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PSYCHOSOCIAL ASPECTS OF PLAYER'S  
ENGAGEMENT TO THE  
SITTING VOLLEYBALL

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**Key words:** volleyball, sitting volleyball, persons with physical disability, sports motivation, physical activity motivation, sport/physical activity participation

## **Abstract:**

The purpose of this study was to examine motivation of sitting volleyball participation among athletes with physical disability from the Balkan countries. The investigation aimed to determine if sport motivation differed between ages, years of training and athletes with and without disability. 88 athletes (M: 83 and F: 5) with and without physical disabilities, coming from Bosnia and Herzegovina, Serbia, Croatia, Slovenia and Greece, participated in this study. Athletes were asked to complete Modified Sitting Volleyball Participation Survey. Descriptive statistics (frequencies) and Spearman's Correlation Coefficient from SPSS 16.0 for Windows were used for statistical analysis. The results showed that Socialization (78.8%), Health (76.7%) and Entertainment (76.7%), were the three highest motivation factors for sitting volleyball participation, and the Fitness (74.4%) and Sport Competition (69.0 %) were closely behind, whereas Rehabilitation (60.5%) was the lowest motivation factor of participation. Significant correlation ( $p \leq 0.01$ ) was found between the category of young adulthood and factors of socialization and rehabilitation. Significant correlation ( $p \leq 0.05$ ) was found between years of training and rehabilitation factor, as well as between injury age and factors of sport competition and fitness ( $p \leq 0.05$ ). The comparison between athletes with and without disability couldn't be made due to the small number of athletes without disability. In conclusion, the results of this study indicated that Socialization, Health Reasons and Entertainment were the three major factors of sitting volleyball participation, whereas Rehabilitation was the lowest factor. Therefore, coaches should create more competitive opportunities for athletes to increase competitive spirit, and at the same time create activities that are interesting for the participants, and socialization and health benefits will come along.

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# 1 Introduction

Human motivation has always been interesting and important for all people who explore human psychology and reasons who force us to engage in any kind of activities. People play games since very beginning of the Homo sapiens. They used games as rituals for war, to honor the gods and later with human race development for the entertainment and to compete against each others. So we can say that is in human nature to play games and to engage in different sorts of activities, but what are the exact impulses which drive us depend of individual interests, environment, experiences, education, etc.

One of the sports which is being played from 1895 is volleyball, when American William G. Morgan invented the game as a combination of basketball and tennis. Today, volleyball is the one of the most interesting and dynamic sports, which attracts huge masses of people all around world to start to play this amazing sport. With all its variations, such as mini volleyball in schools, beach volleyball and volleyball for disabled, it presents very rare sport which is developed to that level, which can satisfy the needs and desires of all people. This was the primarily goal of William G. Morgan, to invent a simple game which would be suitable for variety of participants and that could be played almost anywhere (Vute, 2008).

Volleyball for the disabled is composed of two forms, standing and sitting volleyball, and with its big simplicity presents great example of adaptation and implementation of the major team sport. There are no gender and age issues, because both sexes of various ages can play together, except at the some higher level competitions. Approachability and adaptability of the court (i.e. lower net, smaller dimensions) allows people without and with various type of physical disability to play together, because when they sit down and get on the court, they are all the same, regardless to age, gender or (dis)ability. It is also used in medical rehabilitation as the great tool for the recovery. These might be the reasons sitting volleyball became one of the most popular sports among people with physical disabilities, played in all continents, since the middle of the last century, as the most of the disability sports after the Second World War.

A lot of research has been published about sport and physical activity motivation, but mostly among able bodied. Even though in last fifteen years people started to work in this

field of study among disabled population, still much has to be done to determine patterns of participation. Motivation to do sports among nondisabled population is examined between different gender and ages and between different countries and cultures, whereas on the other side, among those factors, we have to consider type of disability, is it congenital or acquired, which make things more challenging.

Some people engage in sports because they want to compete, to prove them selves, to win and to achieve medals, others just want to have fun, keep their fitness and health, make friends and go for a beer after the game. Reasons are various, and fortunately sport is suitable to meet everyone's needs.

The purpose of this study is to examine psychosocial factors, respectively motivation of players from Balkan countries to engage in sitting volleyball. This geographical area is specific because of the war situation who affected some Balkan countries fifteen years ago. It will be important to find out what the players from these countries consider as strong reasons to engage themselves in sport of sitting volleyball and will that results be similar with the results of previous studies about sport motivation among physically disabled athletes. This information could be valuable not only to coaches, but for teachers as well and all others who work with people with disabilities in different institutions. They can use it to create strategies and more appropriate programs which will be approachable and health beneficial for everyone. People with disabilities are more liable for secondary health conditions (hypertension, type2dyabetes, obesity, stress, hypo kinesis, etc.) then their able bodied peers. By engaging in physical activities and satisfying exactly what they want of sport will be more effective in reducing the risks for those conditions.

The relevance of this study is in introducing the sitting volleyball, as one of the sports for disabled to the wider population in Bosnia and Herzegovina and other countries from this study, because they still have prejudice about disabled and what they are capable of. The reasons for this is lack of knowledge, limited access for information, low interests and neglect of the state to present disability in general and possibilities disabled people have.

People with disabilities are often more capable than the people without disabilities, have stronger personalities and stress management because by time they learned how to deal with it.

I hope the information from this study will help others to get to know better this population of people and why they engage in sports. We have to consider how much effort and energy they have to invest into their way of life and to achieve great results. So, they deserve much more attention than they have been given till now.

## 2 Literature review

### 2.1 History

#### **2.1.1 The origin of sport for the disabled**

Looking back in time we may see that the position of the disabled has differed considerably over the past few centuries. Luckily, taking part in sports by the disabled has contributed greatly towards the rise of a more equal existence of this group within our society (de Haan, 1986).

Disability sport as it exists in its modern form is a relatively recent phenomenon that first emerged in Britain, specifically England, during the immediate post Second World War period. More specifically, the roots of the emergence and early development of disability sport can be traced back to the request made by the British government that Sir Ludwig Guttmann (a Jewish neurosurgeon) should open the National Spinal Injuries Centre (NSIC) at the Stoke Mandeville Hospital in Aylesbury, England, in 1944. Once the NSIC was established, a range of sports and physical activities were used as a means of physical and psychological rehabilitation of large numbers of soldiers and civilians who had acquired a range of impairments following their involvement in the Second World War. Despite this initial motivation for encouraging the war-injured (especially those with spinal cord injuries) to engage in sport and physical activities, the perceived benefits that competitive, organized sports could have for war veterans and for challenging attitudes about the abilities of disabled people were quickly recognized by Guttmann and other hospital workers. The first formally recognized national event in disability sport was subsequently held for athletes with spinal cord injuries in 1948 at Stoke Mandeville Hospital (Nigel & Smith, 2009).

From these early beginnings, disability sport has since developed rapidly and disabled people with a range of physical, sensory and cognitive impairments now participate in sport and physical activity from the grassroots to elite level in many countries. Such has been the growing internationalization, globalization and competitiveness of disability

sport at the elite level, for example, the thirteenth Paralympic Games held from 6–17 September 2008 in Beijing was the largest Paralympics ever with approximately 4,000 athletes participating in 20 sports (Nigel & Smith, 2009).

### **2.1.2 Development of volleyball**

While in England in 1591 a game is already being played, which resembled volleyball somewhat, it would last until 1895 for the American William G. Morgan to develop a game, which was the predecessor of our present day volleyball and which would become one of the most dynamic, exciting and spectacular games in the world (de Haan, 1986). Spread by a.o. the American army and the YMCA (Young Men's Christian Association), this sport, which had meanwhile gained some momentum, reached other countries (de Haan, 1986).

The basic intention of his was to present a simple game, which would be appropriate for variety of participants with different abilities. Simplicity, but in the same time dynamics of the game resulted in its dramatic rise in popularity also among disabled population (Vute, 2008).

### **2.1.3 Development of sitting volleyball**

Volleyball for the disabled has two main forms, standing and sitting, what seems to be, from the WOVD perspective, a prime example of adaptation and implementation of a major team sport (Vute, 2004).

WOVD is the International Organization of Volleyball for people with physical disabilities and is affiliated to the International Paralympic Committee (IPC). The WOVD was formerly part of the International Sport Organization for Disabled (ISOD) and was established in 1981. The WOVD became a separate organization in 1992, after the Paralympic Games in Barcelona. The headquarters of the WOVD were established in the Netherlands (WOVD, 2010).

They are responsible for managing and controlling the conduct of international volleyball competitions (Paralympic, World and Zonal Championships, and other international

competitions) for men, women and youth. The WOVD also liaises with IPC (as an independent organization), and with other organizations for people with or without disability (WOVD, 2010).

#### *2.1.3.1 Standing volleyball*

This is the only sport which can be played “standing” by people with physical disabilities, and there is no other like it (WOVD, 2010).

Standing volleyball had been played by disabled athletes long before the international sports federations for the disabled (ISOD) were founded. The game has its roots in Great Britain and originally was played only by amputees. Due to the growth of the game, and various types of the amputees and other disabled people taking part in standing volleyball, a classification system was set up where each player received points according to the degree of disability (Vute, 2009).

Volleyball for the disabled was accepted as an official Paralympic event for the first time in Toronto (Canada) in 1976, where four standing volleyball teams took part. Standing volleyball is no longer a Paralympic sport today (Vute, 2009).

#### *2.1.3.2 Sitting volleyball*

With sitting volleyball, the disability of a player is no longer a handicap. Since players must be sitting on the floor when hitting the ball, only the skill is important, not the disability (WOVD, 2010).

The first sports club for the disabled was established in the Netherlands only as late as 1953. Athletics and “fistball” (the game stemming from Germany), were the main sports. Later was found that fistball, which could be played sitting down, is too passive game, so more mobile forms of sports were looked for (de Haan, 1986).

In the fifties, the Society of Dutch Military War Victims (BNMO), created a separate sports group for the purpose of practicing sports and physical activities by the disabled. This group created a new game, a combination of fistball and the popular volleyball, and they called it sitting volleyball. After some changes to field size and net height, the first

competition match could be played in 1957. That everything had been well thought out is evidenced by the fact that only the height of the net (5 cm higher) has been changed since then (de Haan, 1986.).

Since 1967, international competitions have taken place, but we had to wait until 1978 before the International Sport Organization for Disabled (ISOD) accepted sitting volleyball in its program. The first official international tournament under the umbrella of the ISOD (International Organization for the Disabled) took place in 1979 in Haarlem, the Netherlands. Sitting volleyball was accepted as a Paralympic sport in 1980 at Arnhem Paralympic Games, with participation of seven men's teams. Since 1993 the championships have been organized for women as well, and their first appearance at Paralympic Games has been confirmed for Athens in 2004 (Vute, 2008).

Sitting volleyball is a sport in which the disabled and able bodied can play together at high level and, as such, represents a good opportunity for cooperation and integration. During the past years world volleyball and sitting volleyball as well has gone through strong developmental process, introducing new rules and new playing possibilities. Today sitting volleyball is a world wide famous game, played in Africa, both Americas, Asia, Australia and Europe, with its own playing concepts and identity (Vute, 2008).

Leading sitting volleyball countries for men are Iran and Bosnia and Herzegovina, who interchangeably winning the tournaments. Behind them are Egypt, Russia, Germany, then Iraq, Libya, Morocco, etc., with solid results. On the last men World Championship in Edmond, Oklahoma, USA in July 2010, Iran won the gold medal, Bosnia and Herzegovina silver and the Russia was behind them with the bronze medal.

With women's ranking situation is different, where Netherlands is the leading country, just behind them is Slovenia and USA, then Ukraine, China and Finland who did not participate at the few last championships. At the last championship for women in 2008, Netherlands won the first place in front of Slovenia with second and USA with third place.

#### **2.1.4 Development of sitting volleyball in Republic of Srpska and B&H**

Bosnia and Herzegovina is divided on two entities, Federation and Republic of Srpska. Each entity has its own sitting volleyball league, and only players from Federation compete for Bosnia and Herzegovina and players from Republic of Srpska compete under the Serbian flag.

Regardless to these political misunderstandings and dissidences, Bosnia and Herzegovina managed to develop very high level of sitting volleyball, although they didn't have big support from the state. Unfortunately, the same situation is present today, even they are Paralympic champions. Apparently, sitting volleyball, as well as other sports for the disabled people is still not recognized by the government leaders.

In a year of 2001, on the initiative, at that time five existing clubs, inspired with influence of sport on their psycho – physical development, rehabilitation and re – socialization, the Sitting Volleyball Federation of Disabled Republic of Srpska was founded. The first sitting volleyball season is played in a year of 2002/2003 with 7 participating teams.

The federation is composed of twelve teams, which are competing within two separate leagues, super and the first league of Republic of Srpska. The most successful club is volleyball club of invalid persons “Odbojkaški klub invalida Banja Luka”, multiple champion of Republic of Srpska, the four times second place winner at Euro league competition and fifth place winner within Euro cup competition, the highest level of club competition in Europe.

(Sitting Volleyball Federation of Disabled Republic of Srpska, 2010)

The biggest success of players from Republic of Srpska is the fifth place on the European championship in Poland in 2009. Sitting Volleyball Federation of Disabled Republic of Srpska is a member of World Organization Volleyball for Disabled and European Committee Volleyball for Disabled.



As it already mentioned above, two entities of Bosnia and Herzegovina, Republic of Srpska and Federation, have two separated associations and they compete separately of each other within their own leagues.

Representation of Bosnia and Herzegovina is consisted only of players from Federation, and the sport development started earlier in that part of the country. Team of Bosnia and Herzegovina competes on the international scene since 1992, when the country had only one club, “Spid” from Sarajevo, which was actually representing the country.

In the 1996 the Sitting Volleyball Association of Bosnia and Herzegovina was established, and the first bronze medal came in 1997 in the European Championship in Tallinn, Estonia. The next bronze medal came next year when they took part at the World Championship in Teheran, Iran. Representation continued winning series when they won their first gold medal, in front of their fans, at the European Championship in Sarajevo in 1999.

Since then the representation of Bosnia and Herzegovina haven't missed to win a medal on any more important competition each year:

- 2000 Paralympics Sidney – silver medal
- 2001 EC Hungary – gold medal
- 2002 WC Egypt – gold medal
- 2003. EC Finland – gold medal
- 2004. Paralympics Athena – gold medal
- 2005. EC Germany – gold medal
- 2006. WC Holland – gold medal
- 2007. EC Hungary – gold medal
- 2008. Paralympics Beijing – silver medal
- 2009. EC Poland – gold Medal
- 2010. WC Oklahoma, USA – silver medal

(Association of Sitting Volleyball of Bosnia and Herzegovina, 2010)

## 2.2 Sitting volleyball specifics and facts

### **Degree of adaptation needs:**

Moving around the court with hands and playing the ball from sitting position, requires some major adaptations. Therefore the playing field dimensions and the height of the net are significantly smaller and lower. The technical elements, such as serving, passing, setting, smashing and blocking need to be practiced under personalized training program to become useful in specific competition circumstances. The coach should adapt offensive and defensive strategies carefully according to the player's fitness and disability level (Vute, 2004).

