Getting a handle on HIV

Physiotherapy perspective: encouraging movement

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Aims of the presentation

By the end of the presentation the audience should have a better understanding of:

- The burden related to HIV
- The different roles of physiotherapy and aspects that may influence movement enhancing strategies
- Evidenced-based practice interventions to enhance movement and exercise

Sustainable Development Goal 3

"Ensure healthy lives and promote wellbeing for all at all ages"

Health targets for SDG 3:

- By 2030, **end the epidemics of AIDS**…
- By 2030, **reduce** by one third premature **mortality from non-communicable diseases** through prevention and treatment and promote mental health and well-being

  (World Health Organisation, 2019)

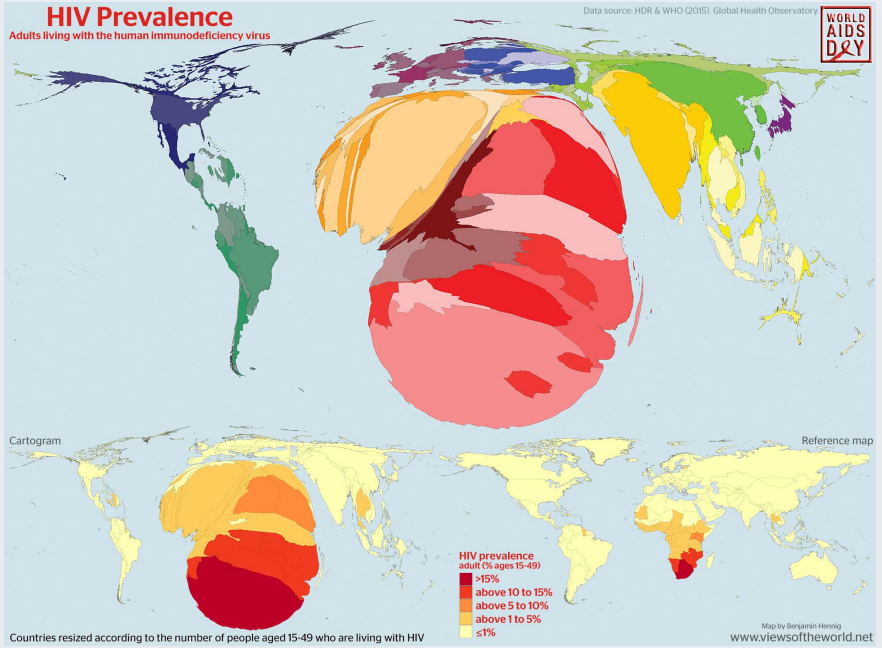
Physiotherapists therefore have an important role to play in the health care of people living with HIV and AIDS as a means of working towards the goal.

Background

- HIV is a significant **Sub-Saharan Africa** health problem with prevalence of HIV differing between countries in Africa.

- The overall estimated prevalence of HIV in **South Africa** in 2018 was **13.1%** (7.52 million people living with HIV) and in the 15-49 age category of the population the prevalence was **19%**

(Statistics South Africa, 2018).



Henning B 2018 Global HIV Prevalence Cartogram. Available at: http://www.viewsoftheworld.net/?p=5015

Background…

- AIDS-related **deaths** worldwide have **declined** by more than **51% since 2004** *(UNAIDS, 2018)*.
  - Deaths: 2017 (940 000 people), 2010 (1.4 million people), 2004 (1.9 million people)

- Many countries including South Africa adopted the **90-90-90** (diagnosed/sustained therapy/undetectable viral loads) UNAIDS treatment strategy for HIV *(South African National AIDS Council, 2017).*

- By 2017, South Africa had reached targets of **85-71-86** in the age group 15–64 years knowing their HIV status *(Feldman, 2019).*

Background…

- HIV can be considered a **chronic disease** where individuals may fluctuate between **periods of wellness, illness or episodic disability** *(Nixon et al., 2011).*

- Due to the chronicity of HIV a proposal was made that the treatment approach should be a **90-90-90-100 strategy** where **100% of services link chronic care to rehabilitation** *(Hanass-Hancock et al., 2016).*

