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Canterbury Christ Church University

CATHERINE PORTER BSc Hons

Autogenic training for people experiencing chronic pain

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APRIL 2015

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CANTERBURY CHRIST CHURCH UNIVERSITY
Doctorate in Clinical Psychology (D.Clin.Psychol.)

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I would like to say a big thank you to the women who took part in this study. I was often humbled by your stories and feel like I learnt a lot from you about what it means to be strong. To my supervisors, Dr Sue Holttum, Dr John Hughes - thank you so much for all your advice and encouragement, for reading many a draft and for keeping a steady nerve when I have struggled! Thank you also to Chris Perrin, who began supervising this project, Dr Ann Bowden and those at The British Autogenic Society for support with recruitment. I'd also like to say a huge thank you to my family and friends who have been phenomenally supportive – I really couldn't have done it without you.

Summary of the MRP Portfolio

Section A is a literature review of what have been termed “mind-body” therapy interventions for people who have received a diagnosis of fibromyalgia (FMS). The review begins by outlining the key theories of the development and maintenance of fibromyalgia and proceeds to a systematic review of empirical literature on mind-body interventions for FMS. Six mind-body interventions are identified, namely: cognitive-behaviour therapy, mindfulness, yoga, autogenic training, hypnosis, and qigong therapy. The clinical and theoretical implications of these findings are considered and recommendations are made for future research.

Section B presents a qualitative, grounded theory study exploring the process of an eight-week autogenic training (AT) programme for eleven women who experienced chronic pain. Six main categories emerged: 1) *“*No*body knows what’s wrong with me”*: Trying to get help for the pain; 2) *“A ‘mind-body’ conversation”*: The process of AT for chronic pain; 3) *“*Something my body wanted more of – *like nectar”*: The effects of AT; 4) *“Bringing us back”*: Practising AT with other(s); 5) *“*Giving *yourself permission to stop”*: Practising AT independently; and 6) *“Not just fre*e-*falling”*: Comparing AT with other therapies. The findings are discussed in relation to previous research and the implications for future clinical and research are considered.

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SECTION A: LITERATURE REVIEW PAPER

Mind-body interventions and fibromyalgia: A systematic review

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CANTERBURY CHRIST CHURCH UNIVERSITY

Abstract

Fibromyalgia or fibromyalgia syndrome (FMS), is a long-term condition characterised by wide-spread pain in the body without an established aetiology (American College of Rheumatology, 2014). Historically, FMS has been understood from a biomedical or psychological perspective, however, more recently, a number of theories have been developed which incorporate a "mind-body" perspective. This paper critically reviewed key theories of the development of fibromyalgia and conducted a systematic review of "mind-body" interventions, which seek to influence physical and psychological domains of wellbeing. Six mind-body interventions were identified, namely: cognitive-behaviour therapy, mindfulness, yoga, autogenic training, hypnosis and qigong therapy. With the exception of hypnosis, support was found for all mind-body interventions as yielding benefits for emotional wellbeing in the context of FMS. However, fewer studies reported significant improvements in pain reduction, and methodological limitations were identified. The clinical and theoretical implications of these findings are considered and recommendations are made for future research.

Keywords: Fibromyalgia; Mind-body therapy; Long-term condition

Mind Body Interventions and Fibromyalgia: A Systematic Review

What is Fibromyalgia?

Wolfe (2009) describes those with a diagnosis of fibromyalgia (FMS) as “patients who have ‘medically unexplained symptoms’ including: widespread pain, fatigue, sleep disturbance, depressive symptoms, cognitive problems, irritable bowel syndrome…and tenderness on palpation” (p.1). The American College of Rheumatology’s classification criteria are most commonly used to diagnose FMS, with inclusion criteria such as: pain lasting 3 months or longer, pain affecting all four quadrants of the body, and pain upon digital palpation of at least eleven out of eighteen tender points of the body (Wolfe et al., 1990).

Who is Affected?

FMS is thought to affect between 2 and 4% of western adult populations (Wolfe et al., 1990; Wolfe, Ross, Anderson, Russell & Herbert, 1995). Those between the ages of 25 and 55 are thought to be most at risk being diagnosed with FMS (De Girolamo, 1991). Studies have repeatedly found that FMS disproportionately affects women more than men with Weir et al. (2006) estimating that women are 1.64 times more likely to receive a diagnosis of fibromyalgia than men. Interestingly, Smith, Harris and Clauw (2011) report that gender differences in those reaching diagnostic thresholds for FM are starker in clinical populations than in community samples, perhaps pointing towards gender differences in help-seeking behaviours.

