Disability Paper

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**An overview of the disability paper**

This is a disability paper that discusses a sport played by disable athletes. It starts with the description of the wheelchair racing sport and ends with designing an injury assessment plans for the participants. The central ides of the paper is that sport is a good rehabilitating tool for disabled individuals and it should by therapeutic centers and health institute for recovery and rehabilitation of the disabled individual.

However, the concept of wheelchair racing came after Second World War and it was used for the first time as a recreational source for the injured individual of World War II. After that, it got great attention throughout Europe and the United States. Medical care centers and therapist start using wheelchair sports for the treatment of their disabled patients.

The wheelchair used in the race should be designed in a way that it should bare the weight of the participant as well as maintaining his or her balance so that the participant could perform well in the race. The paper also highlights the rules of the wheelchair racing which need to be strictly followed by the participant and the coaches during the Olympics. The participants are divided into groups based on the disabilities they have and then they are granted points accordingly.

The paper also describes the roles of an athletic therapist and also talks about what opportunities he or she can offer to the disabled participants. The therapist has a key role in the upbringing of the disabled athletes and it is discussed in the paper that the athletic therapist is someone who is responsible for the assessments of injuries and he or she is responsible for minimizing the risk factors attached to the wheelchair racing. The therapist is well known for his or her risk assessments and rehabilitation planning for disables athletes. So wheelchair racing is the best way to improve the physical as well as mental health of the disabled athletes.

**Introduction**

Recent researches in the field of biology, physiology, and biomechanics show that researchers are interested to know the impact of sports on the individual with disabilities. Such studies reveal that the quality of life of disabled athletes has improved as a result of participation in various sports. As the sport has a positive impact on the psychomotor functions of the brain and helps to build body muscle which gives strength to the body.

The extensive training being offered by the coaches of particular sports help to build cortical activates by modifying the efficiency of neurons. Sports enhance cognitive as well as sensory events which help the athlete to stay focused during the competition (Di Russo et al., 2010).

There are various games that help to rehabilitate disable athletes and such sports have worldwide therapeutic uses.

**Sport for disable athletes**

 Sports have great importance in everyone’s life and it has an influence not on the active member of the society but on the disabled individuals as well. Disable athlete are being encouraged to be part of many sports and wheelchair Racing is one of those sports that is loved by disable athletes.

**Wheelchair Racing:**

Wheelchair racing science and the participation of athletes in this sport has been increased in the last decades. With the increasing interest of people in this sport, a need for further research is needed to make the sports more comfortable for disabled athletes.

However, the sport was first introduced by Sir Ludwig Guttmann after WWII. He developed it with the help of his colleagues as rehabilitation in a hospital in England called the Stoke Mandeville hospital. It was meant to provide a recreational outlet and was also used as an exercise for the recovery of the injured individual of World War Two. His idea soon spread throughout Europe and the United States. The first Olympic that as arranged for British Veterans happened in 1948 and then in 1952 it developed into an international competition of wheelchair sports of the disables. The participants were from Sweden, Germany, the Netherland, and Norway. Then the sports were governed by international bodies like the International Stoke Mandeville Games Federation. This made the sport more popular and it was then well known throughout the world (Cooper, 1990b).

However, it is a type of sports where the disable participate with the help of a wheelchair as the name reveals and it is a main part of the current Summer Paralympics. The athletes are classified on the basis of their disabilities. The classifications are on the bases of an amputee, and on the bases of spinal cord injuries. The athletes with spinal cord injury or with amputee are labeled as T51-58 and T51-54 is used for participant who is going to compete in the event of the track and T55-T58 is for athletes in the field events. Separated races are arranged for each class (Mason, van der Woude, & Goosey-Tolfrey, 2013). While the wheelchair used in the race is designed solely for this purpose and a lot of specifications are used in the design.

The basic principle behind the wheelchair design that it should bear the weight of the athlete be comfortable at the same time. It should minimize the energy loss between the athlete and the ground because the athlete is a disable and cannot have enough energy to operate the chair. The steel used for making this chair is aluminum and Chromalloy steel because these materials have excellent strength to weight ratio (Van, et.al, 2001).

**Kit required for the wheelchair racing:**

The essential kit used during the sports are the custom build racing chair that is a custom build, helmet that can suit differ t clime and temperature range, Spare raising wheels, gloves chair computer, and training rollers.

