Comparison between Mindfulness and CBT for the Management of Chronic Pain

According to the International Association for the Study of Pain, chronic pain is defined as an unpleasant sensory experience which may either be associated with tissue damage or may mimic the feeling associated with such damage (Merskey and Bogduk, 1994). In general, pain is classified as chronic if it lasts for more than 3 months as opposed to acute pain that begins suddenly and is directly linked to demonstrable tissue injury (Bushnell et al., 2013). Statistically, chronic centralised pain is present in 10% of the population and chronic localised pain is present in 25% of the population (Haliloglu et al., 2014). The management of chronic pain may be achieved through many ways such as prescription opioids, non-opioid pharmacotherapies, physical therapy, behavioural therapy, and alternative medicine. Considering behavioural therapies, Cognitive Behavioural Therapy (CBT) is found to be most effective as it aims to alter emotional responses of patients and help them self-manage their condition (Eccleston et al., 2009). This paper aims to prove that among psychological interventions for chronic pain, CBT is the most effective in terms of minimal side effects and lesser recovery time.

Since time immemorial, prescription opioids have been used for the management of chronic pain. However, several studies have proved that chronic pain management requires a multidisciplinary approach rather than a single prescription or a single mode of treatment (Kamper et al., 2015). Non-opioid medications such as Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) are useful in the management of musculoskeletal pain; however, they are not very useful in neuropathic pain (Enthoven et al., 2016). Antidepressants such as duloxetine are effective for chronic neuropathic pain, although pain relief in this case takes time and there may be side effects such as suicidal ideation, renal failure, and liver failure (Finnerup et al., 2015). Combined with medications, physical therapy (PT) has also proved to be extremely effective for

chronic pain although it needs to be done under supervision (Fransen et al., 2015). Apart from PT, other interventions include yoga, acupuncture, nutritional supplements, music therapy, and hypnosis. Literature regarding the effectiveness of these studies is lacking; however, the studies that do exist point to greater short-term benefits rather than long-term relief (Lin et al., 2016). With the power of the mind being emphasised in recent studies, physcological interventions are recommended for chronic pain management too as they are non-invasive, non-drug based, and promote the practice of self-care and self-management in patients. Additionally, they are beneficial for all patient categories and for all types of chronic pain as they focus on using the mind to manage pain in the body (Tompkins et al., 2018).

CBT is a form of psychotherapy wherein the core belief is that behavioural problems and emotional distress arise due to maladaptive cognitions, which in turn leads to chronic pain. Therefore, the major focus of CBT is altering physical sensations, maladaptive behaviours, and destructive thinking for the management of conditions such as anxiety, depression, and chronic pain (Hofmann et al., 2012). Generally, CBT is practiced in individual sessions over a period of 4 to 6 weeks and delivered by a skilled psychiatrist. Initially, patients are taught abdominal breathing and encouraged to use charts for documenting pain and mood on a daily basis. Gradually, their automatic thoughts are identified and recorded, and the patients are introduced to muscle relaxation techniques. After this, their thoughts are evaluated and thinking errors are identifed. Finally, these errors are corrected by the introduction of alternative thoughts and the patients are introduced to mindfulness meditation. Towards the end of the therapy, the patients are skilled in problem-solving, meditation, and coping with pain related to stress (Lim et al., 2018).

There are several studies that have proved the effectiveness of CBT for the management of pain either alone or in combination with other interventions (Hofmann et al., 2012). It has particularly been shown to improve the quality of lives of chronic pain patients suffering from headaches, facial pain, and fibromyalgia (Hoffman et al., 2007). In contrast, Henschke et al. (2010) has shown that while CBT is beneficial for reducing pain intensity, it does not have any effect on the quality of lives of chronic pain patients. In the alleviation of pain too, studies have shown mixed results. For instance, a study conducted by Williams et al. (2012) has shown that CBT had a small beneficial effect for pain which was absent after a 6 to 12 month followup.

