**Final-Term Assignment/Paper (spring -2020)**

**Therapeutic exercises**

**DPT 4th semester**

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**Mehak shah**

**ID : 15032** Max Marks: 50

Q1. Define following.(10)

1. Flexibility

**Flexibility:-**

* Ability to move a single joint or series of joints smoothly and easily through an unrestricted, pain-free ROM.
* Flexibility exercise helps stretch muscles, protect against injury and allows high range of motion of any joint.
1. Mobility

**Mobility:-**

* The ability of an individual to initiate, control, or sustain active movements of the body to perform simple to complex motor skills” is called Mobility.
1. Indications and contraindications of stretching.

**Indication Of stretching:-**

* Improve joint ROM
* Increase extensibility of muscle tendon unit and periarticular connective tissue
* Return normal neuromuscular balance between muscle groups
* Reduce compression on joint surfaces
* Reduce injuries.

**Contraindications Of Stretching:-**

* Joint motion limited by bony blocks
* After fracture and before bone healing is complete
* Acute inflammatory or infectious process
* When disruption of soft tissue healing is likely
* Sharp, acute pain with joint movement or muscle elongation
* Hematoma or other soft tissue trauma
* Hypermobility exists.
1. Isometric contraction

**Isometric Contraction:-**

* **Meaning:-** Isometric means “same length,”
* Isometric contractions generate force without changing the length of the muscle is called isometric Contraction.

**Example:** Isometric Exercise is the example of planks

1. Isotonic contraction

**Isotonic Exercise:-**

* **Meaning:-**Isotonic means “same tension”
* **Isotonic contractions** generate force by changing the length of the **muscle** is called isotonic Contraction.

It has two types;

**Concentric and eccentric Contraction:-**

* A **concentric** **contraction** causes muscles to shorten, thereby generating force. A **Eccentric contraction** occurs when the total length of the muscle increases as tension is produced

**Example:** Isotonic Exercises examples is like squats

Q2. Define contracture? Discuss types of contractures? (10)

**Answer:**

**Contracture:-**

Contractures refer to the permanent tightening of tissues. This includes muscles, tendons, ligaments, or skin. It makes it hard or impossible to move the nearby joints, resulting in significant resistance to Stretch and limitation of ROM.

Contracture Deformity of the Hand, It can be reversible or irreversible.

**Types Of Contracture:-**

1. Myostatic Contracture
2. Pseudomyostatic Contracture
3. Arthrogenic Contractures
4. Fibrotic Contracture

**1).Myostatic Contracture:-**

Myostatic contracture is a condition of permanent shortening in resting muscle which persists after section of the motor nerve.

**2).Arthrogenic Contracture:-**

An Arthrogenic contracture is the result of intra- articular pathology.  These changes may include adhesions, synovial proliferation, joint effusion etc.

**3).Fibrotic Contracture:-**

Contractures develop when normally elastic tissues such as muscles or tendons are replaced by inelastic tissues (fibrosis).

**4).Pseudomyostatic Contracture:-**

An apparent permanent contraction of a muscle due to a central nervous system lesion, resulting in loss of range of motion and resistance of the muscle to stretch

Q.3. what is stretching? What are types of stretching? (10)

**Answer:**

**Stretching:-**

General term used to describe any therapeutic maneuver designed to increase the extensibility of soft tissues, there by improving flexibility by elongating structures that have adaptively shortened and have become hypo mobile over time.

**Types Of Stretching:-**

* **Active** **Stretching**:

The perks stretching provides the force of Stretch.

* **Passive** **Stretching**:

a partner provides the force of the stretch.

* **Static Stretching**:

Slow sustained stretch for 10-30 sec.

* **Ballistic** **Stretching:**

Bouncy stretch reserved for those involved in sports that require quick movements.

Reserve for the 15+ years old.

* **PNF**:

Combination of Active /Passive stretch usually with a partner or some kind of ‘Aid’.

Not for children 6-10 years old.

**Other types of Stretching is;**

* Cyclic/intermittent Stretching.
* Manual stretching.
* Mechanical stretching.
* Self-stretching.

Q.4. what is Nagi Model? Discuss disablement and impairment? (10)

**Answer:-**

* **Nagi Model:-**

A conceptual explanation of the process and underlying mechanisms by which disease, injury or birth defect impacts a person’s ability to function (perform their expected role in society).

