Transcript for PROMINENCE - Movement, Mobilisation & Ergonomic Considerations for People Living with Obesity (PwO) - Physiotherapy Perspective

Slide 1:

Welcome to this presentation. I'm Caitriona Cunningham from University College Dublin, Ireland and this presentation has been developed by myself and Theresa Flynn, who is a specialist physiotherapist in ergonomics at St Vincent's University Hospital in Dublin, Ireland.

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The content of this presentation is not exhaustive. Physiotherapy learners will need to engage with relevant content elsewhere in their physiotherapy programme. Additionally, physiotherapists may decide to embark on further education and training to specialise in ergonomics or bariatric physiotherapy.

This presentation will give an overview of key moving, handling, mobilisation and ergonomic issues as they relate to people with obesity with the goal of highlighting key implications for physiotherapy practice. Some case studies will be shared as the basis for a learning activity.

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Obesity as a disease may lead to movement impairments and it presents unique mobility and ergonomic challenges, which will vary dependent on the obesity stage. The primary reason for referral of a PwO to physiotherapy will vary and the goal of physiotherapy will differ.

For example, a person may present with a musculoskeletal injury affecting their ability to walk. The person with obesity may be presenting to an outpatient department, or a PwO may present with cardiorespiratory disease, leading to hospital admission and the person may have a significant period of bedrest with reduced mobility.

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The Edmonton Obesity Staging System is presented as a reminder of the differing stages of obesity.

In stages 3 & 4, obesity, mobility, movement and handling challenges are likely greater. Hospitalisation of the person with stage 3 or 4 obesity for an acute illness or trauma can present significant challenges in terms of providing equitable and effective healthcare.

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Ergonomics is the scientific discipline of designing workplaces, products and systems to fit the physical and cognitive capabilities of the users, maximising efficiency and safety while minimising injury, strain and fatigue. It is also referred to as human factors.

Bariatric ergonomics refers to ergonomics as it relates to a person with obesity across settings. It's about understanding interactions between the PwO, other people and other elements of a system.

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People with obesity will engage with health services in multiple settings. For Physiotherapy common settings include:

- out-patient settings,
- community settings, i.e., gym, workplace, sports settings,
- acute hospitals,
- nursing homes,
- person's own home.

Each setting will have its own ergonomic considerations for the person with obesity, which may impact their movement and function.

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Having an appropriate physical environment, with appropriate equipment is critical to ensuring non-stigmatising, evidence-based, effective healthcare for people living with obesity.

Healthcare organisations may not be adequately designed or equipped, leading to staff taking unacceptable risks or patients at risk of not receiving the care they need.

Pre-planning with universal design of healthcare spaces and equipment is essential for safe delivery of therapy for all, including people with obesity.

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This diagram outlines some of the settings where a PwO may engage with healthcare and gives an overview of the bariatric risk factors to be considered in each of these health care settings.

Some risk factors are related to the PwO – their shape, the stage of obesity, the mobility, their skin condition. Others are related to spaces, equipment, and the need for transport across settings, including ambulance, outpatients, emergency room, hospital ward.

The diagram helps illustrate the planning required for the journey of a PwO through a healthcare system in relation to movement and handling.

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Physiotherapists have unique expertise to contribute to bariatric ergonomics in healthcare and to act as advocates for the PwO.

This includes providing solutions for safe, dignified mobility and transfers for the PwO, to enable effective healthcare and optimise physical function of the PwO. For example: planning, moving, handling, mobilisation pathways in healthcare systems for people with obesity; procuring bariatric equipment; providing guidance and movement and therapeutic handling for individuals, their family and carers; and balancing manual handling risks for staff with the healthcare needs of the PwO.

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Physiotherapists may also play a key role in occupational health as it relates to healthcare workers providing care and rehabilitation for the PwO.

The International Federation of Physiotherapists in Occupational Health and Ergonomics (IFPOHE) published guidelines in 2024.

Occupational health physiotherapy services generally fit into three broad

categories:
- promoting work ability and workplace well-being,
- preventing work disability,
- managing work disability.