Background…

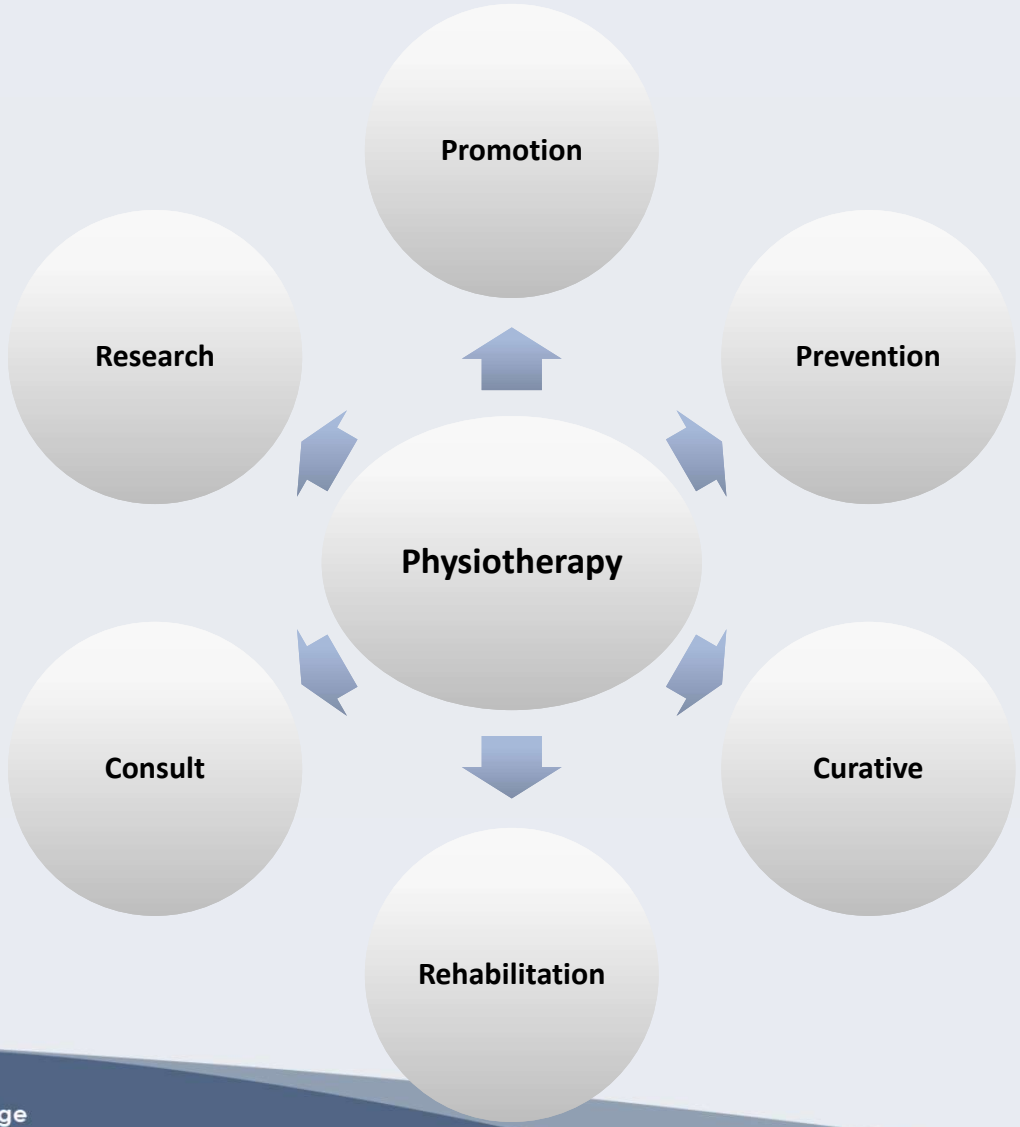
Six comorbidity clusters have been identified in PLWH:

Clusters	Diseases/ conditions
Cardiovascular disease	Coronary Artery Disease, Peripheral Vascular Disease, Heart Failure, Hypertension, Kidney dysfunction
Metabolic disease	Abnormal lipids, lipodystrophy, diabetes
Respiratory	PTB, PJP, CAP, COPD, Asthma
Cancer	Blood, skin and solid organ cancers
Mental health	Depression, Anxiety, Panic attacks
Sexually transmitted diseases	Hepatitis C, gonorrhoea, chlamydia

(De Francesco et al., 2018)

Role of physiotherapy

(WCPT, 2018; Maleka, Frantzen, Stewart, 2008)



Physiotherapy in South Africa

(N=10 320)

Registered physiotherapists (n=7 734)

Student physiotherapists (n=2367)

Physiotherapy assistants (n=171)

Physiotherapy technicians (n=48)

Health Professions Council of South Africa 2018 Statistics
Available at: https://www.hpcsa.co.za/Publications/Statistics

