UPPScAle Manual

UPPScAle
Undergraduate Physiotherapy
Pain Science Augmentation Project

European
Commission

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Introduction

The UPPScAle project aims to innovate, improve and standardise undergraduate physiotherapy pain science curricula.

This manual contains lecture summaries, learning outcomes mapped to the European Pain Federation EFIC core curriculum for Bachelor / Pre-registration Physiotherapy programmes EFIC curriculum, and reference lists to accompany the lectures on the Open Education Resource.

Module 1

Pain Science

Module 1: Lecture 1. Pain mechanisms and phenotypes

Introduction

This lecture presents and discusses models of pain set against the background of its variable clinical presentations. A mechanisms-based approach towards the classification of pain as a way to understand and explain such variability will be presented. Participants will acquire an understanding of how they might identify mechanisms-based phenotypes in individual patients and how these may influence patients' assessment, treatment, and prognosis.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

By the end of this session, participants should have an understanding of:

1. Models of pain (1.1).

2. The potential complexity of clinical presentations of pain (1.3).

3. Mechanisms-based classifications of pain (2.1.2).

4. The symptoms and signs associated with mechanisms-based classifications of pain (2.1.2).

5. Their implications for treatment (2.1.3).

Preparation

Participants should prepare by i) having spent some time thinking about how they personally conceptualise, assess, and treat patients' pain, ii) reflecting on some recent notable/perplexing/interesting clinical presentations of pain, and iii) reading this one article; (Towards a mechanisms-based classification of pain in musculoskeletal physiotherapy? Physical Therapy Reviews: Vol 13, No 1 (tandfonline.com).

Content

The class will provide participants with a contemporary perspective on mechanisms-based classification of pain via an interactive lecture. As respected, knowledgeable, and experienced healthcare professionals, participants will be encouraged to actively contribute to the session by sharing their own knowledge and experiences and participating in a 'Q&A' and reflective moments.

Follow up / suggestions for processing and practice

Consolidating the knowledge developed in this session will provide participants with real-world, clinically applicable knowledge capable of immediately influencing clinical practice.

Key academic references are cited and which, once read and considered, will support participants to further develop their pain-related knowledge and expertise. Participants will

be encouraged to reflect on the extent to which mechanisms-based classifications of pain could apply to their own work settings.

Reference material

Smart KM et al. Towards a mechanisms-based classification of pain in musculoskeletal physiotherapy? Physical Therapy Reviews 2008; 13: 1-10. doi: https://doi.org/10.1179/174328808X251984

Shraim MA et al. Features and methods to discriminate between mechanism-based categories of pain experienced in the musculoskeletal system: a Delphi expert consensus study. Pain 2022; Jan 19. DOI: 10.1097/j.pain.0000000000002577. Epub ahead of print.

Smart KM, Blake C, Staines A, Doody C. The discriminative validity of 'nociceptive', 'peripheral neuropathic' and 'central sensitisation' as mechanisms-based classifications of musculoskeletal pain. Clinical Journal of Pain 2011; 27: 655-63. DOI: 10.1097/AJP.0b013e318215f16a

Smart KM, Blake C, Staines A, Doody C. Self-reported pain severity, quality of life, disability, anxiety and depression in patients classified with 'nociceptive', 'peripheral neuropathic' and 'central sensitisation' pain. The discriminant validity of mechanisms-based classifications of low back (± leg) pain. Manual Therapy 2012; 17: 119-25. DOI: 10.1016/j.math.2011.10.002

Beales D et al. Masterclass: A pragmatic approach to pain sensitivity in people with musculoskeletal disorders and implications for clinical management for musculoskeletal clinicians. Musculoskeletal Science and Practice 2021; 51: 10221. DOI: 10.1016/j.msksp.2020.102221

Smart KM, Blake C, Staines A, Thacker M, Doody C. Mechanisms-based classifications of musculoskeletal pain: Part 3 of 3: Symptoms and signs of 'nociceptive' pain in patients with low back (± leg) pain. Manual Therapy 2012; 17: 352-7. DOI: 10.1016/j.math.2012.03.002

Finnerup NB et al. Neuropathic Pain: From Mechanisms to Treatment. Physiological Reviews 2021; 101:259-301. DOI: 10.1152/physrev.00045.2019

Fitzcharles MA et al. Nociplastic pain: towards an understanding of prevalent pain conditions. Lancet. 202; 397: 2098-110. DOI: 10.1016/S0140-6736(21)00392-5

Module 1: Lecture 2 & 3. Pain driven arthrogenic muscle inhibition-mechanisms, part 1 and 2

Introduction

Skeletal muscle weakness is an inevitable negative effect of injury, disease, or surgery of joints. Key factors of muscle deconditioning are 1) muscle atrophy and 2) arthrogenic muscle inhibition (AMI); however, their interaction and underlying mechanisms are not fully understood. The AMI originating from either knee or hip joint has been demonstrated to predominantly affect Quadriceps Femoris (QF) muscle. The role of AMI in development of weakness in various muscle groups and joint conditions remains equivocal. Physiotherapeutic modalities work through various physiological pathways; their efficiency thus depends on the primary cause of muscle weakness in each individual. In cases where AMI is predominantly caused by reflex neural inhibition, peripheral neuromuscular electrical stimulation used in conjunction with voluntary contraction and biofeedback has proven efficient. The pain-driven inhibitory neural inflow from the affected joint can be attenuated prior to or during muscle activation by application of cryotherapy or TENS over the affected joint. If AMI is primarily driven by inhibition of upper motor neurons, transcranial magnetic stimulation of motor cortex has been shown effective, however technical limitations hinder its more widespread clinical use. To tackle disuse muscle atrophy, the range of effective modalities is substantially narrowed due to AMI and limited tolerance of the affected joint for mechanical loading. Apart from neuromuscular electrical stimulation, muscle vibration exercise and low-load resistance exercise with blood flow restriction in active muscles (ischemic exercise) may have potential for counteracting development of disuse atrophy and tackle AMI.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

1. Critically discuss indications, efficacy, complications, management, and patient follow-up for treatment modalities related to pain physiotherapy (3.5.1).

2. Discuss appropriate follow up and proper outcome measurement for patients and how these can be implemented (2.2).

Preparation

Participants should read the systematic review of Norte et al (2021) to get an overview of the theme.

Content

A brief presentation of the contemporary concept of AMI treatment and a patient case with severe form of quadriceps femoris AMI will be followed by practical demonstrations of several evidence-based disinhibitory and muscle conditioning techniques and instrumental patient assessment used by Laboratory of Physiotherapy at Faculty of Health Sciences UL.

Follow up / suggestions for processing and practice

In-depth readings of reference material and introduction of the concept of AMI treatment to undergraduate study curricula.

Reference material

Buckthorpe M, La Rosa G, Villa FD. Restoring knee extensor strength after anterior cruciate ligament reconstruction: a clinical commentary. Int J Sports Phys Ther. 2019 Feb;14(1):159-172. PMID: 30746302; PMCID: PMC6350662.

Kacin A, Drobnič M, Marš T, Miš K, Petrič M, Weber D, Tomc Žargi T, Martinčič D, Pirkmajer S. Functional and molecular adaptations of quadriceps and hamstring muscles to blood flow restricted training in patients with ACL rupture. Scand J Med Sci Sports. 2021 Aug;31(8):1636-1646. doi: 10.1111/sms.13968. Epub 2021 Apr 26. PMID: 33837592.

Lepley AS, Lepley LK. Mechanisms of Arthrogenic Muscle Inhibition. J Sport Rehabil. 2021 Sep 1;31(6):707-716. doi: 10.1123/jsr.2020-0479. PMID: 34470911.