What are the Reported Effects of FMS?

Physical phenomena Whilst pain is considered the primary symptom of FMS, others are common including, fatigue, sleep disturbance, irritable bowel syndrome, cognitive difficulties, depression, anxiety and vertigo (Wolfe, 2009; Waylonis & Heck, 1992). People diagnosed with FMS often report increased sensitivity to light, sound, weather, posture and stress. In addition, people can experience disruptions in their ability to perform activities of daily living. For example, a study found that 62% of participants interviewed had difficulty climbing the stairs, whilst more than half reported that they had difficulty walking short distances (Bennett, Jones, Turk, Russell, & Matallana, 2007).

FMS is thought to be a long term condition, with pain often remaining 5-10 years following diagnosis (Olin & Schenkmanis, 1996). This is true despite much research into the effectiveness of analgesic medicines in the treatment of FMS. A review conducted by Mease (2005) outlined that a range of drugs, including non-steroidal anti-inflammatory drugs, opioids, sedatives, muscle relaxants and anti-epileptic drugs are often prescribed in the treatment of FMS, yet few have been found to demonstrate clear benefits in randomised controlled trials. Psychological medicines, including anti-depressants, are also commonly prescribed. However, a recent review reported that the most consistent finding was that antidepressants were associated with greater sleep quality, and benefits beyond this have yet to be confidently ascertained (Arnold, Keck, & Welge, 2000).

Psychological phenomena People with FMS diagnosis have been found to perform more poorly than age-matched healthy controls and older controls on cognitive tasks assessing working memory, free recall memory, recognition memory, verbal fluency and vocabulary (Park, Glass, Minear, & Crofford, 2001).

In addition, people diagnosed with FMS have an increased likelihood of developing a mental health difficulty or experiencing problems in relationships (Bernard, Prince, & Edsall, 2000). Studies have reported that people with a diagnosis of fibromyalgia diagnosis report higher frequencies of psychological difficulties compared with people who have other forms of long-term pain, such as rheumatoid arthritis (Ellertsen, Værøy, Endresen, & Førre, 1991). Furthermore, people with FMS diagnosis report a lower current quality of life compared with their retrospective quality of life scores before they received their diagnosis.

Reported social impact of FMS De Girolamo (1991) points to the social impact of FMS, with many patients reporting mental health difficulties, relationship difficulties, reduced engagement in pre-illness activities and reduced levels of socializing. In addition, there can be significant costs associated with FMS, through inability to work and sick days and people with a diagnosis of FMS can experience considerable scrutiny from their employer about the legitimacy of their diagnosis and functional status (Wolfe et al., 1995). Insurance companies have been known to follow people with the intent to “prove” that someone is more mobile that they claim and people with the diagnosis understandably report a sense that they are not believed to be in the pain that they say they are and that their distress is “invisible” (Haugli, Strand, & Finsett, 2004).

Fibromyalgia as a Controversial Diagnosis

In the background of many conversations about FMS is the ongoing debate about its legitimacy as a medical diagnosis and whether it should be considered a physical or mental condition. On the one hand, patients have been known to report symptoms that are largely physical in nature (e.g. pain, fatigue etc.) and there are active campaign groups for FMS to be understood as a disease (National Fibromyalgia Association, 2014). In his paper “Fibromyalgia Wars” Wolfe (2009) points out that this position is supported by pharmacological organisations who have a vested interest in the medical acknowledgement of FMS and associated pharmacological treatments. On the other hand, a number of healthcare professionals, perhaps physicians in particular, are reportedly sceptical about the legitimacy of FMS as a disease and many believe patients' problems are psychiatric or psychological in nature. There is significant overlap in symptoms of a number of other conditions, including chronic fatigue syndrome (CFS) and irritable bowel syndrome (IBS), all of which adds to the confusion around diagnosis and the legitimacy of the terminology itself. Furthermore, there are no biological markers or "objective" diagnostic tests available for FMS, and diagnosis is made primarily on the basis of the symptoms reported by patients. Friedberg and Jason (2001) summarise the dominant narrative around FMS from the perspective of many physicians as follows:

> "Given the absence of a recognized biomedical etiology and the perception of high levels of psychiatric disorder, these conditions are often viewed by physicians as somatoform disorders or simply non-illnesses masquerading as medical diseases". (p. 434).

