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REHABILITATION: MEANING, AIMS AND OBJECTIVES**

INTRODUCTION

The very nature of human beings right from the primitive ages have made our ancestors to be involved in various kinds of rigorous physical activities. The primitive man had to be involved in various kinds of physical activities for his survival. Though in the present scenario the level of physical labour has gone down considerably from that of the primitive man, but the involvement in moderate or rigorous physical activities continues to be an integral part of the sustenance of living beings. Each and every individual performs a wide variety of movements in their day to day life. A professional in the field of Physical education and Sports is even more actively and widely involved in a variety of movements ranging from simple to complex ones; movements are a part and parcel of a sportspersons life. Just as the fact goes that movements are inseparable from the life of an athlete, a sportsperson or a physical education professional, similarly a very famous saying emphasizes on injuries related to the above category of people as, ‘injuries are the ornaments of a sportsperson’.

MEANING OF REHABILITATION

The training schedule of an athlete or a sportsperson is very systematic and well planned. General exercises forms not only an important part of the athlete's warm-up before training sessions and competitions, but also plays an important role in preventing injuries. Sportspersons at various levels despite using all kinds' protective gears of the best quality and minimizing all possible risks of injuries still encounter minor or major injuries. Many a times even the slightest bit of carelessness on the part of the individual may result in injuries ranging from minor to even fatal ones. The immediate step that follows is first aid and treatment of the injury. But the most important function that comes at the end of the whole treatment process is rehabilitation. In most cases the rehabilitation of the injured part is ignored which delays the recovery process or may even lead to permanent damage. The above statement can be better exemplified by the following examples:

1. Former Olympic Games champion and gold medalist in the 2000 Sydney Olympics, Audley Harrison had to retire untimely from Professional Boxing as a result of Traumatic Brain Injuries (TBI) that he suffered during his matches, it had adverse effects on his health like he had vision problems, vestibular injuries that lead to balance disturbances, he also had bouts of serious irritability and moodiness that comes with TBI.
2. Another example is the most recent cases of injury that forced Australia National Football team coach Ange Postecoglou to make two changes for their 2018 FIFA World Cup qualifiers. Ace player Massimo Luongo suffered an ankle injury while the other player that is Trent Sainsbury suffered a hamstring injury, despite using the necessary protective gears that are required during practice.

Many such examples can be cited from the sports arena where players even when surrounded by the best of facilities are vulnerable to sports injuries. In order to help these top performance athletes as well as sportspersons representing at different levels it is very important to have a thorough knowledge about the do's and don'ts of rehabilitation. These examples further puts more emphasis on the importance of the knowledge of rehabilitation so as to ensure an athlete's recovery from the injury and at the same time return of the injured area to its previous state of functional ability which is important for the injured or disabled to get back to the team. Rehabilitation is very important for an athlete so as to prevent a minor injury from hindering or even destroying his future professional prospects of growth.

In order to avail the benefit from the discipline of rehabilitation it is essential to have a clear understanding of it. Hence, let us discuss the meaning of the term in detail.

Rehabilitation is a specialized branch of medicine that helps to improve the condition of an injured or disabled person. Rehabilitation is the combined and coordinated use of medical, social, education and vocational measures for retaining the individual to the highest possible level of functional ability.

The dictionary meaning of rehabilitation is ‘to restore an individual to healthy or normal life by training and therapy after imprisonment, addiction or illness.’

The World Health Organization says that "Rehabilitation of people with disabilities is a process aimed at enabling them to reach and maintain their optimal physical, sensory, intellectual, psychological and social functional levels. Rehabilitation provides disabled people with the tools they need to attain independence and self-determination."

Lars Peterson and Per Renstrom, in their book on ‘Sports Injuries Their Prevention and Treatment’ wrote, ‘When an injury has healed, the aim is to restore original function to the affected part. The athletic trainer’s instructions are of the utmost importance in ensuring that the correct muscle groups are trained with the appropriate movements and with a well-balanced load.’ From this we can clearly understand the meaning of rehabilitation as well as its importance in the field of physical education as well.