Nagi described four basic phenomena that he considered fundamental to rehabilitation as follows:

Primary Pathology --🡪Primary impairment -🡪Functional limitations --🡪 Disability

* **Primary pathology**
* **Primary Impairment**
* **Functional limitations**
* **Disability**
1. **Primary pathology is** an interruption in normal body Processes that lead to a deviation from the normal state such as infection, trauma, disease processes or other degenerative conditions.
2. **Primary Impairment** is a loss or abnormality at the tissue, organ and body system level.
3. **Functional limitations** relates to the individual inability to perform the tasks and obligations of his usual roles and normal daily activities.
4. **Disability** defined as a mental or physical Limitation in performing socially defined roles and Tasks expected of an individual.
* **ICF Model:**

The ICF focuses on three components: body, activities, participation (at individual and societal levels) and contextual (personal and environmental). These three components underscore the importance of the interplay and inﬂuence of both internal and external factors to each individual’s health status.

**Body Functions and Structures:-**

**Definitions:**

* **Body functions**: The physiological functions of body systems (including psychological functions)
* **Body structures:** Anatomical parts of the body such as organs, limbs and their components

**Impairments**: Problems in body function and structure such as significant deviation or loss

Examples:

* Pain in head and neck
* Structure of shoulder region
* Structures of areas of skin.

**Activities and Participation:-**

**Definitions**:

* **Activity**: The execution of a task or action by an individual
* **Activity limitations:** Difficulties an individual may have in executing activities
* **Participation**: Involvement in a life situation
* **Participation restrictions:** Problems an individual may experience in involvement in life situations

**Examples**:

* Carrying out daily routine
* Transferring oneself
* Driving
* Toileting
* Community life
* Recreation and leisure.

**Environmental Factors:-**

* **Definition**: The physical, social and attitudinal environment in which people live and conduct their lives. These are either barriers to or facilitators of the person’s functioning.

Examples:

* Products and technology for personal use in daily living
* Design, construction and building products and technology of buildings for private use
* Physical geography
* Health profprofessional

**Personal Factors:-**

* Personal Factors should also be considered in this model but are not classified within the actual ICF framework.
* **ICIDH Model**:

ICIDH consists of two parts: a conceptual model and three classifications.

The first part is the theoretical explanation of the consequences of diseases. It proposes the concepts and definitions of impairment, disability and handicap and discusses the relation between these dimensions. This is based on a linear model implying progression from disease, impairment, disability to handicap.

Disease --🡪 impairment -🡪 disability --🡪 handicap.

**Part:(b)**

1. **Disablement:-**

Disablement is a term that refers to the impact and functional consequences of acute or chronic conditions, such as disease, injury, and congenital or developmental abnormalities, on specific body systems that compromise basic human performance and an individual’s ability to meet necessary, expected, and desired societal functions and roles.

**Pathology Of Disablement:-**

1. Active pathology is an interruption in normal body Processes that lead to a deviation from the normal state such as infection, trauma, disease processes or other degenerative conditions.
2. Impairment is a loss or abnormality at the tissue, organ and body system level.
3. Functional limitations relates to the individual inability to perform the tasks and obligations of his usual roles and normal daily activities.
4. Disability defined as a mental or physical Limitation in performing socially defined roles and Tasks expected of an individual.
5. **Impairment:-**

Impairments are the consequences of pathological conditions; that is, they are the signs and symptoms that reflect abnormalities at the body system, organ, or tissue level.

**Pathology Of Impairment:-**

**Impairments:** Problems in body function and structure such as significant deviation or loss

Examples:

* Pain in head and neck
* Structure of shoulder region
* Structures of areas of skin.

Q.5.What is Aerobic exercises? Write down **Principles of aerobic exercise**. (10)

**Answer:**

* **Aerobic exercise:-**
* Aerobic exercise is sometimes known as ‘’cardio’’ exercise that requires pumping of oxygenated blood by the heart to deliver oxygen to working muscles.
* Aerobic exercise stimulates the heart rate and breathing rate to increase in a way that can be sustained for the exercise session.
* **Examples of aerobic exercise;**

Cardio machines, spinning, running, swimming, walking, hiking, dancing and skiing.

* **Principles Of Aerobic Exercise:-**
1. Intensity
2. Duration
3. Frequency
4. Modes

**1).Intensity:-**

* How hard your body is working
* Moderate intensity aerobic
* Vigorous intensity aerobics(high-intensity exercise).

**Example** : An example of intensity is how quickly a treadmill is moving.

**2**).**Duration**:-

* How long the performance is 20-30 minutes is optimal
* The greater intensity of exercise the shorter the duration needed to adapt.

**3). Frequency:-**

* How often the exercise should be 3-4 times a week depends on goals.

**4).Modes:-**

* Selecting type of aerobic exercise Depends on goal, physical condition, injury history

**For Example**: high load few repetitions = muscle strength

* Light load, ,many repetitions= muscle endurance