THE AUSTRALIAN PAIN SOCIETY

POSITION STATEMENT:

The role of the Psychologist in the management of pain

3rd Edition

Approved: April 2021

Due for review: April 2024

THE AUSTRALIAN PAIN SOCIETY

POSITION STATEMENT:

The Role of the Psychologist in the Management of Pain

3rd Edition (March 2021)

Contents

POSITION STATEMENT:

The Role of the Psychologist in the Management of Pain

3rd Edition (March 2021)

Chronic pain affects 1 in 5 Australians, or one in three for older individuals. It is the country's third most expensive health condition with an estimated yearly cost of $139.3 billion including direct healthcare expenditure and lost productivity (Deloitte Access Economics, 2019). Individuals with chronic pain commonly experience anxiety, depression, sleep disturbance, fatigue and loss of quality of life and function (Australian Insitute of Health and Welfare [AIHW], 2020a). Multidisciplinary approaches to pain management, which include psychology as an important feature, may improve quality of life for those living with pain and afford savings to health and disability support systems (Deloitte Access Economics, 2019).

The discipline of psychology plays a significant role in the Australian health system, delivering psychological treatments to enhance the mental and physical health of over 1.25 million consumers each year (AIHW, 2020b). As a profession, psychology recognises the importance of evidence-based practice in pain management. Psychologists bring a unique perspective to the understanding of pain, providing services to consumers on an individual basis as well as via multidisciplinary pain management teams. They also make important contributions to program development, research, and advocacy across the pain sector.

This position paper will provide an overview of the key role of Psychologists by answering the following questions:

- Why are Psychologists involved in pain management?
- What does a Psychologist do in pain management?
- When should a Psychologist be involved in pain management?
- How should a Psychologist be providing services for pain management?
- Who should be providing psychological services for pain management?

POSITION STATEMENT:

The Role of the Psychologist in the Management of Pain

3rd Edition (March 2021)

In recognition of the complex nature of pain and the involvement of a range of health care professionals, this paper has been developed to inform a broad multidisciplinary audience, including clinicians entering or working in the pain management field, Psychologists-in-training, health professionals needing support for their pain management patients, health care funders, health care administrators, and other services interested in psychological approaches to pain management.

Why are Psychologists involved in pain management?

Pain is impacted by the biological, emotional, cognitive, behavioural and social influences of the individual living with the condition (Epker, 2013; Greve, Bianchini, & Ord, 2012; Roditi & Robinson, 2011; Turk & Robinson, 2011). It is a complex problem that is frequently associated with a range of physical and psychological co-morbidities. Indeed, over 44% of people with chronic pain experience some form of psychological difficulty such as depression or anxiety (Tardif, Blanchard, White, & Bryce, 2018); conditions which can exacerbate pain and erode effective management. Pain is also influenced by cognitions, with beliefs (e.g., about symptoms) driving behaviour and mediating factors such as treatment engagement, functional activity, mood and coping (Turner, Jensen, & Romano, 2000). Similarly, social factors such as beliefs/opinions of significant others, the work environment and iatrogenic factors within the treating relationship can all shape the interpretation of, and response to, pain.

Pharmacological interventions can be of limited benefit for chronic pain, especially when used exclusively. In some circumstances, they can exacerbate the problem (e.g., increased pain through opioid induced hyperalgesia (Morris & Crowley, 2020) or rebound headache from codeine-based medication (Evers & Marziniak, 2010)). A current concern is the perceived

over-reliance on medications, especially opioid medications, to manage pain despite data demonstrating that they are frequently ineffective in the long-term and carry a significant risk profile (Wandner, Aklin, & Freed, 2020). There is, however, strong evidence for non-pharmacological approaches to the management of pain, of which Psychologists are critical providers.

What does a Psychologist do in pain management?

Psychologists work across the trajectory of pain, providing assessment and treatment to individuals living with pain, and guiding the evaluation of outcomes achieved by those interventions in order to ensure that therapeutic goals are achieved (Wandner, Prasad, Ramezani, Malcore, & Kerns, 2019). Psychologists can be involved from the earliest stages of pain onset to improve outcomes and are firmly established within the chronic pain management setting, assisting with emotional and functional distress and supporting individuals to change health behaviours in order to more effectively self-manage pain. Psychologists target symptom reduction for co-morbid mental health conditions (e.g. PTSD, depression, anxiety), whilst also focusing on the broad range of factors influencing the individual's pain (e.g., attention, learning and memory, beliefs and thought processes, social context). They provide specialised input to inform care planning (as outlined below) and collaborate with other professionals to highlight relevant psychological and social factors; thus facilitating the development of a comprehensive case formulation that is shared among the treating team.

Psychological Assessment

Psychological assessment is conducted for many reasons, including:

- diagnosis;

- informing treatment decisions and care plans;
- pre-medical procedure or pre-surgery screening (e.g., for neuromodulation or intrathecal drug delivery devices);
- informing disability determination; and
- monitoring treatment progress and effectiveness (Turk & Robinson, 2011).

Broadly speaking, psychological assessment considers the biological, psychological and social factors that may be contributing to an individual's pain, and the impact that those factors are having on the person's life. This model is reflected in the latest revision of the International Classification of Disease for chronic pain (Treede et al., 2019; World Health Organization, 2020) where clinicians are encouraged to look for positive evidence of contributors from these different domains when assessing an individual's pain, rather than forming a diagnosis by exclusion (Nicholas, Vlaeyen, et al., 2019).