Physiotherapy in Africa

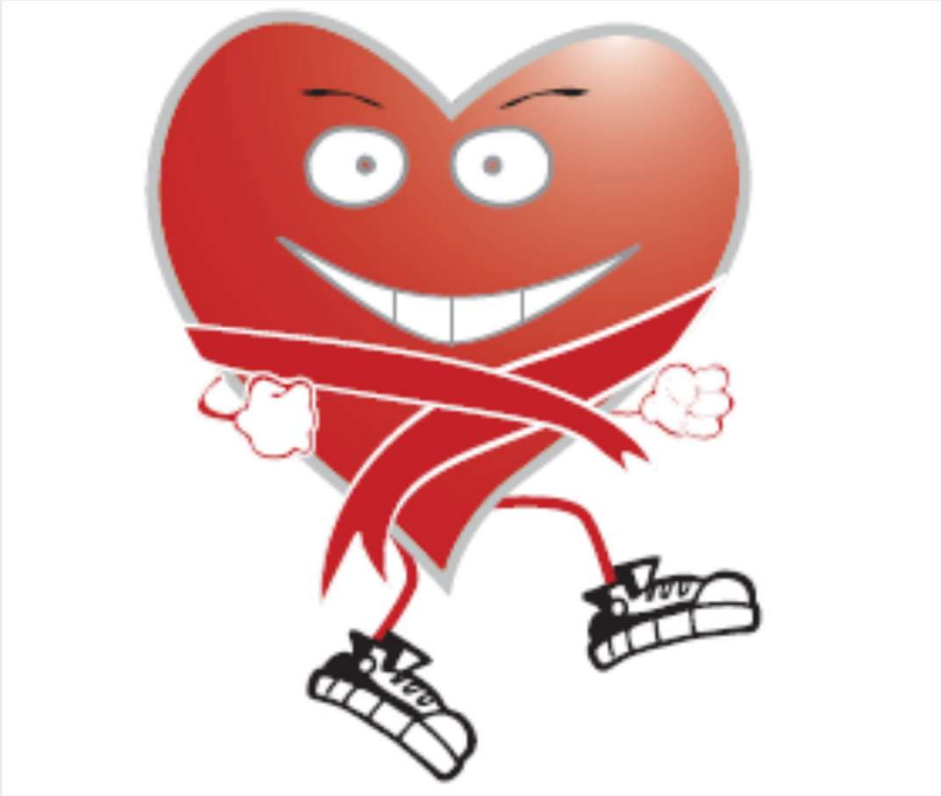
Registered physiotherapists according to the WCPT:

- Kenya (411 PT)
- Cameroon (150 PT)
- Malawi (50 PT)
- Nigeria (648 PT)
- Niger (50 PT)
- Rwanda (75 PT)
- Zimbabwe (56 PT)
- Zambia (79 PT)

World Confederation of Physical Therapy 2019 African Region of WCPT. Available at: https://www.wcpt.org/africa

Role of Physiotherapy

Health Promotion/ Prevention



Health Education

The following education is important to assist with behavior change:

- **Smoking cessation**
- Optimal nutrition
- Weight management
- **Increase in physical activity levels and exercise routine**
- Adequate sleep
- Stress management
- Alcohol use

(Dean et al 2014 The Second Physical Therapy Summit on Global Health: developing an action plan to promote health in daily practice and reduce the burden of non-communicable diseases. Physiotherapy Theory and Practice, 30:4, 261-275.)

Tobacco Use and Smoking Cessation Interventions in PLWH

(Pacek & Cioe 2015 Curr HIV/AIDS Rep. 2015 December ; 12(4): 413–420)

Aim of the study: Review the prevalence of smoking and existing smoking cessation programmes.

Results: Studies included (n=10). Smoking prevalence across studies was **40 to 70%.** Smoking cessation studies included non-pharmacological, pharmacological interventions and combination. Programme length differed (1 month, 2 months, 3 months or 12 months).Different methods of providing information was given: **discussions or pamphlets** etc. **Counselling methods** included: **face-to-face; group-based; cell phone; web-based** counselling.

Conclusion: Interventions had variable effects on smoking cessation.

Health Promotion – Education & Physical activity

(Roos R, Myezwa H, Van Aswegen H, Musenge E 2014 Effects of an education and home-based pedometer walking programme on ischemic heart disease risk factors in people infected with HIV: a randomised trial. Journal of Acquired Immune Deficiency Syndromes 67 (3): 268 – 276.)

Aim*:* The effect of a **home-based education** and individualised **incremental pedometer walking programme** on ischemic heart disease risk factors in people living with HIV and AIDS.

Intervention:

- RCT with control and experimental group
- Experimental group: Education regarding CAD, benefits of activity, how to monitor of physical activity; Progressive walking programme with pedometer
- Assessments (baseline, six and twelve months)

Variables	Between-group effect (p-value)	Mean difference (±SE)	95% CI for difference
Pedometer, *steps/day*	0.49	4020.56 (2153.51)	-265.07 – 8306.17
Six minute walk test distance, *m*	**0.01**	**15.70 (9.33)**	**-2.86 – 34.26**
Perceived stress	0.61	-0.49 (1.21)	-2.90 – 1.23
Resting heart rate, *bpm*	0.29	-0.18 (1.70)	-3.57 – 3.21
Systolic blood pressure, *mmHg*	0.14	-0.56 (1.66)	-3.86 – 2.74
Diastolic blood pressure, *mmHg*	0.26	0.43 (1.31)	-2.17 – 3.03
Waist circumference, *cm*	0.09	0.45 (0.81)	-1.16 – 2.06
Waist: hip ratio	**0.00**	**-0.003 (0.01)**	**-0.02 – 0.01**
Body mass index, *kg/m2*	0.33	0.05 (0.34)	-0.62 – 0.72
Glucose, *mmol/l*	**0.00**	**-0.12 (0.09)**	**-0.31 – 0.06**
Total cholesterol, *mmol/l*	0.11	0.13 (0.11)	-0.10 – 0.35
High density lipoprotein, *mmol/l*	**0.01**	**0.07 (0.05)**	**-0.03 – 0.17**
Low density lipoprotein, *mmol/l*	0.57	0.11 (0.08)	-0.04 – 0.27
Triglycerides, *mmol/l*	0.50	-0.05 (0.06)	-0.16 – 0.06
Hs-CRP, *mg/l*	0.08	0.78 (0.93)	-1.08 – 2.64

What are the barriers and facilitators of physical activity in PLWH?