Norte G, Rush J, Sherman D. Arthrogenic Muscle Inhibition: Best Evidence, Mechanisms, and Theory for Treating the Unseen in Clinical Rehabilitation. J Sport Rehabil. 2021 Dec 9;31(6):717-735. doi: 10.1123/jsr.2021-0139. PMID: 34883466.

Sonnery-Cottet B, Saithna A, Quelard B, Daggett M, Borade A, Ouanezar H, Thaunat M, Blakeney WG. Arthrogenic muscle inhibition after ACL reconstruction: a scoping review of the efficacy of interventions. Br J Sports Med. 2019 Mar;53(5):289-298. doi: 10.1136/bjsports-2017-098401. Epub 2018 Sep 7. Erratum in: Br J Sports Med. 2019 Dec;53(23):e8. PMID: 30194224; PMCID: PMC6579490.

Module 2

Pain Assessment

Module 2: Lecture 1. Brain-changes in (chronic) pain

Introduction

Brain changes, as the organization of the primary somatosensor cortex (S1) and the primary motor cortex (M1), are seen in people with (persistent) pain. Measurement tools and interventions are suggested to assess and target pain and these changes. For example, applying the Quantitative Sensory Testing (QST) battery in clinical practice provides the opportunity to quantify functions of the somatosensory nervous system. It allows to further investigate the aspects of the experienced sensation, as pain, indicated by the patient. A few studies investigated the possibilities of measuring these tests in clinical practice. Besides the QST battery, also tests to assess the sensoric-discrimination dimension are investigated for in clinic. Moreover, sensoric-discrimination interventions are suggested for sensoric mapping and thereby target the pain and restrictions.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

By the end of this session, participants should have an understanding of:
1. The theoretical constructs of pain with brain changes and applies these in a case with (persistent) pain (1.3.1).

2. The participant performs the tests to quantify the somatosensory system (1.1.5).

Preparation

1. Read the recommended literature.
2. Prepare a case where possible brain changes are present and try to highlight this.

Content

Theoretical approach: Brain changes (somatosensory and motor cortex) will be linked to (persistent) pain and possible indicated feelings/experiences of the patient.

Practical approach: Both diagnostic and intervention tools to assess, evaluate and target pain and brain changes are demonstrated and practiced.

Follow up / suggestions for processing and practice

After specifying the indication of the patient regarding experiencing differences in sensations, pain and restrictions, specific tools can be advised and conducted to assess and target these experiences.

The advice is to:
1. Theoretically explain the construct to be measured and target.
2. Practically teach:
    - tests from the QST battery (Pressure Pain Threshold, Temporal Summation, mechanical allodynia) and sensoric discrimination (Two Point Discrimination Threshold, Graphesthesia test).

    - interventions to target experienced differences in sensations (discrimination

therapy, sensoric mapping), combine sensoric function with motor function.

Additional literature:

Van Griensven H, Schmid A, Trendafilova T, Low M. Central sensitization in musculoskeletal pain: Lost in translation? J Orthop Sports Phys Ther. 2020;50(11):592–6. DOI: 10.2519/jospt.2020.0610

Meier ML, Vrana A, Schweinhardt P. Low Back Pain: The Potential Contribution of Supraspinal Motor Control and Proprioception. Vol. 25, Neuroscientist. SAGE Publications Inc.; 2019. p. 583–96. DOI: 10.1177/1073858418809074

Zhu GC, Böttger K, Slater H, Cook C, Farrell SF, Hailey L, et al. Concurrent validity of a low-cost and time-efficient clinical sensory test battery to evaluate somatosensory dysfunction. Eur J Pain (United Kingdom). 2019;23(10):1826–38. DOI: 10.1002/ejp.1456

Tsao H, Galea MP, Hodges PW. Driving plasticity in the motor cortex in recurrent low back pain. Eur J Pain. 2010 Sep;14(8):832–9. DOI: 10.1016/j.ejpain.2010.01.001

Louw A, Farrell K, Landers M, Barclay M, Goodman E, Gillund J, et al. The effect of manual therapy and neuroplasticity education on chronic low back pain: a randomized clinical trial. J Man Manip Ther [Internet]. 2017;25(5):227–34. Available from: http://dx.doi.org/10.1080/10669817.2016.1231860

Goossens N, Janssens L, Brumagne S. Changes in the Organization of the Secondary Somatosensory Cortex while Processing Lumbar Proprioception and the Relationship with Sensorimotor Control in Low Back Pain. Clin J Pain. 2019;35(5):394–406. DOI: 10.1097/AJP.0000000000000692

Video's developed by the Pain Unit.
Video's developed by Sabrine (TPD, graphaesthesia)

Module 2: Lecture 2. The ICF as a clinical reasoning model

Introduction

The International Classification of Functioning, Disability and Health (ICF) is a framework for describing and organizing information on functioning and disability. It provides a standard language and a conceptual basis for the definition and measurement of health and disability. It represents a paradigm shift from the linear biomedical ICDIH model by Nagi to a biopsychosocial model that displays elements in mutual affecting relationships, thus surpassing the traditional understanding of causality. Students can be taught to use the ICF model in their clinical reasoning to navigate these complex interrelationships and use these insights to determine a treatment plan.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

By the end of this session, participants should be able to:
1. Understand and demonstrate ability to undertake a comprehensive biopsychosocial assessment of the patient across the life span. (2.1.1).

2. Understand and demonstrate an understanding of the rationale behind basic biopsychosocial assessments. (2.1.1).

3. Understand and demonstrate critical selection of appropriate valid and reliable physical and psychological assessment and outcome measures across International Classification of Functioning, Disability and Health (ICF) domains. (2.2).

4. Develop, justify and negotiate with the patient an individualised management plan and options, based on evidence and clinical reasoning and within the context in which the patient's experience of pain occurs. (3.1.1).

Preparation

Participants should familiarize themselves with the ICF model by watching part 1 : https://www.youtube.com/watch?v=uoEIc4wBaIo&ab_channel=PranayJindal (there are 5 parts and they are all fun to watch)
Bring a patient case to class – you are going to use this case in the classroom and map the various aspects of this patient to the ICF model. Get inspired by using the example EFIC case report: https://europeanpainfederation.org/wp-content/uploads/2018/10/2017.-EFIC-EDPP-Clinical-Case-Report-Guidelines-and-Example.pdf

Content

After a short introduction of the ICF and a clinical case example in the ICF, participants will map their own case onto the ICF and draw hypotheses about the relationships between the ICF domains. They should reflect on missing items, if any. Each participant will then be paired with another participant to compare notes and explain their clinical reasoning process using reflective questions outlined in the lecture.

Follow up / suggestions for processing and practice

The knowledge and skills developed in this class will give participants a framework for their

clinical reasoning and decision-making, which supports their functioning in clinical practice, consistency of documentation and communication between clinical tutors/academics and students as well as student and client.

Reference material

World Health Organisation, Internal Classification of Functioning Disability and Health.

