Similarities and differences at Summer Olympic and Paralympic Games. "Numbers" under the magnifying glass

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Abstract

Nowadays one of the most prestigious sport events is the Olympic Games. After the Olympic Games, in the same year at the same place a similarly prestigious event – the Paralympic Games – takes place, which gives possibility for people with disability to compete. The goal of our research was to compare the Summer Olympic and Paralympic Games from the aspect of numbers through a document analysis. Spearman correlation was used to find the relationship between the ranks of the countries and also to compare the results with actual economic condition of the countries. We found that the number of athletes has been continuously increasing in both games. Differences were found between the two games in the number of participant countries from different continents. We can assume that there is a significant, linear correlation between the Olympic and in Paralympic ranks of the countries. According to the research results however, neither the Olympic nor the Paralympic ranking is correlated with the actual economic condition (GDP) of the countries.

Introduction

Approximately 600 million people worldwide (10–15 per cent of all human beings) have some kind of disability. (Földesiné, 1994; Laczkó, 1999; Sibilski, 2000). The existence and problem of persons with a disability is as old as mankind. Since the negative attitude and prejudice towards persons with a disability has decreased and science has developed, our society’s important task is not only to increase life expectancy but also to ensure the quality of social life for persons with a disability (Kálmán-Kőnczey, 2002). To support this idea, the legislative power has issued numerous statements and declarations, including the following:

- In 1948 the World Health Organization (WHO) declared in its Constitution that “the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being” (WHO, 1948).
- In 1978, the United Nations Educational, Scientific and Cultural Organization (UNESCO) stated in its International Charter of Physical Education and Sport that every person is entitled to participate in sport, including especially women, young people, the

• According to the position statement on human rights, which was adapted by the International Paralympic Committee (IPC) in 2004; every individual should enjoy access to and opportunities for leisure, recreation and sporting activities. The IPC believes both sport and human rights are for all (Craven et al., 2006).

It has been proved by numerous researchers (Wells and Hooker, 1990; Paulsen, P. at al., 1990; Craven at al., 2006), that sports and recreation have a positive health impact on athletes in the sense that increasing physical activity mitigates the effects of many chronic health problems.

In the United States, it was found that for every US Dollar spent on physical activity, 3.20 US Dollar is saved in medical costs (Pratt et al., 2000). Consequently, it is also in the interest of the state to encourage persons with a disability to regularly take part in some kind of physical activity. The annual loss of gross domestic product (GDP) due to having persons with a disability out of work is between 1.37 and 1.94 trillion US Dollars (Metts, 2000).

Through sports persons develop a competitive spirit, self-discipline, and self-respect. It enhances the quality of life and increases a person’s opportunities, options and experiences (Steward and Walsh 1984). Human action-oriented playfulness involves cognitive, social and physical spontaneity, humor, personal empowerment and manifest joy (Lytle, 1999). In sports therapy physical movements are the tools of rehabilitation, which help the individuals to become independent. The desire for competing and to overcome our fellows or maybe even ourselves is a human characteristic (Nádas, 2000), which motivates both able-bodied and persons with a disability. This is how the tool of rehabilitation has become the main goal of persons with a disability throughout decades and created the competitive sports opportunities.

The Olympic Games are now the largest, regularly scheduled international gathering in the world, and as such they constitute a major political showplace. The Games draw the world’s attention like no other event. At this competition, appearing for a worldwide audience, large states (like the USA, China, Australia, Russia, etcetera) have the opportunity to demonstrate their power, small states (like also Hungary is) can win recognition for special achievements, and new states, participating in the introductory Parade of Nations, receive worldwide validation as members of the international community. The idea of the Olympism was to educate and encourage (Shippi, 2007). The best athletes in the world come together every four years to compete.

The Paralympic Games are the equivalent of the Olympic Games for athletes with a physical disability or a visual impairment. The Paralympic games originated as an event with a strong social and therapeutic orientation in 1948, when the Stoke Mandeville Games were held in Aylesbury, England, the same year as the games of the 14th Olympiad were being held in London. The idea of the games is attributed to Doctor Sir Ludwig Guttmann, who included sports in the rehabilitation of injured World War II veterans (Paciorek, 2005). The first official summer Paralympic Games were held in Rome in 1960 (Nádas, 2005). Since then, the Olympic and Paralympic Games have led a parallel existence. The 1988 Seoul games marked the beginning of the modern Paralympic Games, for the first time the term Paralympic was used. Since 1996 all bids for the Olympic Games must be submitted by joint Olympic and Paralympic Committees (Paciorek, 2005). The Games have become the most important sporting event for persons with a disability. We can assume, that nowadays the sport of persons with a disability means much more than therapy. It inspires athletes to maximal physical performance. One is considered an athlete rather than a patient. (Steward and Walsh 1984).