Examples of this would include: promoting health and safety of healthcare workers; reducing the risks of occupational injury in healthcare environment, preventing an occupational injury - for example reducing the risk of musculoskeletal injury during manual handling tasks with the PwO.

Also, reducing work disability of healthcare staff with health issues through finding ergonomic solutions when providing care and rehabilitation for all patients, and this includes people with obesity.

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Physiotherapists may also provide the training in movement, mobilisation and handling as it relates to the PwO for other healthcare staff and also carers and family members.
This may occur as part of daily work routine, working with other healthcare workers in relation to a specific patient, e.g., a patient with obesity or specialist physiotherapists may deliver dedicated training programmes regarding moving, handling and ergonomics or specialist training in bariatric ergonomics.

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Risk factors for obesity are complex with psychological well-being a particular concern. Psychological effects of obesity can be deeply intertwined with emotional and behavioural factors, where psychological vulnerabilities may predispose individuals to obesity and vice versa. Additionally having obesity can lead to lots of psychological issues like low self-esteem, low self-efficacy, feelings of self-blame and embarrassment.

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Episodes of care and rehab, which involve moving, handling and mobilisation are potentially high-risk situations for the PwO feeling stigmatised by healthcare professionals. For example, throw away remarks regarding a lack of suitable equipment or clothing, a lack

of space or struggling using equipment that is not appropriately designed can lead to feelings of stigmatisation.

Physiotherapists need to be aware of their own internal bias and their language in general conversation, as well as in direct delivery of care. People-first language is important.

Please note that the PROMINENCE Open Education Resource has a Section 2 (Weight Bias and Stigma), dedicated to reducing bias and stigma and promoting psychological well-being of PwO when engaging with healthcare professionals.

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It is important that physiotherapists encourage and promote independence and are autonomy supportive and aim to empower the PwO in a supportive environment and this applies to moving, handling and mobilisation.

The physiotherapy ethos is to optimise physical function of all, irrespective of ability or disease.

'Therapeutic handling' definition therefore refers to facilitating and empowering a person to actively engage in movement to the best of their ability, rather than simply moving and handling.

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The Chartered Society of Physiotherapy UK advocates that a manual handling (MH) risk assessment should be included in all clinical assessments for all therapeutic interventions. The key steps are:

- Assess the patient clinically.
- Consider realistic treatment goals and functional outcomes with the patient.
- Consider: does the proposed treatment involve hazardous manual handling?
- Decide if the hazardous manual handling can reasonably be avoided?
- If manual handling cannot be avoided, complete a risk assessment, rate the risk and consider the benefits of treatment which requires manual handling versus the risk of proceeding with the manual handling task.
- Identify solutions to reduce risk. If satisfied that the risk has been

reduced, proceed and if not, consider competence to proceed and/or reconsider treatment goals.

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Physiotherapy movement or mobility assessment for a patient in bed.

First establish baseline mobility, identify the stage of obesity on the EOSS.
Assess how weight is distributed, consider how this will affect movement.
Assess how the patient turns in bed, moves up the bed, and sits over the side of the bed and goes from sit to stand.
Assess how their walking is.
Ask: what are the high-risk components to treatment?
Decide on how you might manage this.
Ask if the person is using any specific equipment at home?
Consider how you will access the appropriate equipment to deliver appropriate treatment?

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What additional issues need to be considered for the PwO?
- What number of staff are needed to safely assist the patient?
- Consider the safe workload of existing equipment – the beds, the chairs, walking frames, crutches.

Does the bed go low enough to return to sitting without lifting the patient if they fatigue?
What, if any, are the alternative options for sit to stand?
Could a hoist be used to transfer to chair or could a riser recliner chair be used and attempt to stand from there?
Is it better for the person to come to the gym and then can use floor mounted parallel bars?
Perhaps a Viking hoist, suitably sized, is required?
Is there an option or a requirement to hire bariatric equipment?

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Other issues to be considered include:
- How to create a dignified environment.
- Developing shared achievable goals with the PwO.

The person’s tissue viability and skin condition need to be considered and how these might affect mobility.
Footwear needs to be considered.
Also, is the person at risk of a fall?
Physiotherapist’s problem-solving skills are critical – and thinking laterally to resolve complex issues is often required.