Available at: https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health

Heather L Atkinson, Kim Nixon-Cave: A tool for clinical reasoning and reflection using the international classification of functioning, disability and health (ICF) framework and patient management model: DOI: 10.2522/ptj.20090226
Ruth L Chimenti , Laura A Frey-Law, Kathleen A Sluka . A Mechanism-Based Approach to Physical Therapist Management of Pain. DOI: 10.1093/ptj/pzy030

Module 2: Lecture 3. Measurement in physiotherapy clinical care

Introduction

A patient-reported outcome (PRO) is “any report of the status of a patient's health condition that comes directly from the patient without interpretation of the patient's response by a clinician or anyone else” (FDA 2009). PROs provide patients’ perspectives regarding treatment benefit and harm, directly measure treatment benefit and harm beyond survival, major morbid events and biomarkers, and are often the outcomes of most importance to patients and families.PROs are essential when externally observable patient-important outcomes are rare or unavailable. They provide the only reasonable strategy for evaluating treatment impact of many conditions including pain syndromes, fatigue, disorders such as irritable bowel syndrome, sexual dysfunction, and emotional function and adverse effects such as nausea and anxiety for which physiological measurements are limited or unavailable.A common term used in the health status measurement literature is **construct**. Construct refers to what Patient Reported Outcome Measures (PROMS) are trying to measure, the concept that defines the PROM such as pain, physical function or depressive mood.PROMS can be used for assessment, evaluation of treatment success or for prognosis / risk assessment.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

1. Demonstrate the ability to choose appropriate and validated tools to assess and monitor treatment and modify as necessary across the life span and in specific populations (infants, children, adolescents, older adults, patients from linguistically or culturally diverse backgrounds, patients who are cognitively impaired, patients with behavioural issues)(2.2).

Preparation

Participants should go to the COSMIN website https://www.cosmin.nl/ and review the COSMIN Taxonomy of Measurement Properties.

Content

In this lecture I will use a low back pain case to illustrate the various purposes of using PROMS and the steps clinicians can take to choose the right instrument for the right purpose, looking at their measurement properties.

Follow up / suggestions for processing and practice

Review the PROMS available in your country that are applicable to physiotherapy practice. Do you have a sense of their measurement properties?

Reference material

https://www.cosmin.nl/

Köke AJA, Bastiaenen CHG, Kleijnen J, Telgenkamp I, Smeets RJEM, Beckers LWME. Measurement properties of patient-reported outcome measures used in rehabilitation of

adults with chronic musculoskeletal pain: A mapping review. J Back Musculoskelet Rehabil. 2022 Dec 8. doi: 10.3233/BMR-220133. Epub ahead of print. PMID: 36565099.

Pulles ANTD, Köke AJA, Strackke RP, Smeets RJEM. The responsiveness and interpretability of psychosocial patient-reported outcome measures in chronic musculoskeletal pain rehabilitation. Eur J Pain. 2020 Jan;24(1):134-144. doi: 10.1002/ejp.1470. Epub 2019 Sep 2. PMID: 31408556.

Volker G, van Vree F, Wolterbeek R, van Gestel M, Smeets R, Köke A, Vlieland TV. Long-Term Outcomes of Multidisciplinary Rehabilitation for Chronic Musculoskeletal Pain. Musculoskeletal Care. 2017 Mar;15(1):59-68. doi: 10.1002/msc.1141. Epub 2016 Apr 21. PMID: 27098842.

Köke AJ, Smeets RJ, Schreurs KM, van Baalen B, de Haan P, Remerie SC, Schiphorst Preuper HR, Reneman MF. Dutch Dataset Pain Rehabilitation in daily practice: Content, patient characteristics and reference data. Eur J Pain. 2017 Mar;21(3):434-444. doi: 10.1002/ejp.937. Epub 2016 Sep 15. PMID: 27634023.

Chiarotto A, Maxwell LJ, Ostelo RW, Boers M, Tugwell P, Terwee CB. Measurement Properties of Visual Analogue Scale, Numeric Rating Scale, and Pain Severity Subscale of the Brief Pain Inventory in Patients With Low Back Pain: A Systematic Review. J Pain. 2019 Mar;20(3):245-263. doi: 10.1016/j.jpain.2018.07.009. Epub 2018 Aug 10. PMID: 30099210.

Terwee CB, Bot SD, de Boer MR, van der Windt DA, Knol DL, Dekker J, Bouter LM, de Vet HC. Quality criteria were proposed for measurement properties of health status questionnaires. J Clin Epidemiol. 2007 Jan;60(1):34-42. doi: 10.1016/j.jclinepi.2006.03.012. Epub 2006 Aug 24. PMID: 17161752.

Prinsen CAC, Mokkink LB, Bouter LM, Alonso J, Patrick DL, de Vet HCW, Terwee CB. COSMIN guideline for systematic reviews of patient-reported outcome measures. Qual Life Res. 2018 May;27(5):1147-1157. doi:

Module 2: Lecture 4. Prognostic reasoning

Introduction

Bio-psycho- social clinical reasoning is an ongoing process during the encounter with your patient. The therapist integrates thinking and decision making to be able to treat the patient 'tailored made". During this reasoning process the therapist weighs up factors that influence the ability of the patient to adapt and use his/her self-management skills. These factors are called prognostic factors. We know different ways to order prognostic factors, for example biological, psychological or social factors. Another way is predisposition factors, provoking factors and maintaining factors. Mapping these factors can help the therapist to analyse the implication of these factors on the health status of the patient. These factors can be beneficial or disadvantageous, and dependent if the kind of factor can be treated by a physical therapist. If not, referral is necessary.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

By the end of this session, participants should have an understanding of:

1. The different types of prognostic factors. (2.13, 2.14).

2. The structure of SCEBS-model to explore the different types of prognostic factors.

3. The participant will be able to analyze the implication of the prognostic factors on the health status of the patient. (2.1.4).

4. The participant will be able to analyze the implication of the prognostic factors on the ability of the patient to cope with their health status. (2.1.4).

5. The participant will be able to discuss referral options to other specialists due to risk factors in order to respect the boundaries of his/ her own profession. (2.1.6).

Preparation

Read the article of Wijma et al (2015), especially step 2-6 of the assessment.

Make a list of the factors mentioned by the authors.

Think about how you can explore those factors in a patient centered manner.

Write down what you hope to learn. Which questions are easy for you to ask and which part is more difficult?

Content

During this meeting we will practice a structured manner (SCEBS) to explore different types of prognostic factors using the ICF and bio-psycho-social model. We will use tools to support the analyzing process.

The lesson will be experienced based (learning by doing). By using the interaction between

teacher and student, methodological reflection on the experience will be part of the learning process, giving the experience a meaning during clinical reasoning.

Reference material

Wijma A.J., Wilgen van , C.P., Meeus, M. & Nijs, J. (2015) Clinical biopsychosocial physiotherapy assessment of patients with chronic pain: the first step in pain neuroscience education, Physiotherapy theory and practice, (32) 368-384.
DOI: 10.1080/09593985.2016.1194651

Module 2: Lecture 5 (i). Introduction to Phenotypes

Introduction

Increasingly, attention is being paid to personalized treatment, "precision medicine", or personalized pain treatment, as this is thought to lead to better outcomes in health care. Before implementing this approach, the characteristics of individual patients or subgroups of patients that increase or decrease the response to a specific treatment need to be identified. The challenge is to identify the measurable phenotypic characteristics of patients that are most predictive of individual variation in analgesic treatment outcomes, and the measurement tools that are best suited to evaluate these characteristics.

Informing ourselves of the knowledge, skills, and tools needed to deliver personalized treatment is a first step. Applying this knowledge, using clinical reasoning skills, to a specific clinical case is next. This is needed to hone these skills and make them robust for treating a variety of patients. Since there is no "one size fits all", the use of reflection and discussion on real case scenarios is useful. A PeerReview approach can be a helpful tool for this.

This lecture presents how chronic musculoskeletal pain is on the rise and some of the issues associated with this. It also shows the results from a longitudinal observational study which used phenotype analysis to show a novel approach towards musculoskeletal phenotypes.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

1. Demonstrate an understanding of the rationale behind basic biopsychosocial Assessments (2.1.1).

2. Demonstrate an ability to identify patient and healthcare provider factors that may influence treatment (patients and healthcare providers' attitudes and beliefs, health literacy levels, patient and their family's response to the experience of pain and illness including affective, cognitive and behavioural response) (2.13).