Several studies have pointed towards the effectiveness of CBT in managing specific types of chronic pain. A meta-analysis of 22 studies have proved that CBT, among all other psychological interventions, is beneficial for reducing chronic back pain and also improving quality of lives of patients (Hoffman et al., 2007). Another study conducted by Andrasik (2007) showed that CBT was able to reduce chronic headaches by 50 to 60% in patients and these results were consistent over a long-term period. Among CBT techniques, biofeedback interventions have been shown to be most effective for treating migraines and tension headaches (Turk et al., 2008).

Apart from specific types of chronic pain, studies have also analysed the effectiveness of CBT-based interventions in specific groups of people. A study conducted by King et al. (2011) has shown that CBT is particularly beneficial for managing chronic pain in children and adolescents. CBT-based interventions can alleviate pain by up to 50% and these effects can be seen until 3 months following therapy (Palermo et al., 2010). Another group of people that benefits from CBT interventions for chronic pain is older adults as this approach does not involve medications and encourages self-management in patients (Solomon et al., 2010). Chronic

pain is also very common in people who suffer from neurological conditions such as multiple sclerosis, stroke, HIV/AIDS, and spinal cord injury. Although the literature is neither clear nor sufficient for proving the efficacy of CBT in these patients, it is definitely promising as shown by Jensen et al. (2011).

Psychological interventions, especially CBT, is considered to be extremely beneficial for people with chronic pain mainly because it is not feasible for people to take opioids or non-opioid medications permanently, and this approach is a medication-free way to manage ongoing pain conditions. Additionally, it aims to treat specific psychological and behavioural aspects that may be contributing to the pain condition thereby giving patients not only relief from pain, but also from underlying emotional distress (Morley and Williams, 2015). CBT uses self-instruction to encourage people to modify their behaviours thus making them independent in taking care of their own health. Gradually, people with chronic pain learn to replace feelings of hopelessness and passivity with activity and resourcefulness leading to alleviation of pain as well as significant improvement in their quality of lives (Turk et al., 2008).

In conclusion, CBT is considered to be one of the best approaches among psychological interventions as well as others for the management of chronic pain as it does not involve medications and instills the values of independence in relation to health in patients. It has been shown to both reduce the intensity of pain as well as improve the quality of lives of chronic pain patients. Specifically, it is shown to be beneficial for chronic back pain and chronic headaches. Children, adolescents, older people, and those with neurological conditions experience the maximum benefits of this therapeutic approach. Therefore, CBT encompasses a unique psychological and behavioural approach to the treatment of both physical and (possibly) emotional pain thereby giving them a new outlook of life and their health.

References

Andrasik, F. (2007). What does the evidence show? Efficacy of behavioural treatments for recurrent headaches in adults. *Neurological Sciences, 28*(S2). doi:10.1007/s10072-007-0754-8

Bushnell, M. C., Čeko, M., & Low, L. A. (2013). Cognitive and emotional control of pain and its disruption in chronic pain. *Nature Reviews Neuroscience, 14*(7), 502-511. doi:10.1038/nrn3516

Eccleston, C., Williams, A. C., & Morley, S. (2009). Psychological therapies for the management of chronic pain (excluding headache) in adults. *Cochrane Database Syst. Rev., 2*(CD007407).

Enthoven, W. T., Roelofs, P. D., Deyo, R. A., Tulder, M. W., & Koes, B. W. (2016). Non-steroidal anti-inflammatory drugs for chronic low back pain. *Cochrane Database of Systematic Reviews, 2*(CD012087). doi:10.1002/14651858.cd012087

Finnerup, N., Attal, N., & Haroutounian, S. (2015). Pharmacotherapy for Neuropathic Pain in Adults: A Systematic Review and Meta-Analysis. *Journal of Vascular Surgery, 62*(4), 1091. doi:10.1016/j.jvs.2015.08.010

Fransen, M., Mcconnell, S., Harmer, A. R., Esch, M. V., Simic, M., & Bennell, K. L. (2015). Exercise for osteoarthritis of the knee. *Cochrane Database of Systematic Reviews, 49*, 1554-1557. doi:10.1002/14651858.cd004376.pub3

Haliloglu, S., Carlioglu, A., Akdeniz, D., Karaaslan, Y., & Kosar, A. (2014). Fibromyalgia in patients with other rheumatic diseases: Prevalence and relationship with disease activity. *Rheumatology International, 34*(9), 1275-1280. doi:10.1007/s00296-014-2972-8