Wolf (2009) has pointed out that there are a number of different theories about FMS, with some arguing that the cause is neurobiological and others believing it is a cultural disease and a reflection of how society responds to particular experiences, and others still who believe FMS is psychological in origin. This has led to inevitable differences in the extent to which people believe FMS is "real," depending on their idea of what constitutes "reality." However, despite much uncertainty about the causes of the experiences called FMS, Wolfe, (2013) suggests there is some consensus around the legitimacy of patients' claims of distress.

Where Does FMS Sit in Relation to Other Types of Pain?

In broad terms, pain has been defined `an unpleasant sensory and emotional experience associated with actual and potential tissue damage, or described in terms of such damage' (Merskey, 1986). It is often categorized as either nociceptive or neuropathic pain.

Nociceptive pain is that which occurs following actual or perceived tissue damage (Nicholson, 2006) and is often considered “acute pain”. The painful experience is estimated to subside over a predictable timeframe, and is considered to be adaptive in that it notifies the individual to a threat to the body and prompts responses of care (Winfield, 2000).

Neuropathic pain is that which follows damage to the central or peripheral nervous system (Woolf & Mannion, 1999). This type of pain can be triggered by an injury (starting as nociceptive pain), which develops into longer term pain or the cause can be less clear. When the cause is unknown or considered to be partly psychological in origin, the terms “idiopathic” and “somatic pain” may also be used. Neuropathic pain responds less well and less predictably to analgesic medications (Dworkin et al., 2007).

The extent to which FMS could be considered a type of neuropathic pain has been the subject of much debate within the literature. Martinez-Lavin (2004) argued that FMS fits the clinical features of neuropathic pain, namely that pain is present in the absence of stimuli and that patients experience allodynia (pain in the presence of symptoms which would not usually cause pain, such as touching tender points) and paresthesia (a sensation such as prickling or burning, with no obvious physical cause).

However, Winfield (2000) argued that pain in FMS (and other conditions) is more complicated and suggested that pain is the result of “a simultaneous parallel processing of nociceptive input from the spinal cord that activates a central network encompassing the pain experience in multiple regions of the brain” (p. 276). He suggested that, as well as information from somatic reflexes, the subjective experience of pain in fibromyalgia is mediated by emotional, motivational and cognitive factors.

Theories of the Development and Maintenance of Fibromyalgia

The controversy surrounding FMS has both been informed by and promoted differences in theories to explain its “existence”. Historically, there has been a tendency to frame the debate about FMS in dualist mind or body terms, with theories focussing on the physical or psychological causes of FMS. However, Winfield (2000) points out that this dualist approach “has not been clinically useful” (p. 277) and there have been a number of mind-body or biopsychosocial theories of FMS which have emerged in recent years. This section will present an overview of some of the prominent theories of FMS, although an exhaustive account of theories is beyond the scope of the paper. Although there is significant overlap, theories of FMS could be classified as being predominantly bio-medical, psychological or mind-body in form. Whilst many of the theories implicitly acknowledge a role of the mind and the body in their theories, only theories that explicitly acknowledged the relationship between the mind and body in the development of FMS were summarised under the mind-body category. The following overview of theories of FMS will therefore be presented in this order.

Biomedical Theories of Fibromyalgia

Central sensitivity syndrome Mease (2005) wrote that “a unifying hypothesis is that FM results from sensitization of the central nervous system” (CNS; p.1). This is the theory that people develop fibromyalgia due to changes in the central nervous system (CNS), which increases sensitivity to sensory information and thus reduces an individual’s pain threshold. Explanations for such changes in the CNS vary, but researchers have suggested that environmental triggers, such as a physical injury, childhood trauma, and infections such as hepatitis C and the Epstein-Barr virus could play a role (Smith et al., 2011). Staud and Rodriguez (2005) suggest that “central sensitization” can occur immediately following a trigger or in a delayed fashion. Some have extended this idea further, saying that a central sensitivity syndrome is the best term to characterize a range of conditions where the symptoms overlap and a well-understood etiology is lacking, including CFS and IBS (Yunus, 2008).