3. Demonstrate ability to utilise a person-centred approach and achieve a deep understanding of how pain affects the life of the patient (biologically, functionally, psychologically as well as work and social relations (2.1.5).

Preparation

Each partner prepares a clinical case study on a patient with nociceptive, neuropathic, and/or nociplastic pain.

- The format for the EFIC case study can be used to guide preparation. However, changes in this format, additional information or an alternative way of presenting are welcomed.
- Try to be as rich as possible in presenting the narrative of the patient, but do not feel obliged to be complete. Choose the information you regard as important.
- If possible: video material showing e.g. movement patterns or communication is a great addition to the case. Make sure that it is possible to show just a short excerpt (max. 2 mins).

- Prepare at least one clear question you have on the case that you would like your peers to give input on.

Content

Following an introduction of the use of phenotyping in prognostic and clinical reasoning we will break up into groups for PeerReview of the prepared cases. We will end the session with short presentations of the cases and the output of the discussions.

Follow up / suggestions for processing and practice

Improve your cases with the advice from your peers. Reflect on the lessons learned and how to translate these to clinical practice and teaching.

Reference material

Edwards RR, Dworkin RH, Turk DC, Angst MS, Dionne R, Freeman R, Hansson P, Haroutounian S, Arendt-Nielsen L, Attal N, Baron R, Brell J, Bujanover S, Burke LB, Carr D, Chappell AS, Cowan P, Etropolski M, Fillingim RB, Gewandter JS, Katz NP, Kopecky EA, Markman JD, Nomikos G, Porter L, Rappaport BA, Rice ASC, Scavone JM, Scholz J, Simon LS, Smith SM, Tobias J, Tockarshewsky T, Veasley C, Versavel M, Wasan AD, Wen W, Yarnitsky D. Patient phenotyping in clinical trials of chronic pain treatments: IMMPACT recommendations. Pain. 2016 Sep;157(9):1851-1871. doi: 10.1097/j.pain.0000000000000602. PMID: 27152687; PMCID: PMC5965275.

Meisingset I, Vasseljen O, Vøllestad NK, Robinson HS, Woodhouse A, Engebretsen KB, Glette M, Øverås CK, Nordstoga AL, Evensen KAI, Skarpsno ES. Novel approach towards musculoskeletal phenotypes. Eur J Pain. 2020 May;24(5):921-932. doi: 10.1002/ejp.1541. Epub 2020 Feb 27. PMID: 32040225.

Obbarius A, Fischer F, Liegl G, Obbarius N, van Bebber J, Hofmann T, Rose M. A Step Towards a Better Understanding of Pain Phenotypes: Latent Class Analysis in Chronic Pain Patients Receiving Multimodal Inpatient Treatment. J Pain Res. 2020 May 14;13:1023-1038. doi: 10.2147/JPR.S223092. PMID: 32523372; PMCID: PMC7234963.

Langenmaier AM, Amelung VE, Karst M, Krauth C, Püschner F, Urbanski D, Schiessl C, Thoma R, Klasen B. Subgroups in chronic low back pain patients - a step toward cluster-based, tailored treatment in inpatient standard care: On the need for precise targeting of treatment for chronic low back pain. Ger Med Sci. 2019 Sep 11;17:Doc09. doi: 10.3205/000275. PMID: 31728134; PMCID: PMC6838656.

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of educational research*, *77*(1), 81-112.

Module 2: Lecture 5 (ii). Using peer review to develop clinical reasoning

Introduction

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Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

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Follow up / suggestions for processing and practice

Improve your cases with the advice from your peers. Reflect on the lessons learned and how to translate these to clinical practice and teaching.

Reference material

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Meisingset I, Vasseljen O, Vøllestad NK, Robinson HS, Woodhouse A, Engebretsen KB, Glette M, Øverås CK, Nordstoga AL, Evensen KAI, Skarpsno ES. Novel approach towards musculoskeletal phenotypes. Eur J Pain. 2020 May;24(5):921-932. doi: 10.1002/ejp.1541. Epub 2020 Feb 27. PMID: 32040225.

Obbarius A, Fischer F, Liegl G, Obbarius N, van Bebber J, Hofmann T, Rose M. A Step Towards a Better Understanding of Pain Phenotypes: Latent Class Analysis in Chronic Pain Patients Receiving Multimodal Inpatient Treatment. J Pain Res. 2020 May 14;13:1023-1038. doi: 10.2147/JPR.S223092. PMID: 32523372; PMCID: PMC7234963.

Langenmaier AM, Amelung VE, Karst M, Krauth C, Püschner F, Urbanski D, Schiessl C, Thoma R, Klasen B. Subgroups in chronic low back pain patients - a step toward cluster-based, tailored treatment in inpatient standard care: On the need for precise targeting of treatment for chronic low back pain. Ger Med Sci. 2019 Sep 11;17:Doc09. doi: 10.3205/000275. PMID: 31728134; PMCID: PMC6838656.

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of educational research*, *77*(1), 81-112.

Module 2: Lecture 6. Development of cases and the use of case-based learning

Introduction

Case-based learning (CBL) is commonly used in physiotherapy curricula. It was found to be a very effective instructional methodology in physiotherapy academic programs to enhance students' learning, problem solving skills, clinical preparedness, and confidence levels (Nelson, 2010). Within the domain of physiotherapy for patients with pain, often complex and chronic, the development and use of cases for CBL might not be easy. How do you describe a realistic case with sufficient detail, while at the same time concrete enough to be used in a pragmatic manner? How do you integrate the ICF model in your case and the subsequent discussions? How do you use a case to engage and guide students in a learning dialogue that supports development of their clinical reasoning and practical skills?

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

By the end of this session, participants should be able to:

1. Understand, demonstrate and discuss a comprehensive biopsychosocial assessment of the patient and the rationale behind. (2.1.1 – 2.1.5).
2. Understand, demonstrate and choose a critical selection of appropriate valid and reliable physical and psychological assessment and outcome measures across International Classification of Functioning, Disability and Health (ICF) domains. (2.1.1).

Participants in their role as teaching-staff should be able to:

1. Guide a learning dialogue and support an external reflective articulation by the student;
2. Prepare case-descriptions for use in CBL-classes;
3. Make a lesson-plan for a CBL-class considering different phases of methodological thinking and the goal of the specific lecture / workshop.

Preparation

Look at your own reflective journal and articulate for yourself what skills, information and confidence you need to guide a learning dialogue with a student on clinical reasoning. Formulate your 'zone of proximal development' (Vygotski) regarding the use of CBL as a teaching tool.

We will make use of the cases that are developed for the lecture "Prognostic and clinical reasoning - phenotyping of patients / analysis of clinical cases". As a preparation you can highlight certain aspects of the case you think can be helpful in starting a learning dialogue.

Content

In this workshop we will work on the development of case-descriptions that are useful for the different purposes within a CBL-class. We will experience how useful these cases are for clinical reasoning, forming hypotheses, methodological thinking and making choices in assessment and treatment. We will practice our role as teachers guiding the learning dialogue, supporting the external reflective articulation and thereby the development of students' clinical reasoning and practical skills.

Follow up / suggestions for processing and practice

Use what you've learned in developing a case-description for a CBL-class.

Putting external reflective articulation in practice, answer the following questions:

1. In what manner will you implement the use of CBL in your upcoming teaching assignments?
2. What is your next step in the development of your skill as a teacher guiding a learning dialogue?

Reference material

Nelson, T. K. (2010). *Case-based learning (CBL) in selected physical therapy curricula and its perceived effectiveness by students, faculty, and administrators* (Doctoral dissertation, University of New Orleans).