Henschke, N., Ostelo, R. W., Van Tulder, M. W., Vlaeyen, J. W., Morley, S., Assendelft, W. J., & Main, C. J. (2010). Behavioural treatment for chronic low-back pain. *Cochrane Database of Systematic Reviews, 7*(CD002014). doi:10.1002/14651858.cd002014

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), 1-9. doi:10.1037/0278-6133.26.1.1

Hofmann, S. G., Asnaani, A., & Vonk, I. J. (2012). The efficacy of cognitive behavioral therapy: A review of meta-analyses. *Cognit Ther Res, 36*, 427-430.

Jensen, M. P. (2011). Psychosocial approaches to pain management: An organizational framework. *Pain, 152*(4), 717-725. doi:10.1016/j.pain.2010.09.002

Kamper, S. J., Apeldoorn, A. T., Chiarotto, A., Smeets, R. J., Ostelo, R. W., Guzman, J., & Tulder, M. W. (2015). Multidisciplinary biopsychosocial rehabilitation for chronic low back pain: Cochrane systematic review and meta-analysis. *Bmj, 350*(Feb18 5). doi:10.1136/bmj.h444

King, S., Chambers, C. T., Huguet, A., Macnevin, R. C., Mcgrath, P. J., Parker, L., & Macdonald, A. J. (2011). The epidemiology of chronic pain in children and adolescents revisited: A systematic review. *Pain, 152*(12), 2729-2738. doi:10.1016/j.pain.2011.07.016

Lim, J., Choi, S., Lee, W. J., Jang, J. H., Moon, J. Y., Kim, Y. C., & Kang, D. (2018). Cognitive-behavioral therapy for patients with chronic pain. *Medicine, 97*(23). doi:10.1097/md.0000000000010867

Lin, X., Huang, K., Zhu, G., Huang, Z., Qin, A., & Fan, S. (2016). The Effects of Acupuncture on Chronic Knee Pain Due to Osteoarthritis. *The Journal of Bone and Joint Surgery, 98*(18), 1578-1585. doi:10.2106/jbjs.15.00620

Merskey, H., & Bogduk, N. (1994). *Classification of chronic pain: Descriptions of chronic pain syndromes and definitions of pain terms* (2nd ed.). Seattle, Washington: IASP.

Morley, S., & Williams, A. (2015). New Developments in the Psychological Management of Chronic Pain. *The Canadian Journal of Psychiatry, 60*(4), 168-175. doi:10.1177/070674371506000403

Palermo, T. M., Eccleston, C., Lewandowski, A. S., Williams, A. C., & Morley, S. (2010). Randomized controlled trials of psychological therapies for management of chronic pain in children and adolescents: An updated meta-analytic review. *Pain, 148*(3), 387-397. doi:10.1016/j.pain.2009.10.004

Pieh, C., Altmeppen, J., Neumeier, S., Loew, T., Angerer, M., & Lahmann, C. (2012). Gender differences in outcomes of a multimodal pain management program. *Pain, 153*(1), 197-202. doi:10.1016/j.pain.2011.10.016

Solomon, D. H. (2010). The Comparative Safety of Opioids for Nonmalignant Pain in Older Adults. *Archives of Internal Medicine, 170*(22), 1979. doi:10.1001/archinternmed.2010.450

Tompkins, D. A., Hobelmann, J. G., & Compton, P. (2017). Providing chronic pain management in the "Fifth Vital Sign" Era: Historical and treatment perspectives on a modern-day medical dilemma. *Drug and Alcohol Dependence, 173*. doi:10.1016/j.drugalcdep.2016.12.002

Turk, D. C., Swanson, K. S., & Tunks, E. R. (2008). Psychological Approaches in the Treatment of Chronic Pain Patients—When Pills, Scalpels, and Needles are Not Enough. *The Canadian Journal of Psychiatry, 53*(4), 213-223. doi:10.1177/070674370805300402

Williams, A. C., Eccleston, C., & Morley, S. (2012). Psychological therapies for the management of chronic pain (excluding headache) in adults. *Cochrane Database of Systematic Reviews*. doi:10.1002/14651858.cd007407.pub3