Gracely, Petzke, Wolf, and Clauw (2002) tested this theory using in a functional magnetic imaging study where activity was monitored while people with FMS and healthy controls received “moderate pressure” to their right thumbnail. As expected, they found that participants with FMS reported levels of pain (unlike controls), but they also found no overlap in areas of the brain with increased signal between the two groups of participants. They suggested that this offers support for the theory that people with FMS have a hyper-sensitive CNS. However, there are few recent studies which have explored this further, meaning this theory has only been tested on a small sample size.

Hypothalamo-pituitary-adrenal (HPA) stress axis Other researchers have suggested that the functioning of the HPA axis is different in people with FMS and that this could contribute to their distress. The HPA is a system in the body which is thought to be involved in stress reduction, amongst other things. Griep, Boersma and De Kloet (1993) hypothesised that people with FMS are hyper-responsive to the hormones responsible (including cortisol) for regulating the HPA axis when under acute and chronic stress. Others have argued that serotonin and cortisol levels are lower than normal in those with FMS, and that these factors together serve to undermine the optimal functioning of the HPS axis.

Wingenfeld, Nutzinger, Kauth, Hellhammer and Lautenbacher (2010) measured cortisol release and HPA axis feedback regulation over the course of a day using a salivary measure. They reported that participants with fibromyalgia had higher cortisol levels and reduced feedback sensitivity compared with healthy people in the control group and that self-reported pain intensity was positively correlated with salivary cortisol levels throughout the day. They suggest this is evidence for the mediating effects of stress and negative affect on experiences of pain. However, Tanriverdi, Karaca, Unluhizarci and Kelestimur (2007) point out that contradictory results have also been found and that the role of HPA axis under activity in FMS is not clear-cut. In addition, like the central sensitivity syndrome theory, the theory acknowledges the potential role of environmental stressors as precipitating the diagnosis of FMS, but struggles to integrate the role of psychological or environmental factors which could be involved in the maintenance or management of FMS.

Psychological Theories of Fibromyalgia

Patients as "action-proned" and the influence of attachment history There are a number of psychological or bio-psycho-social theories about the cause and maintenance factors of FMS. One theory draws on findings from studies that people diagnosed with FMS (and also CFS) often report a pre-illness "over-doing" style of functioning and often score highly on measures of perfectionism, seeking to achieve highly in a number of areas of their life. Van Houdenhove, Neerinckx, Onghena, Lysens and Vertommen (2001) found that patients with FMS and CFS scored significantly higher on a questionnaire measuring "action-proneness" compared with healthy controls, and this finding remained when someone close to the person (e.g. their "significant other") completed the questionnaire. Friedberg and Jason (2001) suggested that the development of FMS can be seen as the individual succumbing to the unrealistic demands they come to expect from themselves, and that there may also be an unconscious appeal of a “sick-role” so that the individual can legitimately receive the care for themselves that they have not received (from themselves and others).

The latter point alludes to the influence of early and adult attachment styles, as well as the presence of adverse life events, on the development of fibromyalgia. Frieberg and Jason (2001) acknowledged that early aversive events such as poor attachment relationships, physical and sexual abuse, poverty and other traumas may all be related to the development of FMS (and other syndromes such as CFS). In addition, Sayar, Gulec and Topbas (2004) found that patients with FMS are more likely to report difficulties with depression, anger and expressing emotion than patients with rheumatoid arthritis. The way in which people express themselves and seek care has been consistently linked to the quality of the attachment relationship with early caregivers (Vogel & Wei, 2005) and, thus, there is reason to hypothesise that attachment and style of emotion expression could influence the experience of FMS. In addition, the presence of adverse life events or trauma is acknowledged by some proponents of the HPA axis’s involvement in FMS. Whilst the two are rarely studied in depth concurrently, they may be compatible in terms of considering environmental and physical theories together.

