# The role of Physiotherapy in Pain Management in Kesihatan Awam

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- Physiotherapy service in primary healthcare
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# **DEFINITION of PAIN**

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

IASP, 1994

# **PAIN** ....

# SUFFERING

DISABLING

# DISTRACTING

# **DEFINITION of PHYSIOTHERAPY**

Physiotherapist is an individual who is trained, certified and registered as physiotherapist, responsible to analyze and make physiotherapist diagnosis, carry out physiotherapy treatment for prevention of pain or injury, habilitate or rehabilitate any form of physical condition and disabilities in order to facilitate or restore optimum movement and functional abilities as well as to promote physical health for patients and public.

(AHP Act)

# PHYSIOTHERAPY SERVICE IN PRIMARY HEALTHCARE

Consists of:



For all age group in the population

# PHYSIOTHERAPY ROLE IN PAIN MANAGEMENT

Assisting patients to diminish pain

Improving quality of life

Preventing acute & subacute painful conditions from developing into chronic pain

Assisting patients to live with chronic pain

# CASES TREATED BY PHYSIOTHERAPY

Consideration of multipathology by identifying actual and potential limitations to function, including pain and other problems of musculoskeletal, respiratory, circulatory etc.

### PHYSIOTHERAPY TREATMENT APPROACH



# **SPECIAL TREATMENT CONSIDERATION**

Consider the safety of the patient and care taker by providing education and training on the safe movement and ways of handling patient.

Each exercise program is tailored based on individual need and does not exacerbate the pain. Prepare a proper home exercise program or discharge care plan to prevent recurrent pain

### **REFERRAL TO PHYSIOTHERAPY**

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ALCOND.	

KEMENTERIAN KESIHATAN MALAYSIA PHYSIOTHERAPY REFERRAL FORM

Field / Burg/ KK / 2018



Clinic :				Date :	
		P	ATIENT'S BIODATA		
Name:				IC. No/ Passport:	
Age:	Gender: M / F	Race:	RN :	Tel.:	
Address :	•		•	•	
		P	ATIENT'S HISTORY		_
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Patient's H	listory:		Precautions (if	any):	
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Diagnosis:	Investigation:	
Patient's History:	Precautions (if any):	
РНҮ	SIOTHERAPY SERVICES	
NCD PROGRAMME	OUTPATIENT	
Weight Management	Therapeutic Exercise	
DM Exercises	Chronic Pain Management	
HPT Exercises	Thermal Therapy	
	Cryotherapy	
GERIATRIC (Warga Emas Programme)	Balance Training	
Fall Risk Assessment	Ambulation	
Fall Prevention	Gait Assessment/Training	
Therapeutic Exercise	Chest Physiotherapy	
	Motor Relearning Program	
ANTE/ POST NATAL PROGRAMME	Posture Training	
Breathing Technique	Bandaging/ Strapping	
Postural Care	Joint mobilization	
Pelvic Floor Exercise	OTHERS (Please specify):	
CHILDREN WITH SPECIAL NEEDS		
Neurodevelopmental Therapy		

PATIENT S HISTURT

INITIAL BY SPECIALIST / MEDICAL OFFICER

#### **TO KLINIK KESIHATAN**

### **REFERRAL TO PHYSIOTHERAPY**

Finio / b.ruj / hosp / 2015 KEMENTERIAN KESIHATAN MALAYSIA PHYSIOTHERAPY REFERRAL FORM	
NAME : ELNIK/UNIT/WARD : EN NO :	PATIENT'S PARTICULARS
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**TO HOSPITAL** 

### **PROGRAMS OFFERED BY KLINIK KESIHATAN**

#### **COMMUNITY BASED PROGRAM**

#### E.g:

- NCD PROGRAM
- Obesity
- Diabetes Mellitus
- Hypertension
- GERIATRIC (WARGA EMAS)PROGRAM
- ANTE /POST NATAL PROGRAM
- CHILDREN WITH SPECIAL NEED
- SCHOOL SCREENING
- KEM KESIHATAN
- OUTREACH COMMUNITY
- KOSPEN
- WORK HEALTH PROGRAM
- DOMISILIARI TREATMENT

#### **OUTPATIENT**

Based on condition :

E.g:

 Neck, shoulder , elbow, back , hip , thigh, knee, calf, ankle , foot , chest, stroke, men's health , women's health , peads musculoskeletal, and peads neurology

\*case mainly seen are to treat -pain

- -correct posture
- -create awareness
- -prevention of future/further injury,

## **AIM OF PHYSIOTHERAPY INTERVENTION**





Therapeutic Electro modalities

### For pain relief





Hydrotherapy Key Strength, stability , reduce stiffness & reduce pain

#### Example of stretching exercise



Shoulder-neck stretch



Posterior shoulder stretch





# Example of relaxation technique and positioning



Relaxation technique and positioning for asthmatic patient during asthmatic attack

Relaxation technique and positioning for patient with back pain



Lie on your side with both knees bent and a pillow placed between your legs. It is recommended to lie on your **left side** to help improve blood circulation.



