



Guidelines for Pain Management Programmes for Adults

An evidence-based review prepared on
behalf of The British Pain Society

October 2021

Guidelines for Pain Management Programmes for Adults

An evidence-based review prepared on
behalf of The British Pain Society

October 2021

Authors

Pain Medicine	Iain Jones (Chair and Editor) Lars Williams Paul Wilkinson
General Practice	Frances Cole (retired)
Psychology	Hannah Twiddy Lance McCracken
Physiotherapy	Eve Jenner Gail Sowden Cormac Ryan
Occupational Therapy	Sarah Kelly

Published by
The British Pain Society
Third Floor
Churchill House
35 Red Lion Square
London WC1R 4SG

www.britishpainsociety.org

ISBN 978-1-7393255-0-3

To be reviewed: April 2025

Design: Andrassy Media

© The British Pain Society 2021

Contents

Foreword	6
Definitions and approach to evidence	7
1. Executive summary	10
2. Background	13
3. PMPs: aims, methods, delivery and outcomes	15
4. Assisting retention and return to work in PMPs	26
5. Referral and selection	28
6. Resources	30
7. References	36

Foreword

In 1997, the Pain Society (now the British Pain Society) published Desirable Criteria for Pain Management Programmes. This was a response to the perceived need for information and guidance for those involved in developing and running Pain Management Programmes. This is the fourth set of Guidelines for Pain Management Programmes for Adults and replaces all previous versions.

The functions of this document are:

- To provide a set of standards of care and guidelines for provision of programmes of rehabilitation to improve health outcomes for all types of chronic pain.
- To provide healthcare professionals of various disciplines with a synthesis of current best practice to set up and deliver pain management programmes.
- To provide commissioners and provider organisations with an outline framework for effective and sustainable service provision.
- To update stakeholders on the scientific foundation of practice and quality issues relating to pain management programmes.

It is intended that the document will be maintained as a live document on the British Pain Society website which can be updated as new evidence emerges.

The document begins with an Executive Summary (section 1) before providing background information and a summary of the current evidence for PMPs (section 2). Section 3 provides an overview of the aims of PMPs as well as their methods, and key considerations in terms of delivery and outcomes.

There is growing interest and need for services to utilise digital means to provide assessment, treatment and rehabilitation to people with chronic pain. A brief summary of the available evidence in this area is therefore a new addition to section 3. Strategies to facilitate return to work and retention in work are considered in section 4. The challenge of selecting people appropriately while reaching as wide a target group as possible is considered in section 5 and the resources required, including, staff, training and other essentials, are considered in section 6.

It should be noted that the finalisation of this document has been delayed because of the Covid-19 pandemic. It remains to be seen what the implications of the pandemic will be for the delivery of pain management programs in the future.

An accompanying booklet *Participant information for Pain Management Programmes for Adults* provides information specifically for people with chronic pain and carers.

Definitions and approach to evidence

The term chronic pain refers to pain which has persisted beyond the usual healing time. In the latest version of the WHO international classification of disease (ICD-11), chronic pain was defined as persistent or recurrent pain lasting longer than 3 months (Treede et al.,2015).

For simplicity, the document refers to Pain Management Programmes (PMPs) as a treatment. It avoids the term patient, instead using the term participant or equivalent. In addition, it uses the term interdisciplinary instead of multidisciplinary team. This most accurately reflects the way separate professional disciplines work together within a common model using cognitive behavioural principles. It is accepted that definitions and use of these terms can vary.

The guideline group has undertaken a review and update of evidence focussing particularly on areas where it was felt that the evidence has evolved since the 2013 Guidelines. We sought to retain a similar methodological approach (see SIGN 50).

The search for evidence for sections selected for update involved the use of standard databases (e.g., Medline and Embase) as well as evidence-based resources. Each section was researched by a subgroup of the Working Group to provisionally agree evidence ratings. Evidence-based entries were then presented to the whole working group one by one. The entries were justified, debated and then, accepted, rejected or changed through this peer review.

Final consistency checks were made, and the document reviewed by the BPS Communications Committee. It was agreed in advance that the Working Group would attempt to reach a consensus through discussion of each item. A decision was made to avoid resolving opinion differences by any artificial means. Where significant differences of opinion arose, it was agreed to capture the debate, difficulty or range of opinion rather than resolve it. The PMP guideline and the participant information guide was reviewed by the The Patient Voice Committee on behalf of the BPS.

The production of the guidelines will be followed by an implementation strategy developed through the Pain Management Specialist Interest Group.

Level of evidence

- 1++** High-quality meta-analyses, systematic reviews of randomised controlled trials (RCTs) or RCTs with a very low risk of bias.
- 1+** Well-conducted meta-analyses, systematic reviews or RCTs with a low risk of bias.
- 1–** Meta-analyses, systematic reviews or RCTs with a high risk of bias.
- 2++** High-quality systematic reviews of case control or cohort studies. High-quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal.
- 2+** Well-conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal.
- 2–** Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal.
- 3.** Non-analytic studies, e.g., case reports, case series.
- 4.** Expert opinion.

Grades of recommendation

Note: The grade of recommendation relates to the strength of the evidence on which the recommendation is based. It does not reflect the clinical importance of the recommendation.

- A. At least one meta-analysis, systematic review or RCT rated as 1++, and directly applicable to the target population; or a body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results.
- B. A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; or extrapolated evidence from studies rated as 1++ or 1+.
- C. A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; or extrapolated evidence from studies rated as 2++.
- D. Evidence level 3 or 4; or extrapolated evidence from studies rated as 2+.

Good practice points

Recommended best practice based on the clinical experience of the guideline development group.

We believe that this guideline remains a strongly evidence-based document that is unique in building upon other available resources in providing a practical guide to clinicians and commissioners involved in the provision and commissioning of Pain Management Programmes.

1. Executive summary

- 1.1 Pain Management Programmes (PMPs) are the intervention of choice for people with chronic pain which adversely affects their quality of life and where there is significant impact on physical, psychological and social function. These person centred programmes are formulated on evidence based cognitive behavioural principles and normally occur in non-residential settings. **(1++)**
- 1.2 There is good evidence for the efficacy of cognitive behavioural PMPs as a package, compared with either no treatment or treatment as usual, in improving pain experience, emotional wellbeing, coping, negative outlook on pain, activity levels and healthcare utilisation. (Morley et al., 1999; Guzmán et al., 2001; European Guidelines, 2004; Koes et al., 2006; Hoffman et al., 2007; Williams et al., 2012 Kamper et al., 2015; Pike et al., 2016; Salathe et al., 2018). **(1++)**
- 1.3 Combined physical and psychological (NICE guideline NG59., 2020) programmes can be helpful, but when problems associated with pain are more complex, the psychological components of pain are best addressed in a PMP (Koes et al., 2006). **(1++)**
- 1.4 PMPs consist of methods to promote behaviour change and promote well-being, including methods based on cognitive and behavioural therapy, learning and conditioning processes, skills training, physical exercise and education (A). Participants practise these skills in their home and other environments to become expert in their application and in integrating them into their daily routines. Methods to enhance acceptance, mindfulness and psychological flexibility are also recommended.
- 1.5 PMPs are delivered in a group format to normalise pain experience, to maximise the possibilities of learning from other group members and for economy. However, it is recognised that the content of PMPs may in some circumstances be best provided on an individual basis. **(B)**
- 1.6 Evaluation of outcome should be standard practice. The following outcome domains have recently been recommended: assessing changes in pain intensity; pain frequency; physical activity; emotional wellbeing; satisfaction with social roles and activities; productivity; health related quality of life; participants' perceptions of treatment goal achievement and healthcare utilisation (Kaiser et al., 2018). Additional outcome measures should be considered in specialised PMP interventions. Wherever possible PMPs should demonstrate clinically and statistically significant change in the specified domains. Evaluation of effectiveness should be considered in respect to both group level and individual level change. **(A)**

- 1.7 Return to work can be achieved. It is important to consider the potential to return to work and to identify and address obstacles to remaining in or returning to work, wherever possible. Interventions which combine clinical management, biopsychosocial and vocational rehabilitation and organisational interventions, reduce lost work time associated with musculoskeletal and pain-related conditions. **(A)**
- 1.8 Greater length and intensity of programme usually achieve greater change (Williams et al., 1996, 1999; Guzmán et al., 2001). Economies of time, staff skills or other resources, risk reducing the effectiveness of the programme towards zero; however, it is not possible to specify a minimum number of hours as change results from the interaction of participant needs and staff skills during treatment. **(A)**
- 1.9 Suitability for a PMP is based on the impact of pain on daily function and wellbeing. There are no grounds for discrimination on the basis of age, literacy, litigation or judgement of motivation. Reasonable adjustments for participants with learning difficulties must be considered.
- 1.10 A PMP is delivered by an interdisciplinary team where some competencies are shared, and some are unique to particular professions. All staff use cognitive behavioural principles to deliver their component(s) of the PMP.
- 1.11 Guidance on resources required to provide interdisciplinary PMPs for commissioners are outlined in the BPS commissioning document; Pain Management Services: Planning for the Future (2013) as well as within this document.
- 1.12 The NICE guideline on the assessment and management of chronic pain published in April 2021 (NICE Guideline NG193) made a recommendation to offer acceptance and commitment therapy (ACT) or cognitive behavioural therapy (CBT) for pain, for people with chronic primary pain, but concluded that because of lack of evidence, and uncertainty about cost effectiveness, that they were unable to make a recommendation for or against the use of PMPs for chronic primary pain. The term chronic primary pain comes from The International Classification of Diseases 11th Revision (ICD-11) and is defined in the guidelines as pain which has no clear underlying condition and that the mechanisms underlying it are only partially understood. (Treede et al.,2015)
- 1.13 The Cochrane Pain, Palliative and Supportive Care (PaPaS) feedback document highlighted that as PMPs are always psychologically informed, with direct psychological content and other therapeutic components, most often physical activity, and are delivered in ways consistent with psychological methods, it makes little sense to distinguish PMPs from psychological interventions – usually CBT, ACT, or mindfulness. We agree with this viewpoint and it is our interpretation that, if a PMP is

delivered with a psychologically informed framework, as recommended in our guidelines, such as CBT or ACT, then its delivery is in keeping with the NICE guidelines.

- 1.14 Further guidance for those involved in the commissioning of pain services in light of the NICE NG193 guideline can be found in the following resources:
- <https://fpm.ac.uk/fpm-concerns-regarding-new-nice-chronic-pain-guidelines>
 - https://www.britishpainsociety.org/static/uploads/resources/files/BPS_statement_on_final_NICE_guideline_NG193_for_CPP_and_CSP_-_8_April_2021_FINAL.pdf
- 1.15 Stakeholder feedback from the Cochrane Pain, Palliative and Supportive Care (PaPaS) Review Group on the National Institute of Health and Care Excellence (NICE) draft clinical guideline GID- NG10069 Chronic pain: assessment and management:
- https://papas.cochrane.org/sites/papas.cochrane.org/files/public/uploads/papas_response_nice_chronic_pain_guideline_sep20_for_web_0.pdf

2. Background

Key points

1. **High-quality evidence supports the use of PMPs in people with chronic pain.**
2. **This document is designed to promote appropriate evidence-based provision of PMPs.**
3. **Evidence is growing that some principles of PMPs may be applied early in care pathways to attempt to reduce future disability. These interventions should not be confused with PMPs for complex participants.**

2.1 Chronic pain is a common, complex sensory, emotional, cognitive and behavioural long-term health condition which occurs when pain cannot be resolved by available medical or other treatments. **(1++)**

2.2 Chronic pain is common in Europe and elsewhere and its under-treatment confers a substantial burden on individuals, employers, healthcare systems and society in general (Breivik 2013). In 2016 an estimated 30.8 million working days were lost to musculoskeletal conditions in the UK (Improving Working Lives: The Work Health and Disability Green Paper, 2016).