**Rules of the sport:**

* The races are conducted on road courses as well as on tracks. There are various distances set for the competition as is being set for a running race. The short distance races are of 100m, 200 and 400m. Middle races are of 800m and 1500m while long-distance races are of 5k and 10k. The field and track wheelchair racing also includes relay racing of 4 x 400m and 4 x 100m. Work is oncoming on the introduction of mathematical and computer models in this sport in order to increase the performance and efficiency (Cooper, 1990a)
* A wheelchair athlete has to compete against an individual with the same gender and respective classification will be done
* The entire team will get two extra points if any of the athletes are able to compete against the other of a different group.
* The team point given to the second finisher is one point and from a single group if three athletes participate in a race then the team points will be three, two and one. If the group is not participating by the individual is participating then one group points will be given to the group.
* The wheelchair should be of a maximum of three wheels
* The diameter of the two larger chairs should not go beyond 28 inches and the minimum diameter is 10 inches. The chair should not be in height more than 25 inches and the holding bar must be fixed (Berger, 2008).

**The participants of the Wheelchair Racing**

Wheelchair racing requires a lot of athleticism. The participants should have developed a very strong upper body, good muscles strength. The participant should have perfect body weight and participant over 200 pounds are not encouraged to participate in wheelchair racing. They are going to cover 30km per hour in the chairs so the athletes should be well trained and highly active during the sport. He or she should be able to maintain his or her balance so that sport-related injuries could be minimized (Cooper, 1990). Wheelchair athletes are grouped based on their functional potential and the classification may be reduced in the coming years.

**Class IA:**

 The athletes with complete or incomplete cervical lesion are included in this group. The athletes with incomplete quadriplegia can also be part of this group. The people having the weakness of the trunk area and they are unable to walk are as well included in this group.

**CLASS lB**:

Athletes with Complete or incomplete cervical lesion with normal or good triceps and normal extensions and have a low weakness of the trunk can be placed in this group.

**CLASS IC:**

The participants in these groups have a high quality of grip and have lower trunk balance issues and can thoroughly walk (Cooper, 1990).

In short the athletes with spinal cord injuries, amputees and cerebral palsy and athletes with poor vision can also participate in this race. Anyone has a very severe lower-body injury but could control the balance of his body by the help of arms or truck are also able to participate in this sport. Athletes with Cerebral Palsy, minimum to severe scoliosis and athletes with permanent hip injuries can participate in the race as well (Berger, 2008).

The participants are recruited on the bases of the fact that a person cannot participate in a sport just because of his or disability but he or she has the full potential of becoming an athlete. Such athletes need very high encouragement to participate in the race and to boost up their inner talent.

**Opportunities provided by an athletic therapist to the disable participants**

The responsibilities of an athletic therapist are to provide therapeutic treatment to the athletes which involve immediate care, taking care of sports injuries, taking preventive measures and rehabilitation. Athletic therapist is well known for them on filed emergency care and they are the experts of rehabilitation and injury assessment (Weidner & August ,1997).

**Prevention care for injury:**

This the main duty of the athletic therapist and it includes injury prevention, acute as well as non-acute injury management and it also covers the rehabilitation of all sorts of injuries. The athletic therapist is also responsible to arrange sports program in order to deliver measures for therapy (Weidner & August, 1997).

**Communication:**

The athletic therapist is responsible to communicate with the coach about serious injuries and shall guide the coach regarding the needs of specific athlete student. The athletic therapist is also responsible for communication with different members of the Health Care team including, Physicians, chiropractors, and surgeons. An athletic therapist is also responsible for booking, invoicing, facilitating and scheduling (Butterwick, et.al, 2006).

**Mentorship:**

An athletic therapist is also responsible for providing guidance to the trainers who train the athletic. Monthly sessions will be arranged for learning and understanding sport-related injuries. He therapist is also responsible to improve the skills of the athletes so that they will be able to manage their own injuries during the race (Weidner & August, 1997).

**Clinical Supervision:**

The record of major injuries should be kept safely and great care should be taken of the specific injured student. The report should be generated for checking the increasing rate of injuries of the athletes. These are the responsibilities of the athletic therapist. The therapist should also work for the on spot clinical facilities for the athletes (Weidner & August, 1997).

Being an Athletic therapist I will provide the athletes a good lesson plan that will be describing their injury management plan, training program, physical and mental health upbringing strategies and it will also include injury assessment and rehabilitation.

**Injury assessment**:

 There is a high chance of injuries related to wheelchair race and athletes needs to apply a technique that will minimize the injury risks. Shoulder, elbow, arm and head injuries are greatly seen among such athletes and I will make a strategy to minimize that. Upper extremities injuries can be taken care by using helmets, racing suits and gloves that could reduce the rate of injury.

I will determine the specific risk factors like shoulder and arm injuries that are more common in wheelchair athletes. The cause of shoulder injuries in wheelchair athletes is very common and is multifactorial. The weakness in shoulders, it is limited internal as well as external rotations and the minimum trunk moment can be the possible cause of should injuries in wheelchair racing athletes. The incorrect posture while driving the wheelchair is also one of the causing factors of shoulder injuries. Heavy load of the helmet could not be managed by the disabled athletes and it might cause shoulder injury.