During an assessment, a Psychologist will seek to develop a broad understanding of the pain onset and context, as well as how it impacts on the life of the individual living with it. This information enables identification of key factors contributing to the person's pain condition, as well as potential barriers (e.g., low self-efficacy, unhelpful beliefs about pain, distress, fear and anxiety, depression, readiness for change, unrealistic expectations) and facilitators (e.g. spouse, employer, previous experience) to treatment progress. This information is then drawn together to form a comprehensive understanding of the individual's experience. Psychologists call this a case formulation (Linton & Nicholas, 2008).

Accredited training for psychology includes rigorous skill development in conducting comprehensive psychosocial assessments. As there is no simple instrument that can

objectively measure pain, the procedures and measures used by a Psychologist in the assessment of individuals living with pain will depend on a range of factors. This includes the purposes(s) of the assessment, the unique characteristics of the individual being assessed (e.g., age, cultural background, educational level, ability to communicate verbally) and the context in which the assessment is taking place (e.g., clinic, emergency department, medicolegal setting) (Turk & Robinson, 2011). Valid and reliable pain-specific psychometric measures (such as those used in the electronic Persistent Pain Outcomes Collaboration (Australian Health Services Research Institute, 2020) can be used to quantify pain intensity, emotional distress and physical function, explore belief systems, and examine coping strategies. Normative data for Australasia are now available for many of these scales (Nicholas, Costa, et al., 2019); but it is important to note that psychometrics should always be interpreted in concert with clinical data.

Psychological Treatment

Psychological approaches to the management of pain emphasise self-management strategies to facilitate improved function, reduced pain and enhanced quality of life; with specific goals determined by the preferences of the individual (Nicholas & Blyth, 2016). Treatment by a Psychologist directly targets barriers to progress in physical, social, and psychological domains by focusing on behavioural change and functional re-engagement. Enhancing insight into the secondary gains and losses which have arisen from pain is also often needed to facilitate change. Focusing on the individual with pain is central to treatment, however couples or family therapy may also be appropriate, particularly in the paediatric or disability setting. The effectiveness of therapy depends on a range of factors including the therapist's training and experience and, critically, the engagement of the individual with the therapeutic process.

With those caveats in mind, the following are some commonly used, evidence-based psychological therapies for pain management:

- *Cognitive-Behavioural Therapy (CBT)* assists individuals to recognise and change thoughts, behaviours and social/environmental factors that have been identified (by the individual and the Psychologist) as unhelpful in the interpretation of, or response to, pain (Tang, 2018);
- *Behavioural Therapy (BT)* helps individuals identify and reduce maladaptive behaviours carried out to avoid pain or triggered by worry about pain (Williams, Fisher, Hearn, & Eccleston, 2020); and
- *Acceptance and Commitment Therapy (ACT)* is a mindfulness-based behaviour therapy, which focuses on acceptance and committed action to increase an individual's physical function and engagement with valued activities, without necessarily eliminating the pain (Hughes, Clark, Colclough, Dale, & McMillan, 2017).

Therapeutic strategies

Irrespective of therapeutic modality, Psychologists working in pain management facilitate behavioural change and functional re-engagement through the identification and management of psychological issues affecting the individual. The following therapeutic strategies are especially important when treating patients with pain:

- *Pacing.* Pacing is a well-recognised pain management tool. Effective pacing targets activities rather than pain, relies on objective measures such as time, and incorporates the principles of other psychological strategies including goal setting, conditioning and relapse prevention (refer Hadzic, Sharpe, and Wood (2017) for an overview of key concepts).

- *Exposure*. Similar to exposure for anxiety and phobias, exposure in pain management focuses on exposure to a feared/avoided stimulus or experience (Glombiewski et al., 2018). Here, the stimulus may be a behaviour (e.g. lifting), a setting (e.g. workplace), or an experience (also called interoceptive exposure, refer Nicholas et al. (2014)).
- *Hypnosis / Hypnotherapy.* Hypnosis has been shown to be effective at reducing pain severity and promoting a number of associated positive effects such as increased energy, mood and use of self-management techniques (Jensen & Patterson, 2014), and can be used in conjunction with other approaches such as cognitive and behavioural therapies.
- *Mindfulness*. Although Acceptance and Commitment Therapy includes the use of mindfulness as a strategy for "defusion" from thoughts and feelings, mindfulness can also be effectively used as an independent psychological technique. Mindfulness is generally defined as intentionally focusing one's attention on the experience occurring in the present moment in a non-judgemental and accepting way (Kabat-Zinn, 2013). Mindfulness allows individuals with pain to step back from and reframe experiences, and has been shown to result in lower levels of disability, anxiety, depression and catastrophising and an increase in quality of life (Cassidy, Atherton, Robertson, Walsh, & Gillett, 2012; Hilton et al., 2017).
- *Psychoeducation.* A core component of pain management is educating people about pain and about how their physical, emotional and cognitive response to pain impacts their experience of it. This includes fostering an understanding of the role of the nervous system and sensitisation, as well as the individual's pain triggers and strategies for managing crises (Moseley & Butler, 2015). To competently provide psychoeducation for people with pain, Psychologists should have a working knowledge

of the language, terms, treatments and outcomes associated with all aspects of pain and its management. This knowledge is also vital in the context of interdisciplinary care; enabling the Psychologist to understand key concepts regarding the efficacy of procedures, medications and physical activities that may be recommended for the person with pain.