Analyzing the history of these two prestigious events shows similarities and differences as well. The initiation and the idea of both games came from one person. The founder of the modern Olympic games was Pierre Fredi de Coubertin (MOB), and the founder of the summer Paralympic games was Sir Ludwig Guttmann (MPB). The name „Olympic” alludes to the location of the antique games, while „Paralympic” means parallel with Olympic
Both Paralympic and Olympic movements are based on the fundamental principle of the Olympic Charter. Both games are organized for athletes (with or without a disability) who are inspired by the Olympic motto „Citius-Altius-Fortius”, requiring competitive sports performances, high ethical standards and great courage.

Since 1988 the Paralympic games have been held immediately following the Olympics in the same host city.

The differences between both games include:

• Name and symbols. In 1985 the International Olympic Committee stipulated that all disability sports organizations must refrain from using the world „Olympic”
• The structure and governance of Paralympic sports. Olympic sports are organized by able-bodied international federations but in contrast, Paralympic sports are organized as a mixture of federations by sport (e.g. basketball), or federations by disability (e.g. CP-ISRA) or in some cases as a part of the able-bodied sport federations (e.g. tennis). According to the author’s opinion, Paralympic sports might be integrated into the able-bodied sports federations in the near future.
• The essential difference is the classification. It makes the Paralympic games unique and very popular in athletes with disability, while at the same time confusing for the general public to watch. A high-quality classification system protects athletes with a disability from unfair competition, although in some cases the excessive proliferation of classes and medals had raised questions about the credibility of the Paralympics or the level of achievement of the winners.

The question, what is on the background of the outstanding achievement, is always before the researchers. It is assumed that one of thousand persons with a disability worldwide has got the opportunity to take part in any kind of sport, adapted physical education or movement-oriented rehabilitation (Greve et al, 1992). The physical and societal barriers to participate in physical activity and sports are often difficult to overcome for persons with a disability. One recent survey showed that 56 per cent of persons with a disability, versus 36 per cent of persons without a disability reported not to participate in daily exercise (Rimmer et al., 2004). It must be also mentioned that over the past 40 years, an ever increasing amount of sports programs has been offered to persons with a disability worldwide (Doll-Tepper, 1991). A previous investigation reported no linear correlation between the countries’ economic situation and sports participation rate (Palm, 1991). The president of the Hungarian Paralympic Committee – Mr. Pal Nadas – stipulates that there are more factors contribute to a nation’s Paralympic success, for example war. The injured war-veterans are girdled with honor and appreciation in all part of the world. Thus it is not surprising, that the “Parasport movement” started to develop after World War II. The countries, where there was war in the near past, achieve better results also nowadays in Paralympic Games (Gergely, 2005). In other countries the success in sport is a political matter, and is irrespective of the actual economic status of the country. Other determinants of Paralympic success include sponsorship, which is based on the market. In this case, it is the goal of the firm (who makes and develops special sport equipment) to achieve as good as possible results. There are countries beside (also Hungary), where athletes are amateur, and they trying to achieve mostly from self power (Gergely, 2005).

The aim of the research

The parallel development of the two prestigious games –Olympic and Paralympic Games- was proved by many researchers (Papkonstantopoulus, 2004; Nádas, 2005). We were interested in the development of these two games from a quantitative point of view. Therefore our goal is to compare these prestigious events. Our research focused only on summer games. Following questions are to be answered by our research:

• How have the number of the participating nations and athletes evolved in the Olympic
and Paralympic Games? It is hypothesized that the number of participating athletes and nations is bigger at the Olympic Games as a result of longer history.

• Which continents’ participation is dominant in Olympic and Paralympic Games? It is supposed that we find differences between the two games.

• Are the number of sports and sport events the same on the two games? It is hypothetic that because of the Paralympic classification, there are more sport events included in the Paralympic program.

• Is there a linear correlation between the Olympic and Paralympic ranks of countries? We supposed that there is no correlation. Countries, which have good positions in the Olympic ranks do not necessarily have a good position in Paralympic ranks.

• Does the countries’ actual economic situation (GDP) have an effect on the Paralympic result of the countries? We supposed that there is a linear correlation between these two facts.

Methods

A document analysis was used to obtain the historical data. The analysis was based on records, official documents, internet data and links, administrative texts, and formal reports on history, results and statistical data.

The correlation between the rank of the countries –according to the official medal tallies- in the Olympic and Paralympic summer games have been analyzed with Spearman correlation. As well, we compared the ranks of the two games including all Olympic and Paralympic summer games from 1960, when the first official Paralympic summer games were held (Nádas, 2005).

