752/jpes.2020.s5414)
- Deaf Sport Australia Annual Report 2014: Australian Deaf Sports Federation Limited, Independent Audit Report to the members of Australian Deaf Sports Federation Limited, October 2014
- Deaf Sport Australia Annual Report 2015: Australian Deaf Sports Federation Limited, Independent Audit Report to the members of Australian Deaf Sports Federation Limited For the Year Ended 30 June 2016
- Deaflympic Committee of Slovakia, Výročná správa za rok 2017, 2018.
- Federación Española de Deportes para Sordos: Estatutos (2016)
- Górecka, D. (2020). Selecting the right football club to sponsor: multi-criteria analysis. *Journal of Physical Education and Sport*, 20 (Supplement issue 5): 2867-2874. doi [10.7752/jpes.2020.s5389](https://doi.org/10.7752/jpes.2020.s5389)
- Im, G.J., Ahn, J.H., Lee J.H., Han K.D., Lee, S.H., Kim, Jin-Sook, Jang H. & Chung J.W. (2018). Prevalence of severe-profound hearing loss in South Korea: a nationwide population-based study to analyse a 10-year trend (2006–2015) *Scientific Reports* 8:9940 doi [10.1038/s41598-018-28279-z](https://doi.org/10.1038/s41598-018-28279-z)
- Kosztin, N., Balatoni, I. (2015). Examination of the sustainability of the sport facilities in the northern great plain region of Hungary. *Apstract*. 9 (1-2), 111-118.
- KSH (2011). Népszámlálás (Census) 2011, 11. Fogycékkalélők (People with disabilities)
- Mitchell, R.E. (2006). How many deaf people are there in the United States? Estimates from the Survey of Income and Program Participation. *Journal of Deaf Studies and Deaf Education*, 11(1), 112-9.
- Muñoz-Llerena, A. Caballero-Blanco, P. & Gómez-Chacón, R. (2018). Analysis of public grants and state aids given by the Spanish National Sports Council. *Journal of Physical Education and Sport*, 18 (Supplement issue 3): 402 – 1407. doi [10.7752/jpes.2018.s3207](https://doi.org/10.7752/jpes.2018.s3207)
- Ombudsman, The situation of deaf people in Poland (2014), Report of the team for Deaf people at the Human Rights Defender, Warsaw, Poland.