- *Anxiety management strategies.* In addition to generalised anxiety management and exposure therapy (refer above) (Flink et al., 2020), Psychologists can support individuals to break the cycle of pain-related fear and avoidance behaviours. The fear avoidance model of chronic pain postulates that fear of anticipated pain results in hypervigilance and monitoring of pain sensations which in turn, can increase pain intensity. Over time, this can lead to avoidance of movement and activity, resulting in reduced function, lower mood, increased disability and greater fear (Zale & Ditre, 2015).
- *Treatment of PTSD symptoms*. Pre-existing and pain-related trauma are common in this population. Research shows a bi-directional temporal relationship between pain and trauma, with management of trauma symptoms influencing pain management outcomes (Ravn, Hartvigsen, Hansen, Sterling, & Andersen, 2018).
- *Sleep strategies.* Sleep and chronic pain are intricately linked and there is strong evidence that improving sleep quality can improve pain (Finan, Goodin, & Smith, 2013) and increase quality of life.
- *Healthy lifestyles*. Supporting people with pain to engage in healthy behaviours such as regular physical activity and eating a healthy diet can improve quality of life (Brain et. al., 2019). Additionally, Psychologists can provide targeted therapy for management of smoking, alcohol and both prescribed and illicit substances (Witkiewitz & Vowles, 2018).

- *Applied relaxation training.* This targets the physiological and/or psychological impact of pain, and may include techniques such as progressive muscle relaxation, guided relaxation and rapid relaxation using breathing and cues. Regular practice of all methods is required to ensure their efficacy (Hayes-Skelton, Roemer, Orsillo, & Borkovec, 2013; Kwekkeboom & Gretarsdottir, 2006).
- *Vocational rehabilitation*. This includes assessment of the potential for vocational retraining and liaison with employers, rehabilitation providers and case managers to inform work placement and development of effective return to work strategies.

Evaluation of therapeutic outcomes

Evaluation of treatment – process and outcomes - is a vital part of evidence-based interventions and should be an ongoing process throughout treatment. Large scale data collection through the electronic Persistent Pain Outcomes Collaboration (Tardif, Arnold, Hayes, & Eagar, 2016) has been influential in standardising the evaluation of treatment in pain clinics across Australia and New Zealand. Normative data on these measures have now been published, enabling more accurate assessment and evaluation of treatment outcomes (Nicholas, Costa, et al., 2019). Similarly, routine outcome measurement (ROM) enhances collaboration as it facilitates the tailoring of interventions to individual goals and permits the therapeutic relationship to be monitored; a significant factor in predicting treatment efficacy. It can also help demonstrate treatment gains and reduce deterioration in care (Miller, Hubble, & Chow, 2020).

It is important to note that the definition of 'treatment success' will vary as a function of who is asking the question. For example, an individual with chronic pain may define treatment success solely as a function of pain severity; a health service provider may consider both pain

reduction and functional outcomes as important; and a workers' compensation insurer may prioritise the ability to return to gainful employment with little consideration for pain severity (Turk & Robinson, 2011). The definition of treatment success must therefore be clearly defined at the outset of therapy so that any evaluation of therapeutic outcomes can be designed in a way that captures this shared agreement.

When should a Psychologist be involved in pain management?

Early referral for psychological assessment and treatment is important as timely intervention may prevent the development of maladaptive behaviours and thus lead to improved outcomes, including improved return to work rates for injured workers (Nicholas et al., 2020). General practitioners and allied health professionals would ideally screen for psychological risk factors (known as "yellow flags") for pain-related disability soon after the onset of pain and facilitate referral to a psychologist at the earliest opportunity to optimise their patient's recovery. In many areas, access to tertiary services is limited, resulting in lengthy wait-times that may erode patient wellbeing and quality of life (Burke, Mathias, & Denson, 2018). Referral to a skilled single discipline psychology practice may therefore be more appropriate, timely and efficient than referral to a specialist multidisciplinary clinic. Psychologists who have a special interest in pain management can be accessed through the Australian Pain Society 'Public Listing of Members', the Australian Psychological Society "Find a Psychologist" website or the National Pain Services Directory prepared by Painaustralia.

Some suggestions regarding the appropriate duration and frequency of psychology consultations are presented as a guide for clinicians in Appendix 1.

How should a Psychologist be providing services for pain management?

Psychologists providing services for pain management may utilise a range of delivery modes including group and individual therapy, in-person, telehealth, or therapist-supported online education and treatment programs. It is important to note that while therapeutic input from a range of disciplines facilitates a shared understanding of the 'whole person' experience (Turk & Robinson, 2011), interdisciplinary care can occur in many formats.

Most individuals with chronic pain are treated in primary health care settings. Although not physically co-located, Psychologists working independently in the community can maintain the core attributes of an interdisciplinary approach by involving all stakeholders in the patient's care; thus enabling the development of common goals, clear and frequent communication, and an integrated approach to treatment based in a shared treatment or rehabilitation plan. Support from, or referral to, a specialist multidisciplinary service can occur at any time, especially where there is additional complexity, comorbidity, or limited treatment progress (Hayes & Hodson, 2011). Ultimately, effective treatment for chronic pain relies on all members of the treating team providing a consistent and cohesive message.

Who should be providing psychological services for pain management?