Trommelen, R. D., Karpinski, A., & Chauvin, S. (2017). Impact of case-based learning and reflection on clinical reasoning and reflection abilities in physical therapist students. *Journal of Physical Therapy Education*, *31*(1), 21-30. DOI:10.1097/00001416-201731010-00006

Module 3

Pain Management

Module 3: Lecture 1. Evidence based management of low back pain including stratified care

Introduction

Low back pain is one of the most common causes of disability worldwide incurring significant costs to the patient, health services and the economy. This lecture outlines current best practice clinical recommendations for acute and chronic pain. Management approaches based on stratification of care according to the person's risk of chronicity using the Startback tool are outlined.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

1. Knowledge of evidence based clinical recommendations for low back pain (3.1-3.5).

2. Understanding of use of Startback tool for stratification of care (2.1.4).

3. Individual and group based models of care for risk stratification (3.1-3.5).

Preparation

Participants should prepare by reading;
Maher C, Underwood M, Buchbinder R. Non-specific low back pain. Lancet. 2017 Feb 18;389(10070):736-747. doi: 10.1016/S0140-6736(16)30970-9. Epub 2016 Oct 11. PMID: 27745712.

Content

The lecture offers participants an update on the consolidated best practical clinical recommendations for the management of low back pain. Through an interactive session The audience can discuss how these are implemented into teaching and clinical practice, barriers associated with them and strategies for integration.

Follow up / suggestions for processing and practice

Reviewing the knowledge from this session and how it is / can be integrated into teaching and clinical education should be considered by participants.

Reference material

Buchbinder R, van Tulder M, Öberg B, Costa LM, Woolf A, Schoene M, Croft P; Lancet Low Back Pain Series Working Group. Low back pain: a call for action. Lancet. 2018 Jun 9;391(10137):2384-2388.

Hill JC, Whitehurst DG, Lewis M, Bryan S, Dunn KM, Foster NE, Konstantinou K, Main CJ, Mason E, Somerville S, Sowden G, Vohora K, Hay EM. Comparison of stratified primary care management for low back pain with current best practice (STarT Back): a randomised controlled trial. Lancet. 2011 Oct 29;378(9802):1560-71.

Module 3: Lecture 2. How to communicate pain

Introduction

All chronic pain conditions must be viewed within a more comprehensive biopsychosocial framework that takes into account biomedical issues but also includes how patients perceive their injuries, their disabilities, their pain, and how they make sense of what is happening to them. The words we use are crucial to this more comprehensive view since the words we use are at the same time our connection with, and expression of, the world around us. So the choice of the words we use is therefore critical in the delivery of healthcare, where a misunderstood word can undermine treatment and create unnecessary stress. Only by paying careful attention to the words we use, by choosing words that are clear and concise, and by understanding the principles of good communication, can we be assured that the message we intend is the message that is received.

Our culture reinforces the belief that people are not responsible for their own bodies' functioning, and patients often expect "quick fix" for their condition, including chronic pain. How to move a patient from that belief and expectation toward active collaborator in pain self-management strategies? It is unrealistic to expect a typical patient with pain to adopt behavioral self-management strategies, without first helping them to change their mindset, especially after their long and futile journey from one medical provider to another. To raise their motivation, the patient's trust has crucial importance. Research has shown that there is a strong association between a patient's trust in their health care practitioner and how well they follow treatment recommendations. For that purpose, there are lots of techniques and strategies that encourage the patient to express feelings and ideas and that convey acceptance and respect.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

By the end of this session, the participants should be able to:

1. explain the importance of therapeutic communication (3.1).

2. name and explain different strategies of therapeutic communication (3.1).

3. understand and explain how words in speech and writing influence others' understanding of chronic pain and has significant impact on the clinical outcome (3.1).

4. be aware that the wording used before and during painful medical procedures might significantly affect the painfulness and discomfort of the procedures (3.1).

5. understand that the semantic and emotional impact of the words used by patients to describe their pain may improve its assessment (3.1).

Preparation

There is no preparation needed.

Reference material

Munday, I., Kneebone, I., Rogers, K., & Newton-John, T. (2022). The language of pain: is there a relationship between metaphor use and adjustment to chronic pain?. *Pain Medicine*, *23*(12), 2073-2084.

Ritter, A., Franz, M., Miltner, W. H., & Weiss, T. (2019). How words impact on pain. *Brain and behavior*, *9*(9), e01377.

Schoth, D. E., & Liossi, C. (2016). Biased interpretation of ambiguous information in patients with chronic pain: A systematic review and meta-analysis of current studies. *Health Psychology*, *35*(9), 944.

Sharma, S., Pathak, A., & Jensen, M. P. (2016). Words that describe chronic musculoskeletal pain: implications for assessing pain quality across cultures. *Journal of pain research*, *9*, 1057.

Sherko E, Sotiri E, Lika E. Therapeutic communication. JAHR. 2013; 4(7): 457-466.

Stewart, M., & Loftus, S. (2018). Sticks and stones: the impact of language in musculoskeletal rehabilitation. *journal of orthopaedic & sports physical therapy*, *48*(7), 519-522.

VA Office of Patient Centered Care and Cultural Transformation: Communicating about Chronic pain: Instructions for clinicians. Available from: https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Communicating-About-Chronic-Pain.pdf

Module 3: Lecture 3. Overview of pain medication

Introduction

Pain medications is the subject of this topic and present the management and treatment of pain and include several classes of medications (acetaminophen, nonsteroidal anti-inflammatory drugs, antidepressants, antiepileptics, local anesthetics, and opioids). The participants will acquire informations about the indications, actions, and contraindications for all the drug classes listed before as valuable agents in the treatment of pain.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

The participants will understand:

1. Mechanism of action of medications

2. Presentation of the categories of pharmacological options available for the management of pain

Preparation

1. Alcock MM. Defining pain: past, present, and future. Pain. 2017 Apr;158(4):761-762. [PubMed]

2. Attal N. Pharmacological treatments of neuropathic pain: The latest recommendations. Rev Neurol (Paris). 2019 Jan-Feb;175(1-2):46-50. [PubMed]

4. Aubrun F, Nouette-Gaulain K, Fletcher D, Belbachir A, Beloeil H, Carles M, Cuvillon P, Dadure C, Lebuffe G, Marret E, Martinez V, Olivier M, Sabourdin N, Zetlaoui P. Revision of expert panel's guidelines on postoperative pain management. Anaesth Crit Care Pain Med. 2019 Aug;38(4):405-411. [PubMed]

Content

The lectures will discuss the various types of pain and classes of pain medication, actions, indications and contraindications.

Participants will be encouraged to actively contribute to the session by sharing their own knowledge and experiences and participating in a ‘Q&A’ and reflective moments.

Follow up / suggestions for processing and practice

Participants will acquire knowledge about medication administration, and how to choose medication according to other pathologies. The participants are encouraged to work in multidisciplinary teams when taking decisions about pain treatment and set the treatment.