(Vancampfort D, Mugisha J, Richards J, De Hert M, Probst M, Stubbs B 2018 Physical activity correlates in people living with HIV/AIDS: a systematic review of 45 studies. Disability Rehabilitation Jul;40(14):1618-1629.)

Aim: To understand the correlates, barriers and facilitators of physical activity programme participation in PLWH.

Results: 45 studies (N = 13 167; mean age range = 30.5-58.3 years; 63.2% male). **Lower levels of physical activity** were associated with **older age, lower educational level, lower number of CD4** cells/µl, **exposure to ARV**, and the presence of **lipodystrophy**. Other **barriers** were bodily **pain, depression** and **opportunistic infections**.

Facilitators were a **higher fitness level, a higher self-efficacy, more perceived benefits, and a better health motivation.**

How much physical activity should we recommend?

Physical activity guidelines for Americans US Department of Health and Human Services 2018

(Available: https://www.hhs.gov/fitness/be-active/physical-activity-guidelines-for-americans/index.html)

Guideline suggestions for Adults with or without chronic conditions
• Move more and sit less. Some physical activity is better than none.
• Substantial health benefits: 150 to 300 minutes of moderate-intensity activity OR 75-150 vigorous aerobic intensity activity OR a combination of moderate and vigorous intensity exercise.
• Muscle strengthening exercise of moderate or greater intensity on 2 or more days per week.
• Balance training and flexibility focus brings added health benefits
Inactive people should "start low and go slow" by starting with lower-intensity activities and gradually increasing how often and how long activities are done.

(Montoya et al. 2019 Evidence-informed practical recommendations for increasing physical activity among persons living with HIV. AIDS. May 1;33(6):931-939)

What are the specific exercise prescription recommendations for PLWHA?

(ACSM's Guidelines for Exercise testing and Prescription, 2014)

	Aerobic training	Resistance training
Frequency	3-5 days/week	2-3 days/week
Intensity	40-60% HRR	8-10 reps at +/- 60% I-RM
Time	10 min and progress to 30-60 min	+/- 30 minutes to complete 2-3 sets of 10-12 reps
Type	Modalities vary dependent on individual's interest and health status.	
Progression	Initiate training at a low volume and intensity. Progression will dependent on drug and virus side effects.	**Flexibility stretches** 2-3 days/week

What factors could influence performance during exercise?

Impairments	Studies
Reduced cardiovascular fitness could be due to: - Variable degrees of anaemia - Pulmonary diffusion impairment - Low CD_4 counts - Dysfunction of skeletal muscle mitochondria - Reduction of mitochondria DNA content - Respiratory muscle weakness	Redig & Berliner 2013 Crothers et al. 2013 Vancampfort et al 2016 Ortmeyer et al 2016 Payne et al 2015 Jerônimo et al 2015
Reduction in lung function could be due to: - Obstructive lung function changes due to PTB (current and past) - Obstructive lung function changes due to the effect of HIV and level of smoking	Gupte et al 2017; Cole et al 2016 Drummond et al 2012
Reduction in cardiac function e.g. Pulmonary artery Hypertension	Bigna et al 2015
Respiratory symptoms more common in PLWH compared to controls e.g. **cough** (OR 3.05 [95%CI 2.24 to 4.16]) and **breathlessness** (OR 1.39 [95%CI 1.11 to 1.73])	Brown et al 2017
Fatigue is often a symptom reported by PLWH	Potterton, 2016

Health promotion - Exercise programmes

(Ibeneme SC, Irem FO, Iloanusi NI, Ezuma AD, Ezenwankwo FE, Okere PC, Nnamani AO, Ezeofor SN, Dim NR, Fortwengel G 2019 Impact of physical exercises on immune function, bone mineral density, and quality of life in people living with HIV/AIDS: a systematic review with meta-analysis. BMC Infect Dis. 2019 Apr 24;19(1):340)

Aim: Evaluate the impact of physical (aerobic and resistance) exercises on **CD4 count**, **Bone Mineral Density** (BMD) and **QOL** in PLWHA.

Results: 19 studies were included (n = 491 participants) comprising male and female with age range 22-66 years. Two meta-analyses across 13 sub-group comparisons were performed. However, there were **no RCTs on the impact of physical exercises on BMD** in PLWHA. The result showed **no significant change in CD4 count** unlike a significant effect of 5.04 point (95%CI:-8.49,-3.74,p = 0.00001) for role activity limitation due to physical health (**QoL** sub-domain).

Health promotion - Exercise programmes…

Conclusion: There was evidence that engaging in aerobic exercises (55-85% Maximum heart rate), for 30-60 min, two to five times/week for 6-24 weeks significantly improves role activity limitation due to physical health problems.

Also, there is lack of evidence on the impact of exercises on BMD in PLWHA due to the paucity of RCTs.