Understanding psychological principles and providing psychological therapy are distinct ends of the continuum of care. It is important that all individuals working in the area of pain management have a solid understanding of how social and psychological factors can contribute to the experience of pain – indeed, the value of psychologically informed practice is increasingly acknowledged by a range of professionals involved in the treatment of pain. However, pain psychology is a specialist area of psychological practice and it is recommended

that Psychologists working in this area have appropriate supervised clinical training and experience, including extensive clinical experience working with physical health populations and in particular, pain management. Where this is not possible (e.g., clinicians new to the area of pain management), they should have access to a suitably experienced clinician who can provide the necessary supervision. This is particularly salient for Psychologists working as independent sole practitioners in the community. It is also recommended that Psychologists working in this area, especially those new to it, seek more formal, up to date, knowledge-based education on pain and its management (Devonshire & Nicholas, 2018). Table 1 outlines some recommended core competencies (Wandner et al., 2019) and key knowledge areas for Psychologists working in pain management:

Summary

Chronic pain is a significant public health challenge due to its high prevalence, financial and social costs, considerable physical and psychological effects (especially for vulnerable populations) (AIHW, 2020a), and limited access to quality care for those impacted. Psychologists can facilitate significantly improved pain management outcomes across the trajectory of pain, especially where relevant psychosocial factors are identified. Where such factors are identified, health practitioners should refer individuals with pain to an appropriately skilled Psychologist as early as possible. Psychologists working in this field should ensure they possess relevant competencies and knowledge (as outlined herein) and seek training, supervision and collegiate support as required. Access to skilled Psychologists at the optimal time will significantly improve treatment outcomes and quality of life for individuals living with pain and provide major economic benefits to the Australian healthcare system.

Table 1: Recommended core competencies and knowledge areas for Psychologists working in pain management

Core Competencies	Areas of Knowledge
• An understanding of the multidimensional nature of pain. • Pain assessment and measurement. • Evidence-based psychological and behavioural treatments which target optimal management. • Comprehensive clinical care.	• The concepts of sensitisation (central and peripheral), descending inhibition and neuroplasticity (Arendt-Nielsen et al., 2018; Borsook, Youssef, Simons, Elman, & Eccleston, 2018). • The main pain types currently identified: nociceptive, neuropathic and nociplastic (Kosek et al., 2016). • The main chronic pain diagnoses described in the new ICD-11 classification. Specifically: – chronic primary pain requiring possible psychological and environmental contributors to be identified; and – the distinction between primary and secondary chronic pain (Treede et al., 2019). • A general understanding of pain pharmacology including: – commonly prescribed medications and their side effect profiles; – general approaches to best practice (de)prescribing, medication contracts; and – managing risks such as opioid-induced hyperalgesia and substance misuse (Armstrong, Arunogiri, Frei & Lubman, 2020). • Use of accurate, inclusive, and non-stigmatising language (Pain Australia, 2018)

Contributors:

3rd Edition: Laura Prendergast, Kaye Frankcom, Margaret Vandermost, Michael Nicholas, Mike Shelley, Jacqui Stanford, Michelle Martin, Su Chan and Anne Burke (2021).

2nd Edition: Anne Burke, Su Chan, Margaret Vandermost, Michelle Martin, Ally Beeden and Kaye Frankcom (2016). With special thanks to Jacqui Stanford, Professor Tess Cramond, Ruth Braunstein and Peter Gaitanis for their contributions to the development of this paper.

1st Edition: Kerry Merse and Lynnette Boag (2002).

References

Arendt-Nielsen, L., Morlion, B., Perrot, S., Dahan, A., Dickenson, A., Kress, H. G., Wells, C., Bouhassira, D., & Mohr Drewes, A. (2018). Assessment and manifestation of central sensitisation across different chronic pain conditions. *European Journal of Pain, 22*(2), 216-241. https://doi.org/10.1002/ejp.1140

Armstrong, F., Arunogiri, S., Frei, M. Y., & Lubman, D. I. (2020). The six Rs of managing high-risk opioid prescribing. *Australian Journal of General Practice*, *49*(3), 116–120. https://doi.org/10.31128/AJGP-06-19-4967

Australian Health Services Research Institute. (2020). *Electronic Persistent Pain Outcomes Collaboration*. Retrieved from http://ahsri.uow.edu.au/eppoc/index.html

Australian Institute of Health and Welfare (2020a). *Chronic Pain in Australia*. Retrieved from https://www.aihw.gov.au/reports/chronic-disease/chronic-pain-in-australia

Australian Institute of Health and Welfare (2020b). *Mental Health Services in Australia*. Retrieved from https://www.aihw.gov.au/reports/mental-health-services/mental-health-services-in-australia

Beltrutti, D., Lamberto, A., Barolat, G., Bruehl, S.P., Doleys, D., Krames, E., Meglio, M., North, R., Olson, K., Reig, E., Simpson, B., Turk, D., Aronoff, G. and Melzack, R. (2004). The psychological assessment of candidates for spinal cord stimulation for chronic pain management. *Pain Practice, 4*(3), 204-221. https://doi.org/10.1111/j.1533-2500.2004.04305.x

Block, A., & Sarwer, D. B. (Eds) (2012). *Presurgical Psychological Screening: Understanding Patients, Improving Outcomes.* Washington, DC: American Psychological Association. https://doi.org/10.1037/14035-000

Borsook, M. D., Youssef, M. A., Simons, M. L., Elman, M. I., & Eccleston, M. C. (2018). When pain gets stuck: the evolution of pain chronification and treatment resistance. *Pain, 159*(12), 2421-2436. https://doi.org/10.1097/j.pain.0000000000001401

Brain, K., Burrows, T. L., Rollo, M. E., Chai, L. K., Clarke, E. D., Hayes, C., Hodson, F. J., & Collins, C. E. (2019). A systematic review and meta-analysis of nutrition interventions for chronic noncancer pain. *Journal of Human Nutrition and Dietetics*, *32*(2), 198–225. https://doi.org/10.1111/jhn.12601