A 2016 meta-analysis reported that chronic pain affects between one-third and one-half of the population of the UK corresponding to just under 28 million adults. Within this, the prevalence of moderate to severely disabling pain based on 4 studies ranged from 10.4-14.3%. (Fayaz., 2016) **(1++)**

What is not known is the proportion of people with debilitating symptoms who seek support from healthcare services. There is uncertainty around the proportion of people meeting the criteria for chronic pain who either need or wish for intervention.

There is evidence that PMPs can reduce healthcare utilisation and costs (Clare., 2013; Luciano et al., 2017; Pike et al., 2016). **(1+)**

2.3 The principal aims of PMPs are to enable people with chronic pain to have improved quality of life by reducing physical disability and emotional distress, to improve their ability to self-manage pain-associated disability and to reduce reliance on healthcare resources. **(1++)**

- 2.4 This document is designed to promote the appropriate provision of evidence-based treatment within PMPs and to maintain and improve the quality of group-based self-management training and support offered to participants.
- 2.5 Since 2005, the Department of Health's approach to the management of long-term health conditions has changed, increasing the emphasis on self-management skills and resources (see for instance, The NHS Long Term Conditions Plan, 2019) for long-term medical conditions.
- 2.6 There is high-quality evidence for effectiveness of PMPs (Morley et al., 1999; van Tulder et al., 2000; Guzmán et al., 2001; Hoffman et al., 2007; Williams et al., 2012; Kamper et al., 2015; Salathe et al., 2018). **(1+)**
- 2.7 Historically, PMPs are offered to people who have not responded to medical interventions. Research has suggested that a less intensive form of pain rehabilitation may be both effective and cost-effective if delivered at an early stage (Linton 2000., 2005; Pincus et al., 2001). It has been shown that non-specialist staff can be trained to deliver low-intensity or brief psychologically informed pain rehabilitation, focused primarily on improving physical functioning and self-management skills (Hill et al., 2011). **(1++)**
- 2.8 These low-intensity interventions should not be confused with interventions by specialist staff for participants with complex needs.
- 2.9 The provision of services should include early assessment and triage of individuals to enable them to access interventions based on biopsychosocial management if this is indicated. Individuals should be matched to interventions that meet their needs, led by trained staff with the appropriate knowledge and skills, at the appropriate level, for the treatment being delivered.
- 2.10 A PMP as referenced within this guideline would be for participants considered to have more complex needs and requiring high levels of staffing and staff expertise.
- 2.11 Depending on the needs of the population, different interventions may need to be offered, at different stages of the care pathway. The table below is intended as a visual guide to aid understanding of the key differences in terms of patient selection, and resources with regard to staffing numbers, expertise and treatment intensity, between a PMP and a combined physical and psychological programme (CPPP) (Nice Guideline, NG59) This is important for anyone involved with the commissioning of PMPs or CPPPs to understand. Patient complexity will require assessment by health care professionals with expertise in chronic pain assessment and management. This may be supported by the use of questionnaires. Further information about assessment tools can be found in the Faculty of Pain Medicine document (FPM Outcome measures, 2019).

**MATCHING PATIENT COMPLEXITY
TO LEVEL OF PAIN REHABILITATION REQUIRED**

The purpose of this thermometer is to provide a quick visual guide to commissioners, managers and providers of services. It is to be used in conjunction with evidence based documents such as the NICE "[Low back pain and sciatica in over 16s: assessment and management](#)" guidelines (NG59) and the "[National Pathway of Care for Low Back and Radicular Pain](#)" (2017).

Level of Pain Rehabilitation		Patient Complexity, Staff Skills, Number of Professions and Treatment Dose Required
Pain Management Programme	Intensive MDT PMP HIGHEST	
	Standard MDT PMP HIGH	
Combined Physical and Psychological Programme	Multidisciplinary (Two or more professions) CPPP Medium	
	Unidisciplinary CPPP LOW	

Produced by Gail Sowden Consultant Physiotherapist and Zoe Malpus, Consultant Clinical Psychologist, on behalf of the British Pain Society's Pain Management Programme Special Interest Group (2017).

3. PMPs: aims, methods, delivery and outcomes

Key points

1. The general aim of PMPs is to improve participation in daily activities and enhance quality of life for those with persistent pain and pain related disability.
2. A PMP consists of a variety of methods for directly and indirectly producing behaviour change, including methods based on cognitive and behavioural therapy.
3. Outcome evaluation should be standard practice so that pain management staff can describe to participants, referrers and commissioners the range of participants with whom they work and the range of improvements that a PMP brings about, in both the short and longer term. Best practice should bench mark the magnitude of improvement against the minimally important clinical change for each outcome measure.

3.1 Aims of treatment

- 3.1.1 PMPs aim to improve the long-term physical, emotional and social dimensions of health and functioning for people with chronic pain. This is carried out using an interdisciplinary team working according to broad cognitive behavioural principles.
- 3.1.2 The general aim of PMPs is to improve participation in daily activities and enhance “quality of life” for those with persistent pain and disability. This includes a focus on increasing mobility, self-care, work, leisure and social activities, emotional well-being and reducing reliance on medication or healthcare use. Specific goals should be identified by the individual participants, although these are likely to be more effective when these are shaped and clarified with the help of healthcare providers. **(C)**
- 3.1.3 Pain relief or reduction in other symptoms is typically not a primary aim of treatment, although improvements in pain are often reported (Morley et al., 1999; van Tulder et al., 2000; Guzmán et al., 2001; Hoffman et al., 2007). The primary focus is on daily functioning without assuming that a change in pain is necessary to improve that

functioning. One of the primary strategies of PMPs is to shift participant behaviour away from struggling ineffectively with pain and towards focussing their behaviour on more worthwhile individual goals. (C)

3.2 Pain Rehabilitation approach

3.2.1 A PMP consists of a variety of methods for directly and indirectly producing behaviour change, including methods based on cognitive and behavioural therapy, learning and conditioning processes, skills training, physical exercise and education.

3.2.2 Specific Cognitive and Behavioural methods

3.2.2.1 **Cognitive therapy methods.** These methods are used to identify, examine, and change the impact of distressing, misleading, or restricting thoughts and beliefs, particularly those about pain. The aim is to help guide and teach methods of managing and re-evaluating unhelpful thinking styles and beliefs (Williams et al., 2012; see also Longmore & Worrell., 2007). (A)

3.2.2.2 **Graded activation and graded exposure.** Graded activity consists of goal-setting, identification and management of barriers to activity and the practice of specific practical and psychological skills to produce integrated and sustainable patterns of healthy activity (Williams et al., 2012). (A) Graded exposure involves structuring a series of practice activities in ways that are specifically designed to reduce fear or to increase willingness to experience fear and to reduce avoidance (Bailey et al., 2010). (A). Activities selected for both these methods should be guided by individual participant goals.

3.2.2.3 **Acceptance-based approaches and mindfulness.** These include a range of methods designed to enhance participant openness and willingness to experience undesirable sensations, cognitions, emotions and memories and to foster present moment focus, including mindfulness techniques. These methods are incorporated into third wave psychological treatments such as Acceptance and Commitment therapy (ACT). The aim of acceptance-based treatments is to enhance psychological flexibility to promote effective and value-led patterns of behaviour (Hayes et al., 1999, 2012; Veehof et al., 2011; Wicksell et al., 2008, 2012). (A)

3.2.3 Skills training and activity management

3.2.3.1 Information alone is typically a weak way to change behaviour and improve daily functioning but can help prepare people to make behavioural changes. Experiential learning opportunities to experience behaviour change is preferred when possible (Hayes et al., 1999; see also Waller., 2009). (D)

3.2.3.2 PMPs are an opportunity for direct practice in the use of skills for changing behaviour, pursuing goals and dealing with barriers to the achievement of these goals. Direct practice of skills within the PMP context enables participants to access help from staff. This helps participants shape, develop and integrate changes in their behaviour, starting from their current level of performance and increasing at an effective and practical rate (Main et al., 2008). **(C)**

Typical skills taught in PMPs include the following:

3.2.3.3 Methods for altering the negative impacts of thoughts and feelings on behaviour, including, cognitive restructuring or other more contextually based methods (such as mindfulness, acceptance and awareness exercises).

3.2.3.4 Methods for identifying, setting, planning and pursuing goals.

3.2.3.5 Strategies for co-ordinating, scheduling and managing the rate and pattern of values based activity. The word pacing is widely used, a conceptual analysis usefully defined pacing as "an active self-management strategy whereby individuals learn to balance time spent on activity and rest for the purpose of achieving increased function and participation in meaningful activities." (Jaimeson-Lega et al., 2012).

This helps guide clinicians and participants in being clear about the purpose of pacing and how best to achieve this, resulting in healthy engagement with activity rather than avoidance patterns (McCracken & Samuel, 2007; Gill & Brown, 2009).

3.2.3.6 Skills for communication and social interaction with family, friends, employers, work colleague or healthcare providers, including skills such as reflective listening and assertive communication.

3.2.3.7 Methods for generalising and integrating new skills and behaviour change into daily life and maintaining these over the longer term.

Participants are helped to set goals, make explicit plans and commitments, and then to practice these in their home and other environments, monitoring what they do. They should review progress with health care practitioners, incorporate setbacks or failures into continued progress, and adjust goals and methods as necessary.

3.2.3.8 [Note: It is not possible to quantify the level of evidence for each individual component of a PMP. These treatment components have Level 1 evidence of effect in other areas of healthcare and are the components that contribute to the level 1++ evidence of effect of the programme as a whole]

3.2.4 Sleep

3.2.4.1 A meta-analysis of 11 RCTS investigating psychological sleep treatments in people with chronic pain found improvement in sleep quality as well as improvement in pain and fatigue at post treatment and for fatigue and depression at follow-up up to 12 months (Tang et al., 2015). There is a growing body of evidence suggesting that pain management programmes should give more attention to the treatment of insomnia (Tang et al., 2015). **(1++)** Hybrid interventions that place equal emphasis on pain management and insomnia treatment have produced significant improvements in sleep, mood, fatigue and pain-related outcomes (Tang et al., 2012b; Pigeon et al., 2012). The addition of CBT for insomnia to CBT for pain alone has been shown to improve outcomes (Pigeon, 2012; Vitiello et al., 2013). **(1+)**

3.2.4.2 Addressing insomnia within a pain management programme

Key components of CBT-I are as follows (Espie., 2012):

- **Stimulus control therapy:** A set of instructions that support the association of the bed/bedroom with sleep and help to establish a consistent sleep-wake schedule.
- **Sleep restriction therapy:** A method that limits the time in bed to actual sleep time.
- **Relaxation training:** Procedures that are aimed at reducing tension or intrusive thoughts at bedtime that interfere with sleep (such as progressive muscle relaxation, imagery training and meditation).
- **Cognitive therapy:** Psychological methods that challenge and change faulty beliefs about sleep and insomnia and involve daily sleep monitoring.
- **Sleep hygiene education:** Guidelines about health-related behaviours (e.g. diet, exercise, substance use) and environmental factors (e.g. noise, light and temperature) that help or hinder sleep.