Health promotion – Exercise programmes

(Kamintani et al 2017 Evaluating the effectiveness of physical exercise interventions in PLWH: overview of systematic reviews. AIDS Educ Prev. August ; 29(4): 347–363)

Aim: Assess the effectiveness of physical exercise (PE) and to determine the most appropriate PE regimen for PLHIV.

Results: Synthesized five reviews to assess the effectiveness of PE and conducted meta-analyses on CD4 counts to identify the best PE regimen. PE is associated with **reduced adiposity and depression**, but was not associated with a decrease in HIV viral load.

CD4 counts were improved by interventions with interval aerobic or 41-50 minutes of exercise three times per week compared with other modes and duration of exercise.

Health promotion – Exercise programmes

O'Brien KK, Tynan AM, Nixon SA, Glazier RH 2017 Effectiveness of Progressive Resistive Exercise (PRE) in the context of HIV: systematic review and meta-analysis using the Cochrane Collaboration protocol. BMC Infect Dis. 2017 Apr 12;17(1):268

Aim: Evaluate the safety and effectiveness of progressive resistive exercise (PRE) interventions on immunological, virological, cardiorespiratory, strength, weight, body composition, and psychological outcomes in adults living with HIV.

Results: 22 studies met inclusion criteria (n = 764 participants); the majority of participants were men (77%) taking antiretroviral therapy (14/20 included studies). Exercise interventions included PRE alone (8 studies) or a combination of resistive and aerobic exercise (12 studies) ranging from 6 to 52 weeks in duration.

Results demonstrated statistically significant **improvements** in **cardiorespiratory status** (maximum oxygen consumption, exercise time), **strength** (chest press, knee flexion), **weight**, and **body composition** (arm and thigh girth, leg muscle area) among exercisers versus non-exercisers. **No significant differences** in change in **CD4** count and viral load were observed.

Conclusion: Progressive resistive exercise (PRE) or a combination of resistive and aerobic exercise at least three times per week for at least six weeks is safe and can lead to improvements in cardiorespiratory fitness, strength, weight, and body composition for adults with HIV.

Health promotion – Benefits of Yoga

Dunne et al 2019 The benefits of yoga for people living with HIV/AIDS: A systematic review and meta-analysis. Complementary Therapies in Clinical Practice 34: 157-164.

Aim: This meta-analysis examines the benefits of yoga interventions on psychological distress among PLWHA.

Results: 7 studies met inclusion criteria (n=396). PLWHA who received yoga interventions reported significant **improvements in perceived stress, depression and anxiety levels.** An improvement in QOL was reported. **No significant change in CD4 levels** were reported between experimental or control group participants.

Conclusion: Yoga can be an alterative therapy method to address the psychological outcomes of PLWHA.

Role of physiotherapy

Curative

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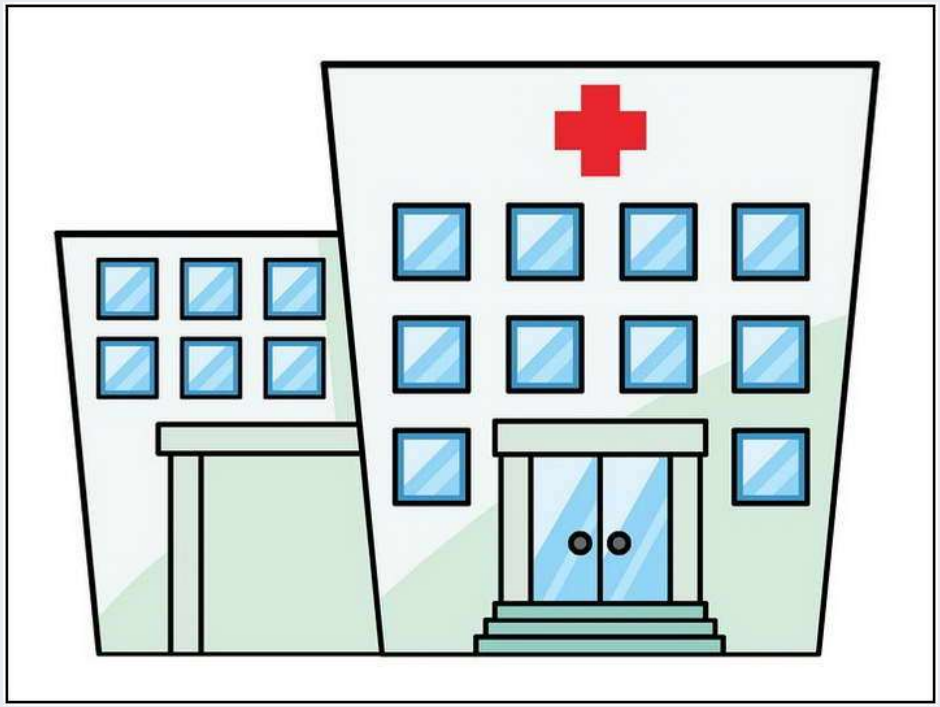
Promoting movement



Curative – Hospital care

Conditions that may lead to hospital admission include:

- Infectious diseases (e.g. respiratory)
- Mental disorders
- Diseases of the CVS, neurological systems, gastrointestinal tract etc.