Bruns, D., & Disorbio, J. (2009). Assessment of biopsychosocial risk factors for medical treatment: A collaborative approach. *Journal of Clinical Psychology in Medical Settings, 16*(2), 127-147. https://doi.org/10.1007/s10880-009-9148-9

Burke, A. L., Mathias, J. L., & Denson, L. A. (2018). Waiting for multidisciplinary chronic pain services: A prospective study over 2.5years. *Journal of Health Psychology*, 25(9), 1198–1212. https://doi.org/10.1177/1359105317752828

Cassidy, E. L., Atherton, R. J., Robertson, N., Walsh, D. A., & Gillett, R. (2012). Mindfulness, functioning and catastrophizing after multidisciplinary pain management for chronic low back pain. *Pain, 153*(3), 644-650. https://doi.org/10.1016/j.pain.2011.11.027

Deloitte Access Economics. (2019). *The Cost of Pain in Australia*. Retrieved from https://www2.deloitte.com/au/en/pages/economics/articles/cost-pain-australia.html

Devan, H., Farmery, D., Peebles, L., & Grainger, R. (2019). Evaluation of self-management support functions in apps for people with persistent pain: Systematic review. *JMIR mHealth and uHealth, 7*(2), e13080-e13080. https://doi.org/10.2196/13080

Devonshire, E., & Nicholas, M.K., (2018) Continuing education in pain management: using a competency framework to guide professional development. *Pain Reports, 3*(5): e688. https://doi.org/10.1097/PR9.0000000000000688

Doleys, D. M., & Cianfrini, L. (2018). Evaluating patients for neuromodulation procedures. In D. C. Turk & R. J. Gatchel (Eds.), *Psychological Approaches to Pain Management: A Practitioner's Handbook* (Third Edition ed., pp. 303). New York: Guilford Press.

Epker, R. J. (2013). Psychometric methods for measuring pain. *The Clinical Neuropsychologist, 27*(1), 30-48. https://doi.org/10.1080/13854046.2012.739203

Epker, R. J., & Block, R. A. (2001). Presurgical psychological screening in back pain patients: A review. *The Clinical Journal of Pain, 17*(3), 200-205. https://doi.org/10.1097/00002508-200109000-00003

Evers, S., & Marziniak, M. (2010). Clinical features, pathophysiology, and treatment of medication-overuse headache. *The Lancet Neurology*, 9(4), 391-401. https://doi.org/10.1016/S1474-4422(10)70008-9

Faculty of Pain Medicine, Australian and New Zealand College of Anaesthetists (2015). *Recommendations Regarding the Use of Opioid Analgesics in Patients With Chronic Non-Cancer Pain*. Melbourne: ANZCA, 2015 PM1-2010.pdf

Finan, P. H., Goodin, B. R., & Smith, M. T. (2013). The association of sleep and pain: An update and a path forward. *The Journal of Pain, 14*(12), 1539-1552. https://doi.org/10.1016/j.jpain.2013.08.007

Flink, I., Reme, S., Jacobsen, H., Glombiewski, J., Vlaeyen, J., Nicholas, M., Main, C., Peters, M., Williams, A., Schrooten, M., Shaw, W. & Boersma, K. (2020). Pain psychology in the 21st century: lessons learned and moving forward. *Scandinavian Journal of Pain, 20*(2), 229-238. https://doi.org/10.1515/sjpain-2019-0180

Glombiewski, J. A., Holzapfel, S., Riecke, J., Vlaeyen, J. W. S., De Jong, J., Lemmer, G., & Rief, W. (2018). Exposure and CBT for chronic back pain: An RCT on differential efficacy and optimal length of treatment. *Journal of Consulting and Clinical Psychology, 86*(6), 533-545. https://doi.org/10.1037/ccp0000298

Greve, K. W., Bianchini, K. J., & Ord, J. S. (2012). The psychological assessment of persons with chronic pain. In G. J. Larrabee (Ed.), *Forensic Neuropsychology: A Scientific Approach* (pp. 302-335). New York: Oxford University Press.

Gybels, J., Erdine, S., Maeyaert, J., Meyerson, B., Winkelmüller, W., Augustinsson, L., Bonezzi, C., Brasseur, L., DeJongste, M., Kupers, R., Marchettini, P., Muller-Schwefe, G., Nitescu, P., Plaghki, L., Reig, E., Spincemaille, G., Thomson, S., Tronnier, V. and Van Buyten, J.-P. (1998). Neuromodulation of pain: A consensus statement prepared in Brussels 16–18 January 1998 by the following task force of the European Federation of IASP Chapters (EFIC). *European Journal of Pain, 2*(3), 203-209. https://doi.org/10.1016/S1090-3801(98)90016-7

Hadzic, R., Sharpe, L., & Wood, B. M. (2017). The Relationship Between Pacing and Avoidance in Chronic Pain: A Systematic Review and Meta-Analysis. *The Journal of Pain, 18*(10), 1165-1173. doi:https://doi.org/10.1016/j.jpain.2017.04.008

Hayes-Skelton, S. A., Roemer, L., Orsillo, S. M., & Borkovec, T. D. (2013). A contemporary view of applied relaxation for generalized anxiety disorder. *Cognitive Behaviour Therapy: Special Issue in Honour of Lars-Göran Öst, 42*(4), 292-302. https://doi.org/10.1080/16506073.2013.777106