Reference material

1.Bonanni, R., Cariati, I., Tancredi, V., Iundusi, R., Gasbarra, E., & Tarantino, U. (2022). Chronic Pain in Musculoskeletal Diseases: Do You Know Your Enemy?. *Journal of clinical medicine*, *11*(9), 2609. https://doi.org/10.3390/jcm11092609

2. Colloca, L., Ludman, T., Bouhassira, D. *et al.* Neuropathic pain. *Nat Rev Dis Primers* 3, 17002 (2017). https://doi.org/10.1038/nrdp.2017.2

3. Arakawa, A., Kaneko, M. & Narukawa, M. An Investigation of Factors Contributing to Higher Levels of Placebo Response in Clinical Trials in Neuropathic Pain: A Systematic Review and Meta-Analysis. *Clin Drug Investig* 35, 67–81 (2015). https://doi.org/10.1007/s40261-014-0259-1

4. Casale, R., Symeonidou, Z. & Bartolo, M. Topical Treatments for Localized Neuropathic Pain. *Curr Pain Headache Rep* 21, 15 (2017). https://doi.org/10.1007/s11916-017-0615-y

Module 3: Lecture 4. How to communicate pain

Introduction

All chronic pain conditions must be viewed within a more comprehensive biopsychosocial framework that takes into account biomedical issues but also includes how patients perceive their injuries, their disabilities, their pain, and how they make sense of what is happening to them. The words we use are crucial to this more comprehensive view since the words we use are at the same time our connection with, and expression of, the world around us. So the choice of the words we use is therefore critical in the delivery of healthcare, where a misunderstood word can undermine treatment and create unnecessary stress. Only by paying careful attention to the words we use, by choosing words that are clear and concise, and by understanding the principles of good communication, can we be assured that the message we intend is the message that is received.

Our culture reinforces the belief that people are not responsible for their own bodies' functioning, and patients often expect "quick fix" for their condition, including chronic pain. How to move a patient from that belief and expectation toward active collaborator in pain self-management strategies? It is unrealistic to expect a typical patient with pain to adopt behavioral self-management strategies, without first helping them to change their mindset, especially after their long and futile journey from one medical provider to another. To raise their motivation, the patient's trust has crucial importance. Research has shown that there is a strong association between a patient's trust in their health care practitioner and how well they follow treatment recommendations. For that purpose, there are lots of techniques and strategies that encourage the patient to express feelings and ideas and that convey acceptance and respect.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

By the end of this session, the participants should be able to:

1. explain the importance of therapeutic communication (3.1).

2. name and explain different strategies of therapeutic communication (3.1).

3. understand and explain how words in speech and writing influence others' understanding of chronic pain and has significant impact on the clinical outcome (3.1).

4. be aware that the wording used before and during painful medical procedures might significantly affect the painfulness and discomfort of the procedures (3.1).

5. understand that the semantic and emotional impact of the words used by patients to describe their pain may improve its assessment (3.1).

Preparation

There is no preparation needed.

Reference material

Munday, I., Kneebone, I., Rogers, K., & Newton-John, T. (2022). The language of pain: is there a relationship between metaphor use and adjustment to chronic pain?. *Pain Medicine*, *23*(12), 2073-2084.

Ritter, A., Franz, M., Miltner, W. H., & Weiss, T. (2019). How words impact on pain. *Brain and behavior*, *9*(9), e01377.

Schoth, D. E., & Liossi, C. (2016). Biased interpretation of ambiguous information in patients with chronic pain: A systematic review and meta-analysis of current studies. *Health Psychology*, *35*(9), 944.

Sharma, S., Pathak, A., & Jensen, M. P. (2016). Words that describe chronic musculoskeletal pain: implications for assessing pain quality across cultures. *Journal of pain research*, *9*, 1057.

Sherko E, Sotiri E, Lika E. Therapeutic communication. JAHR. 2013; 4(7): 457-466.

Stewart, M., & Loftus, S. (2018). Sticks and stones: the impact of language in musculoskeletal rehabilitation. *journal of orthopaedic & sports physical therapy*, *48*(7), 519-522.

VA Office of Patient Centered Care and Cultural Transformation: Communicating about Chronic pain: Instructions for clinicians. Available from: https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Communicating-About-Chronic-Pain.pdf

Module 3: Lecture 5. Health literacy in Europe

Introduction

Health literacy skills reflect the ability to access, understand, appraise and use health-related information in various domains, such as in health care and prevention.

Health literacy skills are relevant when it comes to understanding information from healthcare providers, as well as information in print from newspapers, medication leaflets and digital information from websites. In part, interest in health literacy is driven by its potential contribution to individuals' ability to exert control and make personal decisions with respect to their health and healthcare. Individuals who have better access to information sources and who are better able to understand information are more likely to internalize the information. This could contribute to better health outcomes and/or to lower healthcare use, since health education may have a larger effect on the health related behaviour of individuals with higher health literacy skills.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

By the end of this session, participants should be able to:
1. Understand and demonstrate the ability to undertake a comprehensive biopsychosocial assessment of the patient across the life span (2.1.1).

2. Demonstrate an understanding of the rationale behind basic biopsychosocial assessments (2.1.1).

3. Understand and identify patient and health care provider factors that may influence treatment (patient and healthcare providers attitudes and beliefs, health literacy levels, patient and their family's response to the experience of pain and illness, including affective, cognitive and behavioural responses) (2.1.3).

4. Understand and demonstrate the process of shared decision making and negotiating a therapeutic alliance with the patient towards implementation of the management plan, taking into account the patient's level of health literacy (3.1.3).

5. Understand and discuss variables that may impact on patients knowledge of their condition, e.g. health literacy, self-efficacy, beliefs, culture and co-morbidities. (3.1, 3.2).

Preparation

Watch: https://www.healthnavigator.org.nz/videos/c/communication-active-listening/

Go to: https://www.healthnavigator.org.nz/videos/a/ask-build-check/

Watch the videos – although they are about high blood pressure, diabetes and high cholesterol, they could easily be about musculoskeletal problems. Try to remember what ABC stands for and practice applying it in your patient communication. There is also a pdf on this site, read that too.

Content

Teaching will mainly be in the form of a lecture with interaction with the participants about their experiences in their own settings (give examples).

Follow up / suggestions for processing and practice

Practice the ABC approach and Teach Back techniques in communication skills and with each other. Then apply your knowledge and skills to your patients. Although many patients have adequate health literacy, they also tend to appreciate a good listener and clear explanations.

Reference material – there is lots of information available on the internet, so go google!

Open (2014) Three Steps to Better Health Literacy, A Guide for Professions. Available at: https://www.healthnavigator.org.nz/media/1006/three-steps-to-better-health-literacy-guide-for-health-professionals-dec-2014.pdf

Read the factsheets and watch the video:
https://pacificu.libguides.com/HLeT/HealthOutcomes

Module 3: Lecture 6. Pain and mental health

Introduction

The lecture provides a comprehensive overview of the critical connection between mental health and overall well-being, emphasizing the inability to achieve true health without mental stability. Participants will gain an understanding of the relationship between pain, mental health, and maladaptive cognitions, and how these factors can influence therapeutic outcomes. The session highlights the multidimensional nature of pain, incorporating behavioural and cognitive perspectives, and underscores the importance of biopsychosocial assessments in physical therapy treatment. Educational strategies and communication techniques to promote patient self-management and motivation are also discussed. The content is designed to be accessible without prior preparation, ensuring participants from various backgrounds can engage with and benefit from the material presented.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

By the end of this session, participants should have an understanding of:
1. The interactions between pain and mental health (2.1.5).

2. Mental illnesses and maladaptive cognitions that can determine if and/ or how they influence therapy outcomes (2.1.5).

3. The Complex and Multidimensional Nature of Pain: behavioral and cognitive pain explanations, including fear avoidance, catastrophising, operant and classical conditioning (1.3.2).

4. Demonstrate an understanding of the rationale behind basic biopsychosocial assessments (2.1.3).

5. Education: discuss and apply educational and communication strategies to promote active patient self-management, motivation and coaching (3.1, 3.2).

Preparation

There is no preparation needed.

Content

The main subject is the cognitive and affective component of pain and the importance of it within physical therapy treatment. In this workshop the interactions between pain, maladaptive cognitions and mental health will be explained, assessment tools considering mental illnesses and cognitions will be discussed and treatment suggestions will be offered to substantiate that these factors have to be addressed in the training of physical therapy students.