- Report on the activities of the Polish Deaf Sports Association since 01. 01. 2016 r. to 31. 12. 2016 r.
- Report on the activities of the Polish Deaf Sports Association since 01. 01. 2017 r. to 31. 12. 2017 r
- Saward and Dawson. (2014). Chartered accountants: Independent Audit Report to the members of Australia Deaf Sports Federation.
- Soto-Rey, J.; Pérez-Tejero, J.; Rojo-González, J.J. & Álvarez-Ortiz, J.C. (2015). “Evaluación del tiempo de reacción en velocistas con discapacidad auditiva: estudio piloto” (“Evaluation of reaction time in sprinters with hearing impairment: pilot study”). *Revista Iberoamericana de Psicología del Ejercicio y el Deporte (RIPED)*, 2(10), 235-241. ISSN: 1886-8576.
- Statistics Poland: Social Surveys and Living Conditions Department, Physical Education in Poland in the years 2013 and 2014, Warszawa – Rzeszów 2015
- Supreme Audit Office in Lublin, Post-audit informations 2013 - 2016: Polish Deaf Sport Association, LLU. 410.014.01.2016; P/16/023; Lublin 2016
- Supreme Audit Office: Department of Science, Education & National Heritage. Information on inspection results: development of sport for the disabled, KNO.410.003.00.2016; nr. 194/2016/P/16/023/KNO.
- UK Deaf Sport Annual Report and Unaudited Financial Statements For The Year Ended 31 March 2018
- UK Deaf Sport Trustees’ Report and Unaudited Accounts for the year ended 31 March 2014, Registered Charity No: 1111776
- UK Deaf Sport: Unaudited Set of Accounts by the Accountants as Independent Examiners Approved by the Board of Trustees and presented to members at this Annual General Meeting, 2015–2016
- Walczak, D., Krupa, D., & Żołądkiewicz-Kuzioła, A. (2020). Crowdfunding in financing sport activities. *Journal of Physical Education and Sport*, 20 (Supplement issue 5): 2959-2966. doi [10.7752/jpes.2020.s5402](https://doi.org/10.7752/jpes.2020.s5402)
- Żołądkiewicz-Kuzioła, A., Krupa, D., & Walczak, D. (2020). Financing physical culture by local government units. *Journal of Physical Education and Sport*, 20 (Supplement issue 5):2845 – 2850. doi [10.7752/jpes.2020.s5386](https://doi.org/10.7752/jpes.2020.s5386)
- website:*  
<http://wfdeaf.org/>; (access date: 2020.10.09).  
<https://wfdeaf.org/who-we-are/our-story/> (access date: 2020.10.09).  
<https://www.ine.es/prensa/np524.pdf> (access date: 2020.10.09).  
[http://www.cnse.es/inmigracion/index.php?option=com\\_content&view=category&id=13&Itemid=236&lang=es](http://www.cnse.es/inmigracion/index.php?option=com_content&view=category&id=13&Itemid=236&lang=es) (access date: 2020.10.09).  
<https://www.teraz.sk/slovensko/spolocnost-podla-sluchovo-postihnuty/351693-clanok.html> (access date: 2020.10.09).  
[http://www.activityalliance.org.uk/assets/000/000/238/1919\\_NDSO\\_Inserts\\_UKDS\\_Web\\_updated\\_28.9.17\\_original.pdf?1506608788](http://www.activityalliance.org.uk/assets/000/000/238/1919_NDSO_Inserts_UKDS_Web_updated_28.9.17_original.pdf?1506608788) (access date: 2020.10.09).  
<https://www.and.org.au/pages/disability-statistics.html> (access date: 2020.10.09).  
<http://cad.ca/issues-positions/statistics-on-deaf-canadians/>. (access date: 2020.10.09).  
<https://www.deaflympics.com/icsd/icsd-facts>. (access date: 2020.10.09).  
<https://www.deaflympics.com/icsd/history>. (access date: 2020.10.09).  
<https://www.eud.eu/collaborators/edso-european-deaf-sport-organisation/> (access date: 2020.10.04).  
<http://www.pzsn.pl/> (access date: 2020.10.09).  
<http://feds.feds.es/>. (access date: 2020.10.09).  
<https://deaflympic.sk/> (access date: 2020.10.09).

[http://hdsf.hu/wp-content/uploads/2018/04/MHSSZ\\_Alapszabaly\\_2017-10-28.pdf](http://hdsf.hu/wp-content/uploads/2018/04/MHSSZ_Alapszabaly_2017-10-28.pdf) (access date: 2020.10.09).

<https://deaflympic.sk/pages/clenovia-vv/Sporty>. (access date: 2020.10.09).

<https://www.csd.gob.es/es/federaciones-y-asociaciones/federaciones-deportivas-espanolas/licencias> (access date: 2020.10.09).

<https://www.csd.gob.es/es/federaciones-y-asociaciones/federaciones-deportivas-espanolas/otras-estadisticas>

<https://birosag.hu/civil-szervezetek-nevjegyzeke> (access date: 2020.10.09).

<https://deafsports.org.au/sports/national-deaf-sports-committees/> (access date: 2020.10.09).

<https://deafsports.org.au/active-deaf-sports/active-deaf-kids/> (access date: 2020.10.09).

[http://kdsf.koreanpc.kr/board/post\\_list?board\\_id=x=30](http://kdsf.koreanpc.kr/board/post_list?board_id=x=30) (access date: 2020.10.09).

<https://projects.propublica.org/nonprofits/organizations/526044700> (access date: 2020.10.09).

<https://www.money.pl/pieniadze/kalkulator/> (2020, May)

<https://www.heraldsun.com.au/leader/north/basketballer-sam-cartledge-says-deaf-sports-need-more-federal-funding/news-story/40b60c84f8698b603f92c5d573f589f4>

(access date: 2020.10.09).