### **Dominant disability:**

Most of the players who take part in WOVD official competitions are classified as amputee, cerebral palsy, poliomyelitis and les autres (sorter limbs, muscle power deficiency, congenital dysfunctions, etc.). Sitting volleyball seems to be a favorable choice for amputee athletes, especially for those with lower limb amputations (Vute, 2004).

### **Mobility factor:**

Efficient mobility in a sitting position depends very much of a player's hands ability. Upper limb limitations therefore generate negative effect on the movement skills. Athletes with lower limb disability are generally fairly mobile, while double above knee amputee are believed to be the fastest movers. Competitors in sitting volleyball do not use prosthesis during the game (Vute, 2004).

### **Gender factor:**

Both women and men participants have no limitations for participation in sitting volleyball. Championships are organized separately for women and men. The minimal disability enables wider inclusion which greatly contributes to the global expansion of the women's sitting volleyball (Vute, 2004).

**Age appropriateness:**

Sitting volleyball is a game appropriate for all generations. Children learn to play sitting volleyball alike games with balloons and beach balls very quickly. Sitting position is relatively stable with minor injury treats. Recreation level of sitting volleyball has opened doors to all generations; there are no restrictions to play the game in mixed formations with women and men, on smaller or larger courts, with a lighter ball, etc. The sitting volleyball game with its specifics – sitting position, rather small court, specialized role in the game, team support, etc. allows players with proper fitness level a relatively long period of time to compete on top level (Vute, 2004).

**Inclusion potential:**

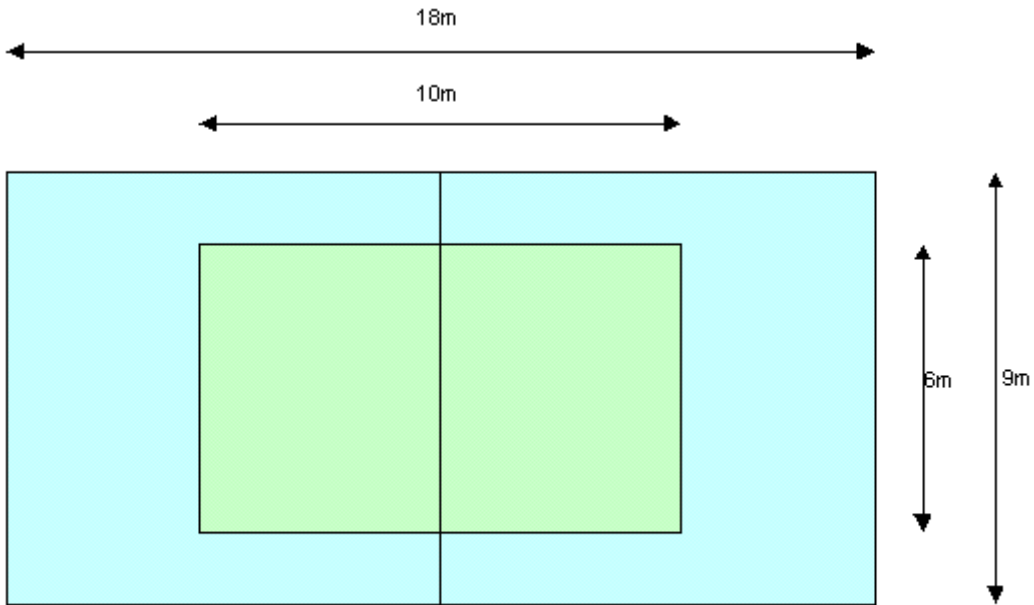
Sitting volleyball seems to be an ideal sport of choice for inclusion. When a child, for example, with a locomotor disability plays the game in sitting position with able bodied schoolmates, mobility problems are no longer significant. The right for a minimal disability classified player to participate in top sitting volleyball events indicates that inclusion is two way process. We are happy to see that sitting volleyball attracts able bodied children, youth and other athletes to play the game which was originally designed and adapted for the persons with physical disabilities (Vute, 2004).

**2.2.1 Rules and regulations:**

Sitting volleyball also follows the FIVB (Federation Internationale de Volleyball) principal rules and regulations. WOVD has its own technical rules and medical classification system which determines players' disability, especially at the minimal disability level. Sitting Volleyball is a team sport played by two teams, with six players on each side. The ball is put in play by hitting it with any part of the body. The playing area is 10m in length and 6m in width, the height of the net is 1.05m for women and 1.15 for men, the attack line is 2.0m from the central line. To block the service is allowed by roles, players use hands for moving (sweeping) on the playing court. At WOVD sanctioned competitions each team is allowed to have one player with minimal disability

on the court. The required sitting position during the game gives no advantage to disabled player over an able bodied athlete (Vute, 2004).

**Picture 2 – Court dimensions**



FIVE Court Dimensions = 18m x 9m  
IPC Sitting Volleyball Court Dimensions = 10m x 6m

### 2.2.2 Comparison between volleyball and sitting volleyball:

The best way to answer on the question: “What is sitting volleyball?” is the following table.

**Table 1 – Comparison between volleyball and sitting volleyball (de Haan, 1986)**

		Volleyball	Sitting volleyball
<i>Field</i>	Length	18m	9m
	Width	9m	6m
	Attack line	3m	2m
	Service area	3m	2m
<i>Net</i>	Length	9.50m	6.50m
	Width	1.00m	0.80m
	Height	2.43m (men); 2.24m (women)	1.15m (men) 1.05m (women)
<i>Special differences</i>	Moving	With legs/feet, position of the feet is decisive	With arms/hands, position of the bottom is decisive
	Much from a jump	Attack, block, set up	Contact with floor is obligatory by means of bottom or any other part of the torso
	Rules	For national and international are the same (FIVB)	National: anyone can join in, International: minimal disability is required according to ISOD

The changes in field size and net height are logical for sitting volleyball, in view of limited mobility and the non-existence of rules allowing the players to “stand up” at the net during an action (de Haan, 1986).

## **2.2.3 Classification in sitting volleyball**

### *2.2.3.1 Classification system of volleyball for disabled*

Classification system is intended to detect the eligibility of the athlete to compete in the sitting and standing volleyball as well as to allocate the athlete into the appropriate class. The WOVD Classification system in the general terms complies with the IPC classification rules.

The purpose of WOVD Classification system is to minimize the impact that eligible impairment types have on the outcome of the competition. The WOVD system of Classification aims to place athletes into classes according to how much their impairment impacts on the specific core determinants of success in sitting and standing volleyball. As an outcome, the according International Classification Status is given to an athlete during the WOVD sanctioned events. WOVD International Classifiers are in charge of the application of the current Classification rules.

The eligible impairment types in WOVD sitting and standing volleyball are: amputations, impaired muscle power, restricted joint movements, instability of the joints, impaired balance and coordination. The conditions are normally of the orthopedic or neurological nature. The current WOVD Classification system uses the terms listed in International Classification of Functioning, Disability and Health (ICF, agreed by the World Health Assembly in 2001) as a framework for the unified and standardized Classification. (WOVD Medical Handbook, November 2009)

### *2.2.3.2 Sitting volleyball classification*

- The classes for Sitting Volleyball are Disabled (D) and Minimally Disabled (MD).
- At any time on court, a team may have a maximum of 1 MD player. At any time, a team may have a maximum of 2 MD players on the team. This is a technical regulation which is in power for the Paralympic Games, World Championships and Zonal Championships. That regulation can be accordingly

changed at the discretion of the other (not mentioned above) tournament's organizers in consultation with the Zonal Manager. In the last case, the changed formula is to be without the changes in the actual Classification of the players (WOVD Medical Handbook, November 2009).

#### *2.2.3.3. The most frequent disability in sitting volleyball and minimal disability requirements*

Sitting volleyball can be generally suggested as a safe tool for promoting health and physical working capacity for persons with locomotor disabilities (Mustafins, Landör, Vetrál & Scibrja, 2008).

Most players who take part in WOVD official competitions are classified as amputee, cerebral palsy, poliomyelitis (polio) and les autres (shorter limbs, muscle dystrophy, congenital dysfunctions, etc.). Sitting volleyball seems to be a favorable choice for amputee athletes, especially for those with lower limb amputations.

#### **Amputee:**

The term amputee refers to those individuals who have at least one major joint in a limb missing (elbow, knee, wrist, ankle) or, in cases where the amputation is through the ankle or the wrist, no functional movement remaining in those joints. Amputations are either congenital or acquired. Congenital amputations occur as a result of a failure of the fetus to develop in first three months of gestation. Acquired amputation can be result of a disease, trauma or tumor (Vute, 2009).

Amputees are by far most represented in volleyball for the disabled. Therefore teachers and coaches should pay attention to the following specifics:

- a missing limb can cause a distortion in body image
- skin care around the stump area can be a problem
- the center of gravity may be affected which in turn affects balance and spine problems

- there may be problems associated with thermoregulation for the amputee. Because the amount of body surface for respiration is reduced, the body may overheat on particularly hot or humid environment (Vute, 2009).

#### Minimal disability of upper extremities

- amputation of two first fingers on both hands
- amputation of seven or more fingers on both hands
- amputation of one hand between metacarpal – phalange joint and wrist

#### Minimal disability of lower extremities

- amputation in Lisfranc joint on the foot

It is the joint between metatarsal bones (the long bones that lead up to the toes) and tarsal bones (bones in the arch).

- amputation in Chopart joint on one foot

It is the tarsal articulation between talus and navicular bone medially and calcaneus and navicular bones laterally.

(WOVD Medical Handbook, November 2009).

### **Cerebral palsy (CP):**

Cerebral palsy is a disorder of movement and posture appearing in early years of life. It is caused by damage to, or lack of development in small part of the brain controlling movement and posture. The term CP covers a wide range of types and severity of disability. Some people are so mildly affected that there may be no obvious disability, while others may be affected very seriously. The damage of an area of the brain affects the control and coordination of muscle tone, reflexes, posture and movement

(Vute, 2009)

#### Minimal disability:

- minimal diplegia (the lower extremities are affected with little to no upper-body spasticity)
- minimal hemiplegia (one side of the body being affected)



- monoplegia (paralysis of a single limb, usually an arm )
- minimum impairment of the cerebellum (incomplete coordination)

(WOVD Medical Handbook, November 2009).

### **Poliomyelitis:**

Poliomyelitis is the virus infection which starts as an acute infection lasting up to six weeks. A severe attack causes varying amounts of damage to the part of the brain and spinal cord responsible for the control of voluntary movement. This results in paralysis of muscles, which no longer receives any nerve impulses. The degree of paralysis varies from one person to another. Some may be on the wheelchair, others may be affected in only one limb. There is no cure for polio, but prevention by the vaccine is effective (Vute, 2009).

### **Les autres conditions:**

The term les autres have been used to describe athletes with a range of conditions that result in locomotor disorders that have not fitted into traditional classification system of the established disability groups (Vute, 2009).

Only two athletes with minimal disability per team are allowed to participate in the official sitting volleyball competition, but only one of these athletes can be on the court at any time. Example of conditions not eligible for les autres are: Down syndrome or persons with severely reduced mental capacity, persons with heart, chest, abdominal, skin, ear and eye diseases without locomotor disability.

(WOVD Medical Handbook, November 2009).

## 2.3 Insight from the research

### 2.3.1 Physical activity benefits

Number of people with disabilities who engage in different kind of sport and physical activities has increased rapidly in past few centuries, especially even more in recent years. This is the result of constant work of organizations for disabled and their one individual effort to come out of social isolation, although there is still a big group of people with disabilities who stay inactive. So one of the tasks of the pedagogical and sport workers is to influence on awareness of what are the consequences of inactivity, especially for the population of disabled people.

Sedentary lifestyle can lead to problems with functioning, which could further lead to the development of secondary health conditions, which include type 2 diabetes, osteoporosis, osteoarthritis, colon cancer, high blood pressure, decreased strength, endurance, flexibility and fitness, weight problems, depression, reduced ability for societal interactions and greater dependence upon others (van der Ploeg, van der Beek, van der Woude & van Mechalen 2004). According to the Centers for Disease Control and Prevention (CDC, 1999), physical activity can be very beneficial for people with and without disabilities. Both physiological and psychological benefits can be obtained from regular physical activity involvement. Regular physical activity (5 or preferably all days a week for 30 or more minutes of moderate intensity physical activity) can increase health-related physical fitness such as cardiovascular endurance, muscle strength and endurance, and flexibility and also prevent development of secondary health conditions.

In spite of these benefits, only 23 % of individuals with disabilities engage in regular physical activity, which is characterized by at least 30 minutes of exercise on 5 or more days per week (USDHHS, 2000). One reason for this situation might be low motivation to participate in regular physical activity, or different sorts of barriers to participate. Therefore it is of paramount importance to identify what are the motivation factors of

persons with physical disabilities in order to create better strategies and programs which will satisfy their needs.

### **2.3.2 Motivation**

Understanding and enhancing motivation is one of the most popular areas of research in psychology, as well as sport and exercise psychology. There are at least 32 theories of motivation that have their own definition of the construct, and there are almost as many definitions as there are theorists (Ford, 1992).

Those definitions of motivation gleaned from a variety of psychological textbooks and reflect general consensus that motivation is an internal state or condition (sometimes described as a need, desire or want) that serves to activate or energize behavior and give it direction (Huitt, 2001).

Motivation theories may be viewed as being on a continuum ranging from deterministic to mechanistic to organismic to cognitive. Deterministic and mechanistic theories view humans as passive and driven by psychological needs or drives. Organismic theories acknowledge natural needs but also recognize that a dialectic occurs between the organism and the social context. Cognitive theories view humans as active and initiating action through subjective interpretation of the achievement context. Contemporary theories tend to be organismic or social-cognitive and are based on more dynamic and sophisticated conceptions that assume the human is an active participant in decision making and in planning achievement behavior. Specifically, the motivation theory that has emerged as the most popular in sport and physical activity contexts is achievement goal theory (Roberts, Treasure & Conroy, 2007).

Achievement may be defined as the attainment of a personally or socially valued achievement goal that has meaning for the person in a physical activity context (e.g., losing weight, improving a skill, defeating an opponent). Achievement is subjectively defined, and success or failure in obtaining the goal is a subjective state based on the

participant's assessment of the outcome of the achievement behavior (Roberts, Treasure & Conroy, 2007).

### **2.3.3 Research based on motivation theories**

It has been noted above in the text that there is more than 30 motivational theories with goal to explain the causes of the same. The most popular theory in the sport context is Achievement goal theory.

The following two studies were based on the Achievement goal theory (Nicholls, 1984). The central purpose of this theory indicates that individuals in achievement settings are typically oriented to one of two goals when determining whether or not they have been successful in these contexts.

Someone may have a "task orientation", where the focus is on improving performance; they have a stronger work ethic, are more persistent and are better motivated because the factors they focus on are internal and more controllable.

Others may have an "ego (outcome) orientation", where they constantly compare themselves with others. Such factors are external and uncontrollable, they tend to give up more easily and select tasks that are easier to perform (Nicholls, 1984).