Lie on your back with pillows placed under your shoulders and under your knees. In this position, the baby's weight puts pressure on one of your main blood vessels. You could feel dizzy and weak. **Avoid this position after your fourth month of pregnancy**.

#### Relaxation technique and positioning for pregnant lady



### Example of breathing exercise



Diaphragmatic breathing

Graded exposure & pacing There are often particular activities that are challenging, painful & sometimes avoided for fear of causing damage / harm. With knowledge of pain & confidence to move, patient can gradually re-engage with these activities.

Pacing means doing activities / exercises with rest in between so that patient's achieved set goals.



Hands-on techniques to manipulate / mobilize tissues of the body, to diagnose & treat soft tissues & joint structures for the purpose of modulating pain, increasing range of motion (ROM), reducing / eliminating soft tissue inflammation, inducing relaxation, improving contractile and non-contractile tissue repair, extensibility, and/or stability, facilitating movement and improving function.

Correction of physiological impairments allows fearless, pain free movements that facilitate the relearning of pain free memories of movements.

# Types of Manual Therapy

Soft tissue techniques	Joint techniques
Soft Tissue Manipulation	Joint mobilization
Myofascial Release technique	Joint Manipulation
Manual Lymphatic Drainage	Muscle energy techniques



### Soft Tissue Manipulation





#### **MYOFASCIAL RELEASE TECHNIQUE**



#### Manual Lymphatic Drainage (MLD)



Are designed to increase the movement of lymph and interstitial fluid.

The basic hand positions of MLD are adapted to follow the anatomy & physiology of the lymphatic system

Vodder Technique





#### **GENERAL EFFECTS OF MLD**

- Improves the lymph capillary uptake
- Increase the lymph-angio-activity
- Soothing effect
- Analgesic effect
- Redirect the flow around blocked areas into more centrally located healthy lymph vessels





Joint Mobilization



Joint Manipulation



#### Muscle Energy Technique

# **Therapeutic Electrotherapy modalities** Hot pack Ice pack Ice pack on the forearm and knee Hot pack on the neck and back

### **Therapeutic Electrotherapy modalities**

Cryotherapy	Transcutaneous Electrical Nerve Stimulation (TENS)
<image/>	

Cryotherapy on the right knee

TENS on the right upper back region

### **Therapeutic Electrotherapy modalities**

Ultrasound therapy on elbow and knee

ESWT on shoulder and foot

Wax bath therapy on foot and palm

# Extracorporeal Shockwave Therapy (ESWT)

ESWT is based on a unique set of pressure waves that stimulate the metabolism, enhance blood circulation and accelerate the healing process. Damaged tissue gradually regenerates and eventually heals. Examples of condition treated by this modality:

- Rotator cuff tendonitis
- Plantar fascitis
- Tennis elbow
- Golfers elbow



Using a more flexible kind of tape, it function to reduce pain . inflammation , swelling, promote healing, via stabilization and support , facilitate towards full range of motion and to relax overused muscle









**OBJECT WEIGHT** 

LOAD

MUSCLE

OBJECT DISC LOAD

VEIGHT

Example of patient education

#### Working posture

- 1. **Head and neck** to be upright, or in-line with the torso (not bent down/back).
- 2. Head, neck, and trunk to face forward (not twisted).
- 3. **Trunk** to be perpendicular to floor (may lean back into backrest but not forward).
- 4. **Shoulders and upper arms** to be in-line with the torso, generally about perpendicular to the floor and relaxed (not elevated or stretched forward).
- 5. **Upper arms and elbows** to be close to the body (not extended outward).
- 6. Forearms, wrists, and hands to be straight and in-line (forearm at about 90 degrees to the upper arm).
- 7. Wrists and hands to be straight (not bent up/down or sideways toward the little finger).
- 8. **Thighs** to be parallel to the floor and the lower legs to be perpendicular to floor (thighs may be slightly elevated above knees).
- 9. Feet rest flat on the floor or are supported by a stable footrest.





## Management of acute pain

- Find a position of comfort that decreases / eliminate the pain.
- Use a pain-relieving treatment e.g ice for 10 15 mins
- 3. Use an assistive device e.g crutches / walker if the leg is involved, a sling / splint for the upper extremity / a corset for the back.