Follow up / suggestions for processing and practice

It all starts with awareness that a patient might have maladaptive cognitions of mental illnesses. Make yourself familiar with talking about mental health and cognitions with the tools given, in the classroom as well as in the treatment setting. Once you do, you'll get to

patient centered care.

Reference material

Kohrt BA, Rasmussen A, Kaiser BN, Haroz EE, Maharjan SM, Mutamba BB, de Jong JT, Hinton DE. Cultural concepts of distress and psychiatric disorders: literature review and research recommendations for global mental health epidemiology. International Journal of Epidemiology. 2014; 43(2):365–406. [PubMed: 24366490] DOI: 10.1093/ije/dyt227

Kohrt BA, Griffith JL, Patel V. Chronic pain and mental health: integrated solutions for global problems. Pain. 2018 Sep;159 Suppl 1(Suppl 1):S85-S90
DOI: 10.1097/j.pain.0000000000001296

Edita Navratilova. Positive emotions and brain reward circuits in chronic pain. J Comp Neurol, 2016 Jun 1;524(8):1646-52. DOI: 10.1002/cne.23968

Fields, H. (1991). Depression and pain: a neurobiological model. Neuropsychiatry, Neuropsychology, & Behavioral Neurology.

Fishbain, D. A., Cutler, R., Rosomoff, H. L., & Rosomoff, R. S. (1997). Chronic painassociated depression: antecedent or consequence of chronic pain? A review. The Clinical journal of pain, 13(2), 116-137. https://doi.org/10.1097/00002508-199706000-00006

Geisser, M. E., Robinson, M. E., Keefe, F. J., & Weiner, M. L. (1994). Catastrophizing, depression and the sensory, affective and evaluative aspects of chronic pain. Pain, 59(1), 79-83. DOI: 10.1016/0304-3959(94)90050-7

Mergl, R., Seidscheck, I., Allgaier, A.K., Moller, H.J., Hegerl, U., & Henkel, V. (2007). Depressive, anxiety, and somatoform disorders in primary care: prevalence and recognition. Depression abd Anxiety, 24(3), 185-195. DOI: 10.1002/da.20192

Prince M, Patel V, Saxena S, Maj M, Maselko J, Phillips M, et al. No health without mental health. The Lancet | Global Mental Health | volume 370, issue 9590, P859-877, September 08, 2007. DOI: 10.1016/S0140-6736(07)61238-0

Module 3: Lecture 7. Physiotherapy pain management in patients with chronic pain

Introduction

Physiotherapy is an integral part of pain management, with the goal of facilitating functional independence and performance, community inclusion and participation in life roles. Reducing risk factors for persistent pain should also part of the plan. For this purpose patients are often given a (psychologically informed) exercise programme, which may be generic, or focused on achieving specific functional goals /movements.At the present time there is no agreed upon approach and it is still unclear which is the best approach, as the specific physiotherapy contribution in an interdisciplinary approach cannot be teased out from the available literature.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

Principles of Treatment

1. Education (3.2).

2. Behavioural therapies (3.3).

3. Exercises (3.4).

Preparation: Think about how you assess patients with chronic pain- what do you look for to be able to start a treatment plan?

Content: I will discuss the measurement of physical activity in patients with chronic pain and the correlation with relational factors, such as depression and fear. From there we will have a discussion on the available evidence on exercise in patients with chronic pain and arrive at a discussion on how we feel patients with chronic pain should be treated by physiotherapists.

Follow up / suggestions for processing and practice

Ask yourself how you will apply what you have learned in this presentation to your clinical practice.

Reference material:

O'Keeffe M, O'Sullivan P, Purtill H, Bargary N, O'Sullivan K. Cognitive functional therapy compared with a group-based exercise and education intervention for chronic low back pain: a multicentre randomised controlled trial (RCT). Br J Sports Med. 2020 Jul;54(13):782-789. doi: 10.1136/bjsports-2019-100780. Epub 2019 Oct 19. PMID: 31630089; PMCID:PMC7361017.

O'Sullivan PB, Caneiro JP, O'Keeffe M, Smith A, Dankaerts W, Fersum K, O'Sullivan K. Cognitive Functional Therapy: An Integrated Behavioral Approach for the Targeted Management of Disabling Low Back Pain. Phys Ther. 2018 May 1;98(5):408-423. doi: 10.1093/ptj/pzy022. Erratum in: Phys Ther. 2018 Oct 1;98(10):903. PMID: 29669082; PMCID: PMC6037069.

Vibe Fersum K, O'Sullivan P, Skouen JS, Smith A, Kvåle A. Efficacy of classification-based cognitive functional therapy in patients with non-specific chronic low back pain: a randomized controlled trial. Eur J Pain. 2013 Jul;17(6):916-28. doi: 10.1002/j.1532-2149.2012.00252.x. Epub 2012 Dec 4. PMID:
23208945; PMCID: PMC3796866.

Vibe Fersum K, Smith A, Kvåle A, Skouen JS, O'Sullivan P. Cognitive functional therapy in patients with non-specific chronic low back pain-a randomized controlled trial 3-year follow-up. Eur J Pain. 2019 Sep;23(8):1416-1424. doi: 10.1002/ejp.1399. Epub 2019 May 14. PMID: 30974479.

Caneiro JP, Smith A, Bunzli S, Linton S, Moseley GL, O'Sullivan P. From Fear to Safety: A Roadmap to Recovery From Musculoskeletal Pain. Phys Ther. 2022 Feb 1;102(2):pzab271. doi: 10.1093/ptj/pzab271. PMID: 34971393.

Chimenti RL, Frey-Law LA, Sluka KA. A Mechanism-Based Approach to Physical Therapist Management of Pain. Phys Ther. 2018 May 1;98(5):302-314. doi: 10.1093/ptj/pzy030. PMID: 29669091; PMCID: PMC6256939.

Hayden JA, Ellis J, Ogilvie R, Stewart SA, Bagg MK, Stanojevic S, Yamato TP, Saragiotto BT. Some types of exercise are more effective than others in people with chronic low back pain: a network meta-analysis. J Physiother. 2021 Oct;67(4):252-262. doi:
10.1016/j.jphys.2021.09.004. Epub 2021 Sep 16. PMID:
34538747.

Module 3: Lecture 8. Challenges in connecting with the patient with chronic pain

Introduction

Remaining physically active despite chronic pain is key for chronic pain management, which is why physiotherapists play a crucial role in treating chronic pain patients. Achieving that goal is not without its challenges, and these frustrate chronic pain patients, as well as physiotherapists. There are many obstacles to building an effective therapist-patient alliance and achieving treatment goals. Due to living with a condition that cannot be proven with medical imaging or easily obtainable biomarker identifiers, chronic pain patients face systemic stigmatization, which can impact their level of trust in health care providers. Physiotherapists often are not equipped with recognizing cultural, experiential and various contextual factors that determine how the patient assesses pain, responds to pain, goal setting and treatment. Biomedically oriented beliefs about chronic pain in patients as well as physiotherapists are a hindrance to effective pain management. When faced with the expectation of promoting a biopsychosocial model of physiotherapy for chronic pain, physiotherapists are often uncertain of their role or focus on professional shortcomings when it comes to psychosocial chronic pain factors. Integrating motivational techniques into the physiotherapy process is also a task that goes well beyond the physiotherapists' expertise in muscles and joints.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

The lecture / workshop touches on the following curriculum points

1. Certain elements of medical history and pain science that remain implicitly embedded and influence our understanding and treatment of chronic pain, especially Cartesian Dualism (1.1.2).