3.2.4.3 Skill / knowledge implications

To deliver a PMP that addresses insomnia, practitioners would need skills/knowledge in the following areas:

- Sleep science: foundation level
- Sleep assessment measures
- Core components of CBT-I
- Supporting participants to use resources such as sleep diaries

3.2.4.4 Interest in incorporating ACT based techniques (ACT-I) such as, mindfulness, committed action and cognitive defusion for sleep into PMP's has grown in recent years. An observational cohort study suggested potential for ACT based treatment for co-morbid pain and sleep difficulties but further research is needed (Daly-Eichenhardt et al., 2016). **(2+)**

3.2.5 Physical exercise

- 3.2.5.1 Physical activity and exercise are associated with few adverse events and can improve pain severity, physical function and quality of life in people with pain (Hayden et al., 2020; Gneeen et al 2017,, Hauser 2010., Bennell 2011). **(A)**
- 3.2.5.2 No particular type of exercise has been shown to be superior to another. (Geeeen 2017 van Middelkoop 2014., Smith 2014). **(1-)**
- 3.2.5.3 Important aims of physical exercise are to change behaviour patterns around physical sensations, including pain, to increase willingness to engage the body in movements and to expand patterns of activity.
- 3.2.5.4 Participants should be encouraged to take a flexible approach to exercise and activity levels in accordance with individual valued goals. Mindful movement can be used to explore avoidance and habitual ways of moving and create opportunities to experiment with responding differently to avoided external and internal experiences (e.g., cognitions, emotions, sensations and memories).
- 3.2.5.5 The role of physical deconditioning, such as in chronic low back pain, is not clear and hence the role of physical reconditioning in treatment is also not clear (Smeets et al., 2006; Verbunt et al., 2010). However, for general health benefits, current physical activity guidelines recommend that people aim to achieve 150 minutes of moderate intensity, or 75 minutes of high intensity, physical activity per week, and minimise sedentary behaviour (UK Chief Medical Officers' Physical Activity Guidelines 2019). This level of activity may form part of a longer term goal for participants with lower levels of baseline activity. Adherence to exercise can be improved by providing supervised and individualised exercises, supplemented with home exercises (Jordan.,2010). **(1+)**
- 3.2.5.6 As with other processes of behaviour change, it is important to explicitly train generalization and integration of new patterns outside of the program context so that they persist over time. **(B)**

3.2.6 Education

- 3.2.6.1 Pain science-based education should be considered as a method of improving understanding of pain and addressing any misconceptions participants may hold, such as the inappropriate belief that pain is an accurate marker of tissues damage. Such beliefs are associated with poorer outcomes and can be a barrier to engagement with biopsychosocial interventions such as exercise. Recent systematic reviews support the use of pain science education as part of a package of care (Louw et al., 2016; Tegner et al., 2018; JoyPaul et al., 2019; Marris et al., 2019; Wood & Hendrick., 2019;

Watson et al., 2019; Jones et al., 2020) **(A)**. In contrast, Biomedical, biomechanical, anatomy-based education should be avoided as it may inadvertently foster inappropriate misconceptions (Moseley et al., 2004).

- 3.2.6.2 Education should be provided by members of the interdisciplinary team with appropriate expertise, using an interactive style to enable participants to raise and resolve difficulties in understanding material or in applying it to their particular situations or problems. Progress towards reconceptualization should be monitored throughout, tailoring concepts that have not been accommodated to ensure relevance of the material to the individual (Geenen et al., 2015; Watson et al., 2019). **(B)**
- 3.2.6.3 Pain science-based education can reduce catastrophising and fear of movement. Such education appears more effective when delivered as part of a package of care rather than in isolation (Watson et al., 2019). The impact of pain science-based education on pain and function directly is less clear with some reviews demonstrating an effect (Wood & Hendrick., 2019; Marris et al. 2019) whilst others do not (Watson et al., 2019).
- 3.2.6.4 Many participants benefit from a current and up to date pain science explanation to guide them in their valued behavioural changes. However, others can engage in valued behaviour change without accepting and relating to a pain science explanation first, or at all.
- 3.2.6.5 Some of the information provided to PMP participants should aim to facilitate behavioural change techniques and can include:
- Information targeted at reconceptualising pain as a marker of perceived threat to the tissues rather than an accurate marker of tissue damage.
 - Safety, advantages and disadvantages in relation to exercise and activity.
 - How to commence and sustain exercise and physical activity and problem solve difficulties.
 - Short- and long-term advantages and disadvantages of using aids, appliances, adaptations, treatments and medication.
 - Safe and effective use of medication and awareness of harmful side effects. This may also include advice about tapering of medication if identified as a participant goal.
 - Self-management approaches to flare-ups and setbacks.
 - General information and advice on issues such as diet, weight, alcohol use, smoking, recreational drug use and exercise for improving or maintaining general health.

3.3 Delivery

3.3.1 The inclusion of additional components will depend on available resources and should always be properly evaluated. Sacrificing core components for other content for which evidence is poor or lacking is to be discouraged.

3.3.2 The dimensions of the programme should reflect an individual's health needs and may vary in intensity, structure, length, size of group, and the time available and competencies of the clinical staff. Providing a low-intensity programme to individuals with high complexity is less likely to be cost-effective and may be harmful. **(D)**

3.3.3 Intensity and range

3.3.3.1 PMPs are most commonly delivered as non-residential programmes. There are some centres which offer more intensive, usually residential, programmes.

3.3.3.2 Non-resident programmes of at least 25–30 hours have produced evidence of efficacy, but more intensive programmes achieve greater improvement (Williams et al., 1996; Guzmán et al., 2001). This advantage is seen to be maintained at one-year follow-up. **(B)** Systematic review of ACT based interdisciplinary treatments concluded that treatment duration matters and that a larger dose of integrated treatments may contribute to more efficacious and robust outcomes, particularly among participants with complex symptomatology. Duration of interdisciplinary treatment in the studies analysed was on average 67.0 hrs. (Vowles et al., 2020). **(1+)**

3.3.3.3 Clinical experience suggests that graduates of pain management programmes may struggle to continue to use the skills they have learnt in the long term, particularly in times of crisis. Several models are being explored to provide long-term support to participants in putting the knowledge and skills they have learnt into practice in their day-to-day lives, including user-led groups. As yet there is no published evidence to support any particular model.

3.3.3.4 It is acknowledged that a proportion of patients will be re-referred to pain services. Reasons for re-referral are complex and multifactorial and may be addressed to some extent by educating and supporting primary care services to better assess and manage people with persistent pain. Where former PMP graduates are seen again in clinical services for the same pain problem, embarking on a further round of consultations, investigations and treatments relating to pain reduction or control is unlikely to be helpful. In this situation it is usually preferable to re-orientate them towards a pain rehabilitation approach and support them to put the skills and techniques they have learnt into practice. PMPs may have a useful role in supporting or delivering this re-orientation.

3.3.4 Group format

3.3.4.1 PMPs are delivered to groups because this format can normalise the experience of pain, provide natural social situations for addressing behaviour change and rehearsal, and maximise opportunities to draw on the experiences of group members. They can also be delivered at lower cost per case.

3.3.4.2 When considering group size, the following points should be taken into consideration (Stewart et al., 2009) **(3)**:

- Group size should be chosen with the needs of participants in mind.
- Smaller groups (8 or less) are considered suitable for participants with greater need for psychological therapy, providing opportunity for people to participate and share individual experiences and stories, and more actively engage with psychological therapy.
- Larger groups (9 or more) are considered suitable for education and information focused sessions. Larger groups may reduce the risk of outlier disengagement where the programme serves a heterogeneous demographic and are better able to cope with high drop-out rates.
- Larger groups require a larger team of staff. Where considered appropriate and given adequate staff, larger groups can be split into smaller groups for some elements of the PMP.
- Aspects of potentially useful group influences can be weakened with smaller numbers. Likewise, the influence exerted by the treatment provider can be weakened with larger groups.
- The most common PMP group size in the UK is between 8 and 12 participants.
- Space provided must support the group size and format chosen.

3.3.5 Staff Skills

3.3.5.1 Staff training is addressed in section 5; there are no data specifically from PMPs on staff skills in relation to outcome, however, it has been shown that periods of high staff turnover are associated with poorer participant outcomes (Williams & Potts., 2010). **(2+)**

3.4 Outcome measurement

3.4.1 Commissioners, referrers and participants expect providers to deliver an effective PMP. There is no single primary outcome, since multiple problems imply multiple outcomes, and goals are to a large extent determined by participants themselves.

3.4.2 The following domains have recently been proposed for assessing the effectiveness of interdisciplinary multimodal therapy by an expert panel of clinicians and patients (Kaiser et al., 2018) **(4)**:

- Pain intensity and pain frequency
- Physical activity (including activities such as household chores)
- Emotional wellbeing
- Health related quality of life
- Satisfaction with social roles and activities
- Productivity (including work related activities both paid and unpaid)
- Participant's perception of treatment goal achievement

These domains have been listed in the same order as the primary source (Kaiser et al., 2018) and the order does not reflect importance.

3.4.3 In addition to the above, the following domains could also be considered:

- Medication and health-care utilisation
- Participant experience of the programme (both quantitative and qualitative)
- Process outcomes (monitoring concordance of the programme with best practice and the psychological model adopted)

3.4.4 In addition to outcome data, services should collect participant demographic data so that the outcomes can be appropriately contextualised.

3.4.5 Data collection should seek to capture short- and longer-term outcomes.

3.4.6 Services should routinely utilise the data collected to evaluate the service and make improvements where a need is identified. Relevant data and outcomes should be shared with programme participants, service users and commissioners.

3.4.7 Additional assessment of condition specific outcome domains should be considered in respect to the delivery of specialised PMP services, e.g., chronic pelvic pain (sexual dysfunction), facial pain and young people (Dworkin et al., 2008) **(4)**

3.4.8 Outcome evaluation should consider benchmarking changes against published minimally clinically important change values where possible.

3.5 Evidence for effectiveness

- 3.5.1 There is a significant body of evidence to support the efficacy of interdisciplinary PMPs (Williams et al., 1996; Morley et al., 1999; Guzmán et al., 2001; van Tulder et al., 2000; Gatchel & Okifuji 2006; Scascighini et al., 2008; Gatchel et al., 2014; Waterschoot et al., 2014; Kamper et al., 2015). **(1++)** The most recent systematic review suggests that while treatment trial design has improved, the quality of treatment has not. (Williams et al., 2012, 2020).
- 3.5.2 PMPs have generally been evaluated as complete packages (see Morley & Williams., 2002). A number of systematic reviews have shown that PMPs significantly reduce distress and disability, significantly enhance coping, and improve various measures of physical performance (Morley et al., 1999; van Tulder et al., 2000; Guzmán et al., 2001; Gatchel & Okifuji., 2006; Scascighini et al., 2008; Gatchel et al., 2014; Waterschoot et al., 2014; Kamper et al., 2015). **(1++)**
- 3.5.3 It has become increasingly important to demonstrate the cost effectiveness of PMPs. Evidence of reduced healthcare costs through reductions in numbers of consultations and reduction of medication in the UK and across other healthcare systems has been demonstrated (Morley et al., 1999; Turk, 2002; Gatchel & Okifuji., 2006; Clare., 2013; Pike et al., 2016; Luciano., 2017). **(1++)**
- 3.5.4 Few of the components of a PMP have been evaluated individually. It has been concluded that there is too much heterogeneity in the content of treatment to establish its relationship with outcomes (Williams et al., 2012). However, there are the following points to consider:
- 3.5.4.1 The exercise component is drawn from established practice, supported by multiple RCTs and systematic reviews (Hayden et al., 2020; Hayden et al., 2005; Geneen et al., 2017).
- 3.5.4.2 Each of the components in the behaviour change methods and skills training components is drawn from behavioural and/or cognitive therapy, with moderate-to-excellent evidence of efficacy in changing behaviour and improving emotional functioning in psychological disorders (Roth & Fonagy., 2004; Tolin., 2010) compared with no treatment or with most alternative treatments. Efficacy in psychological settings depends, in part, on the skills of the healthcare professionals delivering treatment (Roth & Fonagy., 2004). **(1+)**
- 3.5.4.3 Another way to consider treatment components is in terms of treatment process. For example, studies of CBT, in general, do not show clear evidence that disputing negative thoughts or irrational beliefs is necessary for change produced by CBT (Longmore & Worrell., 2007). Adherence to thought-challenging, pacing, stretching

and exercise correlate variably with outcomes at follow-up (Curran et al., 2009; Nicholas et al., 2011). Other results show that beneficial outcomes from PMPs are more likely to be a result of changes in patterns of fear- and pain-related avoidance than in changes in physical capacity (McCracken et al., 2002), or are the result of increases in psychological flexibility (McCracken & Guttierrez- Martinez., 2011; Vowles & McCracken., 2008, 2010; Wicksell et al., 2010). **(1+)**