(Kinirons & Do 2015; Maharaj & Rangiah, 2010; Myezwa et al., 2007; Zonta et al., 2005).

Poor survival if patients admitted to ICU due to the following:

- Septic shock
- Renal impairment
- CD4 count less than 50/mm^3
- Pneumocystis jerovici pneumonia
- Extra pulmonary tuberculosis
- Presence of any AIDS-defining illness

(Koegelenberg et al 2016)

Curative – Hospital care…

Impairments and functional limitations:

Bodily pain; Paraesthesia; Dizziness; Fatigue; Shortness of breath; Sputum retention

Decrease in:

- Cough effort, lung ventilation
- Strength
- Range of motion
- Balance
- Endurance
- Bed mobility, Transfers, Ambulation

(Kinirons & Do 2015; Myezwa et al., 2007; Zonta et al., 2005)

Curative – Hospital care

- Determinants of referral to physiotherapy

  - Age (> 40 years); If an individual requires assistance with mobility status; length of hospital stay (> 8 days) *(Kinirons & Do 2015).*

- Physical function outcome measures

  - Karnofsky Performance Status Scale; Barthel Index; Functional Independence Measure; Modified Rankin Score; Chelsea Critical Care Physical Assessment (CPAx) tool; Six minute walk test

    (Roos & Van Aswegen Unpublished data)

Early hospital mobility screening tools

Reference	Categories
SAFEMOB task force (Dean et al)	What to assess? When not to mobilise? What to monitor? How to mobilise and progress?
Hodgson et al. (2014)	In-bed or out-of-bed activities/ potential for risk
Hanekom et al. (2011)	Three categories: unconscious, awake, deconditioned patient
Gosselink et al. (2011)	Five levels dependent on cooperation
Korupolu et al. (2009)	Intrinsic factors
Perme et al. (2009)	Four phases
Stiller and Phillips (2003)	Medical background and intrinsic factors

SAFEMOB tool

(Available at: https://physicaltherapy.med.ubc.ca/physical-therapy-knowledge-broker/safemob-project/)

SAFE PRESCRIPTION OF MOBILIZING PATIENTS IN ACUTE CARE SETTINGS
WHAT TO ASSESS, WHAT TO MONITOR, WHEN NOT TO MOBILIZE AND HOW TO MOBILIZE AND PROGRESS

PURPOSE, SCOPE & DISCLAIMER: The purpose of this document is to provide physical therapists with guidance on safe mobilization of the patient in acute care settings. This decision-making guide is evidence informed and where there is insufficient evidence, expert informed. It is not intended to replace the clinician's clinical reasoning skills and interprofessional collaboration. Mobilization, for the purposes of this document, has been defined as "To work towards the functional task of locomotion"

WHAT TO ASSESS

The chart
- Medical history.
- Premorbid level of function (e.g., mobility aids), activity and exercise response.
- Primary diagnosis.
- Medications.
- Investigations, lab work (e.g., Hgb, RBC, Blood sugar, ECG, fluid/electrolytes).
- Risk factors and lifestyle conditions.
- Physician orders re specific restrictions on mobilization.

The patient , family and team member
- Multisystem review (e.g., cognition, respiratory, cardiac, musculoskeletal & neuro systems)
- Level of cooperation.
- Ask patient what he/she currently feels about mobilization concerns and readiness.
- Consider the impact of the illness or medical procedures & medications on the patient's mobility (e.g., weakness from disuse, incision, trauma, pain, equipment needs, e.g., walker).
- Coordinate with team members the timing of treatment with medication, availability of equipment and of personnel to optimize effectiveness.

WHEN TO CONSIDER NOT MOBILIZING[1-8]

**Please note: the cited values are not absolute criteria for withholding mobilization but are within the range of concern that could benefit from team discussion*

Cardiovascular status
- ***Mean arterial pressure***: <65[1,3] or >110[3].
- ***BP:*** A drop in systolic pressure (>20 mm Hg) or below pre-exercise level **OR** a disproportionate rise i.e., >200 mm Hg for systolic or >110 mm Hg for diastolic[4].
- ***HR:*** <40[3] or >130[3,5]; requiring temporary pacer.
- ***Hemodynamic:*** Administration of a new pressor e.g., inotropes agent[1]; two or more pressor or frequent increase[6]; uncontrolled systemic hypertension; active bleeding.[3,5]
- ***Acute or unstable cardiac status:*** New MI[1]; dysrhythmia requiring new medications[1]; active cardiac ischemia[3]; unstable rhythm[6]; intra aortic balloon.[8]
- ***Pulmonary embolus:*** Discussion with physician required to determine suitability.
- ***Deep venous thrombosis***: May mobilize as tolerated immediately after low molecular weight heparin (e.g., enoxaparin (lovenox®), dalteparin (fragmin®), tinzaparin (innohep®), nadroparin (fraxiparine®)) is given. If patient is on any other form of anticoagulation (e.g., IV heparin) please check mobility orders with the physician. Monitor patient for changes in pain, swelling, colour and sudden shortness of breath.[6]