Hayes, C., & Hodson, F. J. (2011). A whole-person model of care for persistent pain: From conceptual framework to practical application. *Pain Medicine, 12*(12), 1738-1749. https://doi.org/10.1111/j.1526-4637.2011.01267.x

Hilton, L., Hempel, S., Ewing, B.A., Apaydin, E., Xenakis, L., Newberry, S., Colaiaco, B., Maher, A.R., Shanman, R.M., Sorbero, M.E. and Maglione, M.A. (2017). Mindfulness meditation for chronic pain: Systematic review and meta-analysis. *Annals of Behavioral Medicine, 51*(2), 199-213. https://doi.org/10.1007/s12160-016-9844-2

Hughes, S. L., Clark, A. J., Colclough, A. J., Dale, A. E., & McMillan, A. D. (2017). Acceptance and Commitment Therapy (ACT) for chronic pain: A systematic review and meta-analyses. *The Clinical Journal of Pain, 33*(6), 552-568. https://doi.org/10.1097/AJP.0000000000000425

Jensen, M. P., & Patterson, D. R. (2014). Hypnotic approaches for chronic pain management: Clinical implications of recent research findings. *American Psychologist, 69*(2), 167-177. https://doi.org/10.1037/a0035644

Kabat-Zinn, J. (2013). *Full Catastrophe Living: How to Cope with Stress, Pain and Illness Using Mindfulness Meditation*. London: Piatkus.

Kosek, E., Cohen, M., Baron, R., Gebhart, G. F., Mico, J. A., Rice, A., Rief, W., & Sluka, A. K. (2016). Do we need a third mechanistic descriptor for chronic pain states? *Pain, 157*(7), 1382-1386. https://doi.org/10.1097/j.pain.0000000000000507

Kwekkeboom, K. L., & Gretarsdottir, E. (2006). Systematic review of relaxation interventions for pain. *Journal of Nursing Scholarship, 38*(3), 269-277. https://doi.org/10.1111/j.1547-5069.2006.00113.x

Linton, S. J., & Nicholas, M. K. (2008). After assessment, then what? Integrating findings for successful case formulation and treatment tailoring. In A. S. Rice, C. A. Warfield, D.

Justins, & C. Eccleston (Eds.), *Clinical Pain Management: Chronic Pain*. London: Arnold.

Miller, S. D., Hubble, M. A., & Chow, D. (2020). *Better Results: Using Deliberate Practice to Improve Therapeutic Effectiveness.* Washington, DC: American Psychological Association.

Morris, O., & Crowley, L. (2020, March 3rd). Opioid-Induced Hyperalgesia. World Federation of Societies of Anaesthesiologists, Anasthesia Tutorial of the Week. Retrieved from https://resources.wfsahq.org/wp-content/uploads/419_english.pdf

Moseley, G. L., & Butler, D. S. (2015). Fifteen years of explaining pain: The past, present, and future. *The Journal of Pain, 16*(9), 807-813. https://doi.org/10.1016/j.jpain.2015.05.005

Nicholas, M., Asghari, A., Sharpe, L., Brnabic, A., Wood, B., Overton, S., Tonkin, L., de Sousa, M., Finniss, D., Beeston, L., Sutherland, A., Corbett, M. and Brooker, C. (2014). Cognitive exposure versus avoidance in patients with chronic pain: Adherence matters. *European Journal of Pain, 18*(3), 424-437. https://doi.org/10.1002/j.1532-2149.2013.00383.x

Nicholas, M. K., & Blyth, F. M. (2016). Are self-management strategies effective in chronic pain treatment? *Pain Management, 6*(1), 75-88. https://doi.org/10.2217/pmt.15.57

Nicholas, M. K., Costa, D. S. J., Blanchard, M., Tardif, H., Asghari, A., & Blyth, F. M. (2019). Normative data for common pain measures in chronic pain clinic populations: closing a gap for clinicians and researchers. *Pain, 160*(5), 1156-1165. https://doi.org/10.1097/j.pain.0000000000001496

Nicholas, M. K., Costa, D., Linton, S. J., Main, C. J., Shaw, W. S., Pearce, G., Gleeson, M., Pinto, R. Z., Blyth, F. M., McAuley, J. H., Smeets, R., & McGarity, A. (2020). Implementation of early intervention protocol in Australia for 'high risk' injured

workers is associated with fewer lost work days over 2 years than usual (stepped) care. *Journal of Occupational Rehabilitation, 30*(1), 93-104. https://doi.org/10.1007/s10926-019-09849-y

Nicholas, M., Vlaeyen, J., Rief, W., Barke, A., Aziz, Q., Benoliel, R., Cohen, M., Evers, S., Giamberardino, M. A., Goebel, A., Korwisi, B., Perrot, S., Svensson, P., Wang, S. J., Treede, R. D., & IASP Taskforce for the Classification of Chronic Pain (2019). The IASP classification of chronic pain for ICD-11: chronic primary pain. *Pain*, 160(1), 28–37. https://doi.org/10.1097/j.pain.0000000000001390

Pain Australia. (2018). Chronic Pain Language Guidelines. Retrieved from https://www.painaustralia.org.au/static/uploads/files/chronic-pain-language-guidelines-wfvxpbttedsz.pdf

Paroli, M., Bernini, O., De Carolis, G., Tollapi, L., Bondi, F., Martini, A., Dario, A., & Paolicchi, A. (2018). Are multidimensional pain inventory coping strategy profiles associated with long-term spinal cord stimulation effectiveness? *Pain Medicine, 19*(5), 1023-1032. https://doi.org/10.1093/pm/pnx106