3.5.5 Internet-based treatments

3.5.5.1 Internet-based treatments based on CBT and ACT are efficacious (Buhrman et al., 2016; Martorella et al., 2017; Paganini et al., 2019; Simister et al., 2018), and are increasingly being offered alongside face to face pain management programmes. Effect sizes for pain interference/disability and pain severity are small to medium, which is in line with the effects of CBT in face-to-face trials (Buhrman et al., 2016; Eccleston et al., 2013). **(1+)**

3.5.5.2 Online treatments historically had high dropout rates (Eccleston et al., 2014; Macea et al., 2010), but more recent trials show improved performance in this regard (Buhrman et al., 2016). Different methods have been used to engage participants (e.g. telephone support, personalised reminders and feedback, and financial incitements), however it is unclear how effective these methods are (Buhrman et al., 2016). **(1+)**

3.5.5.3 Prediction of who will do well is difficult as the evidence is unclear (Gilpin et al., 2017; Trompetter et al., 2016; Vugts et al., 2018). Therefore, assigning people to online treatment should be based on clinical judgement, taking into account patient preferences, circumstances and ability to engage. Lower attrition is associated with guided compared to unguided online treatments (Lin et al., 2017). **(1+)**

3.5.6 Apps

3.5.6.1 There is a proliferation of pain apps, however the quality of the content is variable, most lack evidence of user or healthcare professional input into their development and their effectiveness in improving outcomes has not been rigorously assessed (Gustavo et al., 2016; Reynoldson et al., 2014; Wallace & Dhingra., 2014; Devan et al., 2019). **(1-)**

4. Assisting retention and return to work in PMPs

Key points

1. People who lose their jobs are more likely to suffer from significant physical and mental ill health.
2. Return to work can be achieved. Supporting people to commence, return or remain in work should be viewed as an important component of PMPs.
3. Early intervention should be offered to increase the likelihood of work retention and return to work.
4. Return to work is likely to be more successful if there is joint planning between the participant, the employer and the health care providers.

- 4.1 Not everyone wants to be employed, but almost all want to 'work', that is to be engaged in some kind of valued activity that uses their skills and facilitates social inclusion. (RCOT/NSIP, 2007; Stanley & Maxwell., 2004). This section of the Guidelines focusses on paid employment.
- 4.2 Work intervention should be viewed as an important component of PMPs. PMPs alone can support, but not necessarily maximize an individual's job retention and return to work. (Kamper et al., 2015). **(1+)**
- 4.3 Assigning a practitioner or key worker with training in work rehabilitation, who can work with an individual, has been shown to support optimal outcomes. (Oakman et al., 2016; Waddell et al., 2008). **(2++)**
- 4.4 Practitioners, who have the knowledge and skills to assess, facilitate coordination and work modification, and conduct workplace visits have been shown to reduce lost time at work (Franche et al., 2006; Cullen et al., 2017; Wynne-Jones et al., 2018) and can result in shorter absences (van Vilsteren M et al., 2015) and lower wage-replacement costs and production losses (van Oostrom et al., 2009). **(1++)**
- 4.5 The longer a person with pain is absent from work, the less likely they are to return to work (Waddell & Burton., 2006). Therefore, participants who are struggling to retain

work or who are off sick from work and at risk of losing their job should be identified early following referral (Wynne-Jones et al., 2014; Lydell et al., 2009). **(1++)**

- 4.6 There is strong evidence that interventions which combine clinical management, biopsychosocial and vocational rehabilitation and organisational interventions reduce lost work time associated with musculoskeletal and pain related conditions (Wegrzynek et al., 2020; Ibrahim et al., 2019; Cullen et al., 2017) **(1+)**. These should be provided simultaneously and be integrated (Waddell et al., 2008). Support to remain or return to work can therefore be provided before, alongside, after or be part of, a PMP, participants do not need to have started or completed a PMP first.
- 4.7 People who have been out of work for some time and those who are unemployed may need specific vocational counselling to help them identify transferrable skills and training needs in order to gain skills to assist them to return to work (Watson et al., 2010). (3) This may include referral outside the PMP team to a specialist individual or service, or to Employability Support. Further information on this can be found at <https://www.gov.uk/looking-for-work-if-disabled>.
- 4.8 Work (good work) is generally good for health and well-being (Waddell & Burton., 2006). Conversely, worklessness is associated with poorer physical and mental health and well-being. (1+) Work can also be therapeutic and can reverse the adverse health effects of unemployment. That is true for healthy people of working age, for many disabled people, for most people with common health problems and for social security beneficiaries. The provisos are that account must be taken of the nature and quality of the work and employment, its social context and jobs should be safe and accommodating (Strategic review of health inequalities in England post 2010). Overall, the beneficial effects of work outweigh the risks of work and are greater than the harmful effects of prolonged sickness absence or long-term unemployment (Wadell and Burton., 2006). **(1++)**
- 4.9 Potential obstacles to return to work should be assessed and where modifiable, addressed, these may include psychosocial factors (Yellow Flags) (Nicholas et al., 2011), perceptions about work (Blue Flags) (Shaw et al., 2009) and organisational factors (Black Flags). (Krause et al., 1998; Young et al., 2005). **(2++)**
- 4.10 Although symptoms may increase during or following work, there is no evidence that this represents a progression of an underlying condition in people with most non-specific chronic pain conditions (e.g., chronic low back pain, chronic arm and neck pain) (Klumb & Lampert., 2004; Waddell & Burton., 2006). **(1+)**
- 4.11 There is no evidence to support the notion that physical activity engaged in through normal working causes a progression of “degenerative” changes in conditions such as neck and back pain. There is good evidence that most people with musculoskeletal pain can and do work when symptomatic (Bowey-Morris et al., 2010). **(1+)**

5. Referral and selection

Key points

- 1. It is important to carefully assess participants suitability for a PMP however great care must be taken to maximise access. There are no grounds for discrimination e.g., on the basis of age, literacy, physical or mental ill health, litigation or judgement of motivation.**
- 2. PMP teams should ensure that the PMPs available meet the cultural, linguistic, cognitive and literacy needs within the local area.**

- 5.1 PMPs should be offered to individuals with persistent pain and associated distress, disability and impaired quality of life. Treatment is usually offered as a group treatment.
- 5.2 A primary aim of the assessment process is to assess suitability for and orient participants towards, a pain rehabilitation approach. It is important to ensure, as much as is possible, that they are engaging willingly in treatment. The assessment and consenting should include a discussion of the aim(s) of PMPs, what participants will experience during treatment, the responsibilities of the treatment team and participants, the scheduling of the PMP (e.g. hours, dates) and the expected outcomes.
- 5.3 Self-management strategies may sometimes be offered alongside medical treatments intended to reduce or control pain, although sometimes medical treatments and self-management strategies are difficult for the participant to reconcile. It can take time for some people to accept that their pain cannot be cured and that strategies to manage or live well with life-long pain, are indicated. The optimal timing of a PMP in relation to other treatment will vary between individual participants but will always entail careful discussion between the participant and health care professionals.
- 5.4 PMPs are suitable for all participants with chronic pain, regardless of the underlying cause. There is no evidence to suggest participants with any particular diagnosis benefit more from diagnosis specific PMPs, although participants with particular problems, such as urogenital pain, may prefer to be treated in groups specific to that pain, where these exist. It is also worth noting that as medical treatments for other conditions advance, PMPs have become an option for patient populations who may not have accessed them historically. For example, improved cancer survivorship in recent years has led to a need for pain rehabilitation in this area (De Groef et al., 2019).

- 5.5 Referrals to PMPs may come from primary or secondary care. Generally, it is preferable for participants to have completed all pain related investigations and treatments prior to commencing a PMP, however there are some programmes where people may receive an intervention such as a spinal cord stimulator and a pain management programme concurrently.
- 5.6 Assessment for inclusion in a PMP should include appropriate screening by a health care professional with appropriate training to exclude treatable disease, to discuss treatment options aimed at pain reduction or the lack of them, and to introduce the concepts of chronic pain and pain management, if this has not already been done
- 5.7 Assessment for a PMP is usually made by more than one member of the clinical team, in collaboration with the person with chronic pain. From this assessment a clinical judgement is made about the extent to which the PMP is likely to address the individual's needs, their suitability and willingness to participate and a treatment plan agreed with the individual.
- 5.8 Common inclusion criteria include:
- Presence of persistent pain causing significant disability and/or distress.
 - The participant is able to communicate in the language in which the PMP is conducted; a trained independent interpreter may facilitate successful participation. Currently there is a paucity of evidence addressing pain management in people from culturally and linguistically diverse backgrounds.
 - The participant is willing, and cognitively, emotionally and functionally able, to participate in a group. Discussion with participants who have a learning or cognitive impairment should take place to consider provision of suitable adjustments which could support their participation in a programme. Further guidance can be found in the following resource: Mencap: Treat me well (2018).
- 5.9 There are other issues which have historically been treated as obstacles to attendance and completion of PMPs but for which there is no evidence that alone they render treatment unsuitable:
- Older adults: there is evidence that older participants are able to benefit from PMPs (Cook, 1998, McCracken 2012). **(1+)**
 - Litigation alone should not be the basis for delay or exclusion from multi-disciplinary pain management programmes. The idea that potential secondary financial gain renders positive functional and psychological improvement unlikely is not substantiated. The consensus view is that decision-making regarding PMP inclusion is based upon individual assessment as evidence is mixed regarding the relevance of a context of litigation (Spearing 2012, Twiddy 2018) **(2++)**. Shared decision making should explore potential risks and benefits to each individual participant.

6. Resources

Key points

1. A PMP is delivered by an interdisciplinary team in which some competencies are shared, and some are unique to particular professions. All staff use cognitive behavioural principles to deliver their component(s) of the PMP.
2. Pain management is a complex speciality and requires a broad background of experience in pain rehabilitation.
3. PMPs may be delivered in a primary or a secondary care setting; the resources required will be the same.
4. PMPs should be properly resourced with time, personnel and facilities.

6.1 PMPs should be properly resourced with time, personnel and facilities. Efficacy has been demonstrated for the entire package, rather than for specific components (Morley et al., 1999; Guzmán et al., 2001), therefore reduction of any of these may adversely affect outcome. Pressure to treat the maximum number of participants for minimum outlay is likely to result in an intervention of low-to-negligible efficacy. The content of behavioural interventions can be diluted until they are no longer effective. This can demoralise both participants and staff. Serious consideration needs to be given to the utility of poorly resourced PMPs and to honest evaluation of their results across the range of intended outcomes.

6.2 Time

6.2.1 The length and intensity of PMPs varies across the UK. Shortening a programme may reduce its efficacy or render it ineffective. This is recommended best practice based on clinical experience of the guideline development group.

6.3 Competencies

6.3.1 A crucial principle of PMPs is interdisciplinary teamwork between clinicians from different professional disciplines who together have the necessary skills and competencies to provide the assessment and programme content. In this context, the combined competencies of the team are as important as individual qualifications.