Respiratory Status
- ***SpO_2:*** <88%[1,3] or undetermined cyanosis.
- ***RR:*** <5 or >40[3].
- ***F_iO_2:*** >60%[6].
- ***Ventilator issues:*** Decreased ventilatory support that could precipitate fatigue or increased ventilatory support.
- Ventilator asynchrony[3]; unsecure airway[3]; pressure control ventilation[6]; uncontrolled airway irritability.
- ***Uncontrolled asthma.***

Neurological status
- ***Patient status:*** Severe agitation, distress, or combative[2,3]; not able to understand instructions thus risking patient or therapist safety.
- ***ICP:*** Increased[3] i.e., >20 mm Hg, however, ICP needs to be considered in conjunction with cerebral compliance.
- Uncleared, unstable/non fixated spinal cord injury[8] or head injury.

Other
- Intermittent hemodialysis[3].
- Unstable fracture.
- Excessive muscle soreness or fatigue that is residual from last exercise or activity session.
- Other contraindications specific to a given setting/unit.

WHAT TO MONITOR DURING MOBILIZATION

Subjective: Dizziness, vertigo, shortness of breath, fatigue, nausea, pain *consider use of scales e.g., Borg scale of perceived exertion.
Objective: Cognition, balance, perspiration, cyanosis, heart rate, oxygen saturation, respiratory rate and blood pressure and all other factors relevant to patient and mobility task, for example, cardiac rhythm in those patients when ECG is essential during mobilization.

HOW TO MOBILIZE AND PROGRESS[7]

Step 1 Prepare
- Note obstacles or challenges related to the patient and environment and plan appropriately (e.g., set up equipment – chairs, transfer belt, mobility aids, length of leads/lines).
- Determine whether the benefits outweigh the risk.
- Ensure pre-medication as indicated (analgesia, bronchodilators, oxygen).
- Obtain baseline vital signs (heart rate, blood pressure, oxygen saturation).
- Have objective end-points such as limits of blood pressure, heart rate, oxygen saturation and level of exertion pre-determined before mobilization.

Step 2 Safety first
- Use proper body mechanics during transfer and allow gradual change from lying to upright position. Encourage circulation exercises i.e., foot and ankle, knee flexion/extension before commencing more demanding mobilization procedures.
- If postural hypotension is suspected, monitor BP and ask patient about lightheadedness at each phase of the mobilization i.e., sitting on edge of bed, standing, walking a few paces.

Step 3 When to quit while you are still ahead
- Monitor closely. Watch for signs of fatigue, pain, diaphoresis and intolerance during activity. Frequently ask patient how he/she feels.
- Evaluate patient's status at each progression to determine whether to continue or stop.

Step 4 Monitor and progress
- Determine the limiting factor of the mobilization and any undesirable response(s).
- Use objective outcome measures to monitor progress e.g., ease of transfer, sitting duration, walking distance, HR, RR, oxygen saturation, Borg scales, and pain scales.
- After mobilization, monitor patient until vital signs have returned to pre-activity level.

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SAFEMOB tool

(Available at: https://physicaltherapy.med.ubc.ca/physical-therapy-knowledge-broker/safemob-project/)

HOW TO PROGRESS[1,3,8-13] *Continue to monitor vitals to guide progression*				
LEVEL (Morris[1])	LEVEL I →	LEVEL II →	LEVEL III →	LEVEL IV
TARGET LEVEL OF CONSCIOUS (RASS)[14]	RASS -5 to -2 →	RASS -2 to -1 →	RASS -1 to +1 →	RASS -1 to +1
STRENGTH CRITERIA FOR ENTERING THIS LEVEL			Able to move arm vs. gravity.	Able to move arm and leg vs. gravity.
TURNING AND BED MOBILITY	Q2H Patient to assist as able.	Q2H Same as Level I, plus: • Scooting/bridging • Supine ↔ sitting.	Q2H Gradual withdrawal of assistance. Initiation of training to promote patient's independence.	Q2H Focus on training to promote patient's independence.
POSITIONING AND DEVICES	Keep HOB >30o. Apply splints, other positioning devices as per OT/PT instructions. Focusing on preventing pressure ulcers, especially on heels and sacrum.	Same as Level I.	Same as Level I. Assess for seating needs.	Same as Level III.
EXERCISE PROGRAM	PROM ex to incorporate into patient care e.g., during washing, turns.	Encourage pt assist with ROM during patient care e.g., during washing, turns.	Same as Level II with more active involvement.	Same as Level III.
		Consider inclusion of: • Breathing exercises. • Stretching exercises. • Balance/coordination exercises for head, neck, and trunk.	Same as Level II with more active involvement. Consider inclusion of: • Arm ergometry.	Same as Level III with more active involvement. Consider inclusion of: • Weight bearing/ weight shifting exercises.
	Additional exercise/mobilization as per physio assessment.	Same as Level I.	Same as Level I.	Same as Level I.
MOBILIZATION	HOB >45° x 30-60 minutes BID, support to achieve midline head and trunk position.	High fowlers or cardiac chair position x 30-60 minutes TID.	Assist physio with dangle on side of bed. May need ceiling lift if patient heavy. Sitting balance exercises with physio as appropriate, 5 to 10 minutes to start. Initially OD, progress to BID as patient tolerates.	If dangle and stand at bedside successful, physio assesses ability to weight shift, ability to transfer to chair. Initial time in chair 30 minutes, progress per OT/PT assessment. Initially OD, progress to BID as patient tolerates.
		Mobilization may include* tilt table, dangle or to chair with mechanical lift pm. *Use caution for patients at risk of hypotension.	As per physio assessment of patient strength, assist physio with sit to stand, walking in place; +/- walker. Patients with neuro/ortho status precluding WB require individualized mobilization prescription.	If patient able to transfer to chair, tolerates well, physio assesses ambulation, begins walking practice with appropriate aids, increasing distance and frequency as patient tolerates.