The ACC (Accident Compensation Corporation) defines “rehabilitation” as a process of active change and support to help a person with covered injury regain their health, independence and therefore their ability to participate in their usual activities as far as possible.

Rehabilitation comprises all such processes that assist in the process of recovering an individual or an athlete fully from an injury, often with the assistance of thorough professionals.

Rehabilitation is also further referred to as physical medicine. It is a branch of medicine that aims to enhance and restore functional ability and quality of life to those with physical impairments or disabilities. A physician having completed training in this field is referred to as a physiatrist or rehabilitation medicine specialist. Physiatrists specialize in restoring optimal function to people with injuries to the muscles, bones, tissues, and nervous system. It can also be said that rehabilitation is a treatment or treatments designed to facilitate the process of recovery from injury, illness, or disease to as normal condition as possible.

The purpose of rehabilitation is to restore some or all of the patient's physical, sensory, and mental capabilities that were lost due to injury, illness, or disease. Rehabilitation includes assisting the patient to compensate for deficits that cannot be reversed medically. It is prescribed after many types of injury, illness or disease, including amputations, arthritis, cancer, cardiac disease, neurological problems, orthopedic injuries, spinal cord injuries, stroke, and traumatic brain injuries. Rehabilitation should always be carried out only by qualified therapists. Exercises and other physical interventions must take into account the patient's deficit. An example of a deficit is the loss of a limb.

A proper and adequate rehabilitation program can reverse many disabling condition/s or can help patients cope with deficits that cannot be reversed by medical care. Rehabilitation addresses the patient's physical, psychological, and environmental needs. It is achieved by restoring the patient's physical functions and/or modifying the patient's physical and social environment.

Rehabilitation is a process used to give a healing touch to the patients who are suffering from physical and mental disorders, addiction, etc. Rehabilitation program helps the patient to get back to his/her normal life and earn a livelihood. Rehabilitation plays an important role in the lives of addicts and persons who have suffered from diseases or accidents. Rehabilitation plays a key role in the lives of people who have suffered from a trauma. This program is given to patients based on their needs. Every person's requirements vary so the program is subjective. Personal attention is given to each patient and his or her development is monitored on regular basis.

Each rehabilitation program is tailored to the individual patient's needs and can include one or more types of therapy. The patient's physician usually coordinates the efforts of the rehabilitation team, which can include physical, occupational, speech, or other therapists; nurses; engineers; physiatrists (physical medicine); psychologists; orthotists (makes devices such as braces to straighten out curved or poorly shaped bones); prosthetists (a therapist who makes artificial limbs or prostheses); and vocational counselors. Family members are often actively involved in the patient's rehabilitation program.

Based on all the above discussions it is crystal clear that rehabilitation is not just specific to the field of physical education and sports or solely useful for sportspersons only but is also beneficial for people from all walks of life. According to the needs, the rehabilitation programs are divided into various types and are briefly explained below:

- **Occupational/Vocational Rehabilitation:** This particular type of Rehabilitation is for those victims who do have lost some important skills after they have met with a paralytic stroke or any unfortunate major accident. We have to perform these skills everyday in our life, without which it is impossible to survive. Skills like writing, reading, cooking food etc. We lose this skill if our brain is injured; therefore victims lose interest in communicating with other people. This particular therapist helps you to do regular physical exercises, meditation to make your muscle strong. The patient is given special care by their counselor and psychologist so as to restore the capacity of the individual to earn a livelihood.
- **Physical/Medical Rehabilitation:** This sort of rehabilitation is used for patients who have suffered from bone and muscle injuries. The physiotherapist helps a lot in giving the right exercise regime to strengthen the muscles of back, neck, shoulder, etc. This injury can happen due to accidents, sports, etc. A lot of treatment and technology is available in physical rehabilitation. The recovery time differs from person to person and so does the type of injury. The patients have to follow religiously the given exercise patterns for restoration of the function.