Mind-Body and Biopsychosocial Theory of FMS

Gate control theory Gate control theory of pain is possibly the most influential mind-body theory to date (Melzack & Katz, 2004) and was pioneering in its ability to account for the psychological contribution to the greater or lesser experience of physical pain. First described in Melzack and Wall (1967), it proposes that transmission of nerve impulses (which carry information about painful stimuli) from tissue fibres to spinal cord cells “is modulated by a gating mechanism in the dorsal horn” (p.17). This mechanism is thought to be affected by the activity of small and large diameter fibres. Increased activity in large-diameter fibres is thought to close the pain gate and less pain will be experienced, whereas small-diameter fibre activity will open the gate and allow for the experience of pain. Importantly for the mind-body component of the theory, the gating mechanism is thought to be influenced by nerve impulses from the brain, making room for a psychological contribution (by way of cognition and affect) to the dynamic relationship of the experience of pain. This theory has influenced clinical practice in the management of pain, whereby psychological therapies often focus on techniques to manage the input to the gating mechanism and find ways of “closing the gate” (e.g. van Koulil et al., 2008) and medical research has explored the effects of psychiatric medication on the experience of pain in FMS (e.g. Marangell et al., 2011), as a way of addressing emotional factors which can “open or close the gate”.

Behavioural theory of FMS One theory currently applied to FMS is that which has been termed the “symptom avoidance model” (Friedberg & Jason, 2001). This posits the idea that FMS (and other syndromes such as CFS) come about via an interaction of infection and extreme life stressors at a given time in a person’s history. This, according them, could account for the fatigue and pain experienced. Whilst stressors could be considered an acute event, they argue that the person with FMS may develop fears of activities believed to trigger symptoms akin to the initial painful episode. Like any avoidance cycle, over time the person may become more sensitive and hyper-vigilant to symptom “flare-ups” and reduce their pre-illness activity level further. The authors cite two randomised controlled trials where graded exposure was beneficial for people with CFS (Deary, Chalder, & Sharpe, 2007; Sharpe et al., 1996), and urge further research into this theory and the interventions that follow for FMS.

Summary of FMS Theories

The passage above outlines how a range of theories have emerged to try and explain why the symptoms of FMS develop and are maintained for so long. These have often been considered from a mind or body perspective. Biological theories such as those of central sensitivity syndrome and the HPA stress axis argue that the body's adaptive stress mechanisms are under or over active in people with a diagnosis of FMS, and suggest that physical or environmental trauma can be the cause. However, Tanriverdi et al. (2007) argued that these mechanisms have not been conclusively validated and point to mixed study findings. Some psychological studies have pointed to the role of early attachment, environmental stressors and avoidance cycles to explain the development of FMS, yet, again there is little conclusive evidence that this is the whole story. Interestingly, there is some overlap in the theories with many acknowledging the role of environmental, psychological and biological factors, whilst presenting a theory from an alternative vantage point. The emergence of mind-body theories has attempted to integrate these different approaches, with recent studies exploring gate control theory pointing towards the role of cognition on the physical experience of pain, and vice versa. This begs the question about how interventions designed to address the whole mind-body system have fared for people with FMS and if they offer new potential in the management of this multi-faceted condition. The following section will consider this question and systematically review the recent literature on mind-body therapies for people with FMS.

The Present Review

Aims

This part of the paper will review findings from studies exploring the effects of mind-body treatments in the management of FMS. It will provide a brief overview of what each approach entails, a summary of the evidence base, and a critique of the findings.

Definition of Mind-Body Therapies

There is no universal definition of mind-body therapies, but the term is frequently used within health and psychological literature. Baranowsky et al. (2009) described mind-body treatment as comprising “various approaches that aim to influence both the spiritual or emotional and the physical dimensions in a patient” (p.14). This review will consider a treatment approach to constitute a mind-body approach if it explicitly focuses on both the physical body and cognition or affect. The approach does not have to explicitly state that it is a mind-body intervention, but this should be clear from a summary of the procedure. As such, purely cognitive therapies such as psychodynamic therapy shall not be included in the review, nor will interventions such as exercise, which focus exclusively on the body.

Summary of Previous Review on Mind-body Therapies for Fibromyalgia.

One previous review of complementary therapies for fibromyalgia was identified. Baranowsky et al. (2009) conducted a review into “complementary and alternative medicine treatments” for fibromyalgia. Mind-body therapies formed one category for review, which was taken to include; body awareness therapy, mindfulness meditation, qigong and mensendieck therapy, and autogenic training. They also acknowledge that CBT could be considered a mind-body therapy. They reported “promising yet equivocal” findings, acknowledging a finding from one study where participants reported levels of depression were lower at two-month follow-up of participants who had taken part in a mindfulness intervention as compared to treatment as usual. Despite this, they acknowledge numerous other non-significant findings. This review provided an appropriate date from which to search for studies exploring the impact of mind-body therapies on people with fibromyalgia. Therefore, studies were included in this review if they took place after 2009.[1]

Methodology

Literature Review

There were two stages of the literature search: an initial, broad search for mind-body treatments of fibromyalgia, followed by individual searches for each mind-body intervention identified as a method of managing fibromyalgia. All literature searching was carried out using the electronic databases Psychinfo, Medline, ASSIA and CINNAHL.