Duda & White (1993) examined the goal orientation and perceived reasons for sport success among adolescent athletes with physical disability. Interdependence of personal goals and views about determinants of sport achievement was examined. Fifty-nine athletes with physical disabilities completed the 13-item Task and Ego Orientation in Sport Questionnaire specific to wheelchair basketball and a 21-item questionnaire concerning beliefs about the causes of sport success. Results indicated that both, task and ego oriented goals perspectives are present among athletes with disabilities. This finding also adds to the work of Brasile & Hedrick, (1991), which revealed both ego and task oriented motives for engagement in sports by participants with disabilities. Authors also find that success in wheelchair basketball was perceived to stem from a number of factors including trying hard and wanting to improve (Task), being more able than others and

using prohibited means such as blood doping (Ego). Task oriented wheelchair basketball players also believed that external factors (such as equipment and influence of the coach), also contribute to success. The determination of these athlete's views concerning determinants of sport achievement allow us to better understand their perceptions of how sport works (Nicholls, 1984).

Another study based on achievement goal theory (Skordilis et al., 2001), had a purpose to examine sport orientation and goal perspectives of wheelchair adults who differed on gender and type of sport. Together with TEOSQ, this study had one more instrument of Sport Orientation Questionnaire (SOQ). SOQ findings showed that male wheelchair athletes reported a greater tendency to approach sport with goals related to competition. On the other hand female wheelchair athletes were more likely to approach sport participation with a focus on personal goals. TEOSQ results indicated that marathoners are significantly more ego oriented than wheelchair basketball athletes, which means they were motivated by desire to perform as well or better than others.

Many research had indicated (Duda & White, 1993) that those predominantly task-oriented define success in terms of mastering skills, self-improvement, and working hard. Those more ego-oriented define success in terms of exceeding or outperforming others, preferably with low effort. They are 'other-person referenced' whereas task oriented youth will be 'self-referenced'".

Previous studies showed difference in task and ego-orientation between youth and adults, and now we have a case of different task and ego-orientation between different types of sport. This just shows how big a field of sport participation motivation is, and that still much has to be done in this area in order to improve physical activity programs and to increase participation, especially by disabled population, because it is of great importance for them and for the society in general.

As Duda (1989) said "if we want people to become more involved and stay involved in sport activities, it seems wise to ensure that success can mean being the best as well as personal improvement and skill mastery".

In quest for participation motives and psychosocial aspects for physical activity there are many areas which have to be investigated in order to get more complete picture about causes of sport participation. Group of authors (Ellis, Kosma, Cardinal, Bauer & McCubbin 2007), tried different approach in this quest, by determining physical activity (PA) beliefs and behavior of adults with physical disabilities, using the Theory of Planned Behavior (Ajzen, 1985) as the theoretical framework. The 223 adults with self-reported physical disability took part in the web-based survey. The purpose was to report their behavioral beliefs (advantages and disadvantages of participating in PA), normative beliefs (individuals or groups who approve or disapprove with their PA participation) and control beliefs (factors or circumstances which are enabling or making PA participation more difficult). Behavioral advantages which positively affected participation were that PA improves emotional functioning, assist with weight management and improves overall health, whereas disadvantages were that regular PA cause's pain or soreness, consumes time, causes fatigue or loss of energy, falls and injuries. The normative influences who approve PA participation were family, friends, healthcare professionals, spouse and significant others. The control beliefs obstructing PA are disability and associated symptoms, lack of access to adequate facilities, fatigue and lack of energy, transportation, cost. Control beliefs which could facilitate regular PA are access to adequate facilities, equipment or programs, support or programs and more money and activities that are less expensive.

From this study we discover that persons with disability may poses specific motivation factors for PA participation, but sometimes environmental barriers and health problems related to their disability are powerful negative causative agents of PA participation. From the results of this study we may also conclude that PA participation can be increased changing the environmental issues (access to buildings, lower costs, equipment, programs, support), rather than trying to change personal factors such as finding activities that are enjoyable.

Collins & Kay (2003, p. 141) was noted that the five major issues, which are identified as impeditions for people with disabilities are transport, physical and human barriers to access, staff training and programming, information and communication. Sometimes getting to the building can be a bigger problem for disabled, than actually using it. The

most frequent barriers of using the transport were the cost, infrequency, lack of information about the services and also low level of staff awareness. Beside this information about leisure time and recreational activities are often poor, as well as the offer of the exercise and physical activity programs. These obstacles can easily be motivational barriers for participation, and it has to be addressed to the policymakers and significant others who are responsible.

#### **2.3.4 Motivation of sports participation among persons with physical disability**

Some people engage in sports from health reasons, to improve physical fitness, to discover new skills and to revive ignored abilities or to learn about different games and sports. Others may seek an opportunity to meet new people, to be part of something, to have fun, to gain new friendships, while thousands of others see a Paralympic medal as the ultimate prize (Vute, 2004). As we find out from work of Kälbli (2008), most of the Hungarian sitting volleyball players make sport on a hobby level, for fun or just to keep the health. From one point of view this fact is positive, because they still involve in sport, but from the other hand it should be a bit troublesome because we are facing with the low level of achievement and lack of the ambition for the top sport results. These facts could reflect future generations and could result in low level of popularity of sports of disabled. Because of that, it is very important to educate teachers and coaches, which should be capable to introduce activities on high level for disabled or health impaired athletes. They should be able of motivating adults and youth to do sports not only for the recreational purposes, but also for the high level accomplishments (Vute, 2009).

As it is already mentioned in the text above, very little has been done in the area of psychosocial aspects, determinants or predictors for sport and physical activity participation among disabled population and especially among sitting volleyball players. Due to that fact, the following part of literature review will be focused on psychosocial aspects of people with physical disabilities, considering that is the main category of people in sitting volleyball.

One of the most important factors of psychosocial aspects is motivation, which is very wide and still unrehearsed area of physical activity and sport participation among physically disabled athletes.

Understanding sport participation motives of participants is important to coaches, recreation professionals, adapted physical educators, sport psychologists, as well as athletes, in order to maximize participation and to minimize participatory burn – out.

Reasons why physically disabled persons participate in sport are likely to be quite complex, going beyond simply considering the activity appropriateness or interest in components of specific activity (Brasile & Hedrick, 1991). Cratty (1968) noted that motives assist in determining intensity and effort put into a selected activity, but that these motives may vary from individual to individual and are dependent upon the chosen activity. She also indicates that among motivation orientations related to sport involvement have been: compensation, cooperation and group cohesiveness, competition, being a champion, possession of victory, seeking risk and challenge, aggression and escape.

Ogilvie & Tutko (1963), discussing what they considered to be a complex motive situation toward sport participation, reported needs for love, social approval, status, security and achievement as basic incentives for engagement. According to Brasile & Hedrick (1991), participation motivation for involvement in sport activities can be grouped into three major categories: task, ego and social incentives.

Task-oriented incentives are those intrinsically tied to participating in sport itself. Perception was derived by seeking and successful overcoming optimally challenging task circumstances in which task demands only slightly exceed the individual's capabilities. Task-oriented motives typically involve competition with self, and task-oriented individuals are inclined to choose tasks in which they are maximally responsible for outcomes (Nicholls, 1984). Ego incentives are founded upon desire to demonstrate competence through comparing personal performances with performances of others. When ego-involved, an individual is concerned with outcome and evaluates it in terms of what has been attained in comparison to what has been sought. Function of an ego



incentive is not just to accomplish something, but to be better than someone else (Brasile & Hedrick, 1991; Nicholls, 1984).

Social incentives are those which stress interpersonal relationships, social reinforcement, affiliation and recognition from significant others are desirable outcomes (Brasile & Hedrick, 1991).

Brasile, (1989), compared participation motivation in sport of athletes with physical disability and without disability. This study reported that individuals participated in activity primarily for reasons related intrinsic motivation or task orientation. It was also observed that the presence of disability appeared to be of a limited significance to overall reasons for participation. Wheelchair and able-bodied athletes appeared to be quite similar and the particular sport in which individuals participated appeared to have more of an impact on incentives for participation than disability itself.

In the next study, Brasile & Hedrick, (1991), investigated reasons for competitive sport participation of individuals with physical disabilities and motivational differences between adult and youth participants. Analysis of this study indicated that five factors are closely related to participation motivation. These factors are fitness (general improvement of body functions), task and ego incentives, social integration (interpersonal relationships, friendships) and social affective involvement (emotional or feeling aspects of sport participation). Results showed that following six factors appeared to be the main participation motives, where the first four were the most important for the participants. Those factors labeled as team interaction, improving ability, testing against own standards, providing opportunities for exercise and excitement offering challenges, were regarded of relatively high importance by both groups. We can conclude from this study that both task and ego-incentives were present at adult and youth participants. Significant differences have been found on the level of ego and social-integrative motives. Both ego and social-integrative motives were observed to be more important to disabled youth than adults. This is potentially explained in a study of Veroff (1969), where he found that children from age six have a tendency to evaluate their competence relative to their peers via social comparison than by comparing performance to internalized personal standards.

But, regardless to this finding task-related reasons for participation were of a great importance for the adults and youth participants in this study.

It is important that coaches, educators or program supervisors support dependence on individually relevant task-oriented motives through introducing instructional and participatory sport programs which emphasize pursuit of challenging but attainable personal behavioral goals. This type of orientation allows all participants to experience success regardless of their relative skills and abilities (Brasile & Hedrick, 1991).

Kilpatrick, Hebert & Bartholomew, (2005), conducted the research about College student's motivation for physical activity of 233 participants without disability, (132 women, 101 men), aged from 17 to 47 years. They assessed motivational differences between sport participation and exercise, and gender differences for physical activity motivation. The first part of this study is important for our work, although we are not investigating exercise motivation, we will mention those results as well, because most of the sitting volleyball players report their involvement as a type of recreational exercise. Results of this study revealed that participants' motivation to engage in sport differed from motivations to engage in exercise. The primary motives for sport participation were competition, affiliation, enjoyment and challenge, while the main reasons for exercise engagement were health related motives (health pressures, ill-health avoidance and positive health) and body related motives (weight management, appearance, strength and endurance). These findings also showed that sport participation is more closely linked to intrinsic motives, whereas exercise is associated with extrinsic motives.

Lena Fung (1992) investigated the motives for participation in competitive sport among males and females elite athletes with spinal cord injury. The participants were athletes from Japan, Great Britain and USA ages from 20 – 30, and they were investigated by the questionnaire to examine motives for participation in competitive sport. The most important motive factors reported by the most of the athletes were fitness and skill development, whereas the least important motive factors were energy release, achievement and status and atmosphere. Of course, these results differed among three

countries, but they were highest ranked indicators of participation by all of the participants.

Wu & Williams, (2001) investigated factors influencing sport participation among athletes with spinal cord injury. Findings revealed that for athletes who had been active before injury, the hospital rehabilitation program and specialized sport club for people with disabilities were more important contexts for introducing sport after injury to individuals. Friends and peers with disabilities were much more influential as initial and continuing socialization agents than rehabilitation and therapist, which coincides with the normative beliefs in the research of (Ellis, Kosma, Cardinal, Bauer & McCubbin 2007). The main reasons for athletes with SCI who participated in sports after injury were for fitness, fun, health, and competition; although many athletes noted that social aspects and rehabilitation also influenced their sport participation.

We can see that fitness, fun and health are the very strong motivational factors for the individuals with physical disability, and they are being repeated as reasons for sport participation among athletes and individuals with different kind of physical disabilities (SCI, amputees, les autres, etc.). These results are offering some directions for improving strategies to engage people with different kind of physical disabilities in physical activities and sport. They provide possibilities for escape from social isolation, new friendships opportunities, self-efficacy, better self-confidence, stress management, etc.

King et al., (2006) conducted a research about predictors of the leisure and recreation participation of children with physical disabilities. They used a structural equation modeling to test a theoretically based model of environmental, family and child factors as determinants of leisure and recreation participation. Participants were 427 families and children (229 boys and 198 girls) with physical functional limitations from 6 to 14 years of age. According to the WHO (World Health Organization), participation means involvement and engagement in life situations, including leisure and recreation activities. Many factors have been found to be associated with children's participation, including physically accessible and welcoming environments; family factors such as income and

family functioning; and child factors, such as cognitive abilities and social skills (King et al., 2003). The results showed that significant direct predictors of children's participation intensity were child functional ability, family participation in social and recreational activities and child preferences. Family cohesion, unsupportive environment, and supportive relationships for the child had significant indirect effects on participation. The findings indicate the vital role played by families and the importance of complex approaches to supporting participation.

It is very important that we realize that children are those on which we have to put special attention, whether the child has disability or not. In a case child is disabled, parents or caregivers should be introduced how to help them, how to motivate them and create environment in which children will be able to develop their mental and physical abilities and skills. Friends and peers should be educated and trained how to treat them and give them support, which they highly need. Children and adults with disabilities will always face with a certain dose of prejudice and intolerance by other people, and that's why is important that parents build the positive attitudes, persistence and provide specific knowledge to their children, how to deal with challenges in society and life.

Youth sport participants frequently report social reasons for their involvement in sport such as wanting to be part of a team or to be with friends, and social sources of positive and negative affect such as social recognition and parental pressure. Sport evidently has a meaning for participants, because it provides opportunities for interpersonal interactions and development of social relationships with significant others (Allen, 2003).

In this literature review we summarized various reasons for sport and physical activity participation, but above all, the most noted were the psychological aspects, respectively motivation for sport participation among people with physical disabilities. The reason for that is because the literature in this field is very limited. Beside psychological aspects there are other factors which influence participation and there are classified within seven domains: demographic and biological, cognitive and emotional, behavioral attributes and skills, social and cultural, physical activity characteristics (perceived effort and intensity)

and physical environmental (Dishman, Orenstein, & Sallis, 1985). Identification of these factors is important and necessary to develop relevant policies and effective interventions.

In some situations most of these factors can be fulfilled and satisfied, person can be motivated and supported by significant others, but sometimes that is not enough for participation because disabled people often face with a specific barriers present in the society. Rimmer et al., (2004), identified following barriers and facilitators to participation among people with disability: barriers and facilitators related to built and natural environment; economic issues; emotional and psychological; equipment barriers; barriers related to the use and interpretation of guidelines, codes, regulations and laws; information related; professional knowledge, education and training issues; perceptions and attitudes of persons who are not disabled, including professionals, and availability of resources.

The degree of participation in physical activity among people with disabilities is affected by multiple set of barriers and facilitators that unique for this population. It has been suggested that an understanding of potential barriers and facilitators that affect participation by people with disabilities could provide important information necessary for developing interventions that have a greater likelihood of success (Humpel, Owen & Leslie, 2002).

In conclusion of this review of literature, we can say that the most listed reasons for sport participation were the following: fitness, skill development, various health reasons, socialization (new friendships, being part of something), competition, security and achievement, status, challenges, success, fun, psycho-physical relaxation, stress management and Paralympic participation.

Based on the research it can be seen that motives for participation in sports do vary. Therefore, there seems to be a need for coaches to identify participation motives particular to the group of people they are working with, if they want to design programs

that are attractive and useful enough. It is only by knowing what is important to the participants, that situations can be structured to fulfill the needs and thereby maximize performance and ensure persistence.

In order to find those motives, there is a need to understand, among a host of other phenomena, such as developmental status of disabled sports, attitudes toward persons with disabilities, general social values and each country's economic (Fung, 1992).