6.3.2 Competencies can be described as core and specific.

- 6.3.2.1 **Core competencies** relate to the knowledge and skills required to be part of an interdisciplinary team and to use cognitive and behavioural principles in their intervention in a group environment. These are transferable, in that all members of the team should be able to provide these effectively.
- 6.3.2.2 **Specific competencies** are the knowledge base and specific skills with which profession-specific training equips the individual. These are not transferable.
- 6.3.2.3 All staff delivering PMPs should have sufficient skills and experience to participate in the assessment of people with chronic pain regarding their suitability for inclusion in a PMP.
- 6.3.2.4 Standards for all Health Care Professionals working on PMPs may be found in the following document: Faculty of Pain Medicine: Core Standards for Pain Services in the UK (2015).
- 6.3.2.5 Resources for competency and supervision frameworks for staff utilising cognitive and behavioural interventions can be found at www.ucl.ac.uk/CORE/
- 6.3.2.6 Physiotherapy standards of practice for work in PMPs are described by the Physiotherapy Pain Association: <https://ppa.csp.org.uk>

6.3.3 Clinical staff

- 6.3.3.1 Staffing for PMPs will be drawn from the disciplines of Medicine, Psychology, Physiotherapy, Occupational Therapy, Nursing and Pharmacy.
- 6.3.3.2 The primary disciplines of the team delivering a program may vary depending on local resources. When organising a PMP, service organisers need to consider how the content and processes of a program may be best delivered utilising the specific competencies brought by each discipline, in addition to considering how core competencies and the philosophy underpinning these are embedded within the team delivering the program.
- 6.3.3.3 When considering the staffing model for a PMP it is strongly recommended that a service can meet the following recommendations:
- I. All staff should be registered and accredited by their respective Health and Care Professions council or regulatory organisation.
 - II. All staff working in PMPs should have a regular clinical commitment to working in pain management services.

- III. There are cognitive and behavioural elements which are fundamental to the delivery of a PMP. These require a high level of competence in providing an effective service to participants with complex needs. There must be competencies within the team capable of assessment, and implementation of psychological principles and the delivery of behavioural and cognitive therapies.
- IV. There should be the experience and capability within the team to deliver regular education, training and supervision in the delivery of behavioural and cognitive therapies.
- V. Expertise in the assessment and management of risk in participants with high levels of distress.

6.3.3.4 Physical conditioning and restoration of physical function is a key component of the rehabilitation process. Key skills and competencies relating to this within the team must encompass a wide range of areas including:

- I. Ability to work collaboratively with the participant to develop effective exercise programmes which will assist in increasing physical function and meaningful participation as a means of improving quality of life.
- II. Experience in exploring movements and physical activities which the participant perceives as challenging due to pain or associated factors.
- III. Assisting the participant to build an awareness of their body and develop behavioural flexibility in the presence of pain.
- IV. Provide ongoing assessment of musculoskeletal symptoms and signs experienced during the PMP and act upon these if required.
- V. Expertise in supporting individuals living with chronic pain to perform and engage in their chosen daily activities (Lagueux et al., 2018). These could include essential day-to-day tasks such as self-care, work or leisure.

6.3.3.5 Expertise should be available in supporting people to remain in, return to, or obtain work.

6.3.3.6 Resources should be available to offer specialist advice and the ability to discuss appropriateness of pain treatments and further pain related investigations. It is important to have the appropriate expertise in order to shift a participant's focus away from medical treatments and towards pain management/rehabilitation.

6.3.3.7 Skills should be available to identify complications of pain related treatments, or to advise if further assessment or investigation is indicated in relation to this. For example, endocrine or sleep related disorders associated with opioid medications (Faculty of Pain Medicine: The Role of the Specialist in Pain Medicine., 2020).

6.3.3.8 Access to a pharmacist can be a useful resource for a PMP. Their role includes education and planning medication adjustment with participants. They can also have a useful role as a liaison with primary care physicians and community pharmacists.

6.3.4 Administration and support staff

- 6.3.4.1 A PMP requires secretarial and administrative support appropriate to its organisational needs. This will entail liaison activities, the organisation of assessments and sessions, collation and distribution of assessments and discharge summaries, correspondence and assistance with the production of course materials. The administration team must have excellent communication skills, as they are often the first point of contact for participants who may be depressed, anxious, angry or confused. Provision of support and training for administrative staff in communicating with participants in distress on the telephone should be provided.
- 6.3.4.2 Clinical support staff may include healthcare assistants, occupational therapist assistants, physio-technicians and assistant psychologists. Clinical support staff can support the running of PMP's in working alongside specialist clinical staff in a supporting role.
- 6.3.4.3 It is crucial that the outcomes of PMPs are evaluated and that audits are carried out. This may require personnel to undertake distribution and collection of assessment materials and data entry. Such skills are often provided by assistant psychologists.

6.3.5 PMP Past participant

- 6.3.5.1 A past-participant of a PMP, whose role includes participant education and serving as a role model, may be helpful for participants in addressing worries and concerns when contemplating attendance or commencing a program and demonstrating that change is possible. Whilst there is the potential for this to be a useful addition to a program, supporting evidence does not currently exist.

6.3.6 Leadership

- 6.3.6.1 Leadership within local management structures and in the daily running of the team and programme is crucial. The discipline or title of the leader(s) is less important than the identification and recognition of these roles. Consideration should be given to professional and clinical support and supervision for the post-holder(s).
- 6.3.6.2 Most clinical staff are accustomed to management hierarchies within their discipline. True interdisciplinary teams require cross-discipline supportive management structures.

6.4 Team working

- 6.4.1 The coexistence of staff with a shared purpose does not make a team. Working together as a team requires frequent and regular times to meet and arrive at shared understandings of participants' needs and staff provision. Team members also need to appreciate one another's areas of unique and shared expertise.
- 6.4.2 All staff including medical, can benefit from discussion with the clinical psychologist or equivalent on the application of cognitive and behavioural principles to their area of work. It is important that the clinical team have a shared understanding of the purpose of a PMP and that their clinical practice is consistent with a shared philosophy / psychological approach (e.g. CBT, ACT) and with each other. Time should be allocated to team meetings and training, this is important to maintaining the health and wellbeing of all staff.

6.5 Training and continued professional development

- 6.5.1 There is currently no recognised accredited standard pain management training in the UK or elsewhere directly relevant to PMP work. Appropriate areas of knowledge and skill are set out in the following links, EFIC Pain Curricula, IASP Curricula, FPM Core Standards for Pain Management Services in the UK.
- 6.5.2 Recently, a small number of studies have shown that biopsychosocial based pain education/training can enhance undergraduate health care professionals' knowledge of pain and may shift their clinical behaviour in line with clinical guidelines (Domenech et al. 2011; Colleary et al. 2017; Maguire et al. 2018; Mankelow 2020) **(1+)**. Similar studies with qualified health care professionals have shown that biopsychosocial based pain education can improve clinical behaviour and, in some cases, clinical outcomes (Chassany et al. 2006; Evans et al. 2010; Overmeer et al. 2011) **(1+)**. These studies do not endorse any specific type of learning or development but highlight the potential benefit of good clinician training and education. There are several courses (available up to Masters Level) across the UK which will equip clinicians with a broad framework of understanding in pain management. Each professional has a responsibility to ensure their own training is adequate.
- 6.5.3 The following should be recognised:
- Pain management especially chronic pain should be a core component of all undergraduate HCP training programmes. The British Pain Society have published a guide on incorporating pain management into the pre-registration curricula for healthcare professionals. (BPS Pain Pre- Registration Education 2018).

- PMP staff bring profession-specific as well as generic skills to their workplace.
- Management structures should support staff training to achieve core standards and maintain competencies.
- Staff should be encouraged to attend relevant national meetings, join special interest groups and network with fellow professionals in PMPs outside their geographical area.
- Some components of a PMP do not 'belong' to any particular profession, so development of training in these areas may be undertaken by an interested individual from any profession.

6.5.4 Where PMP staff are delivering a component of a PMP that is outside their usual professional remit (e.g., mindfulness), appropriate supervision structures should be in place.

6.5.5 Where the component is recognised as profession-specific, the staff member taking responsibility for supervision will be obvious. Where the component is not 'owned' by any profession, the individual most qualified to do so will take responsibility.

6.6 Facilities suitable for pain management programmes

6.6.1 A PMP requires designated space suitable for its activities and where any necessary equipment can be accommodated, including:

- An accessible venue
- Access to public transport
- Adequate parking
- A room large enough for the group size and their PMP team
- Adequate floor space (e.g. for exercise, relaxation and/or mindfulness practice)
- Availability of private area(s) for individual discussion
- Easily accessible toilet facilities
- Refreshment facilities
- Office space

6.6.2 When applicable, suitable overnight accommodation should be identified for participants who require it.

6.6.3 Location

6.6.3.1 PMPs are often delivered within hospitals or health centres. Alternative venues such as gyms or community centres may also be suitable, and these may be preferable to ensure closer access to the communities that participants live in.

7. References

Bailey K.M., Carleton R.N., Vlaeyen J.W.S., Asmundson G.J.G. (2010). Treatment addressing pain-related fear and anxiety in patients with musculoskeletal pain: a preliminary review. *Cognitive Behaviour Therapy* 39, 46–63.

Bennell K.L., Hinman R.S. A review of the clinical evidence for exercise in osteoarthritis of the hip and knee. *J Sci Med Sport*. 2011;14(1):4–9.

Blakely T.A., Collings S.C.D., Atkinson J. (2003). Unemployment and suicide. evidence for a causal association? *Journal of Epidemiology and Community Health* 57, 594–600.

Bowey-Morris J., Davies S., Purcell-Jones G., Watson P.J. (2010). Beliefs about back pain: results of a population survey of working age adults. *Clinical Journal of Pain* 27, 214–224.

Breivik H., Eisenberg E. and O'Brien T. The individual and societal burden of chronic pain in Europe: the case for strategic prioritisation and action to improve knowledge and availability of appropriate care. *BMC Public Health*. 24 December 2013, Vol. 13, 1229.

The British Society of Rehabilitation Medicine (BSRM) (2003) Vocational Rehabilitation: the way forward (2nd Ed) Working Party Report Dec; Page 41: 10.7

Buhrman M., Gordh T., Andersson G. (2016) Internet interventions for chronic pain including headache: A systematic review. *Internet Interventions* 4 (2016) 17–34

Caroll C., Rick J., Pilgrim H., Cameron J., Hillage J. (2010). Workplace involvement improves return to work rates among employees with back pain on long-term. *Disability and Rehabilitation* 32, 607–621.

Chassany O., Boureau F., Liard F., Bertin P., Serrie A., Ferran P., Keddad K., Jolivet-Landreau I. and Marchand S., 2006. Effects of training on general practitioners' management of pain in osteoarthritis: a randomized multicentre study. *The Journal of rheumatology*, 33(9), pp.1827-1834.

Clare A., Andiappan M., MacNeil S., Bunton T., Jarrett S. Can a pain management programme approach reduce healthcare use? Stopping the revolving door. *Br J Pain*. 2013;7(3):124-9.

Colleary G., O'Sullivan K., Griffin D., Ryan C.G. and Martin D.J., 2017. Effect of pain neurophysiology education on physiotherapy students' understanding of chronic pain, clinical recommendations and attitudes towards people with chronic pain: a randomised controlled trial. *Physiotherapy*, 103(4), pp.423-429.

Cook A.J. (1998). Cognitive-behavioral pain management for elderly nursing home residents. *Journals of Gerontology Series B Psychological Sciences and Social Sciences* 53B, 51–59.

CORE; Competence frameworks for the delivery of effective psychological interventions. <https://www.ucl.ac.uk/pals/research/clinical-educational-and-health-psychology/research-groups/core>

Cullen K.L., Irvin E., Collie A., Clay F., Gatsby U., Jennings P. A., Hogg- Johnson S., Kristman V., Laberge M., McKenzie D., Newnam S., Palagyi A., Ruseckaite R., Sheppard D. M., Shourie S., Steenstra I., Van Eerd D., and Amick B.C. 3rd, (2018) Effectiveness of Workplace Interventions in Return- to-Work for Musculoskeletal, Pain-Related and Mental Health Conditions: An Update of the Evidence and Messages for Practitioners *J Occup Rehabil.*; 28(1): 1–15.