The Gross Domestic Product (GDP) of a country is defined as the market value of all final goods and services produced within a country in a given period of time, it is one of the ways for measuring the size of a countries’ economy (WIKIPEDIA). We gathered the list of countries’ GDP in the same year with Athens Summer Paralympic Games (GDP 2004) and used Spearman correlation to compare these data with the rank of the countries in the Athens Paralympic Games.

Results and discussion

Number of participants, countries and sport events

The first modern Olympic Games were held in 1896 in Athens. Due to more than 100 years of history of the modern Olympic Games it is not surprising, that the number of athletes at the Olympic Games has been multiplied, it is forty times more than at the first games (it has been increased from 245 to 10500 athletes). The Paralympic Games have also undergone a huge development during its less than 50 years long. The Paralympics Games have been formally listed since 1960, Rome. The 4000 athletes of the Athens Paralympic Games were ten times more then the number of athletes who competed in Rome. In fact, the number of athletes has been continuously increasing in both games, but we can notice a “break” in the number of participants at the 1984 Olympic Games (the number of participating athletes is less, than years before) and in the same year were the most participants at the Paralympic Games (Figure 1). This fact can be attributed to the fact that socialist states refused to participate on the Olympic Games, but they did not think that the Paralympic Games are such important and prestigious events so they let their athletes with disability compete.
More and more nations join both the Olympic and Paralympic movement. In Athens 202 nations took part on the Olympic Games (IOC), and in the same year on the Paralympic Games 135 nations (IPC). (At the first modern Olympic Games 14 and at the first Paralympic Games 23 nations were presented.) Considering the geographical origin and distribution of participant nations, differences can be realized between the two events. At the Athens Olympic Games most of the countries were from the African continent. (It took part 53 countries from Africa, 42 countries from America, 44 countries from Asia, 48 countries from Europe and 15 countries from Oceania at the Athens Olympic Games) At the Athens Paralympic Games European countries have the highest (33%) percentage of participation. The distribution of the participants countries were the following: 28 countries from Africa, 24 countries from America, 33 countries from Asia, 45 countries from Europe and 5 countries from Oceania (Figure 2).

![Figure 2: Distribution of Olympic and Paralympic Committees by continents in 2004.](image)

While the number of the sports has increased more than three times in the Olympic Games, the number of the events has widened in the Paralympic Games. At the first modern Olympic Games only male athletes could take part in the competitions in 43 events of 9 sports. In Athens 29 sports were listed with 301 events where the athletes from different nations could compete against each other and prove their talent and skills. In 133 events of 26 sports women also had the possibility to take part (Tóth, 2004). The 8 sport possibilities of the Rome Paralympic Games have also widened throughout the decades: 19 sports were presented in the Athens Paralympic Games (Nádas, 2005). Men had the possibility to compete in 344 events, and women could take part in 202 events (IPC). These data can be originated in two facts. First of all the sport possibilities can not be extended forever for people with disability, because not every sport can be adapted for people with different kinds of disabilities. On the other hand, Paralympic athletes are classified according to disability. In the past the classification was based on medical condition, but presently classification is moving towards functional classification (Steadward and Peterson, 1997). This system guarantees the same rights and chances for athletes with disability, but also has effect on increasing number of events. In some Paralympic sports (i.e. tennis) there are just two classes, while in other sports or events (i.e. athletics, swimming) there are many disability types and it may be necessary to have many classes in the same type of disability (Papakonstantopoulus, 2004). This higher events-number can also be observed when we investigate the medal tally in the two Summer Games. Currently in the Paralympic Games there are more than 250 gold medals awarded in athletics and about 150 gold medals awarded in swimming, while the corresponding award numbers of the Olympic Games are 46 and 32 respectively (Papakonstantopoulus, 2004).

To analyze the number of different type of sports on the Olympic and Paralympic Summer Games we divided the sports to 6 groups according to the profiles of sports (Rigler, 2001). Sport games are such human activities, which are played according to unit roles. Their characteristics are the arrhythmic movements, game dependent field size, common instrument (it is usually a ball). The aim of the game is to get more scores or goals than the other (Halmos, 1994). Aesthetics may be defined narrowly as the theory of beauty (The internet encyclopedia of philosophy). Based on this statement under the group “aesthetic-sports” fall disciplines where athletes get points for technical execution of the movement, so the aesthetics of the movement influences the results. It can be assumed, that for both able-bodied athletes and people with disabilities most of the sport events are sport games (Figure 3). It is however remarkable, that the “aesthetic-sports” are fully missing from the program of the Summer Paralympic Games. This fact can be originated...
from the healthy, fit ideal role model of the 21st century, who aspires to perfection, health and soundness. Most people accept people with disabilities doing track and field or sports games but they find gymnastics or other “aesthetic” sports too difficult to do and it would just require so many changes in the sport that it would loose its main characteristic. They therefore prefer to leave the “aesthetic” sports out of the program.