- **Aquatic Rehabilitation:** This is a new trend in rehabilitation yet it is a successful in treating problems in joints. The therapists treat the patients by giving various water exercises like swimming, water aerobics, etc. This helps in giving strength, flexibility and mobility to the muscles of legs. Many patients with arthritis, joint pain, and paralytic stroke are treated with help of this rehabilitation.
- **Cognitive Rehabilitation:** This type of rehabilitation is given to patients who have suffered from brain injury. To help them to get back to routine activities, they are treated with the help of neuropsychological approach. In this program, the patients are given counseling and mental exercises. This program looks at cognitive, social, moral and emotional aspects of the brain injury that has made the patient dependent. This rehabilitation helps to support a patient to get back to his normal life prior to injury. The person can go back to his or her studies or job after recovering fully.
- **Social rehabilitation:** This type of rehabilitation is given for restoration of family and social relationships. Social rehabilitation can involve the adaptation of homes to the needs of the victim/s and even the provision of a car or of financial aid to purchase one. Social rehabilitation measures are particularly extensive in nature. It consists of all such activities that aim at improving the functional capability of people and their inclusion in the society. In order to ensure benefits from the programs there are social rehabilitation facilities that provide 24-hour-a-day non-medical care and supervision in a group setting to adults recovering from mental illnesses, who temporarily need assistance, guidance and/or counseling.

AIM OF REHABILITATION

Rehabilitation program without an aim or a goal is a ship without a captain, and in such a situation not only the crew is at risk but the whole ship will be tossed endlessly with no hope of reaching the shores. Hence, it is very important for a rehabilitation program to have a goal.

Different experts from varied areas of expertise have presented the aim of rehabilitation differently. Following are the aim given by different experts:

According to the Austrian Social Society, the aim of rehabilitation following medical treatment is ‘to establish the patient’s health so that they can again take part in everyday life and/or recommence work.’

According to the website Stolperstein, ‘the aims of rehabilitation after amputation are individual and can vary very widely depending on the patient’s physical and emotional capabilities’

According to Lars Peterson and Per Renstrom, in the book Sports Injuries Their Prevention and Treatment have written that the aim of rehabilitation is ‘to limit the amount of scarring, and to preserve strength, elasticity and contractility of the tissue’s components.’

After going through the aims given by different experts the zest that comes out of all the above is to restore original function to the affected part, when injury is healed.

- **Aim of Occupational/Vocational Rehabilitation:**

Occupational Rehabilitation sometimes also referred to as Vocational Rehabilitation and in some cases vocational rehabilitation considered to be a sub part of it, is the science and practices of returning injured workers to a level of work activity that is appropriate to their functional and cognitive capacity, both of which are influenced by the severity of a workers injuries.

The Primary Goal/Aim of Occupational/Vocational Rehabilitation is to enable people to participate in the activities of everyday life.

- **Aim of Physical/Medical Rehabilitation**

Physical or Medical/medicine rehabilitation also known as physiatry, is a branch of medicine that emphasizes the prevention, diagnosis and treatment of disorders particularly those related to the nerves, muscles, bones and brain.

The Primary aim of Physical/Medical Rehabilitation is to enhance and restore functional ability and quality of life to those with physical impairments or disabilities.

- **Aim of Aquatic Rehabilitation**

The physical properties of water provide a unique environment for exercising to improve strength, flexibility and cardiovascular conditioning as well. Aquatic Physical Rehabilitation is now recognized and utilized as a 'procedure' rather than a modality.

The goal of Aquatic rehabilitation is to increase joint mobility, range of motion, muscle strength and endurance. It also helps in providing relaxation.

- **Aim of Cognitive Rehabilitation**

Cognitive rehabilitation (CR) aims to enable people with cognitive impairments to achieve their optimum level of well-being by helping to reduce the functional disability resulting from damage to the brain.