2. The biopsychosocial model of chronic pain and challenges in implementing it in various clinical settings (2.1.1).

3. The role of cultural, societal, economic and institutional influences on the assessment of pain (2.1.3).

4. Identifying patient and healthcare provider factors that may influence treatment (patients and healthcare providers' attitudes and beliefs, health literacy levels, patient and their family's response to the experience of pain and illness including affective, cognitive and behavioural response) (2.1.3).

5. The impact of health care providers' attitudes and beliefs on patient management (2.1.3).

6. Evidence based behavioural therapies including cognitive and behavioural therapies, mindfulness, acceptance and commitment therapy (3.3.1).

7. The importance of identifying and addressing psychosocial factors regarding ability to comply with individualised exercise prescription and physical activity/ activities of daily living (ADLs) e.g. fear avoidance, catastrophizing (3.4.2).

8. Essential role of close collaborations between the various teams involved in the care of patients with differing pain presentations: medical specialists, nurses, psychologists, social workers, workplace, and family (2.1.6)

Preparation

Think about frustrations you have experienced when treating chronic pain patients. Try to identify which area(s) of connecting with the chronic pain patient seem to be most problematic in your physiotherapy practice.

Content

I will discuss factors that challenge effective patient-physiotherapist working alliance and can hinder physiotherapy chronic pain management. Some cases and possible solutions will be presented and discussed.

Follow up / suggestions for processing and practice

Think how you could do things differently in cases that have frustrated you in the past. How can you apply this now and in the future?

Reference material

Brunner E, Dankaerts W, O'Sullivan K, Meichtry A, Bauer C, Probst M. Associations between alliance, physiotherapists' confidence in managing the patient and patient-reported distress in chronic low back pain practice. European Journal of Physiotherapy. 2021;23(3):196–200.

Driver C, Kean B, Oprescu F, Lovell GP. Knowledge, behaviors, attitudes and beliefs of physiotherapists towards the use of psychological interventions in physiotherapy practice: a systematic review. Disability and Rehabilitation. 2017;39(22):2237–49.

Fritz J, Söderbäck M, Söderlund A, Sandborgh M. The complexity of integrating a behavioral medicine approach into physiotherapy clinical practice. Physiotherapy Theory and Practice. 2019;35(12):1182–93.

Gardner T, Refshauge K, Smith L, McAuley J, Hübscher M, Goodall S. Physiotherapists' beliefs and attitudes influence clinical practice in chronic low back pain: a systematic review of quantitative and qualitative studies. Journal of Physiotherapy. 2017;63(3):132–43.

Kinney M, Seider J, Beaty AF, Coughlin K, Dyal M, Clewley D. The impact of therapeutic alliance in physical therapy for chronic musculoskeletal pain: A systematic review of the literature. Physiotherapy Theory and Practice. 2020;36(8):886–98.

Laliberté M, Ehrmann Feldman D. Patient Prioritization Preferences among Physiotherapy Entry-Level Students: The Importance of Chronic Pain. Physiother Can. 2013;65(4):353–7.

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Module 3: Lecture 9. Graded exercise prescription

Introduction

Physical activity and exercise are recommended for general population health, with well recognised guidelines regarding recommended levels (ACSM, 2023). In people living with chronic pain, these health benefits are also important to achieve. In addition, exercise can positively impact pain. However the usual general population barriers and facilitators to being active apply in the pain population and there are additional challenges and considerations related to pain. Pain is commonly cited as a barrier to participation in meeting physical activity guidelines and/or participating in exercise with people fearful of aggravating pain and many believing that exercise will cause damage. Knowing how to optimize physical activity and exercise through programme design, agreeing on an appropriate exercise dose (frequency, intensity , type and time), pacing, knowing when to rest and when to progress exercise can be challenging and physiotherapists are ideally placed to guide individuals living with pain through this process.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

By the end of the session participants should be able to:

Assessment

1.Demonstrate ability to utilise a person-centred approach and achieve an understanding of how pain affects the physical function, physical activity and exercise participation (2.1.5).

2.Demonstrate knowledge of key elements of assessing physical function, physical activity and exercise participation in daily life (functional tests and capacity evaluations) (2.2.1).

3. Demonstrate knowledge of key elements of pre exercise screening (2.2.1).

4. Demonstrate critical selection of appropriate valid and reliable physical and psychological assessment and outcome measures across International Classification of Functioning, Disability and Health (ICF) domains (2.1.1).

Treatment

5. Demonstrate and apply knowledge of evidence based physical activity and exercise prescription in the management of chronic pain

6. Demonstrate ability to modify physical activity and exercise as necessary based on factors including pain state

7. Recognise the importance of identifying and addressing psychosocial factors regarding ability to comply with individualised exercise prescription and physical activity/ activities of daily living (ADLs) e.g. fear avoidance, catastrophizing

8. Demonstrate ability to incorporate patient education in exercise prescription regarding, goal setting, coping, pacing, motivation, graded activity, graded exposure

Preparation

Recommend review ACSM Physical Activity Guidelines

Content

Evidence regarding benefits of physical activity and exercise and optimal dose for pain management

Consideration of challenges of prescribing exercise for people living with pain- interactive Q & A with participants

Pre Exercise Screening guidelines

Setting goals, Choosing target programme outcomes

Special Considerations for Exercise Prescription for Pain Population

Closing Q & A Participants will be encouraged to actively contribute to the session by sharing their own knowledge and experience regarding PA promotion and Exercise Prescription

Follow up / suggestions for processing and practice

Revisit fundamental principles of prescribing different categories of exercise (strength, aerobic, flexibility, neuromuscular exercise). All still apply but some unique considerations are required for people living with pain in terms of pre exercise screening and exercise programme design and delivery.

Reference material

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Module 3: Lecture 10. Evidence-based electrotherapy in pain treatment

Introduction

This lecture presents an overview of the range of electrotherapy treatment approaches that may be utilised in the management of acute and chronic pain. The efficacy, indications and contra-indications are summarised and mechanisms of action discussed.

Learning Outcomes Mapped to EFIC Pain Physiotherapy Curriculum

The participants will understand:

1. Mechanism of medications and PEA actions (3.5).

2. Indications, contraindications of PEA, side effects- the importance of electrotherapy in pain treatment which is used to reduce joint and muscle pain; the current concepts of Electrotherapy /EPA; the main characteristics of EPA commonly used in practice to treat pain (3.5).

Preparation

1. Study and understand what is Electrotherapy

https://www.physio-pedia.com/Current_Concepts_in_Electrotherapy, https://www.electrotherapy.org/modalities/concepts.htm

2. Alcock MM. Defining pain: past, present, and future. Pain. 2017 Apr;158(4):761-762. [PubMed]

Content

This will be interactive where we will present some key elements regarding the application of PEA, their use in clinical reasoning, the importance of knowledge of contraindications and adverse effects in order to avoid accidents and incidents.

Participants will be encouraged to actively contribute to the session by sharing their own knowledge and experiences and participating in a 'Q&A' and reflective moments.

Follow up / suggestions for processing and practice

Participants will acquire knowledge about electrotherapy. The participants are encouraged to work in a multidisciplinary team and make decisions about pain treatment and set the treatment.

Reference material

1.Bonanni, R., Cariati, I., Tancredi, V., Iundusi, R., Gasbarra, E., & Tarantino, U. (2022). Chronic Pain in Musculoskeletal Diseases: Do You Know Your Enemy?. *Journal of clinical medicine*, *11*(9), 2609. https://doi.org/10.3390/jcm11092609

2.Springer, S., Laufer, Y., & Elboim-Gabyzon, M. (2015). Clinical decision making for using electro-physical agents by physiotherapists, an Israeli survey. *Israel journal of health policy research*, *4*, 14. https://doi.org/10.1186/s13584-015-0015-x

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