**Background of the Olympic and Paralympic results**

The Olympic and Paralympic ranks of 46 countries were compared and our hypothesis – stated that there is no connection between the Olympic and Paralympic ranks of a country – proved to be – surprisingly - mistaken. There is significant, linear correlation between the Olympic and Paralympic ranks of the countries. (The correlation coefficient – Spearman R- is 0.510095, and p level= 0.0) Those countries which have better results in the Olympic ranking have better place in the Paralympic ranking as well. The correlation between the ranks of the Athens Olympic and Paralympic Games and the GDP of the countries – as one of the most frequently used data for economic prescription (WIKIPEDIA) - were also analyzed. The results were also unexpected. According to the correlation results it can be stated, that neither the Olympic nor the Paralympic ranking is correlated with the actual economic condition (GDP) of the countries. The correlation coefficient was 0.238919 by GDP-Paralympic research (p-level= 0.148567), and it was 0.15899 by GDP-Olympic correlation (p-level: 0.340352).

**Conclusions**

The number of athletes has been continuously increasing in both Olympic and Paralympic Games. At the Olympic Games (due to more than 100 years of history of the games) swimming were the most successful. Because of the classification system on Paralympic sport (Steadward and Peterson, 1997), from these results we can not draw definite consequences in connection with Olympic results. As we take for example swimming at the Paralympic Games within one sport there are other sub-categories according to types and severity of disability to have equal chance for participation. We can state though, that at the Olympic Games Hungarian won several medals in team games, but on the Paralympic Games the ball games are not the most successful. The reason for not being successful is the economical wealthy status what is needed for the special equipments such as special wheelchairs for tennis or basketball.

**Hungarians on the Olympic and Paralympic Games**

Since 1896 Hungary has been participating regularly – except the Olympic Games of Los Angeles in 1984 – on the Olympic Games. On the first modern Games 7 athletes represented Hungary (Keresztény, 1980) while in Athens 219 athletes were delegated. Only in 1972 Hungary received invitation to join the Paralympic movement (Gita and Káblí, 2004). Since that time the Hungarian athletes have been taken part on the games with year to year increasing number of athletes and coaches. The shorter historical background is shown in the number of participants. In the Olympic Games the Hungarian athletes represent 2-5% of the participating athletes, but in the Paralympic Games this ratio is only 1%. In 2004, Athens 38 Hungarian athletes represented our country on the Paralympic Games. All the above mentioned data have influence on the results. While at the Olympic Games Hungary twice (1936, 1952) finished on 3rd in the Olympic point competition, At the Paralympic Games the best position was 15th in 1984 (Nadas, 2005).

With regards to the medals the most Hungarian Olympic medals are in fencing but on the Paralympic Games the Hungarian athletes in
the number of athletes has been multiplied, it is forty times more than at the first games. During the less than 50 years long history of the Paralympic Games we could observe also a huge development. The 4000 athletes of the Athens Paralympic Games were ten times more then the number of athletes who competed in Rome on the first official Paralympic Summer Games. Also the number of participating countries has been increasing in both games.

We found differences between the two games in the number of participant countries from different continents. At the Athens Olympic Games most of the countries were from the African continent and at the Athens Paralympic Games European countries have the highest percentage of participation.

While the number of sports has increased more than three times in the Olympic Games, the number of the events has widened in the Paralympic Games because of the classification in sports for people with disability.

As the background of the Paralympic results we can assume, that there is significant, linear correlation between the Olympic and in Paralympic ranks of the countries. Those countries, which have better results in the Olympic ranking have better place in the Paralympic ranking as well. It was also surprising, that neither the Olympic nor the Paralympic ranking is correlated with the actual economic condition (GDP) of the countries.

Quantitative growth can not be the main goal of the sport for people with disabilities. The quality is more important. The selection of athletes, in case of able-bodied athletes, is realized from a larger number of populations in a natural and also in an artificial way, while for people with disabilities this “basis of athletes” consists of given number of people. The future’s Paralympic athletes must be brought up from this basis. Because of these reasons the goal is – for the successful selection of talented athletes – to establish and improve the conditions and possibilities of sports activities and with its help to set up magnetic alternatives which encourages people with disabilities to be active and perhaps offering them a choice for improving the quality of life. This can be realized – in high level sport – by a just classification system and with guarantee of equal possibilities, just like for able bodied athletes.

References