Stage One

The first stage involved identifying the mind-body interventions which would be searched for inclusion for the review (Figure 1). The following search terms were used: [psycholog*[2] or mind-body]; and [fibromyalgia or medically unexplained pain]. All abstracts containing the relevant literature terms were read and considered for inclusion of the review. Interventions were noted for further literature searching if they met the definition of mind-body therapies outlined above.

---

[1] Specific search dates were developed when searching for studies of mindfulness and CBT, which had both been reviewed as interventions in their own right subsequent to 2009 (Bernardy et al, 2010; Lauche et al, 2013). CBT studies were included if they took place in or after 2010 and mindfulness studies were included if they took place in or after 2013.

[2] The term “psycholog” was truncated to include the terms “psychology” and “psychological” in the search.

The following mind-body interventions were identified for inclusion in the review:

- Cognitive behaviour therapy
- Mindfulness (including mindfulness-based cognitive therapy and mindfulness-based stress reduction)
- Yoga
- Qigong
- Autogenic training
- Hypnosis

No new studies of mensendiek system therapy or body awareness therapy, which were included as mind-body therapies in Baranowsky et al's (2009) review, were identified for the treatment of fibromyalgia.

Stage Two

Following stage one, a number of mind-body treatments for fibromyalgia were identified. These were used as the basis of subsequent literature searches to identify studies exploring the effects of each treatment on the experience of fibromyalgia. For example, a search was conducted using the following terms: [mindfulness] and [fibromyalgia], or [autogenic training or autogenics or autogenic therapy] and [fibromyalgia].

After inclusion and exclusion criteria were applied (Table 1), the literature search identified 22 eligible studies (Table 2). Once articles had been identified as relevant, they were organised into treatment categories and reviewed accordingly. Randomised and non-randomised controlled trials were critiqued according to National Institute of Health and Care Excellences quality checklist (NICE, 2012). This is based on a tool called the “Graphical appraisal tool for epidemiological studies (GATE)”, which was developed by Jackson et al. (2006), to aid researchers in their appraisal of public health studies' internal and external validity. This comprises a checklist of areas of potential study bias around areas of participant characteristics; experimental and control conditions; outcomes; and methods of analyses. For every item on the checklist, the study in question is given one of five possible scores ("++", "+", "-", "not reported", or "not applicable"), which indicate to what extent levels of potential bias have been considered within the study. Once this is completed, the study can be awarded an overall study quality grading for internal and external validity.[3]

The researcher was mindful of the potential implications of including a second intervention in the review. This was considered appropriate given that an early literature search revealed that many of the interventions explored had combined their intervention with another psychological, physical or pharmacological intervention and in this sense it was felt that the review would capture a wider breadth of studies if one co-intervention was permitted for inclusion. However, it is possible that more than one additional intervention may reduce to too great an extent the possibility that the intervention of focus had contributed to the outcomes. It was considered that broadening the inclusion criteria to one additional intervention would allow for a greater number of studies for each intervention to be reviewed, and that a greater breadth of evidence would outweigh the drawbacks of including a second intervention. However, conclusions drawn from this review should be considered with this in mind.

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[3] For scores of internal and external validity, the following scores were available:

++ : All or most of the checklist criteria have been fulfilled, where they have not been fulfilled the conclusions are very unlikely to alter.

+ : Some of the checklist criteria have been fulfilled, where they have not been fulfilled, or not adequately described, the conclusions are unlikely to alter.

– : Few or no checklist criteria have been fulfilled and the conclusions are likely or very likely to alter.