- **Aim of Social Rehabilitation**

Social rehabilitation aims to help restore a claimant's ability to function as far as practicable in everyday living activities.

Independence includes the capacity to function in:

- Communication
- Domestic activities (cleaning, laundry, meal preparation and associated shopping activities.)
- Education
- Financial management
- Health care
- Hygiene care
- Mobility

- Motivation
- Safety management
- Sexuality
- Cognitive tasks of daily living
- Use of transport

OBJECTIVES OF REHABILITATION

To reach the final goal certain steps need to be taken. Objectives are the means through which the expert will reach the final aim that is to restore normal functioning of the injured part or to bring the injured to such a position that he can get back to his normal mainstream of community life.

The objectives as described by website Stolperstein on amputation rehabilitation, holds the view that, at the beginning of inpatient rehabilitation, the doctors and the patient should decide together on the objective, the further course of treatment, and the planning. For instance, elderly patients wish mostly to retain their independence, social integration and to stay in their own homes, while younger amputees find it important to carry on their familiar private and working lives with as few limitations as possible. An extremely important issue for all those in rehabilitation is the provision of prosthesis and learning how to handle their replacement limb.

Before initiating the provision of prosthesis, the rehabilitation potential, i.e. the amputee's existing or foreseeable potential, must be decided on. The factors that more or less strongly affect the success of rehabilitation include: age, co morbidities and social factors. However, the objectives of rehabilitation can also be a pain less residual limb or adequate mobility in a wheelchair if a decision against a prosthesis has been taken.

The objectives of rehabilitation as given by Lars Peterson and Per Renstrom, in the book Sports Injuries Their Prevention and Treatment which is more specific to the field of physical education and sports are as follows:

- Regain normal mobility (range of motion) of the joints;
- Stretch connective tissue fibers of the tendons and the muscles to an optimal length;
- Increase the strength and endurance of the muscles;
- Increase the strength of muscle and tendon attachments;
- Improve coordination and proprioception.

Let us further specify the objectives of each type of Rehabilitation:

- **Objectives of Occupational/Vocational Rehabilitation**

1. To facilitate individuals' ability to return to work,
2. To assist the latter in reaching their maximum level of function with the aim of meeting the physical and emotional demands of their job,
3. To make recommendations to employers on how to downgrade job demands to meet the functional status of an employee in order to prevent further injury during the rehabilitation process,
4. The use of individual functional capacity evaluations to screen for person-environment fit,
5. The use of a collaborative approach involving the workers and employers to encourage a supportive work environment that would further empower the workers to reach productivity and other work related goals,
6. The use of interventions which includes developing assertiveness, communication and interpersonal skills, control of anger and stress management.

- **Objectives of Physical/Medical Rehabilitation**

1. Common conditions that are considered by the Physical/Medical Rehabilitation therapists include amputation, spinal cord injury, sports injury, stroke, musculoskeletal pain syndromes such as low back pain, fibromyalgia and traumatic brain injuries (TBI).
2. To optimize the function of the heart or lungs by means of cardiopulmonary rehabilitation
3. Management of chronic pain through a multidisciplinary approach which involves psychologists, physical therapists, occupational therapists, exercise therapists, anesthesiologist and interventional procedures.
4. Stroke is often treated with the help of a speech therapist and a recreational therapist.
5. Electrodiagnostic medicine studies are also employed to help diagnose patients with symptoms of numbness, cramps or tingling.

- **Objectives of Aquatic Rehabilitation**

The aim of Aquatic Rehabilitation is achieved by utilizing the physical properties of water which includes:

1. **Buoyancy:** The natural buoyancy of water decreases the effects of gravity, allowing for easier, safer and more comfortable movements during therapy.

Buoyancy can be classified as assistive, resistive or supportive. Working against the tendency of a limb to float is referred to as resistive, conversely when one is working with the tendency of a limb to float than it is assistive and when one is working in the same plane it is referred to as supportive.