Curran C., Williams A.C.D.C., Potts H.W.W. (2009). Cognitive-behavioral therapy for persistent pain: does adherence after treatment affect outcome? *European Journal of Pain* 13, 178–188.

Daly-Eichenhardt A., Scott W., Howard-Jones M., Nicolaou T. and McCracken L.M. (2016) Changes in Sleep Problems and Psychological Flexibility following Interdisciplinary Acceptance and Commitment Therapy for Chronic Pain: An Observational Cohort Study. *Front. Psychol.* 7:1326. doi: 10.3389/fpsyg.2016.01326

De Groef A., Penen F., Dams L., Van der Gucht E., Nijs J., Meeus M. Best-Evidence Rehabilitation for Chronic Pain Part 2: Pain during and after Cancer Treatment. *J Clin Med.* 2019;8(7):979. Published 2019 Jul 5. doi:10.3390/jcm8070979

Devan H., Farmery D., Peebles L., Grainger R. Evaluation of Self-Management Support Functions in Apps for People With Persistent Pain: Systematic Review *JMIR Mhealth Uhealth* 2019;7(2):e13080 DOI: 10.2196/13080 PMID: 30747715 PMCID: 6390192

Domenech, J., Sánchez-Zuriaga, D., Segura-Ortí, E., Espejo-Tort, B. and Lisón, J.F., 2011. Impact of biomedical and biopsychosocial training sessions on the attitudes, beliefs, and recommendations of health care providers about low back pain: a randomised clinical trial. *Pain*, 152(11), pp.2557-2563.

Dworkin, R.H., Turk, D.C., Wyrwich, K.W., Beaton, D., Cleeland, C.S., Farrar, J.T., Haythornthwaite, J.A., Jensen, M.P., Kerns, R.D., Ader, D.N. and Brandenburg, N., 2008. Interpreting the clinical importance of treatment outcomes in chronic pain clinical trials: IMMPACT recommendations. *The journal of pain*, 9(2), pp.105-121.

Eccleston C., Fisher E., Craig L., Duggan G.B., Rosser B.A., and Keogh E. (2014). Psychological therapies (Internet-delivered) for the management of chronic pain in adults. *The Cochrane Library*, 2, CD010152)

EFIC Pain Curricula. <https://europeanpainfederation.eu/education/pain-curricula/>

Espie C. (2012). *Overcoming insomnia and sleep problems: A self-help guide using cognitive behavioural techniques*. Hachette UK.

European Guidelines for the management of non-specific low back pain (2004). www.backpaineurope.org/web/files/WG2_Guidelines.pdf

Evans D.W., Breen A.C., Pincus T., Sim J., Underwood M., Vogel S. and Foster N.E., 2010. The effectiveness of a posted information package on the beliefs and behaviour of musculoskeletal practitioners: the UK Chiropractors, Osteopaths, and Musculoskeletal Physiotherapists Low Back Pain Management (COMPLEMENT) randomized trial. *Spine*, 35(8), pp.858-866.

Faculty of Pain Medicine: Outcome Measures (2019). <https://fpm.ac.uk/sites/fpm/files/documents/2019-07/Outcome%20measures%202019.pdf>

Faculty of Pain Medicine: Core Standards for Pain Management Services in the UK (2015). <https://fpm.ac.uk/sites/fpm/files/documents/2019-07/Core%20Standards%20for%20Pain%20Management%20Services.pdf>

Faculty of Pain Medicine: The Role of the Specialist in Pain Medicine (2020), <https://fpm.ac.uk/sites/fpm/files/documents/2020-06/Role%20of%20Pain%20Consultant%20FINAL.pdf>

Fayaz A., Croft P., Langford R.M., et al. Prevalence of chronic pain in the UK: a systematic review and meta-analysis of population studies. *BMJ Open* 2016;6:e010364. doi: 10.1136/bmjopen-2015-010364

Franché R.L., Severin C.N., Hogg-Johnson S., Côté P., Vidmar M., Lee H. (2007) The Impact of Early Workplace-Based Return-to-Work Strategies on Work Absence Duration: A 6-Month Longitudinal Study Following an Occupational Musculoskeletal Injury in *Journal of occupational and environmental medicine / American College of Occupational and Environmental Medicine* October; 49(9):960-74

Franché R., Cullen K., Clarke J., Irvin E., Sinclair S., Frank J. (2005). Workplace-based return-to-work interventions: a systematic review of the quantitative literature. *Journal of Occupational Rehabilitation* 15, 607–631.

Gatchel R.J., Okifuji A. (2006). Evidence-based scientific data documenting the treatment and cost-effectiveness of comprehensive pain programs for chronic non-malignant pain. *Journal of Pain* 7, 779–798.

Gatchel, R.J., McGeary, D.D., McGeary, C.A. and Lippe, B., 2014. Interdisciplinary chronic pain management: past, present, and future. *American Psychologist*, 69(2), p.119.

Gill J.R., Brown C.A. (2009). A structured review of the evidence for pacing as a chronic pain intervention. *European Journal of Pain* 13, 214–216.

Gilpin H.R., Keyes A., Stahl D.R., Greig R., McCracken L.M. (2017). Predictors of treatment outcome in contextual cognitive and behavioural therapies for chronic pain: A systematic review. *The Journal of Pain*, 18, 1153- 1164.

Geneen L.J., Martin D.J., Adams, N. et al. Effects of education to facilitate knowledge about chronic pain for adults: a systematic review with meta-analysis. *Syst Rev* 4, 132 (2015). <https://doi.org/10.1186/s13643-015-0120-5>

Geneen L.J. 1., Moore A.M. 2., Clarke C. 3., Martin D. 4., Col L.A. 5., and Smith B.H. 1., Physical activity and exercise for chronic pain in adults: an overview of Cochrane Reviews *Cochrane Database Syst Rev*. 2017 Apr 24; (4): CD011279. Published online 2017 Apr 24. doi: 10.1002/14651858.CD011279.pub3 PMID: 28436583

Gustavo C. Machado a, *, Marina B. Pinheiro b, Hopin Lee c, g, i, Osman H. Ahmed d, e, Paul Hendrick f, Chris Williams g, h, i, Steven J. Kamper a, i Smartphone apps for the self-management of low back pain: A systematic review *Best Practice & Research Clinical Rheumatology* 30 (2016) 1098e1109;

Guzmán J., Esmail R., Karjalainen K., Malmivaara A., Irvin E., Bombardier C. (2001). Multidisciplinary rehabilitation for chronic low back pain: systematic review. *British Medical Journal* 322, 1511–1516.

Hauser W., Klose P., Langhorst J., Moradi B., Steinbach M., Schiltenswolf M., et al. Efficacy of different types of aerobic exercise in fibromyalgia syndrome: a systematic review and meta-analysis of randomised controlled trials. *Arthritis Res Ther*. 2010;12(3):R79.

Hayden J.A., Van Tulder M.W., Malmivaara A.V., Koes B.W. (2005). Meta-analysis: exercise therapy for nonspecific low back pain. *Annals of Internal Medicine* 142, 765–775.

Hayden, J.A., Wilson, M.N., Stewart, S., Cartwright, J.L., Smith, A.O., Riley, R.D., Van Tulder, M., Bendix, T., Cecchi, F., Costa, L.O. and Dufour, N., 2020. Exercise treatment effect modifiers in persistent low back pain: an individual participant data meta-analysis of 3514 participants from 27 randomised controlled trials. *British journal of sports medicine*, 54(21), pp.1277-1278.

Hayes S.C., Strosahl K., Wilson K.G. (1999). *Acceptance and Commitment Therapy: An Experiential Approach to Behavior Change*. New York: Guilford Press.

Hayes S.C., Strosahl K.D., Wilson, K.G. (2012). *Acceptance and Commitment Therapy: The process and practice of mindful change*. London: Guilford Press.

Hill J.C., Whitehurst D.G.T., Lewis M., Bryan S., Dunn K.M., Foster N.E., Konstantinou K., Main C.J., Mason E., Somerville S., Sowden G., Vohora K., Hay E.M. (2011). Comparison of stratified primary care management for low back pain with current best practice (STarT Back): a randomised controlled trial. *Lancet* 378, 1560–1571.

Hoffman B.M., Papas R.K., Chatkoff D.K., Kerns R.D. (2007). Meta-analysis of psychological interventions for chronic low back pain. *Health Psychology* 26, 1–9.

IASP Pain Curricula. <https://www.iasp-pain.org/Education/CurriculaList.aspx?navItemNumber=647>

Improving working Lives: The Work Health and Disability Green Paper.(2016) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/644090/work-health-and-disability-green-paper-data-pack.pdf

Jaimeson-Lega K., Berry R., Brown C.A. (2012). Pacing: A concept analysis of a chronic pain intervention. *Pain Research and Management* (in press).

Jones, K.C., Tocco, E.C., Marshall, A.N., McLeod, T.C.V. and Bacon, C.E.W., 2020. Pain Education With Therapeutic Exercise in Chronic Nonspecific Low Back Pain Rehabilitation: A Critically Appraised Topic. *Journal of Sport Rehabilitation*, 1(aop), pp.1-6.

Jordan J.L., Holden M.A., Mason E.E., Foster N.E. Interventions to improve adherence to exercise for chronic musculoskeletal pain in adults. *Cochrane Database Syst Rev*. 2010;1:CD005956

JoyPaul S., Kelly F, McMillan S.S., King M.A. (2019) Multi-disciplinary interventions for chronic pain involving education: A systematic review. *PLoS ONE* 14(10): e0223306. <https://doi.org/10.1371/journal.pone.0223306>

Improving working lives: Work, Health and Disability Green Paper (2016) :-
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/644090/work-health-and-disability-green-paper-data-pack.pdf

Ibrahim, M.E., Weber, K., Courvoisier, D.S. et al. Recovering the capability to work among patients with chronic low Back pain after a four-week, multidisciplinary biopsychosocial rehabilitation program: 18-month follow-up study. *BMC Musculoskelet Disord* 20, 439 (2019). <https://doi.org/10.1186/s12891-019-2831-6>

Kaiser, U., Kopkow, C., Deckert, S., Neustadt, K., Jacobi, L., Cameron, P., De Angelis, V., Apfelbacher, C., Arnold, B., Birch, J. and Bjarnegård, A., 2018. Developing a core outcome domain set to assessing effectiveness of interdisciplinary multimodal pain therapy: The VAPAIN consensus statement on core outcome domains. *Pain*, 159(4), pp.673-683.

Kamper S.J., Apeldoorn A.T., Chiarotto A., Smeets R.J.E.M., Ostelo R.W.J.G., Guzman J., Van Tulder M.W. (2015) Multidisciplinary biopsychosocial rehabilitation for chronic low back pain: Cochrane systematic review and meta-analysis *BMJ* 2015;350:h444

Karjalainen K., Malmivaara A., Van Tulder M., Roine R., Jauhiainen M., Hurri H., Koes B. (2001). Multidisciplinary biopsychosocial rehabilitation for subacute low back pain in working-age adults: a systematic review within the framework of the Cochrane Collaboration Back Review Group. *Spine* 26, 262– 269.

Karjalainen K., Malmivaara A., van Tulder M., Roine R., Jauhiainen M., Hurri H. (2003). Multidisciplinary biopsychosocial rehabilitation for neck and shoulder pain among working age adults.[update of Cochrane Database Systematic Reviews 2000;(3): CD002194; PMID: 10908529]. *Cochrane Database of Systematic Reviews*:CD002194.

Klumb P., Lampert T. (2004). Women, work and wellbeing 1950–2000: a review and methodological critique. *Social Science and Medicine* 58, 1007– 1024.