Table 1. Inclusion and Exclusion Criteria for Stage Two

Studies were included in the review if they met the following inclusion criteria:
- The study reviewed the effects of a mind-body intervention on adults with a diagnosis of fibromyalgia. Up to one co-intervention was permitted within the intervention group (e.g. physical or pharmacological). - The study reported on at least one quantitative outcome measure of pain or psychological functioning.
Studies were excluded from the review if they met the following exclusion criteria:
- Participants were under eighteen years of age. - The study included, and did not differentiate, participants with other conditions (e.g. chronic pain, chronic fatigue syndrome) - The study did not explore the effects of a mind-body treatment programme (e.g. pharmacological only, psychological only). - The study did not report on at least one quantitative outcome measure of pain. - More than one co-intervention was explored within the study - The study was published in a language other than English

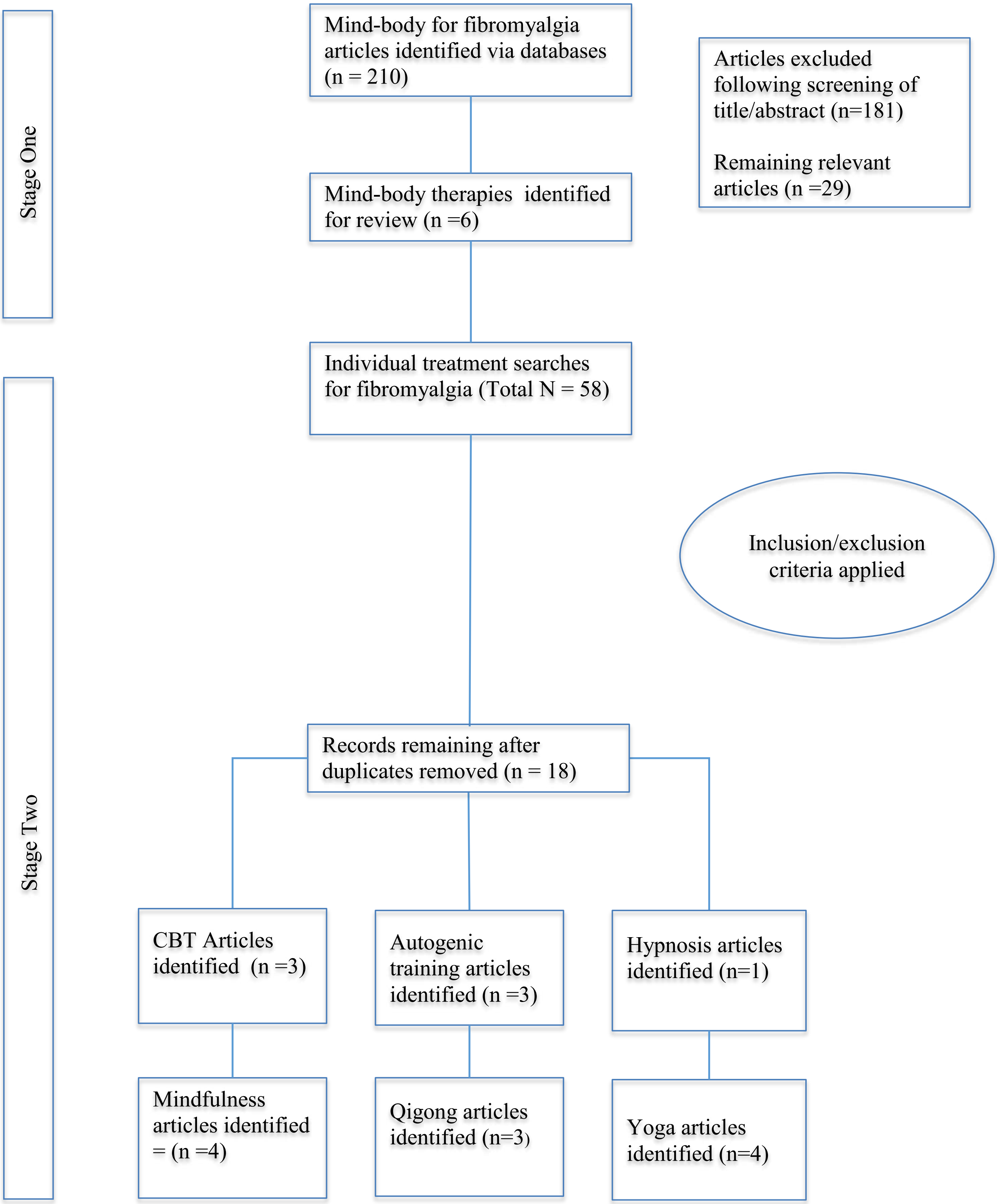

Figure 1.0. PRISMA Diagram Detailing the Search Strategy for the Review

Cognitive Behaviour Therapy

Cognitive Behaviour Therapy (CBT) is a mind-body therapy which assumes that people's thoughts, feelings, physical sensations and behaviours interact to affect wellbeing. CBT has been recommended for the management of FMS (Häuser, Thieme & Turk, 2010) and invariably includes a physical (as well as a cognitive) component, encouraging gentle exercise, behavioural experiments, and progressive muscle relaxation exercises. Three CBT studies were identified for review.

Miro et al. (2011) compared the psychosocial and neuropsychological effects of 20 participants in a CBT group for insomnia with those of a sleep hygiene group (n = 20) in an RCT for people diagnosed with FMS. They reported significantly greater improvements in the CBT group than the sleep hygiene group on measures of alertness and executive functioning, but not orientation, using the Attentional Network Test-Interactions (ANTI). It is a strength of this study that it focussed on neuropsychological functioning following intervention, given the high prevalence of cognitive difficulties (particularly with focus and attention; Park et al., 2001) for people with a diagnosis of FMS, and this was rarely found elsewhere in this review. The study did not find significant differences between the two groups on measures of daily functioning or sleep; however, they did find a significant effect of "time", suggesting that both interventions yielded benefits on these measures. No significant benefits were found in either group for measures of pain, anxiety, and, unlike Bernardy et al's review, they did not report a significant improvement on a measure or depression.