### **2.3.5 Motivation for sitting volleyball**

Volleyball is one of the most attractive and spectacular sports, and it attracts great interest all over the world (Wiczorek, Wiczorek, Jadczyk, Sliwowski & Pietrzak, 2007). The relative simplicity of the sports resulted in very positive rise in popularity among disabled population. Through sport participation in any form of volleyball for the disabled (standing, sitting, wheelchair and beach volleyball), one could reach a better quality of life, fulfill various ambitions on different levels, from rehabilitation and recreation to the top sport achievements (Vute, 2004). The sport of sitting volleyball is also recognized as one of opportunities that fulfill criteria for successful integration in sports, and not only of disabled, but also of able-bodied among people with disabilities, which is called "reverse integration" (Vute, 2009). This opens up a possibility to increase the competitiveness of the sport, although non-disabled persons are not, according to classification, allowed to participate in Paralympic Games, or in world or regional championships (Mustafins, Landor, Vetra & Scibrja, 2008).

Sitting volleyball primarily include people with physical disabilities (amputates, polio, cerebral palsy, les autre, etc.). Those people could be born with specific condition or they could acquire certain disability as victims of a war conflicts or traffic accidents. If you search the literature you will find that very little is known about reasons, motives, psychosocial aspects, determinants or predictors of sport or physical activity participation among disabled population and that every paper published requires further research in this area.

One of the papers published on topic of sitting volleyball participation is the work of Kälbli, (2008). In her work she presents different motivational factors for sport participation among Hungarian sitting volleyball players with congenital and acquired disability. Motivational factors for the athletes with congenital disability were influences of significant persons in their lives such as parents at the beginning and teachers on the second place. Most of the athletes with acquired disability began the sport activities under the influence of friends and less percentage were affected by the parents, and even the lesser percentage of both groups were influenced by the therapist. Author of this study also reports changes in sport motivation by the time. At the beginning athletes were motivated to engage in sport by desire to prove him/herself and to the significant others in the surrounding environment and to spend free time usefully. Later, motivation rises to the level of desire to participate at the Paralympics or for some decreases and sport becomes a sheer habit. As time passes in sport, and the athletes reach the top of sport carrier, the most important motivating factor becomes the aim to keep the health (Kälbli, Rigler & Gita, 2006). This result differ from the result of study with elite Chinese athletes with physical disability, which regardless to their age, wanted to improve their skills in order to achieve great results. The reason for this might be searched in economical system of the country, culture mentality, professional level of the coaches and other practitioners, etc.

One more study was carried out on the sitting volleyball players with and without disability in Hungary (Kälbli, Gita, Rigler & Szilák, 2004). The purpose of the research was to examine the reasons of sport participation among 54 sitting volleyball players, where the 23 of them were without disability. Close type of the instrument was implemented, where 11 items of potential reasons for participation are offered to individuals. The results reveled that the highest motivational factors for both groups of participants were the reasons to keep the health and to make sport from a hobby, whereas the reason to get financial goods was the lowest motivational factors. The other reasons which were highly ranked by the disabled participants were to improve fitness, to make friends and relationships, to prove to him/her self and because sport provides opportunities to travel around the world.

The results of this study shows that the most of the athletes engage in sport just for the recreational purposes or more concretely to spend time with friends, maintain current level of fitness and health or simply to do sport for the overall personal enjoyment. When we take into account the mean age of the participants, which is  $38,3 \pm 10,2$  years (almost the top of the sport career), when the individuals have the lives settled, that might be the possible reason of these results.

We can say that system of psychosocial aspects is a huge complex which includes family and friends, health care professionals (therapists, doctors, social workers, etc.), environment (physical and mental barriers or advantages), education workers (teachers and professors), coaches and sport workers and many others who have influence on individuals with disabilities. Each of these factors has their own role in mental, social and physical rehabilitation, motivation, socialization, and providing support for great life and sport accomplishments.

Chen, Shihui, Wang Jin, Jin Mei & Lau Kwok On (2007) carried out the research about motivation of sport participation in elite athletes with physical disabilities in China. The purpose of this study was to investigate the differences in sports motivation between sexes, age, level and years of training, and type of disabilities (acquired and congenital). 140 Chinese athletes with physical disabilities were asked to complete Participation investigation inventory (PMI) and Task and Ego Orientation in Sport Questionnaire (TEOSQ). Results showed that the most important factors of motivation for sport participation were skill development, fun, friendship, achievement, situation factors and energy release. The highest incentives for sport were skills improvement and participation for fun, as well as improvement of the fitness and body functions, whereas the situational factors and energy release were the two lowest motivation factors. This can be explained with the fact that the Chinese government invests much money to sport for the purpose of achieving medals at international competitions. Therefore, Chinese athletes chose to improve their skills in order to represent their country in the best possible way. The similar result is confirmed in a study of Pensgaard, Roberts & Ursin (1999), where they compared motivational determinants among elite athletes with and



without physical disabilities, and in a study of Fung (1992) with elite athletes with Spinal Cord Injury, where skill development was very highly ranked motivational factor for competition participation, and for the energy release was the opposite.

Study of the Chinese authors further showed that motivation between athletes with congenital and acquired disability was significantly different in terms of energy release, which indicates that athletes with congenital disability engage in sports to improve health and general well being, rather than to compete for medals. Difference between athletes on years of sport training is also present in this study, but only on the achievement factor. The results of the survey demonstrated that athletes with longer training periods scored much higher on the achievement factor than less trained athletes' scores. The part of this study was focused on the Goal orientation from the TEOSQ (Task and ego orientation sport questionnaire), which consists items for task and ego orientation. The result showed that older group of athletes from this study scored much higher on ego orientation than younger athletes.

At the end we can see that both, intrinsic and extrinsic motivation play an important role for the Chinese athletes with physical disability, which differ from the previous study about college student's motivation.

The first reason we described this study so comprehensively, is because its correlates with our study, and the second one is because the results are profound due to the large sample of athletes with physical disability.

This literature review continues with following research (Vute, 1992), which directly correlates with the focus of my thesis, where the author examines motivation for sport among elite top sitting volleyball players. The participants were 102 physically disabled male subjects from 19 – 46 years of age. With the help of factor analyses, 10 factors were isolated as important for participating in sport activity among physically disabled players of sitting volleyball. The results showed that success, by overcoming different barriers and distinguishing from the others, was a leading motive for the athletes. This shows that victory and title of the champion are becoming more and more important in the competition of physically disabled athletes. The second most important factor was a desire to improve fitness in order to achieve better health. We can notice that fitness as a

reason for sport participation was also highly ranked in the study of Fung (1992) and success was a strong reason in a study of Chinese authors (Chen, Shihui, Wang Jin, Jin Mei & Lau Kwok On 2007). The factor of improving fitness can be associated with desire to improve health, which is also present in studies (Kälbli 2008; Pensgaard, Roberts & Ursin, 1999; and Ellis, Kosma, Cardinal, Bauer & McCubbin 2007). Beside these two main reasons of sitting volleyball participation, athletes mentioned few other reasons, such as psycho-physical relaxation and desire for a good appearance. A very significant reason is a spontaneous experience and enjoyment of the sport and to fill the “empty space” in their lives.

Vute & Krpač (2000) also did a very interesting research of eliciting the sporting values among elite sitting volleyball players. The study group consisted of 51 female and 103 male elite sitting volleyball players, who played in European championship in Sarajevo in 1999. Among female athletes authors found that personal strength and friendship are very important and represent leading sporting values. The team leader’s role or the experience to lead action is a significant value in sitting volleyball, but for the most of female athletes sport represents lifelong orientation and remains important after retirement from the national team. On the other hand male sitting volleyball players reported following sporting values as the most important: team work as prevailing factor, mental and physical abilities as a mean of avoiding injury problems and last but not the least, opportunity to fulfill their ambitions. Knowing what the athletes appreciate the most is very valuable for the coaches and practitioners in a specific sport or in general for the disabled.

## 3 Questions

### 3.1 Purpose, rationale, aims, objectives and hypothesis of the study

#### 3.1.1 Purpose and Rationale of the research

Persons with physical disability, their parents or care givers, both youth and adults are frequently facing with obstacles in achieving their social needs, recreational and leisure time activities, in everyday life, from the moment of finding for developmental limitation or after traumatic experience. Health care institutions are the first facilities they address for help, later they continue with the school or might join to the some local sport club or institution for persons with physical disabilities. Professionals working in these institutions are also facing with problem of finding appropriate strategies and programs which will satisfy the needs, interests and desires of the individuals with physical disabilities, and in the same time achieve the goals of their own profession. Thereby, the answer on the main question of this study needs to determine **“What are the psychosocial aspects of individual’s engagement to sport and physical activity?”**

The reason we decided to deal with this problem is because the persons with physical disability in Bosnia and Herzegovina and other Balkan countries, are still on the margins of society and very little is known about motivation to do sports. After the war in Bosnia, a lot of people stayed injured, and sitting volleyball is recognized as a main sport for people with physical disabilities. By knowing what is that they want to accomplish by engaging in this sport is of a great importance not only for coaches, but for teachers, health care professionals, policymakers and all others who work with this population of people, with a goal to create proper programs and strategies suitable for all.

### 3.1.2 Aims and Objectives

**Main aim:**

To determine the psychosocial aspect of player's engagement to the sport of sitting volleyball and to formulate the most frequent ones.

**Sub aims:**

1. To formulate determinants for increasing general knowledge about the sport of sitting volleyball in Bosnia and Herzegovina and other Balkan countries
2. To formulate recommendations for practice, future research and knowledge in a field of sitting volleyball and motivation for sport participation among people with physical disabilities

We will try to identify:

- what are the motivational factors of participation among the players from the Balkan countries
- what are the environmental influences which affected participation
- What difficulties did the participants have after they started with sitting volleyball

Design and strategy of these research:

- Quantitative (we operate with quantity of data from 88 participants)
- Heuristic (we do not know in advance what determinants are frequent or not)
- Analytic-synthetic (data are analyzed, assessed, summarized)
- Comparative (comparison related to age, personal diagnoses of disability).

### 3.1.3 Hypothesis of the study

#### **Main hypothesis:**

It is assumed that we will determine the major motivational factors of sport participation and adherence by the players of sitting volleyball from the Balkan countries

#### **Sub hypothesizes:**

1. It is assumed that that improvement of fitness and competition and health will be the highly ranked reasons for participation.

This prediction is based on the previous research on motivation among people with physical disabilities where those factors were assessed as primarily reasons of sport participation.

2. It is assumed there will be significant correlation between athletes of different age and their claimed reasons of participation.
3. It is assumed that will be significant correlation between years of training and factors of participation

Correlations are used to determine association between two variables. If the correlation is found then the specific association between two variables is present in general population at the specific level of significance.

## 4. Methods

### 4.1 Participants

The research intervention for this study took place at the international and traditional tournament of sitting volleyball in Banja Luka, Bosnia and Herzegovina.

The sample of participant's study group consisted of 88 athletes, from who 71 was with physical disability and 13 was without disability. From the whole number of physically disabled athletes 68 of them was with acquired and only 3 with congenital physical disability. The research sample consisted of 5 females and 83 males, which are grouped in the categories of young adulthood (20 – 30 years old), middle adulthood (30 - 45) and older adulthood (45 - 60). 120 questionnaires were distributed among the athletes at this tournament and another 48 questionnaires has been sent to the same number of sitting volleyball athletes by mail. 88 questionnaires have been returned altogether, which is 59.5 % of returning rate. This research sample was drawn from national clubs of Bosnia and Herzegovina, Croatia, Serbia, Slovenia and Greece. They had to fill in the modified questionnaire about sitting volleyball participation.

### 4.2 Instrument

The original version of the questionnaire we used for our study is the Wheelchair Basketball Participation Survey, consisted of 61 questions. This questionnaire is created by Great Britain Wheelchair Basketball Association in collaboration with The Loughborough National Sports Development Centre and International Wheelchair Basketball Federation (European Zone). This survey had two purposes. First, they wanted to use information to develop a profile of the wheelchair basketball athletes and their participation patterns so that it can produce more effective wheelchair basketball development programs. Second, they could use this information to increase the knowledge about the sport. Our study has similar purpose, but we only modified this questionnaire so the questions are related to the sitting volleyball. Almost half of the

questions are excluded and some are reworded because we considered it would be inappropriate for the participants to answer. We concluded that some questions are very personal and sensitive, related to their health and disability condition, or just too long or irrelevant for our study. So from the precaution that most of those questions will not be answered, we decided to exclude them. The questionnaire is also translated to Serbian language, so the final version of our modified Sitting Volleyball Participation Survey consisted of 32 questions in both, Serbian and English language.

### 4.3 Research management

Survey took place at the 8<sup>th</sup> International Sitting Volleyball tournament, “Banja Luka Open 2009”, in Banja Luka, Bosnia and Herzegovina, with ten participating clubs from the host country, Serbia, Croatia, Slovenia and Greece. 120 questionnaires were distributed among the athletes at this tournament and another 48 questionnaires has been sent to the sitting volleyball athletes from Bosnia and Herzegovina by mail.

The data were collected by the author and one assistant with help of Zoran Jesić, the general secretary of Sitting Volleyball Federation of Disabled Republic of Srpska, who informed director of the tournament and all the coaches about the survey. There was no need for the written request.

The aforementioned tournament lasted two days, from 5 – 6<sup>th</sup> December 2009. The first day, games were played from 09.00 till 18.00 hours and second day from 09.30 till 14.00 hours. Data were collected in breaks between the games when the players were waiting and resting for the next game. During those two days of the tournament, together with returned questionnaires sent by mail, we collected 88 filled questionnaires altogether.

## 4.4 Data processing

Basic matrix for data input was made in SPSS 16.0 for Windows.

**First:** *Descriptive statistics – Frequencies and Percentages* is carried out, to describe basic characteristics of the participant's answers.

**Second:** To analyze the data we used Statistical Package for Social Sciences (SPSS Inc), Version 16.0, for Windows.

*Spearman Correlation Coefficient* was implemented. It is used to determine the degree of association between two variables. Correlation can vary from minus one to plus one.

When there is a negative correlation between two variables, as the value of one variable increases, the value of other decreases, and opposite. When there is a positive correlation between two variables, as value of one variable increases, the value of other variable also increases.



## 5. Results

### 5.1 Descriptive statistics - Description of the questionnaire answers

#### 5.1.1 General information about participants

**Table 2 - Survey of participants by gender**

	Frequency	Percent	Valid percent
Male	83	94.3	94.3
Female	5	5.7	5.7
Total	88	100.0	

From the total number of the study group we had 83 male and 5 female athletes. We have to take into consideration that the data have been collected from the male sitting volleyball clubs so the number of females is not a troublesome fact, and they were there to replace their teammates who could not be present. Unfortunately, small number of female participants gives us no possibilities for some further analyses and comparisons.

**Note:** *Percent* represents the percentage from the whole number of participants (88), and *valid percent* is the percentage only from the athletes who answered on the specific question

**Table 3 – Survey of participants by age span**

	Age span	Frequency	Percent	Valid percent
	Young Adulthood (from 20 – 30 )	10	11.2	11.8
	Middle Adulthood (from 30 – 45 )	54	61.8	63.3
	Older Adulthood (from 45 – 60 )	22	24.7	25.9
	Total	86	97.7	100.0
	Missing System	2	2.3	
Total		88	100.0	

Since the age span of our study group is really wide, from 15 – 60 years, we decided to make groupings as it represented in the Table 2 above. Two participants refused to answer on this question and the single participant with 15 years of age was added to the category of young adulthood, which is the least present group in this study with 11.8%. The most present group of participants, 63.3 % of them, belongs to the category of middle adulthood, whereas 25.9 % of the respondents are put in the category of older adulthood.