2. **Fluid Resistance:** Fluid Resistance is the resistive force that one encounters when moving through water. Fluid resistance occurs because of the cohesion or attraction of the water molecules together; termed as viscosity. When water is warmer the viscosity is low and vice versa. Therefore water temperature not only affects the body but the physical properties of it as well, making movements harder or easier depending upon the temperature.

The other factor that affect movement through the water includes the streamline of the object, a less streamlined object creates more turbulence behind the object that holds it back, which is used therapeutically. The activity can be made more difficult by just increasing the surface area, by using equipments like paddles or by simply changing the position of the body. Water uniquely works on the opposing groups of muscle as movements are resisted in both directions of movements, which is also appropriate from the physical point of view that is to work out both sets of opposing muscles so as to avoid imbalance.

3. **Hydrostatic Pressure:** It is the pressure exerted equally on all submerged areas of the body. This pressure can work against a person who has COPD (chronic obstructive pulmonary disease), as it can make chest expansion more difficult, this pressure increases the awareness of where the body parts are to move. It also reduces the tendency of blood to pool, which helps in reducing swelling. It helps to stabilize joints, which is beneficial to those who have weakness around a particular joint.
4. **Temperature:** This property of water is also important considering the fact that water is an excellent heat conductor. The correct temperature of water is effective for relaxing muscles, decreasing muscle spasms, relieving pain or increasing range of motion.

- **Objectives of Cognitive Rehabilitation:**

Once a goal has been agreed, the following strategies are followed

1. **Facilitating remaining episodic memory functioning:**

Where the aim is to build on the remaining episodic memory ability to encourage learning of new information or re-learning of previously-known information, a number of guiding principles are to be followed. These include providing support at both encoding and retrieval, ensuring effortful processing, reducing errors during the learning process and encouraging encoding through multiple sensory modalities. More specific methods include spaced retrieval, cueing, simple mnemonics, encouraging semantic processing of material and the use of subject-performed tasks as an aid to encoding.

2. **Supporting procedural memory:**

Where the aim is to improve or restore the ability to carry out selected activities of daily living, action-based learning can be used. Prompting methods can also be employed to encourage and support performance of an activity. For this a schedule of prompts can be devised on the basis of a detailed task analysis; the prompts may be either verbal or physical. Once the performance is well established, the prompts can be faded out. This approach is particularly helpful when new external memory aids are introduced.

3. **Supporting semantic knowledge:**

This includes repeated rehearsal combined with contextual information and demonstration of object use especially with people who have semantic dementia.

4. **Addressing risky or problematic behaviours:**

This is especially relevant for people with frontal dementia, and a range of behavioural and environmental modifications can be employed to address problematic behaviours while maintaining the person's quality of life.

- **Objectives of Social Rehabilitation**

To achieve the aim of Social rehabilitation and also on the basis of the Claimant's needs, they are entitled to one or a combination of eight social rehabilitation options provided under the Injury Prevention, Rehabilitation and Compensation Act 2001. These options are:

1. Home help
2. Attendant help
3. Child care
4. Equipment (aids and appliances)
5. Housing modifications
6. Transport for independence (including vehicle purchase and modifications)
7. Education support
8. Training for independence

CONCLUSION

In the present scenario of sports where each and every individual is competing to beat the best, the level of competition has elevated beyond imagination. Where the world's fastest man Usain Bolt wins the 100m, 200m in two consecutive Olympics (2008 Beijing; 2012 London) breaking his own record of 9.69 in 2008 reducing it further to 9.63 in 2012. It is very essential for the future generation of sportsperson to pay special heed to the field of rehabilitation if they are to set record breaking performances on the face of injuries. Rehabilitation is one of the most important fields of study as well as of practical application that directly leads to the restoration of any physiological or psychological functions ranging from minor to major injuries and help an individual to get back to normal life and becomes a socially active as well as productive individual.