Koes, B.W., Van Tulder, M.W., Thomas, S. (2006). Diagnosis and treatment of low back pain. *British Medical Journal* 332, 1430–1434.

Kposowa A.J. (2001). Unemployment and suicide: a cohort analysis of social factors predicting suicide in the US National Longitudinal Mortality Study. *Psychological Medicine* 31, 127–138.

Krause N., Dasinger L.K., Neuhauser F. (1998). Modified work and return to work: a review of the literature. *Journal of Occupational Rehabilitation* 8, 113– 139.

Lagueux, É., Dépelteau, A., & Masse, J. (2018). Occupational Therapy's Unique Contribution to Chronic Pain Management: A Scoping Review. *Pain research & management*, 2018, 5378451. <https://doi.org/10.1155/2018/5378451>

Lin J., Paganini S., Sander L., Lüking M., Ebert D.D., Buhrman M., Andersson G., Baumeister H: An Internet-based intervention for chronic pain—a three-arm randomized controlled study of the effectiveness of guided and unguided acceptance and commitment therapy. *Dtsch Arztebl Int* 2017; 114: 681–8. DOI: 10.3238/arztebl.2017.0681

Linton S.J. (2000). A review of psychological risk factors in back and neck pain. *Spine* 25, 1148–1156.

Linton S.J. (2005). Do psychological factors increase the risk for back pain in the general population in both a cross-sectional and prospective analysis? *European Journal of Pain* 9, 355–361.

Linton S.J., McCracken L.M., Vlaeyen J.W.S. (2008). Reassurance: help or hinder in the treatment of pain. *Pain* 134, 5–8.

Longmore R.J., Worrell M. (2007). Do we need to challenge thoughts in cognitive behavior therapy? *Clinical Psychology Review* 27, 173–187.

Luciano Juan, V. Cost-Utility of Group Acceptance and Commitment Therapy for Fibromyalgia Versus Recommended Drugs: An Economic Analysis Alongside a 6-Month Randomized Controlled Trial Conducted in Spain (EFFIGACT Study). *The Journal of Pain*, Volume 18, Issue 7, 868 – 880

Lydell M., Grahn B., Månsson J., Baigi A., Marklund B. Predictive factors of sustained return to work for persons with musculoskeletal disorders who participated in rehabilitation. *Work*. 2009;33(3):317-28. doi: 10.3233/WOR-2009-0879. PMID: 19759430.

Macea D.D., Gajos K., Daglia Calil Y.A., Fregni F. The efficacy of Web-based cognitive behavioral interventions for chronic pain: a systematic review and meta-analysis. *J Pain*. 2010 Oct;11(10):917–29. doi:10.1016/j.jpain.2010.06.005;

Maguire N., Chesterton P. and Ryan C., 2018. The Effect of Pain Neuroscience Education on Sports Therapy and Rehabilitation Students' Knowledge, Attitudes and Clinical Recommendations Towards Athletes with Chronic Pain. *Journal of sport rehabilitation*, pp.1-19.

Main C., Sullivan M.J.L., Watson P.J. (2008). Pain Management: *Practical Applications of the Biopsychosocial Perspective in Clinical and Occupational Settings*. Edinburgh: Churchill-Livingstone.

Mankelow J., Ryan C., Taylor P. and Martin D., 2020. The effect of pain neurophysiology education on healthcare students' knowledge, attitudes and behaviours towards pain: A mixed-methods randomised controlled trial. *Musculoskeletal Science and Practice*, 50, p.102249.

Marris D., Theophanous K., Cabezon P., Dunlap Z. and Donaldson M., 2019. The impact of combining pain education strategies with physical therapy interventions for patients with chronic pain: a systematic review and meta-analysis of randomized controlled trials. *Physiotherapy Theory and Practice*, pp.1-12.

Martorella G., Boitor M., Berube M., Fredericks S., Le May S., Gélinas C. Tailored Web-Based Interventions for Pain: Systematic Review and Meta-Analysis *J Med Internet Res* 2017;19(11):e385 DOI: 10.2196/jmir.8826

McCracken L.M., Samuel V.M. (2007) The role of avoidance, pacing, and other activity patterns in chronic pain. *Pain* 130, 119–125.

McCracken L.M., Gutierrez-Martinez O. (2011) Processes of change in psychological flexibility in an interdisciplinary group-based treatment for chronic pain based on acceptance and commitment therapy. *Behaviour Research and Therapy* 49, 267–274.

McCracken L.M., Jones R. (2012). Treatment for chronic pain for adults in the seventh and eighth decades of life: A preliminary study of Acceptance and Commitment Therapy (ACT). *Pain Medicine* 13, 861–867.

McCracken L.M., Gross R.T., Eccleston C. (2002). Multimodal assessment of treatment process in chronic low back pain: comparison of reported pain-related anxiety with directly measured physical capacity. *Behaviour Research and Therapy* 40, 585–594.

Mencap: Treat me well; Reasonable adjustments for people with a learning disability in hospital (2018). <https://www.mencap.org.uk/sites/default/files/2018-06/Treat%20me%20well%20top%2010%20reasonable%20adjustments.pdf>

Morley S., Eccleston C., Williams A. (1999). Systematic review and meta-analysis of randomised controlled trials of cognitive behaviour therapy and behaviour therapy for chronic pain in adults, excluding headache. *Pain* 80, 1–13.

Moseley G.L., Nicholas M.K., Hodges P.W. (2004) A randomized controlled trial of intensive neurophysiology education in chronic low back pain. *Clin J Pain* 20:324-330.

NHS Long Term Conditions Plan (2019). <https://www.awaywithpain.co.uk/sites/default/files/RCGP-Commissioning-Pain-Management-Services-Jan-14.pdf>

Nicholas M.K. (1992). Chronic pain. In Wilson P.H. (ed.), *Principles and Practice of Relapse Prevention*. New York: Guilford Press, pp. 255–289.

Nicholas M.K., Linton S.J., Watson P.J., Main C.J. (2011). The early identification and management of psychological risk factors (Yellow Flags) in patients with low back pain: a critical review. *Physical Therapy* 91, 737–753.

NICE Guideline NG59 <https://www.nice.org.uk/guidance/ng59>

NICE Guideline NG193 <https://www.nice.org.uk/guidance/ng193>

Oakman J., Keegel T., Kinsman N., Briggs A.M. (2016) Persistent musculoskeletal pain and productive employment; a systematic review of interventions. *Occup Environ Med.* Mar;73(3):206-14.

Overmeer T., Boersma K., Denison E. and Linton S.J., 2011. Does teaching physical therapists to deliver a biopsychosocial treatment program result in better patient outcomes? A randomized controlled trial. *Physical therapy*, 91(5), pp.804-819.

Paganini S., Lin J., Kahlke F., et al. A guided and unguided internet- and mobile based intervention for chronic pain: health economic evaluation alongside a randomised controlled trial. *BMJ Open* 2019;9:e023390. doi:10.1136/bmjopen-2018-023390

Pain Management Services: Planning for the Future 2013.
<https://www.awaywithpain.co.uk/sites/default/files/RCGP-Commissioning-Pain-Management-Services-Jan-14.pdf>

Pigeon W. R., Moynihan J., Matteson-Rusby S., Jungquist, C.R., Xia Y., Tu X., & Perlis M. L. (2012). Comparative effectiveness of CBT interventions for co-morbid chronic pain & insomnia: a pilot study. *Behaviour research and therapy*, 50(11), 685- 689.

Pike A., Hearn L. de C., Williams A.C. Effectiveness of psychological interventions for chronic pain on health care use and work absence, *Pain*: April 2016 - Volume 157 - Issue 4 - p 777-785 doi: 10.1097/j.pain.0000000000000434

Pincus T., Burton A.K., Vogel S., Field A.P. (2001). A systematic review of psychological factors as predictors of disability in prospective cohorts of low back pain. *Spine* 27, 109–120.

Physiotherapy Pain Association. <https://ppa.csp.org.uk>

Reine I., Novo M., Hammarström A. (2004). Does the association between ill health and unemployment differ between young people and adults? Results from a 14-year follow-up study with a focus on psychological health and smoking. *Public Health* 118, 337–345.

Reynoldson C., Stones C., Allsop M., Gardner P., Bennett M.I., Closs J., Jones R., and Knapp P. Assessing the Quality and Usability of Smartphone Apps for Pain Self-Management, *Pain Medicine* 2014; 15: 898–909).

Roth A.D., Fonagy P. (2005). *What Works for Whom: A Critical Review of Psychotherapy Research, 2nd edition*. New York: Guilford Press.

Royal College of Occupational Therapists / National Social Inclusion Programme. (2007) Work matters: vocational navigation for occupational therapy staff

Salathé C.R.1, Melloh M. 2,3,4, Crawford R. 3, Scherrer S. 1, Boos N. 5, Elfering A. 1,6. Treatment Efficacy, Clinical Utility, and Cost-Effectiveness of Multidisciplinary Biopsychosocial Rehabilitation Treatments for Persistent Low Back Pain: A Systematic Review. *Global Spine J.* 2018 Dec;8(8):872-886. doi: 10.1177/2192568218765483. Epub 2018 Apr 19.

Scascighini L., Toma V., Dober-Spielmann S. and Sprott H., 2008. Multidisciplinary treatment for chronic pain: a systematic review of interventions and outcomes. *Rheumatology*, 47(5), pp.670-678

Shaw W.S., Van der Windt D.A., Main C.J., Loisel P., Linton S.J. (2009). Early patient screening and intervention to address individual-level occupational factors (Blue Flags) in back disability. *Journal of Occupational Rehabilitation* 19, 64–80.

SIGN 50 (2008). *Scottish Intercollegiate Guidelines Network*. ISBN 978 1 905813 25 4

Simister H.D., Tkachuk G.A., Shay B.L., Vincent N., Pear J.J., Skrabek R.Q. Randomized Controlled Trial of Online Acceptance and Commitment Therapy for Fibromyalgia. *J Pain.* 2018 Jul;19(7):741-753. doi: 10.1016/j.jpain.2018.02.004. Epub 2018 Mar 2. PMID: 29481976.

Smeets R.J.E.M., Wade D., Hidding A., Van Leeuwen P.J.C.M., Vlaeyen J.W.S., Knottnerus J.A. (2006). The association of physical deconditioning and chronic low back pain: a hypothesis-oriented systematic review. *Disability and Rehabilitation* 28, 673–693.

Smith B.E., Littlewood C., May S. An update of stabilisation exercises for low back pain: a systematic review with meta-analysis. *BMC Musculoskelet Disord.* 2014;15:416.

Spearing, N.M., Connelly, L.B., & Sterling, M. (2012). Does injury compensation lead to worse health after whiplash? A systematic review. *Pain*, 153(6), 1274-1282.

Stanley K., Maxwell D. (2004). *Fit for Purpose*. London: IPPR.

Stewart, L., Usher A., Allenby K., Research Branch, Correctional Service of Canada; A Review of Optimal Group Size and Modularisation or Continuous Entry Format for Program Delivery Published 2009. <http://www.csc-scc.gc.ca/research/005008-0215-01-eng.shtml>

Strategic Review of Health Inequalities in England post-2010. (2010). Fair society, healthier lives: The Marmot review. <http://www.instituteofhealthequity.org/resources-reports/fair-society-healthy-lives-the-marmot-review/fair-society-healthy-lives-exec-summary-pdf.pdf>

Thorsell J., Finnes A., Dahl J., Lundgren T., Gybrant M., Gordh T., Buhrman M. (2011). A comparative study of 2 manual-based self-help interventions, Acceptance and Commitment Therapy and applied relaxation, for persons with chronic pain. *Clinical Journal of Pain*, 27, 716–723.

Tolin D.F. (2010). Is cognitive-behavioral therapy more effective than other therapies? A meta-analytic review. *Clinical Psychology Review*, 30, 710–720.