**Table 4 – Survey of participants by country**

		Frequency	Percent	Valid Percent
Valid	without an answer	3	3.4	3.4
	BiH	45	51.1	51.1
	Serbia	17	19.3	19.3
	Croatia	7	8.0	8.0
	Slovenia	7	8.0	8.0
	Greece	9	10.2	10.2
	Total	88	100.0	100.0

We can see that the 51.1 % of respondents was from Bosnia and Herzegovina so the results will be mostly based on their answers. Next is Serbia with 19.3 % of athletes, then

Greece, Slovenia and Croatia with smaller percent of respondents, which corresponds with the number of clubs from the same countries included in this study. Eight of 14 clubs were from Bosnia and Herzegovina, 2 from Serbia and 2 Greece, and by one from Croatia and Slovenia.

**Table 5 – Survey of participants by profession**

		Frequency	Percent	Valid Percent
Valid	Student	4	4.5	5.3
	Employed	44	50.0	57.9
	unemployed	28	31.8	36.8
	Total	76	86.4	100.0
Missing	System	12	13.6	
Total		88	100.0	

Table 4 shows that 57.9 % of athletes who answered on this question were employed at the time of data collection, whereas 36.8 % were unemployed and 5.3 % of the respondents are still studying. Twelve participants or 13.6 % of them who returned the questionnaires did not answered on this question. More then a half of the participants is employed which only shows that is possible to fit in the life obligations and engagement in sport at the recreational and professional level. One will definitely have health benefits of physical activity participation, which will improve his working capacity and prolong life expectancy.

**Table 6 – Survey of participants bt level of education**

		Frequency	Percent	Valid Percent
Valid	Higher education professions	24	27.3	61.5
	secondary education	13	14.8	33.3
	retired	2	2.3	5.1
	Total	39	44.3	100.0
Missing	System	49	55.7	
Total		88	100.0	

In attempt to determine the education degree and nature of their job, 55.7 % of participants did not answer on this question. 61.5 % of the one who answered has University degree, 14.8 % stayed on secondary education (High school degree) and 2.3% is retired already.

**Table 7 - Survey of participants by type of disability**

		Frequency	Percent	Valid Percent
Valid	refused to answer	4	4.5	4.5
	Congenital	3	3.4	3.4
	Acquired	68	77.3	77.3
	without disability	13	14.8	14.8
	Total	88	100.0	100.0

Sitting volleyball is played by persons with physical disability, which can be congenital and acquired. Congenital physical disability means that someone has been born with certain condition which limits mobility functions of individual, such as cerebral palsy, muscular dystrophy, etc. Acquired physical disability is a result of some traumatic accidents, war conflicts in some countries, or some other type of injuries. Majority of our study group, 77.3 % of them, has acquired physical disability and only 3.4 % of participants have been born with some limitations. Sitting volleyball can be also played by individuals without disability, which are present in our study in percentage of 14.8 %. One research from our literature review showed difference in motivation between athletes with congenital and acquired physical disability (Chen, Shihui, Wang Jin, Jin Mei & Lau Kwok On, 2007), unfortunately the small sample of athletes with congenital disability in our study group does not leave us possibility to do the same.

The most frequent type of physical disability in sitting volleyball are various amputations of lower extremities, which confirmed 65.7 % of the athletes in Table 8.

**Table 8 – Survey of participants by type of physical disability**

		Frequency	Percent	Valid Percent
Valid	amputations	44	50.0	65.7
	poliomyelitis	1	1.1	1.5
	Cerebral Palsy	1	1.1	1.5
	Les Autres	21	23.9	31.3
	Total	67	76.1	100.0
Missing	System	21	23.9	
Total		88	100.0	

We had only by one example of cerebral palsy and poliomyelitis, which are two other types of physical disability in sitting volleyball. Individuals, who do not belong into three previous categories and still have some conditions which limit their mobility to the some extent, are classified as Les autres. 23.9 % of participants in our study belong to that category, which include conditions such as different type of wounding, fractures, joint disarticulations, etc. We also need to take into consideration that 23.9 % of athletes did not answer on this question.

It would be valuable to mention that injury age of the participant varied from 2 to 45 years of age, and the period of time after which individuals engage in sport of sitting volleyball varied from 6 months to 20 years. One of the reasons of earlier or later sport engagement after the injury is definitely persons age in a time of injury or the seriousness of injury it self. Other reasons can be various, starting from built and natural environment, economic issues, emotional and psychological barriers, equipment barriers, lack of information and so on. We didn't examine barriers of participation, which are definitely present, especially in the countries that had war crises.

## 5.1.2 Details about involvement in sitting volleyball

The participants were asked at the beginning why did they choose sitting volleyball. Since this was the open type of the question, very often, in one answer we had several reasons of participation. We categorized these answers into the four categories as it presented in Table 9.

**Table 9 – Question: Why did you choose sitting volleyball?**

		Frequency	Percent
Valid	personal attitude and impression	51	57.9
	because sport itself	34	38.6
	because of health	13	14.7
	social reasons	19	21.6

“It is interesting to me; good for relaxation; it is fun; I was doing sports before injury; it was the only choice; I can’t do any other sport; to get back into the normal life”; these were some of the answers which belongs to the most frequent category of personal attitudes and impressions. The second category is very close by the meaning to the first one, but they were directly related to the sitting volleyball. The most common answers in this category were: “I like it; the best sport for me; very dynamic game; I was playing volleyball before; I like it because it’s fast”. The last two categories were present in a smaller percentage, but I would say they are equally important reasons of participation for the athletes. We can not take this question as a reliable, because most of the participants does not like open type of the questions and they just write something to finish with it or just live it empty.

Barriers of sport and physical activity participation among disabled population are numerous, especially lack of information. In Table 10, we can see that the 67.0 % of our study group were introduced with sitting volleyball by their “friends” from the same

sport. 8 % of them found out for the sitting volleyball from the friend who plays standing volleyball or some other acquaintances.

**Table 10 – Question: Who introduced you with sitting volleyball?**

		Frequency	Percent	Valid Percent
Valid	friend from sitting volleyball	59	67.0	67.0
	friend from standing volleyball	7	8.0	8.0
	other friend/acquaintance	7	8.0	8.0
	Doctor	2	2.3	2.3
	rehabilitation worker	3	3.4	3.4
	Coach	1	1.1	1.1
	someone else	6	6.8	6.8
	information from media	3	3.4	3.4
	Total	88	100.0	100.0

People with physical disabilities mostly visit similar places, such as organizations for disabled, and they move in the similar circles of people, so they will find out for this sport eventually. The result which is troublesome is that only 2.3 % of them heard for the sport from their doctor, 3.4 % from rehabilitation worker and the same percentage of athletes from media. Precisely doctors and rehabilitation workers are the first who meet with persons with physical disability after their injury, and they should be the one who will direct them where and how to continue with the active lifestyle after the rehabilitation.

**Table 11 – Question: In what context or on which occasions were you first introduced with sitting volleyball?**

		Frequency	Percent	Valid Percent
Valid	volleyball sport club	52	59.1	62.7
	school/boarding school	3	3.4	3.6
	hospital, rehabilitation institute	6	6.8	7.2
	sport club for the disabled	19	21.6	22.9
	Other	3	3.4	3.6
	Total	83	94.3	100.0
Missing	System	5	5.7	
Total		88	100.0	

We can see that 62.7 % of the respondents stated that was sitting volleyball club and 22.9 % were introduced with the sport in some other club for the disabled. It is logical that they will be introduced with the sport when they are watching it, but the problem is to get the information where to be introduced with the specific sport before the individuals actually heard for some sport. Similar as in the table 9, we can see that hospitals or rehabilitation institutes do not have much or any information where to direct their patients after the rehabilitation. The same is with schools and boarding schools. One more very influential source of information, except health care institutions, should be different sorts of medias.

**Table 12 – Question: Had you ever watched sitting volleyball before you started to play?**

		Frequency	Percent	Valid Percent
Valid	Yes	30	34.1	34.5
	No	57	64.8	65.5
	Total	87	98.9	100.0
Missing	System	1	1.1	
Total		88	100.0	



Table 12 reveals that 65.5 % of the participant’s never watched sitting volleyball on a TV. This fact does not mean that if they did, they would engage in the sport earlier, but it does mean that they would have the information earlier and decide what to do with it. On the other hand, 34.1 % of them answered that they have watched sitting volleyball before they started to play, and 26.1 % said that TV program have influenced on their decision to start playing, as it showed in table 13.

**Table 13 – Question: Did a TV program influence your decision to start playing sitting volleyball?**

		Frequency	Percent	Valid Percent
Valid	without an answer	53	60.2	60.2
	Yes	23	26.1	26.1
	No	12	13.6	13.6
	Total	88	100.0	100.0

We can see that 13.6 % of athletes responded that TV program did not influence their decision, but that percentage could be smaller or bigger, because 60.2 % of them did not answer on this question. We know that the medias are the one of the most important factors in the society who creates the way we are living, which partially proved in 26.1 % of participants who answered that TV influenced on their sport participation. We are also familiar with the various “stop smoking” campaigns on a TV, and if just 1% of people stop with smoking after the campaign, that can be considered as the success. The same is with our case of sports for disabled. Even if the percentage of disabled people who started with sport after the TV were smaller, it would be valuable again. Conclusion from this would be that policymakers and significant others create campaigns on medias, as the top source of information, which will promote active lifestyle among the disabled and to provide very much necessary information where they can address to meet their desires.

**Table 14 – Question: What troubles did you have when you started with sitting volleyball?**

		Frequency	Percent	Valid Percent
Valid	getting information	7	8.0	9.1
	handling training session	21	23.9	27.3
	learning skills - technique	34	38.6	44.2
	handling the game	5	5.7	6.5
	transportation problems	6	6.8	7.8
	Money	3	3.4	3.9
	Total	77	87.5	100.0
Missing	System	11	12.5	
Total		88	100.0	

Athletes with disabilities often face with different problem when they start with specific sport, as well as athletes without disabilities. If we remember the results from some studies in the literature review, we will see that table 12 shows very interesting information. Those studies indicated that skill development and improvement of the fitness were the most frequent motivation factors for sport participation among people with physical disability. Most of the participants from our study had exactly the same difficulties. 44.2 % of them had problem with learning technique (skills development) and 27.3 %, couldn't handle the training (fitness) on the desirable functional level. Maybe the individuals from previous studies in the literature review reported what they would want to improve, after they realized the problems they face within their sport. Anyhow, we can say that there is some connection between the result from this question and the results from previous findings related to motivation.

**– Which of the following reasons were important to you to engage in sitting volleyball?**

This question is based on the Likert scale, psychometric scale commonly used in questionnaires, where participants needed to specify their level of agreement to a specific statement. The reasons of engagement offered in this question were sport competition, health, fitness, socialization, rehabilitation and entertainment. The participants had a task to specify the level of importance any of these reasons starting from very important to not important at all.

**Table 15 – Survey of participants by sport competition**

		Frequency	Percent	Valid Percent
Valid	very important	60	68.2	69.0
	quite important	20	22.7	23.0
	little important	6	6.8	6.9
	not at all important	1	1.1	1.1
	Total	87	98.9	100.0
Missing	System	1	1.1	
Total		88	100.0	

For the 69.0 % of participants sport competition is very important factor of engagement, for the 23.0 % is quite important, whereas 6.9 % of participants stated that is little important.

**Table 16 – Survey of participants by Health**

		Frequency	Percent	Valid Percent
Valid	very important	66	75.0	76.7
	Quite important	13	14.8	15.1
	little important	6	6.8	7.0
	not at all important	1	1.1	1.2
	Total	86	97.7	100.0
Missing	System	2	2.3	
Total		88	100.0	

We can see the health is very important for the 76.7 % of the respondents. It is very encouraging that participants realize that physical activity is necessary to maintain the level of body functions and to raise the quality of life. For the 15.1 % of athletes health is quite important and the statement that is little important was present in 7.0 % of cases.

**Table 17 – Survey of participants by fitness**

		Frequency	Percent	Valid Percent
Valid	very important	64	72.7	74.4
	quite important	13	14.8	15.1
	little important	8	9.1	9.3
	not at all important	1	1.1	1.2
	Total	86	97.7	100.0
Missing	System	2	2.3	
Total		88	100.0	

Fitness is composed of strength, cardiovascular endurance, flexibility, coordination and body composition. Sitting volleyball is definitely identified as a sport which can influence on improvement of any of these components. Great number of athletes in our study considers the fitness as the very important for their sitting volleyball participation. For the 15.1 % fitness is quite important factor, whereas only 9.3 % thinks that is little important.

**Table 18 – Survey of participants by socialization**

		Frequency	Percent	Valid Percent
Valid	very important	67	76.1	78.8
	quite important	16	18.2	18.8
	little important	1	1.1	1.2
	not at all important	1	1.1	1.2
	Total	85	96.6	100.0
Missing	System	3	3.4	
Total		88	100.0	

Socialization is important for every person in all segments of society, and it is in the nature of every human being to make connections with other people. It is especially important for the people with disability. Because of their condition they are very often placed on the margins of the society, and others avoid contacts with them due to the small level of tolerance, lack of knowledge and information about disabled or simply because they do not know how to behave in their presence. This might be the reason 78.8 % of the participants marked socialization as very important factor. In the sport settings for the disabled, they meet people with similar problems (challenges), who understand them and where they can be what they really are. For the 18.2 % of the respondents socialization is quite important reason, and only by one or 1.2 % of participants marked this reason as little important or not important at all.

**Table 19 – Survey of participants by rehabilitation**

		Frequency	Percent	Valid Percent
Valid	very important	49	55.7	60.5
	quite important	15	17.0	18.5
	little important	12	13.6	14.8
	not at all important	5	5.7	6.2
	Total	81	92.0	100.0
Missing	System	7	8.0	
Total		88	100.0	

Rehabilitation is also important for our study group, the same like four previous reasons. In this case we have the “smallest” percentage of athletes who stated that rehabilitation is very important. 60.5 % is a high percentage, but not as much as 78.8 % who marked socialization for the primarily reason of participation. For the 18.5 % of respondents rehabilitation is quite important, 14.8 % answered that is little important, while 6.2 % of participants consider rehabilitation as not important at all. They might feel they are rehabilitated already and now they want to achieve some other goals.

