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FACT SHEET

Behaviour Change Principals for Persistent Pain

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Individuals living with persistent pain often present with pain-related behaviours and cognitions which are usually maladaptive, unhelpful and provocative, particularly in cases with high impact persistent pain problems (e.g., slower and guarded movements, overburdening or catastrophic thoughts about pain)[10; 12]. Health care professionals can use a variety of interventions to influence these towards improving physical, psychological and social function and quality of life [9]. Behavioural interventions can be brief (e.g. the Making Every Contact Count programme) or longer and more structured (e.g., Cognitive Behavioral Therapy - CBT), but they are all non-withdrawable (i.e., their effect continues even after the therapeutic encounter is finished) [2].

Evidence for Behaviour Change Interventions for Persistent Pain

Numerous behaviour change interventions have been developed for individuals with persistent pain. Although they have their own rationale and principles, they result in comparable (positive) outcomes, possibly by influencing what individuals think, how they think and what they do [8]. These factors reciprocally influence each other, so that even though one intervention targets one specific factor, the influence on this one will likely produce changes in the other ones as well. Changes in all these three variables could then influence pain-related outcomes and explain the similarity of findings with somewhat different interventions.

Behaviour change interventions can be used in individual treatments or in group settings where peer models and vicarious learning and social persuasion can be incorporated.

The evidence for behaviour change interventions is mixed and can sometimes be difficult to compare across studies due to the use of different outcomes (e.g., reduction in pain intensity, increased activity). Nevertheless, a Cochrane review of behaviour change interventions in adults with persistent pain [14] reported small or very small effects of CBT on pain, disability, and distress; and no evidence of behavioural therapy and acceptance and commitment therapy as compared to active control or treatment as usual interventions.

In children and adolescents, the evidence is more spars. A recent update of a Cochrane systematic review [5] reported that some behaviour change interventions, such as psychological treatments, seem effective for reducing pain in headache and mixed persistent pain conditions at post-treatment, and to reduce disability in mixed persistent pain conditions at post-treatment and follow-up, and for headaches at follow-up.

Behaviour Change Principles for Clinicians

Bandura's theories of social learning and self-efficacy provide useful pillars for clinicians implementing behaviour change interventions for people with persistent pain [1]. Raising self-efficacy is a key component of behaviour change which relies on four pillars: personal experiences of mastery, vicariously observed mastery, social persuasion in the

form of encouraging feedback, and the physiological feedback of positive emotions [1]. Utilising communication skills which incorporate the principles of motivational interviewing to establish a therapeutic relationship are useful starting points for the clinician. **Step 1** is identifying meaningful life roles and activities linked to these roles which the individual with pain would like to engage in. **Step 2** is setting an activity or behaviour goal using facilitation principles such as SMART (specific, measurable, achievable, realistic/relevant, time-bound) goals. In this step the clinician uses facilitatory engagement strategies which allow the individual with pain to bring their own knowledge and experience to the discussions using principles of adult learning linking to life experience and interests. **Step 3** is experiential learning of new activities or behaviours, first with supervision, then transferred to apply new skills and behaviours in context. In **Step 4**, the clinician provides feedback and encouragement or reward when goals are reviewed. A critical step to raising self-efficacy is not only the reward on achieving the goal, but the problem-solving approach used when goals are not achieved. Step 4 might not be reward but feedback with the individual with pain and the clinician collaborating to explore reasons for not achieving a goal. The clinician may need to provide additional cognitive reassurance as to why the goal is safe, and achievable prior to the individual with pain setting a new goal. As each goal is achieved, the individual with pain is encouraged to set a new goal bringing them closer to engaging in meaningful life roles and activities despite the persistent pain.

Behaviour Change of Clinicians

Many individuals with persistent pain do not receive optimal evidence-based care which can lead to care that is of low value [7], e.g., inappropriate routine imaging for low back pain which can trigger additional unnecessary medical care and increase the risk of poor health outcomes [6]. Changing the behaviour of clinicians is challenging but important to ensure that high value evidence-based care is provided to individuals with persistent pain. Multimodal interventions that include a variety of strategies such as education, mentoring, local champions or audit have shown some effectiveness in changing clinician behaviour [4].

Supporting Adherence and Maintenance of Behaviour Change

Adherence to integrative care interventions is a prerequisite for achieving any positive outcomes in a persistent pain context. Maintenance of the positive health outcomes is based on maintenance of the intervention-related behavior after the intervention ended (e.g., continuation of exercises and physical activity or practice of mindfulness and so forth). Meta-analyses (e.g.,[3] [11]) have concluded that exercise interventions in individuals with persistent non-specific neck pain [3] and CBT and mindfulness, part of integrative care, of individuals with persistent low back pain [11] have shown modest short-term but no long-term (12-15 months) maintenance of effects such as decreased pain and increased quality of life. The lack of maintenance of outcomes is likely partly related to the lack of adherence to the intervention and partly lack of maintenance of the intervention-related behaviors after the intervention.

Behavior change techniques for supporting adherence and maintenance have been studied sparsely, some exists in older adults. In a scoping review, support of adherence to and maintenance of self-management behavior in older individuals with musculoskeletal pain was studied [13]. The change supporting techniques were categorized as being about capability, motivation, and opportunity [9]. Capability considers psychological and physical skills and knowledge needed for target behaviour and consisted of techniques such as pain education, graded supervised exercises, identifying risk situations for a relapse, and problem-solving skills. Motivation includes cognitive and emotional decision-making in facilitating target behavior with techniques such as identifying readiness for change, goal setting, self-monitoring, and self-regulation skills. The opportunity comprises external factors that prompt the target behavior with techniques such as feedback, social support, and identify context-related triggers for relapse. However, the evidence for which techniques are most effective in supporting adherence and maintenance in integrative care interventions targeting any type of behavior change in a pain context is scarce and needs to be further studied. Even so, the above-mentioned techniques can be recommended to be used in supporting adherence to and maintenance of behavior change in managing patients with persistent pain conditions.

Take-Home Message

Behavioral change techniques can be learned during clinical interactions in groups of one-to-one and involve self-management where individuals in pain have to put in place advice outside the treatment room, but self-management is not solo-care. Adherence to and maintenance of desired behavior (e.g., self-management behavior in persistent pain conditions) should be supported specifically with behavior change interventions.

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