### Exercise for chronic pain patient

- 1. Improve problems such as inflexibility, loss of mobility / weakness, which contribute to the pain.
- 2. Decrease pain by inhibiting transmission of pain impulses
- Prevent secondary musculoskeletal complications of pain such as further weakness, immobility, & flexibility at the other joints.

General exercise regime for chronic pain patients

- 1. Ideally, the patient should do activities every day, at least once per day
- 2. Patient may perform several exercise. These session may be only 5 10 minutes long
- Stretches should be intense enough to feel a gentle pulling sensation



General exercise regime for chronic pain patients

- Other exercises should be performed slowly until slight fatigue is felt / as instructed by the physiotherapist /doctor
- 5. The patient may feel some discomfort during / for a short time after exercise. This discomfort should not be confused with the pain that brought the patient to the clinic.
- 6. Patient may continue with to exercise with some of the discomfort

Home management

- 1. Heat treatment
  - hot (warm) pack
  - reduces pain by sedative effect
- 2. TENS

- Gateway Theory – electrical stimulation blocks pain that is transmitted through nerve endings

- Endorphin-release Theory – electrical currents trigger the body to produce endorphin which help the body's nerve system to combat pain.



# **Evidences**



# Management Post Surgical Pain

- A review on TKR have stated effectiveness of physiotherapy management on post TKR pain and regaining the functional ability (Akodu et al ,2011)
- Application of kinesio taping on patient post laparoscopic cholecystectomy have shown decreased level of pain and also improved functional mobility compared to controled group patients (Krajczy et al, 2012)
- Relaxation technique

# Pain management in Cancer patients

- Physiotherapy soft tissue mobilization technique for these patients may prove beneficial in limiting subsequent shoulder dysfunction among breast cancer patient with axillary web syndrome (Fourie & Robb,2009)
- Sufficient levels of exercise were consistently associated fewer side effects such as chest wall pain and shoulder limitation among patient undergone breast cancer treatment (Gho et al, 2013)

# Pain management in Cancer patients

 Physical exercise regime have reported significant improvements in fatigue, depression, sleep disturbances, pain, and quality of life of cancer patients. The improvements were independent of the type of cancer, extent of disease, or treatment status. Additional benefits described by participants were support, a sense of belonging, and being understood.(Van Gerpen & Becker, 2013)



# Pain management in ante and post natal pain

- A study concluded patient who followed physiotherapy program after cesarean delivery have shown reduced pain perception (Citak Karakaya et al, 2012)
- Breathing exercises, muscle relaxation, lumbosacral massage, and showers reported to have reduced pain as cervix dilation increased (Davim et al, 2009)

# Phantom Limb Pain

 Evidence has demonstrated that TENS has potential for reducing phantom pain and stump pain at rest and on movement (Mulvey et al, 2013)

# **Temperomandibular Joint pain**

The anesthetic blockage and physical therapy(Massage and Muscular stretching), when used together, are effective in the reduction of pain among patients with TMD compared to those received anesthetic alone (Nascimento et al, 2013)



### Manual Therapy

A systemic review showed that manual therapy contribute usefully to the management of nonspecific neck pain (Vincent et. al., 2012)

Studies demonstrated analgesic effects and modulation of spinal excitability with use of manual therapy techniques, with clinical outcomes of improved gait and functional ability among patients with lower quadrant pain (Courteny et.al., 2011)

## TENS

A study using functional MRI shown TENS been effective in reducing pain among subacromial impingement patients and also induce analgesic effect through modulation of discriminative, affective, and motor aspects of central pain perception. (Kocyigit et al, 2012)





### Ultrasound:



Recent review on chronic tendon injuries have shown therapeutic ultrasound as of modalities widely used in conservative management (Chidress & Buetler, 2013)



### ESWT

Patient with chronic plantar fascitis reported more satisfaction in term of pain & functional (Krishnan et. al., 2012)

ESWT have reported success of the treatment among plantar fascitis patients at 3 months, 12 months and after 12 months. (Wong CP, 2009)



### Hydrotherapy

Have shown improvement in the mobility level (P<0.01), walking and bending ability of the trunk (P<0.05), levels of pain (P<0.01) and mood (P<0.01) among elderly patients with knee osteoarthritis (Lau et al 2013)



## Exercises

Physical exercises improves not only in term of pain but also strengthen and improves flexibility among patients with lower limb osteoarthritis (Uthman et al, 2013)

Current review on fibromylagia have stated physical exercise as one of the multidimensional approach to treat the condition (Hawkins,2013)

# Taping



- Findings demonstrated that Kinesio taping would be an effective method for reducing neck and low back pain and improving functional performance (Keratas et al, 2012)
- Kinesio taping also showed good prognosis in managing pain during the acute phase (Mostafavivar et al ,2012)

# THANK YOU

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# THANK YOU