Ravn, L. S., Hartvigsen, E. J., Hansen, E. M., Sterling, E. M., & Andersen, E. T. (2018). Do post-traumatic pain and post-traumatic stress symptomatology mutually maintain each other? A systematic review of cross-lagged studies. *Pain, 159*(11), 2159-2169. https://doi.org/10.1097/j.pain.0000000000001331

Roditi, D., & Robinson, M. E. (2011). The role of psychological interventions in the management of patients with chronic pain. *Psychology Research and Behavior Management, 4*, 41-49. https://doi.org/10.2147/PRBM.S15375

Tang, N. K. Y. (2018). Cognitive behavioural therapy in pain and psychological disorders: Towards a hybrid future. *Progress in Neuro-Psychopharmacology and Biological Psychiatry, 87*(Pt B), 281-289. https://doi.org/10.1016/j.pnpbp.2017.02.023

Tardif, H., Arnold, C., Hayes, C., & Eagar, K. (2016). Establishment of the Australasian electronic persistent pain outcomes collaboration. *Pain Medicine*, 1007-1018. https://doi.org/10.1093/pm/pnw201

Tardif, H., Blanchard, M. B., White, J. M., & Bryce, M. P. (2018). *Normative data for adults referred for specialist pain management in Australia.* electronic Persistent Pain Outcomes Collaboration, Australian Health Services Research Institute, University of Wollongong. Retrieved from https://ro.uow.edu.au/ahsri/940/

Treede, R. D., Rief, W., Barke, A., Aziz, Q., Bennett, M. I., Benoliel, R., Cohen, M., Evers, S., Finnerup, N.B., First, M.B., Giamberardino, M.A., Kaasa, S., Korwisi, B., Kosek, E., Lavand'homme, P., Nicholas, M., Perrot, S., Scholz, J., Smith, B.H., . . . Wang, S. J. (2019). Chronic pain as a symptom or a disease: the IASP classification of chronic pain for the International Classification of Diseases (ICD-11). *Pain, 160*(1), 19-27. https://doi.org/10.1097/j.pain.0000000000001384

Turk, D. C., & Robinson, J. P. (2011). Assessment of patients with chronic pain. In D. C. Turk & R. Melzack (Eds.), *Handbook of pain assessment* (3rd ed., pp. 188-210). New York: Guilford Press.

Turner, J. A., Jensen, M. P., & Romano, J. M. J. P. (2000). Do beliefs, coping, and catastrophizing independently predict functioning in patients with chronic pain? *Pain, 85*(1-2), 115-125. https://doi.org/10.1016/s0304-3959(99)00259-6

Veronese, N., Stubbs, B., Noale, M., Solmi, M., Luchini, C., & Maggi, S. (2016). Adherence to the Mediterranean diet is associated with better quality of life: data from the osteoarthritis initiative. *The American Journal of Clinical Nutrition, 104*(5), 1403. https://doi.org/10.3945/ajcn.116.136390.

Voorhies, R. M., Jiang, X., & Thomas, N. (2007). Predicting outcome in the surgical treatment of lumbar radiculopathy using the Pain Drawing Score, McGill Short Form

Pain Questionnaire, and risk factors including psychosocial issues and axial joint pain. *The Spine Journal, 7*(5), 516-524. https://doi.org/10.1016/j.spinee.2006.10.013

Wandner, L. D., Aklin, W. M., & Freed, M. C. (2020). Guest Editorial: Psychologists aim to HEAL the opioid and pain crises. *American Psychologist, 75*(6), 866-868. https://doi.org/10.1037/amp0000713

Wandner, L. D., Prasad, R., Ramezani, A., Malcore, S. A., & Kerns, R. D. (2019). Core competencies for the emerging specialty of pain psychology. *American Psychologist, 74*(4), 432. https://doi.org/10.1037/amp0000330

de C Williams, A. C., Fisher, E., Hearn, L., & Eccleston, C. (2020). Psychological therapies for the management of chronic pain (excluding headache) in adults. *Cochrane Database of Systematic Reviews*, 9(9), CD007407 https://doi.org/10.1002/14651858.CD007407.pub4

Witkiewitz, K., & Vowles, K. E. (2018). Alcohol and opioid use, co-use, and chronic pain in the context of the opioid epidemic: A critical review. *Alcoholism, Clinical and Experimental Research*, *42*(3), 478–488. https://doi.org/10.1111/acer.13594

World Health Organization. (2020). *International Statistical Classification of Diseases and Related Health Problems (ICD-11)*. (11th ed.). Retrieved from https://icd.who.int/en

Zale, E. L., & Ditre, J. W. (2015). Pain-related fear, disability, and the fear-avoidance model of chronic pain. *Current Opinion in Psychology, 5*, 24-30. https://doi.org/10.1016/j.copsyc.2015.03.014

Zhao, P., Yoo, I., Lancey, R., & Varghese, E. (2019). Mobile applications for pain management: an app analysis for clinical usage.(Report). *BMC Medical Informatics and Decision Making, 19*(1). https://doi.org/10.1186/s12911-019-0827-7

***Introductory note for Appendices**: While not an exhaustive manual, the information contained in these appendices is intended to provide additional detail for anyone requiring a "working knowledge" of delivering psychological intervention in a pain management context. This may include students, Psychologists who are new to the field, those charged with coordinating services within a pain management clinic, or anyone who wants more detailed information about the provision of psychological services.*

Appendix 1: Proposed timeframe for psychological intervention

Assessment

A psychological assessment is typically conducted in a single 1-hour session. For complex presentations and/or medicolegal purposes though, this can extend to 3 sessions.