Richmond Agitation Sedation Scale (RASS)[14]:

+4	Combative; violent, immediate danger to staff
+3	Very agitated; pulls or removes tubes/lines; aggressive
+2	Agitated; frequent non-purposeful movement, fights ventilator
+1	Restless; anxious but movement not aggressive or vigorous
0	Alert and Calm
-1	Drowsy; not fully alert, sustained wakening (eye-opening/contact) to voice >10 sec
-2	Light sedation; briefly awakens with eye contact to voice < 10 sec
-3	Moderate sedation; Movement or eye opening to voice but no eye contact
-4	Deep sedation; No response to voice but movement or eye opening to physical stimulation
-5	Unarousable; No response to voice or physical stimulation

Developed by the SAFEMOB Task Force: Dr. Elizabeth Dean, Dr. Darlene Reid, Frank Chung, Simone Gruenig, Roselyn Jones, Jocelyn Ross, Maylinda Urbina, Alison Howns.

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Role of Physiotherapy

Rehabilitation

Rehabilitation – Home-based

(Cobbing S, Hanass-Hancock J, Myezwa H 2016 Home-based rehabilitation interventions for adults living with HIV: a scoping review. African Journal of ADIS Research 15(1):77-88)

Aim: Summarise and discuss the evidence related to the effectiveness of home-based rehabilitation (HBR) interventions designed specifically for PLWH.

Results: Six articles met the inclusion criteria of the study. Interventions included: walking and education programme (n=1), aerobic exercise and strengthening programmes (n=1), aerobic exercise and stretching (n=1), Home based rehabilitation with relaxation (n=1), clinic and home based rehabilitation (n=2).

The scoping review highlighted that HBR was a safe method to implement rehabilitation for PLWH and influenced physical and psychological parameters.

Conclusion: Wider range of outcome measures should be considered for inclusion in programmes e.g. functional outcome measures. Additionally cost benefit calculations of programmes should be determined.

Rehabilitation…

(Stevens ME & Nixon SA 2016 Research on rehabilitation interventions for adults living with HIV: a scoping review. International Journal of Rehabilitation Research. 39(2):106-116, June 2016).

Aim: To investigate the extent, range, and nature of research on rehabilitation interventions for adults living with HIV.

Results: Thirty-three articles were included. There were 27 different rehabilitation interventions delivered by 18 professions. The studies were completed in four different countries. Most studies were published in 2008. A randomized-controlled trial was the most used method.

28 studies addressed impairments; six studies addressed activity limitations; and 14 studies addressed participation restrictions.

Rehabilitation…

Table 3 Intervention type and number of interventions

Intervention type
Acupuncture
Aerobic exercise and/or progressive resistance training
AIDS bereavement intervention
Chronic exercise and strength training
Cognitive stimulation program
Coping intervention
Distant healing
Enabling self-determination program
Exercise
Joint mobilization, soft tissue mobilization, microcurrent, stretching, and self-management instruction
Myofascial release, pectoral traction, rib raising, thoracic pump, and abdominal pump
Occupational therapy
Physiotherapy management of HIV-associated Kaposi's sarcoma
Vocational intervention
Voluntary grocery shopper/occupational therapy

Conclusion:

More research on rehabilitation interventions is needed in sub-Saharan Africa and other low-income and middle-income countries to ensure that these individuals are receiving the best possible care.

Rehabilitation Resource

How Rehabilitation Can Help People Living with HIV in sub-Saharan Africa: An Evidence-Informed Tool for Rehab Providers

Available at: http://ssa.hivandrehab.ca/

Conclusion

- Enhancing movement, physical activity and exercise in the different sectors where physiotherapists work are beneficial to improve the health and wellness of PLWH.

- Due to the symptoms that individuals can complain of e.g. pain, shortness of breath, fatigue these should be monitored before, during and after activity to ensure individuals are coping with the prescribed movement strategies.

Conclusion…

- Physiotherapists should practice with evidence-based practice principles and the use of outcome measures during management is important to illustrate the effect of implemented intervention.

- HIV is a chronic condition and thus individuals should be taught self-management strategies to manage their condition during periods of wellness during the absence of disability.

Let's move people from not just surviving but thriving

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