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Weight distribution is an important consideration. Understanding body shape gives a clearer focus on the issues that may be limiting the patient's mobility and independence and it may help develop more effective treatment programmes.

Some examples:

Weight may be carried high; the abdomen may be rigid due to fluid retention. This could limit trunk flexion, make it difficult to lie flat, and there may be shortness of breath. If there is significant weight around the neck, consider swallowing and respiratory issues. The person may prefer to get out of the bed using a sideline rather than sitting forward in bed. They may prefer a reclined chair.

Another example - weight carried high, but the abdomen has a mobile pannus (known as an apron) hanging where excess skin and fat begin to hang down from the abdomen. This can obstruct lymphatic drainage; the patient may need a lower bed height to have the feet flat on the floor and they may need to use a rocking motion to stand. There’s a high risk of cellulitis and limb oedema here.

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If weight is stored around the waist, this again can limit forward flexion. Weight carried below the waist may lead tissue to bulk between the thighs. Hip and knee flexion may be limited and the person may tend to sit with knees extended. Getting out of bed using a long sit or roll may be best.

Weight carried below the waist with additional tissue bulk on the hips and outside of thighs. If the legs are abducted, rolling may be difficult, the person may sit with their legs extended and abducted, and they may need to get out of bed using a long sit.

If weight is stored around the hips and gluteals, there may be difficulty with personal hygiene. It can be an obstruction to lymphatic drainage. It may lead to oedema in the legs, with a risk of cellulitis and leg ulcers.

If the weight is more proportionally distributed in relation to the person's height, the patient may simply need a longer bed, higher back rest on the chair as well as higher safe working load (SWL).

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Developing a patient handling care plan is critical. If in the acute care setting, the physiotherapist also needs to consider discharge planning. Immediately, liaison with community services, and setting expectations around discharge is important, so that plans can be put in place. Again, we go back to body shape to help choose options that maximise bed mobility.

Consider side rails, bariatric overhead handling poles, and sliding sheets to aid bed mobility.
Choose a bariatric bed.
In general, a low bariatric bed with retractable sides is the best option.
Select a chair, commode and wheelchair, if required.
Bariatric hoist may need to be identified.
A HoverJack inflatable air mattress is the main option if the person needs to be lifted off the floor.

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Having appropriate mobility devices and moving and lifting equipment when required for the PwO is critical. Such equipment is commonly known as bariatric equipment.
Safe Working Load (SWL), sometimes referred to as Normal Working Load, or NWL, is defined as the maximum weight that a piece of lifting equipment - such as a crane, a hook, or a sling - is designed to lift, suspend or lower safely without risking failure.
A Safe Working Load also exists for equipment such as crutches, walking frames, parallel bars, transfer boards, wheelchairs and portable steps and beds.

Bariatric equipment generally refers to equipment that is capable of accommodating an excess of 150 kg, but this will vary.

For hospital beds, it is useful to consider both the Safe Working Load and then the Safe Patient Load. The Safe Patient Load refers to the actual weight of the patient it can accommodate.

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This slide just gives us some examples of bed types. Physiotherapists may need to work closely with occupational therapists and equipment companies in making decisions, and obviously will need to work with the PwO, and possibly family members and carers, in making decisions.

Slide 24

Here are some examples of chair choices, and again there are lots of factors to be considered in making decisions.

Slide 25

Here is just one example. It's a bariatric high dependency reclining chair. This chair has an additional feature of a lateral transfer system that reduces the effort in conducting a supine transfer from bed to chair.

Slide 26

Here we see a HoverMatt transfer being conducted. When the mat is inflated the person is raised on a cushion of air, thus decreasing the effort involved in the lateral transfer from one flat surface to another.

Slide 27

Here are some images of hoist that may be used for patient transfers.

Slide 28

Finally, two case studies are presented which may be used for an in-class learning activity. These cases can act as the basis for discussion and/or demonstration of practical skills for mobility assessment, moving and handling and mobilisation.

Additionally, some key resources are presented in the final slides.
Thank you for listening.