 I will work on athletic activities more to decrease shoulder injuries and minimize shoulder pain. The athletes should be engaged in stretching so that the athletes could not experience any muscular imbalance. Muscle imbalance is a very common cause of injuries in wheelchair athletes and if the head depressors are weak then it could cause rotator cuff impingement.

Biomechanics could also play a role in the causing of injuries in wheelchair athletes. Wrist and elbow injuries are also very common in such sports. Pushing off the wheelchair cause continuous stress in hands and arms that fractures the wrist bones, imbalance the muscle tendons, abrasion and strains (Burnham, et.al, 1993). I will train the athletes to maintain the flexibility and strength of the muscles.

The risk of several other diseases like cardiovascular disease and stiffness of muscles could be reduced by the help of exercises. For a physically disabled person, it is very important that the person should be physically active. I will arrange a class for the athletes and will teach them the techniques to be physically active and I will hire an exercise trainer for them as well.

**Mental health toughness:**

 The mental health of the athletes is very important for good performance and it needs focus. The mental toughness is very important for the performance of the athletes. I will focus on critical incidents by developing cognitive strategies for them. So that they could manage the body pain, the stress related to the sport and will set long term goal for them. I will focus on their personal development by providing them suitable environment so that they could get mental peace and focus on self-improvement.

I will make them focus on the positive side of the stress they are going to get from participating in the racing. They get stressed about the traumatic events faced during the game and could not be able to perform efficiently during the race. They will be practicing more and more so that they could reach a high level of functional abilities. They need to overcome their functional limitations, physiological stress and to maintain their mental skills. I will focus on the external factors that cause mental stress for disabled athletes. Such factors include the pressure from the audience, the objectives set by the group members and the expectations of the coach. If the athletes become able to build a resilient against all that then he or she will be able to build up mental health and will cope with the psychological stress.

**Conclusion:**

The Wheel chair racing is a sport where an individual uses a wheelchair to run in road races or on the track. The sport is open to any athletes with a disability like spinal cord fractured, amputees, cerebral palsy, and bottom body disable. But the participant should have a strong upper body, should be capable to perform well in a competition and should have a patient for sports. Wheelchair racing was first used for the rehabilitation of disabled individual and was introduced for the purpose of recreation and for performing the exercise. A specific design f wheelchair is used for race and that is made by a specialist by keeping in mind the strength to body weight ration.

 There are various injuries attached to this sport and those need to be cured with the help of an athlete therapist. Athlete therapist not only does the injury assessment but provide huge benefits to the athletes. He or she is responsible for the rehabilitation of the participants, he or she is the one who will work on minimizing the risk factors in a sport and will help the participant to improve their personal skills. A good athletic therapist will help the participant to increase his or her performance in the sport and will help the participant to work on his or her low term goal. The athletic therapist should include the disabled participants in training and in exercises for their physical as well as mental growth. The therapist should work to minimize sport-related injuries so that maximum participants will be willing to be the part of this sport and to fight against their disabilities.

**Lesson Plan**

For the disable athletes of wheelchair racing Olympics 2019

**Objectives:**

* + To conduct injury assessments of the athletes participated in the current Olympics and to make rehabilitation strategies for them.
	+ To design training programs and to discuss the current health issue of the participants with a clinical therapist.
	+ To highlight the risk factors related to wheelchair racing and to make strategies to minimize their effect.

**Time**: two hours and thirty minutes

 **The material used**: laptop, tools for exercise and medical equipment.

 **Procedure:**

* + Students are divided based on the type of disability and the sorts of injuries they have after the racing game.
	+ Every participant will be given a sheet to evaluate his or her performance and the challenge they faced during the sport.
	+ The injury prevention measures will be disused with the individuals that include regular exercise, daily practice of wheelchair racing and arranging weekly stress management sessions.

**The daily allocated time for the activities:**

|  |  |
| --- | --- |
| Time | Activity  |
| 30 Minutes1 hour 30 minutes 30 minutesI hour | Discussing the safety measures they are going to adopt during the sport.Perform stretch exercise and practice of the pushing of the wheelchair. Participants are asked to perform an exercise where they will be taught to manage wheelchairs properly.Discussing the health issues of athletes with clinical therapists. The health issues include stress management, pain management and balancing body postures. Involve the participants In a thirty minutes self-assessment test and discussing confidence-building measures, and rehabilitation procedures will be shared with them.Weekly stress management sessions will be arranged for 1 hour in a week |

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