**Table 20 – Survey of participants by entertainment**

		Frequency	Percent	Valid Percent
Valid	very important	66	75.0	76.7
	quite important	15	17.0	17.4
	little important	4	4.5	4.7
	not at all important	1	1.1	1.2
	Total	86	97.7	100.0
Missing	System	2	2.3	
Total		88	100.0	

Sport is that kind of a setting where we have opportunities to test our abilities and skills by competing against others, against time and other obstacles. By engaging in sports and

physical activities we are improving our fitness and gaining health benefits and we have a chance to meet new friends and make new connections. These are all great reasons to engage in sports, but they are always followed with one more factor which is impregnated in every sport, and that is enjoyment or entertainment. It is in human nature to play and to have fun regardless to age. This might be the reason 76.7 % of participants in this study stated entertainment is the very important for their sitting volleyball participation and 17.4 % consider it quite important. For the 4.7 % of them entertainment in sitting volleyball is little important and that is not important at all, think 1.2 % of the respondents. The good thing about the sport is that one can choose only to have fun by engaging in it, but in the same time they will develop their fitness, gain health benefits, raise self confidence and meet new friends.

At the end we can conclude that differences in importance among these five reasons are small, but again they can be significant indicators of what is most important for participants to engage in sitting volleyball. We can isolate socialization, health factor and entertainment as the highest ranked reasons of participation. This does not differ much from the results of the previous studies where skill and fitness developments, fun and various health reasons took the first places as the primarily reasons for sport participation. The difference is only in socialization, which is placed on the first place by the importance for the most of the participants. The possible reason for this is that most of the countries involved in this study were also involved in a war crisis (Serbia, Croatia and Bosnia and Herzegovina), directly or indirectly. Fifteen years from then, many people are still having existence problems. The situation is even worst with people with disabilities who are still not receiving much desirable attention from the government leaders and from others who can make difference. So it is understandable that sport competition is not on the first place when they have to compete for their existence. Sitting volleyball is a great place for socialization and entertainment and good catharsis tool to release all the life problems for most of the participants. Very closely behind is fitness, and on the last two places are sport competition and rehabilitation.

### 5.1.3 Information about training

**Table 21 – Question: Where do you have your trainings?**

		Frequency	Percent	Valid Percent
Valid	in a town where you live	77	87.5	91.7
	in another town	7	8.0	8.3
	Total	84	95.5	100.0
Missing	System	4	4.5	
Total		88	100.0	

Closeness of the training place could be determinant factor of one’s decision to engage to the specific sport, especially for the disabled who face with a lot of architectonic and transport barriers. Luckily, 91.7 % of our participants train in the city where they live, but there are 8.3 % of them travel to the other city to play sitting volleyball.

Distances they have to pass are in a range of 500 meters to 120 kilometers, so the times needed to arrive to their destination are in range of 5 minutes to 1.5 hours. Transports they use to arrive to training are presented in the table 22.

**Table 22 – Question: What kind of transport do you use?**

	Frequency	Percent
personal car	62	70.5
Other means	22	25.0
Tram	1	1.1
By foot	9	10.2
Bus	5	5.7
Motorbike	2	2.3
More then one transport	5	5.7
Missing system	4	4.5
Total	88	100.0



We can see that most of them, 70.5 % use their personal car to arrive to the training sessions, and 25.0 % of the athletes use other means of transport. 10.2 % of them walk, which is commendable, only one participant use tram, but this is because only the capitals of the countries from this study have trams. 5.7 % use buses and more then one transport service.

**Table 23 – Question: Do you have individual training plan?**

		Frequency	Percent	Valid Percent
Valid	Yes	28	31.8	34.1
	No	39	44.3	47.6
	Sometimes	15	17.0	18.3
	Total	82	93.2	100.0
Missing	System	6	6.8	
Total		88	100.0	

Players often have individual training plan to work on their techniques, coordination and fitness. Only 34.1 % of our participants have an individual plan, 47.6 % do not have any special plan beside regular trainings and 18.3 % do have individual plan sometimes, in accordance to their needs.

The 34.1 % of those who have individual training plan is small. More players should pay more attention on the individual training and development of technique, tactics and fitness components in order to improve quality of their game. This is the task of their coaches, who should be expert enough to distinguish what components in their game and in their self need to be improved.

**Table 24 – Question: Are you involved in some other sports besides sitting volleyball?**

		Frequency	Percent	Valid Percent
Valid	None	53	60.2	63.1
	individual sport(s)	18	20.5	21.4
	team sport(s)	13	14.8	15.5
	Total	84	95.5	100.0
Missing	System	4	4.5	
Total		88	100.0	

A lot of players from this study do not engage in some additional sports except sitting volleyball. 21.4 % of sitting volleyball players said that they engage in some individual sports such as, swimming, athletics, rowing. 15.5 % of them do team sports besides sitting volleyball such as, wheelchair basketball, volleyball, and beach volleyball.

We had few cases of rowing among Greek athletes and others from ex Yugoslavian countries (Bosnia and Herzegovina, Serbia, Croatia and Slovenia), mostly stated wheelchair basketball and swimming as additional sports.

**Table 25 – Question: How many practice sessions do you have per week?**

		Frequency	Percent	Valid Percent
Valid	None	1	1.1	1.1
	Once	2	2.3	2.3
	Twice	38	43.2	43.7
	three times	45	51.1	51.7
	four times	1	1.1	1.1
	Total	87	98.9	100.0
Missing	System	1	1.1	
Total		88	100.0	

The same as the small number of player have the individual training plan, the teams have small number of practice sessions per week. 51.7 % of the athlete stated that they train

only three times per week, and 43.7 % train even less, two times per week. We can disregard the answers of 1 participant who said that they do not train, as well as others who stated that they train once or four times per week, because only one participant did not answer on this question and minimal number of them from one country were 7. We can assume that athletes do not have possibilities to train more than three times per week, due to lack of the material resources, sports objects, etc. The number and quality of practice sessions should increase in order to improve the quality of the game and to greater accomplishments become more reachable.

## 5.2 Spearman Correlation Coefficient

Spearman correlation coefficient is used to determine association between two variables in the survey. This means that this correlation is determining is there a correlation (association) between two specific variables not only in the survey, but in the general population between analyzed variables. This is the reason why we conducted spearman correlation coefficient, to see are the found results only present in our study, which does not have big significance, or we can find the same associations in the general population of people.

**Table 26 – Comparisons between age and different participation factors**

			Sport competition	Health	Fitness	Socialization	Rehabilitation	Entertainment
age	Young Adulthood n: 10	Count	7	7	7	<b>6</b>	<b>3</b>	7
		% within Sport competition	11.9%	10.9%	11.1%	<b>8.9%</b>	<b>6.2%</b>	10.6%
	Middle Adulthood n: 54	Count	39	44	43	43	35	41
		% within Sport competition	66.1%	68.7%	68.3%	64.2%	71.4%	62.1%
	Older Adulthood n: 22	Count	13	13	13	<b>18</b>	<b>11</b>	<b>16</b>
		% within Sport competition	22%	20.4%	20.6%	<b>26.9%</b>	22.4%	<b>24.3%</b>
Total		Count	59	64	63	67	49	66
		% within Sport competition	100.0%	100%	100%	100%	100%	100%

When we look above at the table 26, we can see there are no big differences in the factors of Sport competition, Health and Fitness among all three categories of age. In the factors of Socialization, Rehabilitation and Entertainment we can observe some changes, but only in the categories of young and older adulthood. There were no big differences in the Middle adulthood within any of the present factors.

Young adults (20 – 30 years old) showed less interest in socialization and rehabilitation than for the other factors, which is presented with bolded numbers in the table (8.9 % for socialization and 6.2 % for rehabilitation).

The same result is confirmed when we implemented Spearman’s Correlation Coefficient with the same values in table 27. Positive correlation has been found between young adults and socialization factor ( $\rho = .296$ ;  $p \leq 0.01$ ), as well as between young adults and rehabilitation ( $\rho = .308$ ;  $p \leq 0.01$ ). This means that as younger participants are, socialization and rehabilitation will be less important factor of their sitting volleyball participation. The association between these variables is not high, but is still significant at  $p \leq 0.01$ , or at 99% level for both correlations.

**Table 27 – Correlation between young adulthood and socialization and young adulthood and rehabilitation**

Correlations					
			Young Adulthood	Socialization	Rehabilitation
Spearman's rho	Young Adulthood	Correlation Coefficient	1.000	.296**	.308**
		Sig. (2-tailed)	.	.006	.005
		N	88	85	81

\*\* . Correlation is significant at the 0.01 level (2-tailed).

One more result which outshines from other findings has been found in the category of older adulthood (45 – 60 years of age), where socialization and entertainment were more important than other factors (bolded numbers in the table 26), whereas rehabilitation was not valuable for the participation.

Two more Spearman’s correlations have been implemented. The first one is association between years of engagement and factors of participation in sitting volleyball (Table 28). Only correlation between rehabilitation and years of training of sitting volleyball was significant at the level of ( $p \leq 0.05$ ), and there was no other correlations found. Association between these two variables was negative ( $\rho = -.256$ ), which means as longer individual is engaged in sitting volleyball, the rehabilitation factor will be less important.

**Table 28 – Association between years of training and rehabilitation factor**

Correlations				
			Years of training	Rehabilitation
Spearman's rho	inv_18_years	Correlation Coefficient	1.000	-.256*
		Sig. (2-tailed)	.	.034
		N	73	69
	Rehabilitation	Correlation Coefficient	-.256*	1.000
		Sig. (2-tailed)	.034	.
		N	69	81

\*. Correlation is significant at the 0.05 level (2-tailed).

The second correlation has been found between injury age and sport competition ( $\rho = .246$ ;  $p \leq 0.05$ ), as well as injury age and fitness ( $\rho = .249$ ;  $p \leq 0.05$ ).

Both correlations were positive, which means that with higher one's age of injury, sport competition and improvement of fitness assume to be highly ranked for that population of participants (Table 29).

There weren't more significant correlations from this category.

**Table 29 – Association between injury age and fitness and injury age and sport competition**

Correlations					
			Injury age	Sport competition	Fitness
Spearman's rho	Injury age	Correlation Coefficient	1.000	.246*	.249*
		Sig. (2-tailed)	.	.048	.048
		N	65	65	64

\*. Correlation is significant at the 0.05 level (2-tailed).

## 6. Discussion

The purpose of this study was to investigate psychosocial factors, respectively motivation of sitting volleyball participation among persons with physical disability. We also wanted to provide and increase general information and knowledge about sitting volleyball in Bosnia and Herzegovina and other Balkan countries, as an interesting and attractive sport, identified as a great possibility for inclusion in both ways.

We implemented Sitting Volleyball Participation Survey, modified from the Wheelchair basketball Participation survey, intended to examine motivation for sport engagement. Most of the questionnaires were implemented at the sitting volleyball tournament and other smaller part was sent by mail to the four others sitting volleyball clubs from Bosnia and Herzegovina.

Our study sample included 88 participants, from which 83 were males and only 5 were females. When we consider data were collected from male sitting volleyball clubs, the results are not surprising, but it gives us no chance to compare results between different genders. The half of the participants were from Bosnia and Herzegovina and others were from Croatia, Serbia, Slovenia and Greece, which also limited us to compare motivational factors among the athletes from different countries and clubs. We also planned to compare the findings between athletes with and without disability and those with congenital and acquired disability, but due to the small number of athletes in one of those groups we couldn't make the comparison. It would be valuable for us that we could make those comparisons and to determine is there a difference in motivation between genders, countries and type of physical disability.

However, younger individuals (20 – 30 years old) estimated rehabilitation ( $\rho = .308$ ;  $p \leq 0.01$ ) and socialization ( $\rho = .296$ ;  $p \leq 0.01$ ) as less important for their sitting volleyball participation than other factors, after the implementation of Spearman's correlation. We can assume that individuals in this age are still on the beginning of the sport career and they would like to compete and improve their skills and fitness characteristics rather than play the game only for socialization and to rehabilitate themselves. On the other hand, the participants from the category of older adulthood put socialization on the very high

place together with entertainment. In that age (45 - 60), competition could be important, but rather on the recreational level. We can assume they will rather use their leisure time to have fun and to spend time with friends.

One of the findings from our study related to the sitting volleyball engagement is that the very small number of participants is introduced with sitting volleyball by a doctor or rehabilitation workers or in hospital context. Most of them were introduced by friend or acquaintance or when they had opportunity to see some sitting volleyball club. Hospitals and rehabilitation institutions are the first places who meet the individuals with disability and they should be familiar with the sport and physical activity opportunities. The information from this and similar studies could be important in providing implications and help for those institutions, to effectively help the athletes with physical disabilities.

One of the major findings of this study was that the Socialization was rated as the most important motivation of sports by sitting volleyball players from the Balkan countries. On the other hand Kälbli (2008) found that desire to keep the health was the prime factor, whereas Vute (1992) revealed that success is the leading motivation factor for sitting volleyball players. Other studies on athletes with physical disability (Fung 1992; Chen et al. 2007; & Brasile & Hedrick, 1991) showed that skill development and fitness (Fung, 1992) was the highest motivation for participation.

The possible reason for this is that most of the countries involved in this study were also involved in a war crisis (Serbia, Croatia and Bosnia and Herzegovina), directly or indirectly. Fifteen years from then, many people are still having existence problems. The situation is even worst with people with disabilities who are still not receiving much desirable attention from the government leaders and others who can make difference. So it is understandable that sport competition or skill development is not on the first place when they have to compete for their existence. The good thing about the sport and physical activities is that one does not have to perceive fitness or skill development as the important aspects of participation, but they simply come along with socialization and friendship.



However, when we analyzed years of training with factors of participation, we discovered that athletes with more years of training consider rehabilitation as not very important factor of their sitting volleyball engagement, which is also confirmed with significant correlation ( $\rho = -.256$ ;  $p \leq 0.05$ ). This makes sense, because after the years of training they probably feel rehabilitated enough and other factors are more important. Kälbli (2008) also came with the conclusion that motivation does change by time, starting from desire to compete and participate at Paralympics and later slowly decreases to the need to keep the health.

We can see that the findings from this study did not confirm our first hypothesis. It seems that socialization is the highest motivation for the athletes from Balkan countries, unlike the other research where the skill development and fitness were the highest reason for participation. Our second hypothesis is only partially confirmed, because the significant correlation has been found between young adulthood and socialization and rehabilitation only. Correlations between different variables in this category did not show any significance. The same was with the third hypothesis where only the factor of rehabilitation showed significant association with the years of training.

With a clear understanding of the physically disabled athletes' specific motivations of participating in sports, coaches, teachers and practitioners can effectively structure their training to meet the athletes' desire for achieving the training objectives.

## 7. Conclusion

We can conclude that research on people with physical disabilities related to sport psychology is still at the pioneer stage. Researching the literature for the topic of this thesis we met a lot of obstacles, primarily in lack of the resources about motivation for sport participation. We reviewed a lot of articles (Dishman et, al. 1989, Brasile & Hedrick, 1991, Vute, 1992, Fung 1992, Kälbli et, al. 2006, Chen at, al. 2007, Kälbli 2008, etc.) which are related to the sport psychology, respectively motivation for sports among physically disabled individuals and a bit less about motivation for sitting volleyball participation, due to the literature limitation. Those results mostly showed that skill development, fitness, fun, success, friendship, keeping the health, competition, social approval and social status, security and achievement, challenges and psychosocial relaxation are the reasons why individuals with physical disabilities engage in sports and physical activities.