Treatment

(a) *Intensive (early) phase*: Individuals may initially attend 6-12 individual sessions, typically 50 minutes in duration, occurring on a weekly or fortnightly basis (or less frequent depending on practice setting and clinical need). Progress should be reviewed after 6 sessions to determine ongoing need for intensive intervention.

(b) *Intermittent (follow-up) phase*: Individuals may then require episodic (1-6 monthly) psychological review to facilitate maintenance of treatment gains and/or provide support as they solidify behavioural changes within the context of their everyday life. For most individuals, discharge will be possible within a few sessions. In some rare instances, patients may need to be reviewed intermittently on a longer-term basis. Indicators for this may include psychological intervention preventing functional deterioration, medication increases, medical/service presentations and/or other management complications.

(c) *Crisis/flare-up phase*: Following a period of flare-up, individuals may occasionally require psychological review and brief therapeutic intervention to reinforce coping strategies and facilitate stabilisation. Discharge is often possible after a limited number of sessions.

(d) *Exceptional circumstances*: Pre-existing/long standing personality or psychological problems, which were in existence prior to the onset of pain and have been exacerbated by, or integrated with, the pain problem, may require more extensive therapeutic intervention. Involvement with legal action and compensation processes can create a significant barrier to self-management and stabilisation. These individuals need to be clearly distinguished from those requiring more targeted pain management and such decisions should be balanced against risk of fostering dependency.

Appendix 2: Issues typically covered in a psychological assessment

A detailed psychological assessment would include exploration of the following areas:

- Pain (e.g., location; description of physical sensations; events surrounding pain onset and/or exacerbation; the individual's understanding of his/her condition, prognosis, previous treatments, current treatments, coping strategies).
- Predisposing factors (e.g., history of childhood hospitalisation; sickness modelling by significant others; abuse history (emotional, physical, sexual), job dissatisfaction).
- Risk factors, including suicidal and/or homicidal risk.
- Behavioural changes in various areas (e.g., occupational, domestic, recreational activities; social, marital, family roles; sleep; medication and substance (mis)use).
- Emotional functioning - presence and severity of a range of emotional states (e.g., anxiety, depression, anger/hostility, guilt, shame). Specific attention should be given to the identification of symptoms of PTSD as they may have a role in maintaining physiological arousal and impact the pain, and whether they were pre-existing or arose from the incident causing the pain.
- Cognitive factors (e.g., attitudes; expectations; beliefs - rehabilitation vs cure).
- Pre-existing personality factors.
- Learning factors (e.g., reinforcement of sick role or illness behaviour; avoidance of unpleasant activities, pain and illness behaviour).
- Financial factors (e.g., compensation/litigation; financial pressures)

Specific comment on pre-procedural assessment

The Psychologist has a specific role in the assessment and treatment of patients prior to surgery and in the assessment of patients prior to neuromodulation techniques (e.g., implantation of spinal cord stimulators and intrathecal drug delivery devices) (Epker & Block, 2001). It is important to note that pre-procedure psychological assessment has a number of functions, including the identification of: significant psychopathology (which may in turn lead to post-procedure psychological distress and treatment adherence difficulties); preparedness for, or acceptance of, the procedure; and identification of 'yellow flags' (psychological factors known to predict poor surgical outcome). There is strong empirical research regarding psychological factors that predict poor surgical outcomes (Block & Sarwer, 2013; Bruns & Disorbio, 2009; Voorhies, Jiang, & Thomas, 2007) including financial incentives, history of abuse or abandonment, job dissatisfaction, poor social support, substance abuse, pre-existing psychopathology, anxiety/depression, pain catastrophising and treatment engagement difficulties. Where such risk factors are identified, it may be important to recommend continuation of relevant psychological, physical and supportive treatments, in preference to more invasive intervention (Greve et al., 2012).

Neuromodulation. The treatment success in neuromodulation is dependent on many factors beyond the technical aspects of implantation (Paroli et al., 2018). Although psychological factors are associated with treatment outcomes, empirical studies cannot easily identify who will succeed or fail with neuromodulation treatment (Paroli et al., 2018). Nevertheless, there is consensus (Doleys & Cianfrini, 2018; Gybels et al., 1998) that patients seeking neuromodulation should undergo comprehensive psychological assessment and, where indicated, a course of psychological assistance both before and after treatment. Preimplantation input may be required to address issues such as mood, coping, substance

misuse and relapse prevention as identified in the assessment; and/or provide psychoeducation or motivational interviewing for compliance (Beltrutti et al., 2004; Doleys & Cianfrini, 2018). Post implantation input can help monitor treatment response and behavioural adaption, facilitating timely intervention to address any psychological and social difficulties that arise which could adversely impact longer-term outcomes (Beltrutti et al., 2004; Doleys & Cianfrini, 2018).

Appendix 3: Applications and digital supports for pain management

E-health resources include websites, social media, phone apps, chat rooms and on-line forums. There are applications (apps) that assist with self-monitoring of pain and overall health which can be shared with treating health professionals. An up-to-date listing of relevant apps can be found here: https://www.painaustralia.org.au/getting-help/get-help-resources/apps. However, it should be noted that, at the time of writing, there are few apps that have been validated for clinical use or pain self-management, or that have been developed with clinician input/support (Devan, Farmery, Peebles, & Grainger, 2019; Zhao, Yoo, Lancey, & Varghese, 2019). Interested parties should be conscious of these limitations when recommending or using apps for pain management.