Turk D.C., Dworkin R.H., Revicki D., Harding G., Burke L.B., Cella D., Cleeland C.S., Cowan P., Farrar J.T., Hertz S., Max M.B., Rappaport B.A. (2008). Identifying important outcome domains for chronic pain clinical trials: An IMMPACT survey of people with pain. *Pain* 137, 276–285.

Tang N.K., Goodchild C.E., & Salkovskis P.M. (2012b). Hybrid cognitive-behaviour therapy for individuals with insomnia and chronic pain: a pilot randomised controlled trial. *Behaviour research and therapy*, 50(12), 814-821.

Tang N.K., Lereya S.T., Boulton H., Miller M.A., Wolke D., Cappuccio F.P. Nonpharmacological treatments of insomnia for long-term painful conditions: a systematic review and meta-analysis of patient-reported outcomes in randomized controlled trials. *Sleep*. 2015;38(11):1751.

Tegner H., Frederiksen P., Esbensen B.A. and Juhl C., (2018) Neurophysiological pain education for patients with chronic low back pain. *The Clinical journal of pain*, 34(8): 778-786.

Trauer J.M., Qian M.Y., Doyle J.S., Rajaratnam S.M., & Cunnington D. (2015). Cognitive behavioral therapy for chronic insomnia: a systematic review and meta-analysis. *Annals of internal medicine*, 163(3), 191-204.

Treede R.D., Rief W., Barke A., Aziz Q., Bennett M.I. A classification of chronic pain for ICD-11. *Pain*. 2015 Jun; 156(6): 1003–1007. Published online 2015 Mar 14. doi: 10.1097/j.pain.0000000000000160

Trompetter H.R., Bohlmeijer, E.T., Lamers, S.M.A., Schreurs, K.M.G. (2016). Positive well-being is required for online self-help Acceptance and Commitment Therapy for chronic pain to be effective. *Frontiers in Psychology*, 7, 353 doi 10.3389/fpsyg.2016.00353

Twiddy H., Brown R.J., & Waheed H. (2018). The context of litigation in evaluating physical and psychological outcomes from pain management programmes. *British journal of pain*, 204946371882005. DOI: 10.1177/2049463718820056

Van Middelkoop M., Rubinstein S.M., Verhagen A.P., Ostelo R.W., Koes B.W., van Tulder M.W. Exercise therapy for chronic nonspecific low-back pain. *Best Pract Res Clin Rheumatol*. 2010;24(2):193–204.

UK Chief Medical Officers' Physical Activity Guidelines (2019).
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/832868/uk-chief-medical-officers-physical-activity-guidelines.pdf

Van Oostrom S.H., Driessen M.T., de Vet H.C.W., Franche R.-L., Schonstein E., Loisel P., van Mechelen W., Anema J.R. (2009). Workplace interventions for preventing work disability. *Cochrane Database of Systematic Reviews* 2009:CD006955.

Van Tulder M.W., Ostelo R., Vlaeyen J.W.S., Linton S.J., Morley S.J., Assendelft W.J. (2000). Behavioral treatment of for chronic low back pain: a systematic review within the framework of the Cochrane Back Review Group. *Spine* 25, 2688–2699.

Van Vilsteren M., Van Oostrom S.H., de Vet H.C., Franche R.L., Boot C.R., Anema J.R. (2015) Workplace interventions to prevent work disability in workers on sick leave. *Cochrane Database Syst Rev*. Oct 5;(10):CD006955

Veehof M.M., Oskam M., Schreurs K.M.G., Bohlmeijer E.T. (2011). Acceptance-based interventions for the treatment of chronic pain: a systematic review and meta-analysis. *Pain* 152, 533–542.

Verbunt J.A., Smeets R.J., Wittink H.M. (2010). Cause or effect? Deconditioning and chronic low back pain. *Pain* 149, 428–430.

Vitiello M.V., McCurry S.M., Shortreed S.M., Balderson B.H., Baker L.D., Keefe F.J., et al. Cognitive-behavioral treatment for comorbid insomnia and osteoarthritis pain in primary care: The lifestyles randomized controlled trial. *Journal of the American Geriatrics Society*. 2013;61(6):947-56.

Vugts M.A.P., Joosen M.C.W., Van der Geer, J.E., Zedlitz, A.M.E.E., Vrijhoef H.J.M. (2018). The effectiveness of various computer-based interventions for patients with chronic pain or functional somatic syndromes: A systematic review and meta-analysis. *PLoS ONE*, 13, e0196467.

Vooijs M., Leensen M.C., Hoving J.L., Wind H., Frings-Dresen M.H. (2015) *Occup Environ Med.* 2015 . Interventions to enhance work participation of workers with a chronic disease: a systematic review of reviews. Nov;72(11):820-6.

Vowles K.E., McCracken L.M. (2008). Acceptance and values-based action in chronic pain: a study of treatment effectiveness and process. *Journal of Consulting and Clinical Psychology* 76, 397–407.

Vowles K.E., McCracken L.M. (2010). Comparing the role of psychological flexibility and traditional pain management coping strategies in chronic pain treatment outcomes. *Behaviour Research and Therapy* 48, 141–146.

Vowles K.E., Pielech M., Edwards K.A., McEntee M.L., Bailey R.W. A Comparative Meta-Analysis of Unidisciplinary Psychology and Interdisciplinary Treatment Outcomes Following Acceptance and Commitment Therapy for Adults with Chronic Pain. *J Pain.* 2020 May-Jun;21(5-6):529-545. doi: 10.1016/j.jpain.2019.10.004. Epub 2019 Nov 2. PMID: 31683020; PMCID: PMC7477894.

Waddell G., Burton A.K. (2006) *Is work good for your health and well-being?* Department for Work and Pensions London: The Stationery Office

Waddell G., Burton A K., Kendall, Nicholas A.S., (2008) *Vocational rehabilitation – what works, for whom, and when?* (Report for the Vocational Rehabilitation Task Group) TSO, London. ISBN 9780117038615

Wallace LS, Dhingra LK A systematic review of smartphone applications for chronic pain available for download in the United States. *J Opioid Manag.* 2014 Jan-Feb;10(1):63-8. doi: 10.5055/jom.2014.0193

Waller G. (2009). Evidence based treatment and therapist drift. *Behaviour Research and Therapy* 47, 119–127.

Wasiak R., Kim J., Pransky G. (2006). Work disability and costs caused by recurrence of low back pain: longer and more costly than in first episodes. *Spine* 31, 219–225.

Waterschoot, F.P., Dijkstra, P.U., Hollak, N., de Vries, H.J., Geertzen, J.H. and Reneman, M.F., 2014. Dose or content? Effectiveness of pain rehabilitation programs for patients with chronic low back pain: a systematic review. *Pain*, 155(1), pp.179-189.

Watson J.A., et al., (2019) Pain Neuroscience Education for Adults With Chronic Musculoskeletal Pain: A Mixed-Methods Systematic Review and Meta-Analysis *The Journal of Pain*, Volume 20, Issue 10, 1140.e1 -1140.e22

- Watson P.J., Main C.J., Smeets R.J.E.M. (2010). The basics: management and treatment of low back pain. In: Mogil J.S. (ed.), *Pain 2010 – An Updated Review: Refresher Course Syllabus*. Seattle: IASP Press.
- Wegrzynek P.A., Wainwright E., Ravalier J. Return to work interventions for chronic pain: a systematic review. *Occup Med (Lond)*. 2020 Jun 20;70(4):268- 277. doi: 10.1093/occmed/kqaa066. PMID: 32449768.
- Wells-Ferdman C., Arnstein P., Caudill M. (2002). Nurse-led pain management program: effect of self-efficacy, pain intensity, pain related disability and depressive symptoms in chronic pain patients. *Pain Management Nursing* 3, 131–140.
- Wicksell R.K., Ahlqvist J., Bring A., Melin L., Olsson G.L. (2008). Can exposure and acceptance strategies improve functioning and life satisfaction in people with chronic pain and whiplash-associated disorders (WAD)? A randomized controlled trial. *Cognitive Behavioral Therapy* 37, 169–182.
- Wicksell R.K., Olsson G.L., Hayes S.C. (2010). Psychological flexibility as a mediator of improvement in Acceptance and Commitment Therapy for patients with chronic pain following whiplash. *European Journal of Pain* 14, 1059.e1–1059.e11.
- Wicksell R.K., Kemani M., Jensen K., Kosek E., Kadetoff D., Sorjonen K., Ingvar M., Olsson G.L. (2012). *European Journal of Pain* doi: 10.1002/j.1532-2149.2012.00224.x
- Williams A.C.de C., Potts H.W.W. (2010). Group membership and staff turnover affect outcomes in group CBT for persistent pain. *Pain* 148, 481–486.
- Williams A.C.de C., Richardson P.H., Nicholas M.K., Pither C., Harding V.R., Ridout K.L., Ralphs J.A., Richardson I.H., Justins D.M., Chamberlain J.H. (1996). Inpatient vs outpatient pain management: results of a randomised controlled trial. *Pain* 66, 13–22.
- Williams A.C. de C., Fisher E., Hearn L., Eccleston C. Psychological therapies for the management of chronic pain (excluding headache) in adults. *Cochrane Database of Systematic Reviews* 2020, Issue 8. Art. No.: CD007407. DOI: 10.1002/14651858.CD007407.pub4.
- Williams A.C.de C., Eccleston C., Morley S. (2012). Psychological therapies for the management of chronic pain (excluding headache) in adults. *Cochrane Database of Systematic Reviews* 2012, Issue 11. Art. No.: CD007407. DOI: 10.1002/14651858.CD007407.pub3.
- Wynne-Jones G., Cowen J., Jordan J.L., Uthman O., Main C.J, Glozier N., van der Windt D. (2014) Absence from work and return to work in people with back pain: a systematic review and meta-analysis *Occup Environ Med*. Jun; 71(6): 448–456.

Wynne-Jones G., Artus M., Bishop A., Lawton S., Lewis M., Jowett S., Kigozi J., Main C., Sowden G., Wathall S., Burton, A., Van der Windt D., Hay, E., Foster N., The SWAP Study Team. Effectiveness and costs of a vocational advice service to improve work outcomes in patients with musculoskeletal pain in primary care: a cluster randomised trial (SWAP trial ISRCTN 52269669), *Pain*, January 2018 - Volume 159 - Issue 1 - p 128-138 DOI: 10.1097/j.pain.0000000000001075

Young A., Wasiak R., Roessler R.T., McPherson K., Anema J.R., van Poppel M.N. (2005). Return-to-work outcomes following work disability: stakeholder motivations, interests and concerns. *Journal of Occupational Rehabilitation* 15, 543–556.

UK Chief Medical Officer (2019) UK Chief Medical Officers' Physical Activity Guidelines, UK Department of Health and Social Care, UK.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/832868/uk-chief-medical-officers-physical-activity-guidelines.pdf [accessed 07/12/2020]

Louw A., Zimney K., Puentedura E.J. and Diener I., (2016) The efficacy of pain neuroscience education on musculoskeletal pain: a systematic review of the literature. *Physiotherapy theory and practice*, 32(5), pp.332-355.

Watson J.A., Ryan C.G., Cooper L., Ellington D., Whittle R., Lavender M. et al. (2019) Pain neuroscience education for adults with chronic musculoskeletal pain: A mixed-methods systematic review and meta-analysis. *The Journal of Pain*. 44 20(10):1140 e1-1140 e22.

Wood L. and Hendrick P.A., (2019) A systematic review and meta-analysis of pain neuroscience education for chronic low back pain: Short-and long-term outcomes of pain and disability. *European Journal of Pain*, 23(2): 234-249.



The British Pain Society
Third Floor, Churchill House, 35 Red Lion Square, London WC1R 4SG

www.britishpainsociety.org

ISBN *****