The research attention on sports psychology has been extensively examined, but research on athletes with physical disability is very limited (Chen et al. 2007), especially research orientated on specific sports, such as sitting volleyball for example. Because of that, the literature for this study is mostly based on the research on people with physical disability in general. Although this study had some limitation, the results are still important because little is known about motivation of the athletes with physical disabilities. With the development of the society, the physical disabled athletes should receive much desired attention from health care professionals, teachers, coaches and other pedagogical and sport workers. Therefore, the results of this study could provide implications for all who work with disabled how to effectively and purposefully meet the needs of individuals with physical disabilities.

**We have found that socialization is the highly rated motivational factor of sitting volleyball participation among the athletes from the Balkan countries. Closely behind are the entertainment and health with the same rating of importance, and on the last three places are the fitness, sport competition and rehabilitation, from the most to the least respectively.**

According to this we can say that we answered on our first and primarily aim of this study by distinguishing these factors of participation.

Hospitals and rehabilitation institutions needs to be more informed about opportunities for sport and leisure time engagement, in order to facilitate individuals with physical disabilities to continue with active life after the injury.

TV stations, as well as other type of media should integrate educational programs about disability in order to increase people's awareness about this population. These programs should include various possibilities where people with different kind of disability can engage in different kind of activities.

We can conclude that we found that the friends are the main factors from the environment that motivated athletes the most to engage in sitting volleyball. TV partially influenced, while the hospitals and rehabilitation institutions did not influence their decision at all. We have to take into account that most of the athletes were injured almost 15 years ago, so the situation might be changed today.

We also identified the difficulties which athletes stated as the most challenging, after they engaged in this sport, and they are present in handling the training and learning the new skills.

Our first and major hypothesis is not confirmed. On the contrary, socialization, health and entertainment were the highest motivation factors.

The first sub hypothesis did find the significant correlation between age and reasons of participation, when we correlated category of young adulthood with rehabilitation and socialization. The same significance is confirmed in our second sub hypothesis when we correlated years of training with rehabilitation factor.

Most of the participants from this study are from Bosnia and Herzegovina. People here are still not aware of challenges and obstacles that individuals with disabilities have to overcome from day to day. Government is not participating in improving of this condition and there is no some bigger intention to make some changes in future.

I hope this study will increase general knowledge about people with disability and sport of sitting volleyball, who although is very successful in this country, staying on the margins of the society, as well as other sports for the disabled. I also hope that

information from this thesis could be helpful for the teachers, coaches, practitioners and all others who work with people with physical disabilities, in order to more effectively and purposefully create programs and strategies who will satisfy the needs of those population and make their lives better.

## 8. Summary

Research in field of psychosocial aspects of sport and physical activity participation among people without disabilities has been greatly examined. Unfortunately the situation is totally opposite when we talk about people with disabilities.

Last few decades this population of people is coming out of social isolation, and this same impulse is transferred to the development of disability sports, as well as the research in this are. The most researched topic was related to the physical activity benefits, because persons with disabilities are very liable for gaining some of the secondary health conditions. So, the researches wanted to increase awareness about benefits hidden in the human movement. Very soon focus of the research is overtaken by the motivation for physical activity participation, because by knowing the factors of sports engagement it will be easier to create effective programs which are health beneficial and purposeful for all individuals with disabilities.

The purpose of this study was to determine psychosocial aspects of sitting volleyball engagement among people with and without physical disabilities. 88 participants from Bosnia and Herzegovina, Croatia, Serbia, Slovenia and Greece were involved in this study. They had to complete modified Sitting Volleyball Participation Survey with a goal to find motivational factors of their sitting volleyball participation.

One of the major findings came from this study is that Socialization, Entertainment and Health were the highest motivation for participation, whereas Fitness, Sport Competition and Rehabilitation were the lowest motivation for sitting volleyball engagement.

We also found that hospitals and rehabilitation failed in informing the athletes where they can continue with an active life style after the injury.

Limitation of our study was in the lack of athletes with congenital disability, small number of females, as well as younger athletes (20 – 30 years old). We also didn't have enough athletes within one specific country and club, which altogether neutralized possibility for the data comparisons among those categories. This could be the topic for some future research with larger sample of participants and with more research methods included in order to increase comprehensiveness of this topic.

We also faced with lack of the literature related to sitting volleyball, respectively with limited literature of the type of physical disability eligible for sitting volleyball participation. In the same time this is the biggest advantage of this study, exactly because there is no much information about the topic of sports motivation among physically disable athletes, so every result is important.

At the end, I hope this study will help everyone who wants to increase their knowledge about sitting volleyball and disability in general. The results from this study could also be used by teachers, coaches and practitioners, to provide them implications and guidelines in creation of programs and strategies which will complete their objectives and make the lives of people with physical disabilities meaningful in each sense.

## 8. Souhrn

Výzkum v oblasti psychosociálních aspektů účasti na sportu a pohybových aktivit mezi lidmi bez postižení je široce rozvinut a probádán. V oblasti lidí s postižením je však situace naprosto opačná.

Během posledních desítek let se tato skupina lidí dostává ze sociální izolace a tento impuls je přenášen i do rozvoje sportu pro jedince s postižením, stejně tak jako do oblasti výzkumu zabývající se právě touto oblastí. Oblastí, na kterou je v tomto směru nejvíce zaměřena pozornost souvisí s pohybovou aktivitou a jejími benefity, jelikož u osob s postižením je obtížné rozlišit mezi tzv. druhotnými zdravotními aspekty. Výzkumní pracovníci chtěli navýšit povědomí o benefitech, které skýtá lidský pohyb. Velmi brzy byl však tento záměr předstihnout motivací k účasti na pohybové aktivitě, jelikož při znalosti faktorů, ovlivňujících účast jedinců na sportu bude jednodušší vytvořit efektivní programy, které budou zdraví prospěšné a účinné pro všechny jedince s postižením.

Účelem této studie bylo determinovat psychosociální aspekty účasti na volejbalu vsedě u jedinců s a bez pohybových omezení. Na výzkumu se podílelo celkem 88 participantů z Bosny a Hercegoviny, Chorvatska, Srbska, Slovinska a Řecka. Všichni vyplnili modifikovaný dotazník pro účast na volejbalu vsedě s cílem nalézt motivační faktory, které ovlivňují jejich účast na této aktivitě.

Jedno z nejzásadnějších zjištění této studie byly – socializace, zábava a zdraví, jakožto nejvyšší motivační faktor účasti, zatímco kondice, sportovní soutěžení a rehabilitace byly faktory, které účast na volejbalu vsedě podporovaly nejméně. Zároveň jsme zjistili, že nemocnice a rehabilitační zařízení selhaly v informování sportovců v otázce možnosti pokračování v aktivním životním stylu i po prodělaném zranění.

Limitou naší studie byl nedostatek sportovců s vrozeným postižením, nízká účast žen, stejně tak jako nízký podíl mladších sportovců (20-30 let). Zároveň jsme neměli dostatek sportovců v rámci jedné specifické země či klubu, což v souhrnu minimalizovalo možnost pro srovnání dat mezi jednotlivými kategoriemi. Toto může být tématem některé z budoucích výzkumných prací disponující s větším výzkumným vzorkem a s větším spektrem výzkumných metod za účelem zevšeobecnění zjištěných poznatků.

Potýkali jsme se také s nedostatkem relevantní literatury zabývající se volejbalem vsedě, respektive s limitovanou literaturou zabývající se pohybovou aktivitou jedinců s tělesným postižením, která by se hodila pro téma účasti na volejbalu vsedě. Tato slabina je zároveň i největší výhodou této studie, právě proto, že neexistuje dostatek informací z oblasti sportovní motivace mezi tělesně postiženými sportovci, takže každý výsledek je důležitý. Na závěr bych rád podotknul, že doufám, že tato studie pomůže každému, kdo chce zvýšit povědomí a znalosti nejen v oblasti volejbalu vsedě, ale i oblasti postižených obecně. Výsledky této studie mohou být využity i učiteli, trenéry a lékaři, a to sice poskytnutím různých typů využití a směrnic při tvorbě programů a strategií, které zkompletují jejich cíle a učiní tak životy lidí s pohybovými omezeními smysluplnější.



## 9. References

1. Ajzen, I. (1985). From intention to action: A Theory of Planned Behavior. In Crocker, P. R. E. (1993). Sport and Exercise Psychology and Research with Individuals with Physical Disabilities: Using Theory to Advance Knowledge. *Adapted Physical Activity Quarterly*, 10, 324-335. Retrieved from <http://search.ebscohost.com>
2. Asonitou, K., Evans, E., Jensen, B., Koutsouki, D., Skordilis, E. K., & Wall K. (2001). Sport Orientations and Goal Perspectives of Wheelchair Athletes. *Adapted Physical Activity Quarterly*, 18, 304-315. Retrieved from <http://search.ebscohost.com>
3. Allen, J. B. (2003). Social Motivation in Youth Sport. *Journal of Sport & Exercise Psychology*, 25, 551-567
4. Association of Sitting Volleyball of Bosnia and Herzegovina. (2010). Retrieved July 31, 2010, from <http://www.asobih.org/soso/?mod=article&cat=tekstovi&article=76>
5. Brasile, F. M. (1989). Participation motivation among wheelchair athletes. Dissertation Abstracts International, (University Microfilms No. 8823084).
6. Brasile, F. M., & Hedrick, B. N. (1991). A comparison of participation incentives between adult and youth wheelchair basketball players. *Palaestra*, 7 (4), 40-46
7. Bauer J. J., Cardinal B. J., Ellis R., Kosma M., & McCubbin J. A. (2007). Physical activity beliefs and behavior of adults with physical disabilities. *Disability and Rehabilitation*, 29(15): 1221 – 1227. Retrieved from <http://search.ebscohost.com>
8. Cratty, B.J. (1968). *Psychology and physical activity*, Englewood Cliffs. NJ: Prentice Hall
9. Center for Disease Control and Prevention (CDC). (1999). Physical Activity and Health. In Surgeon General's Report (Online). Retrieved from <http://www.cdc.gov/nccdphp/sgr/pdf/execsumm.pdf>
10. Collins, M. F., & Kay, T. (2003). *Sport and Social Exclusion*. Routledge

11. Chen S., Wang J., Jin M., Lao K. O. (2007). Motivation on sport participation in elite athletes with physical disabilities in Mainland China. *Asian Journal of Exercise & Sport Science* 4(1)
12. Conroy, D. E., Roberts, G. C., & Treasure, D. C. (2007). Understanding the Dynamics of Motivation in Sport and Physical Activity: An Achievement Goal Interpretation. In Eklund, R.C., & Tenenbaum, G. (Eds.), *Handbook of Sport Psychology* (3ed ed). (pp. 3-31). John Wiley & Sons, Inc., Hoboken, New Jersey
13. Dishman, R. K., Sallis, J. F., & Orenstein, D. R. (1985). The determinants of Physical Activity and Exercise. *Public Health Reports*, 100, 158-171
14. de Haan, J. (1986). *Sitting – Volleyball: technique and exercises*. Uitgeverij De Vrieseborch – Haarlem, The Netherlands
15. Duda, L. J. (1989). Goal perspectives, participation and persistence in sport. In Skordilis, E. K., Koutsouki, D., Asonitou, K., Evans, E., Jensen, B., & Wall K. (2001). *Sport Orientations and Goal Perspectives of Wheelchair Athletes*. *Adapted Physical Activity Quarterly*, 18, 304-315. Retrieved from <http://search.ebscohost.com>
16. Duda, L. J., & White, S. A. (1993). Dimensions of Goals and Beliefs among Adolescent Athletes with Physical Disabilities. *Adapted Physical Activity Quarterly*, 10, 125-136. Retrieved from <http://search.ebscohost.com>
17. Fung, L. (1992). Participation Motives in Competitive Sports: A Cross Cultural Comparison. *Adapted Physical Activity Quarterly*, 9, 114-122. Retrieved from <http://search.ebscohost.com>
18. Ford, M. (1992). Motivating humans: Goals, emotions, and personal. In Roberts, G. C., Treasure, D. C., & Conroy, D. E. (2007). In Eklund, R.C., & Tenenbaum, G. (Eds.), *Handbook of Sport Psychology* (3ed ed). (pp. 3-31). John Wiley & Sons, Inc., Hoboken, New Jersey
19. Huiitt, W. (2001). Motivation to learn: An overview. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved 31 July, 2010, from <http://www.edpsycinteractive.org/col/motivation/motivate.html>

20. Humpel, N., Owen, N., & Leslie, E. (2002). Environmental factors associated with adult's participation in physical activity. *American Journal of Preventive Medicine*, 22, 188-99
21. Kälbli, K. (2008). Injury-and sport-specific training for sportsman with disability – sitting volleyball players – (Doctoral dissertation). Retrieved from <http://search.ebscohost.com>
22. Kälbli, K., Rigler, E., & Gita, Sz. (2006). What motivated people with disability to do sport? European Conference of Adapted Physical Activity (EUCAPA). 7 – 9<sup>th</sup> September 2006, Palacky University Olomouc, Proceedings pp. 85. ISBN 80-244-1379-5
23. Kälbli, K., Gita, Sz., Rigler, E., & Szilák, Á. (2004). Sports Stimulating Factors in Sitting Volleyball. 7<sup>th</sup> European Congress of Adapted Physical Activity (EUCAPA). Program, abstracts, information. November 10-13, 2004. Germany, Dortmund, pp. 65.
24. King et, al. (2006). Predictors of the Leisure and Recreation Participation of Children with Physical Disabilities: A Structural Equation Modeling Analysis. *Children's Health Care*, 35 (3), 209-234
25. King et, al. (2003). A Conceptual Model of the Factors Affecting the Recreation and Leisure Participation of Children with Disabilities. *Physical & Occupational Therapy in Pediatrics*, 23, 63-90
26. Kilpatrick, M., Herbert, E., & Bartholomew J. (2005). College Student Motivation for Physical Activity: Differentiation Men's and Women's Motives for Sport Participation and Exercise. *Journal of American College Health*, 54 (2)
27. Landor A., Mustafins P., Vetra A. & Scibrja I. (2008). Rate and type of participation limiting health disorders in sitting volleyball players (Health disorders in sitting volleyball players). *Papers on Anthropology XVII*, 233-247. Retrieved from <http://search.ebscohost.com>
28. Nigel, T. & Smith, A. (2009). *Disability, sport, and society: an introduction*. London: Taylor & Francis Group

29. Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. In Duda, L. J., & White, S. A. (1993). Dimensions of Goals and Beliefs among Adolescent Athletes with Physical Disabilities. *Adapted Physical Activity Quarterly*, 10, 125-136. Retrieved from <http://search.ebscohost.com>
30. Ogilvie, B. & Tutko, T. (1963). A psychologist reviews the future contribution of motivation research in track and field. *Track & Field News*.
31. Pensgaard, M. A., Roberts, G. C., & Ursin, H. (1999). Motivational Factors and Coping Strategies of Norwegian Paralympic and Olympic Winter Sport Athletes. *Adapted Physical Activity Quarterly*, 15, 238-250. Retrieved from <http://search.ebscohost.com>
32. Rimmer, J H., Riley, B., Wang, E., Rauworth, A., & Jurkowski, J. (2004). Physical Activity Participation among Persons with Disabilities: Barriers and Facilitators. *American Journal of Preventive Medicine*, 26 (5).  
doi: 10.1016/j.amepre.2004.02.002
33. Biography of Sitting Volleyball Federation of Disabled Republic of Srpska. (2010). Banja Luka
34. United States Department of Health and Human Services. (2000). *Healthy People 2010: Understanding and Improving Health*. Retrieved 31 July 2010, from <http://www.healthypeople.gov/Document/pdf/uih/2010uih.pdf>
35. Vute, R. (1992). Motivation for Sports Activity among Top Sitting Volleyball Players. In Vute, R. (2004). *Studies on volleyball for the disabled*. Ljubljana: World Organization Volleyball for Disabled, Research and Education Department
36. Vute, R. & Krpač, F. (2000). Sporting values among Europe's elite sitting-volleyball players. *Gymnica*, 30 (1), 33-39
37. Vute, R. (2004). *Studies on volleyball for the disabled*. Ljubljana: World Organization Volleyball for Disabled, Research and Education Department
38. Vute, R. (2008). *Teaching and coaching volleyball for the disabled: foundation course handbook*. University of Ljubljana, Faculty of Education
39. Vute, R. (2009). *Teaching and coaching volleyball for the disabled: foundation course handbook (2nd ed.)*. University of Ljubljana, Faculty of Education

40. van der Ploeg H. P., van der Beek A. J., van der Woude L. H. V., & van Mechalen W. (2004). Physical Activity for People with a Disability: A conceptual Model. *Sports Med*, 34 (10), 639-649. Retrieved from <http://search.ebscohost.com>
41. Veroff, J. (1969). Social comparison and the development of achievement motivation. In Brasile, F. M., & Hedrick, B. N. (1991). A comparison of participation incentives between adult and youth wheelchair basketball players. *Palaestra*, 7 (4), 40-46
42. World Organization Volleyball for Disabled (WOVD). (2010). Retrieved July 31, 2010, from <http://www.wovd.info/>
43. World Organization Volleyball for Disabled (WOVD). (2009). *Medical and Functional Classification Handbook*
44. Weiczorek J., Weiczorek A., Jadczyk L., Sliwowski R. & Pietrzak M. (2007). Physical activities and injuries and overstraining syndromes in sitting volleyball players. *Studies in Physical Culture and Tourism*. 14. Department of Team Sport Games, University School of Physical Education in Poznan, Poland.
45. Wu, S.K., & Williams, T. (2001). Factors influencing sport participation among athletes with spinal cord injury. *Medicine & Science in Sports & Exercise*, 33 (2), 177-182

## 10. APPENDIX

Appendix 1

Questionnaire (English)

### Sitting Volleyball Participation Survey

Dear friends of volleyball,

My name is Mladen Protić and I am on postgraduate studies of Adapted Physical Activity at Palacky University Olomouc and I have chosen sitting volleyball as the topic of my postgraduate thesis. It is the most developed sport for people with disabilities in my country and the official Paralympics sport which deserves greater popularization. Therefore, I address you, the players, with several questions which could help improve this sport in some other countries. All your answers will be treated anonymously and will be used for specified purposes only.

I will be glad if you could answer all 32 questions by encircling or filling the gaps.

Thank you in advance for completing the survey and do not hesitate to contact me for any additional information:

**Mladen Protić**

Home address: Rajka Bosnića 34  
78 000 Banja Luka, Bosnia and Herzegovina  
Tel (CZ): +420 773 503 789  
(B&H): +387 65 320 940  
E-mail: [mladenprotic@yahoo.com](mailto:mladenprotic@yahoo.com)

## 1. PERSONAL DATA

In the following group of questions circle your answer or fill in the gap

1. Gender:            a) Male            b) Female
2. Your age \_\_\_\_\_
3. Marital status:    a) Married        b) Single        c) Other
4. Profession:        a) Student        b) Employed        c) Unemployed

If your answer is “**b**”, state your job \_\_\_\_\_ (If you do not want to answer this question, you do not have to)

5.    a) Smoker            b) Nonsmoker

6. Information about your diagnosis (If you do not want to answer this question, you do not have to):

- a) Congenital (you were born like that)    b) Acquired (amputation or other)

If your answer is “**b**”, continuo with the questions 7, 8 and 9, and if your answer is “**a**”, continuo from question 10.

7. What type of amputation or other condition do you have?

\_\_\_\_\_

8. If your answer to the previous question was “**b**”, state the age of your injury

\_\_\_\_\_

9. How many years passed from your injury before you engaged in sports?

\_\_\_\_\_

10. Why did you choose sitting volleyball?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. Which of the following reasons were important for you to engage in sitting volleyball?

Circle the symbol (+) in order of importance

IMPORTANT	Very	Quite	Little	Not at all
Sport competition	+	+	+	+
Health	+	+	+	+
Improvement of fitness	+	+	+	+
Socialization (company, friends)	+	+	+	+
Rehabilitation	+	+	+	+
Entertainment (fun)	+	+	+	+

Other reasons

(Please, specify which one) \_\_\_\_\_



## 2. DETAILS ABOUT INVOLVEMENT IN SITTING VOLLEYBALL

In the following group of questions circle your answer or fill in the gap

12. At what age did you find out about sitting volleyball? \_\_\_\_\_

13. Who introduced you with sitting volleyball?

- a) Friend or acquaintance (known person), who plays sitting volleyball
  - b) Friend from volleyball (“standing”)
  - c) Other friend – acquaintance
  - d) Doctor
  - e) Rehabilitation worker
  - f) Teacher/Professor
  - g) Coach
  - h) Official from sitting volleyball association or some other association for disabled persons
  - i) Information from magazines, newspapers, television, Internet
  - j) Someone else (please, specify who)
- 

14. In what context, or on which occasion, were you first introduced with sitting volleyball?

- a) Volleyball sport club
- b) School – boarding school
- c) Hospital, rehabilitation institute
- d) Sport club for the disabled
- e) Other \_\_\_\_\_

15. Had you ever watched sitting volleyball before you started to play?

- a) Yes (specify when and where) \_\_\_\_\_
- b) No, I didn’t have the opportunity

16. If yes, did a TV program influence your decision to start playing sitting volleyball?

- a) Yes
- b) No

17. What troubles did you have when you started with sitting volleyball (check all what it was in your case)

- a) Getting information
- b) Handling training session (physically)
- c) Learning skills – technique
- d) Handling the game
- e) Transportation problems
- f) Money
- g) Other \_\_\_\_\_

18. How long have you been playing sitting volleyball in official competitions?

\_\_\_\_\_ months or \_\_\_\_\_ years and months

### 3. DATA ABOUT TRAINING

19. Country and club for which you play \_\_\_\_\_
20. What is the competition level of your club?
- a) State league
  - b) Lower level of competition
  - c) None (for recreation only)
21. What position do you play? \_\_\_\_\_
22. How many practice sessions do you have per week? \_\_\_\_\_
23. Where do you have your training?
- a) In a town where you live
  - b) In another town
24. How far, in kilometers, is the place where you have your trainings (in the both directions)? \_\_\_\_\_
25. What kind of transport do you use?
- a) Personal car
  - b) Other \_\_\_\_\_
26. How much time do you need to come to your training place?
- \_\_\_\_\_ hour(s) and \_\_\_\_\_ minutes

**4. DATA ABOUT INDIVIDUAL TRAINING**

27. Beside your collective trainings, do you have individual training plan?

a) Yes: Add and mark what the focus of those trainings is:

technique      coordination      gym (weight lifting)

b) No

c) Sometimes (at certain times of the season)

28. If yes, who helps you in preparing of yours individual training?

a) Alone

b) Coach

c) Friend

d) Somebody else (please, state who) \_\_\_\_\_

29. Are you involved in some other sports or you are doing other physical activities besides sitting volleyball?

\_\_\_\_\_

30. Have you ever had any injuries during the trainings or competitions?

a) Yes

b) No

31. If yes, write what kind of injuries you had and how often?

\_\_\_\_\_

32. If you have any additional comments fill free to put it

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Thank you very much for filling in this questionnaire!**

## Upitnik o učešću u sjedećoj odbojci

### Dragi prijatelji odbojke,

Moje ime je Mladen Protić i na drugoj sam godini magistarskih studija na Fakultetu za fizičku kulturu u Olomoucu, Češka Republika, odsjek Prilagodjene fizičke aktivnosti. Svoj magistarski rad sam odlucio raditi na temu sjedeće odbojke, oficijalnog Paralimpijskog sporta i jednog od najrazvijenih sportova u Bosni i Hercegovini, koji zasluzuje veću popularizaciju. Prema tome, obraćam se vama, igračima, sa nekoliko pitanja koja bi mogla pomoći u unaprijedjivanju ovog sporta u drugim zemljama. Svi vaši odgovori će biti tretirani anonimno i bice korišteni jedino za gore već navedenu svrhu.

Bilo bi mi veoma drago ukoliko bi odgovorili na svako od 32 pitanja na način da zaokružite odgovor ili popunite prazno polje.

Unaprijed vam zahvaljujem na ispunjavanju ovog upitnika, a u slučaju nekih dodatnih informacija ili pitanja slobodno me mozete kontaktirati:

#### **Mladen Protić**

Kućna adresa: Rajka Bosnića 34  
78 000 Banja Luka, Bosna i Hercegovina  
Tel (CZ): +420 773 503 789  
(BiH): +387 65 320 940  
E – mail: [mladenprotic@yahoo.com](mailto:mladenprotic@yahoo.com)

## 1. LIČNI PODACI

U sljedećoj grupi pitanja zaokružite vaš odgovor ili popunite prazno polje.

1. Pol:                      a) Muško                      b) Žensko

2. Godine starosti: \_\_\_\_\_

3. Bračni status:      a) Oženjen/Udata      b) Neoženjen/Neudata      c) Drugo

4. Zanimanje:      a) Student                      b) Zaposlen/na                      c) Nezaposlen/na

**!!!** Ako je vaš odgovor „b“ navedite vaš posao \_\_\_\_\_  
(Ukoliko ne želite da odgovorite na ovo pitanje niste obavezni)

5. Da li ste:              a) Pušač                      b) Nepušač

6. Podaci o vašoj dijagnozi:  
(Ukoliko ne želite da odgovorite na ovo pitanje niste obavezni)

a) Urodjeno                      b) Stečeno (Amputacija ili drugo)

**!!!** Ako je vaš odgovor na prethodno pitanje „b“, nastavite sa pitanjima 7, 8 i 9, a ukoliko se odgovorili pod „a“, nastavite od pitanja broj 10.

7. Molim vas navedite tip vaše amputacije ili druge povrede koju imate

\_\_\_\_\_

8. Molim vas navedite godine starosti kada je došlo do povrede

\_\_\_\_\_

9. Koliko je vremena prošlo od nastanka vaše povrede, prije nego što ste se uključili u sport (godine, mjeseci) \_\_\_\_\_

10. Zašto ste izabrali sjedeću odbojku?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. Koji od navedenih razloga su bili važni za vas da se uključite u sjedeću odbojku?

Zaokružite simbol (+) po važnosti

VAŽNOST	Veoma	Prilično	Malo	Uopšte ne
Sportsko takmičenje	+	+	+	+
Zdravlje	+	+	+	+
Razvoj fizičke kondicije	+	+	+	+
Socijalizacija (Druženje, prijatelji)	+	+	+	+
Rehabilitacija	+	+	+	+
Zabava	+	+	+	+

Drugi razlozi

(Molim vas, navedite koji) \_\_\_\_\_

## 2. DETALJI O UKLJUČIVANJU U SJEDeĆU ODBOJKU

12. Sa koliko godina ste saznali za sjedeću odbojku\_\_\_\_\_

13. Ko vas je uveo u sjedeću odbojku?

- a) Prijatelj ili poznanik, koji igra sjedeću odbojku
- b) Prijatelj iz odbojke („stojeće“)
- c) Prijatelj ili poznanik
- d) Doktor
- e) Fizioterapeut ili drugi rehabilitacioni radnik
- f) Nastavnik ili profesor
- g) Trener
- h) Predstavnik saveza sjedeće odbojke ili neke druge institucije za osobe sa posebnim potrebama
- i) Časopisi, magazini, televizija, internet, itd.
- j) Neko drugi (Molim, navedite ko)\_\_\_\_\_

14. U kom kontekstu i gdje ste se prvi put susreli sa sjedećom odbojkom?

- a) Odbojkaski sportski klub
- b) Škola – internat
- c) Bolnica, rehabilitacioni centar
- d) Sportski klub za osobe sa posebnim potrebama
- e) Drugo,\_\_\_\_\_

15. Da li ste ikada gledali sjedeću odbojku prije nego što ste počeli igrati (TV ili uživo)?

- a) Da (Navedite gdje i kada)\_\_\_\_\_
- b) Ne, nisam imao/la priliku

16. Ako da, da li je to uticalo na vašu odluku da krenete igrati sjedeću odbojku?

- a) Da
- b) Ne

17. Kakve teškoće ste imali kada ste počeli sa sjedećom odbojkom (zaokružite sve što se tiče vas)

- a) Dobiti informacije
- b) Fizički podnijeti trening
- c) Naučiti tehniku i vještine
- d) Savladati igru
- e) Problemi sa prevozom
- f) Novac
- g) Drugo\_\_\_\_\_



18. Koliko već dugo igrate sjedeću odbojku u okviru zvaničnog takmičenja

\_\_\_\_\_ mjeseci ili \_\_\_\_\_ godina i mjeseci.

### 3. PODACI O TRENINGU

19. Država i naziv kluba \_\_\_\_\_

20. Koji je nivo takmičenja vašeg kluba?

- a) Državna liga
- b) Niži nivo takmičenja
- c) Ništa od navedenog (rekreativni nivo)

21. Koju poziciju igrate \_\_\_\_\_

22. Koliko puta sedmično trenirate \_\_\_\_\_

23. Gdje se održavaju treninzi?

- a) U gradu u kojem živite
- b) U drugom gradu

24. Koliko kilometara je udaljeno mjesto gdje se održavaju treninzi (u oba pravca)?

\_\_\_\_\_

25. Koju vrstu prevoza koristite?

- a) Lični auto
- b) Drugo \_\_\_\_\_

26. Koliko vremena vam je potrebno da dodjete do mjesta gdje se održavaju treninzi?

\_\_\_\_\_ sati i (ili) \_\_\_\_\_ minuta.

#### 4. PODACI O INDIVIDUALNOM TRENINGU

27. Da li imate individualni trenažni plan, pored redovnih treninga?

a) Da: Označite šta je cilj tih treninga:

rad na tehnici          koordinacija          teretana

b) Ne

c) Ponekad (u određeno doba sezone)

28. Ako da, ko vam pomaže u pripremanju individualnog plana?

a) Sami

b) Trener

c) Prijatelj iz odbojke

d) Neko drugi (Molim vas navedite ko) \_\_\_\_\_

29. Da li ste uključeni u još neki sport ili se bavite drugim fizičkim aktivnostima pored sjedeće odbojke?

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30. Da li ste se ikada povrijedili tokom treninga ili takmičenja?

a) Da

b) Ne

31. Ukoliko da, napišite koja vrsta povrede je bila u pitanju i koliko često ste se povrijedjivali?

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32. Ukoliko imate nešto da dodate što nije bilo zastupljeno u upitniku, slobodno dopunite

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**Mnogo vam hvala sto ste izdvojili vrijeme za ispunjavanje ovog up**