Williams et al. (2010) reported more positive findings in a study which explored the effects of internet-based CBT for FMS over six-months for 118 people randomly assigned to a CBT or "standard care" control group. They reported significantly greater improvements in the CBT group compared with the control group on standardized scores of pain and physical functioning. Interestingly, they found that exercise and relaxation techniques were best adhered to, perhaps pointing towards a preference of behavioural techniques. Whilst the results were positive with medium (physical function) and large (pain) effect sizes, the study did not provide an active, comparable control group and positive findings may therefore be inflated. In addition, no measures of psychological wellbeing were employed.

Kohl, Rief and Glombiewski (2014) also conducted an experiment exploring the extent to which CBT-related techniques of “cognitive restructuring” and “acceptance” influenced the pain threshold of 62 women diagnosed with FMS when exposed to heat and cold. They reported that participants in both the acceptance and cognitive restructuring condition demonstrated significantly higher heat-pain thresholds following intervention than those in the control condition. However, this benefit only remained for the cognitive restructuring group when participants experienced cold-induced pain. Interestingly, non-significant effects were found for all groups on measures of pain *intensity*, suggesting that CBT techniques were useful in supporting people to *withstand* greater levels of pain, but did not appear to reduce the subjective experience of pain intensity.

Overall, the review and three studies suggest some evidence for the effectiveness of CBT techniques in supporting women with FMS, particularly in areas of pain acceptance, physical function and cognitive function. However, there were few consistent findings and the interventions ranged from laboratory-based pain-threshold testing to group CBT, making it difficult to make comparisons.

Mindfulness

Rosenzweig et al. (2010) describe mindfulness as a form of meditation where those practising are guided to intentionally pay attention to their sensory experiences and acknowledge them in a “non-judgmental and non-reactive way” (p.30). Whilst the aim is not to directly address or reduce uncomfortable feelings, thoughts or sensations (in the mind or the body); practitioners and participants often report that a reduction in distress follows. Mindfulness has been provided in a number of formats including as a “purist” therapy, as part of mindfulness-based stress reduction (MBSR) and mindfulness based cognitive therapy (MBCT). All involve mindfulness meditation as core to their approach and were all included in this review.

Cash et al. (2014) conducted a randomised controlled trial exploring the effects of an eight-week mindfulness programme for people with the diagnosis of FMS. Compared with participants in a wait-list control group, those in the mindfulness group yielded significantly better outcomes on measures of perceived stress, sleep disturbance and symptom severity. However, no significant differences were found for pain scores, physical functioning or cortisol levels. In addition, the authors asked participants to practise at home and reported that outcome was significantly positively correlated with home practice. Whilst this is an interesting finding, this latter analysis was not carried out on an intent-to-treat basis and therefore may overestimate this effect.

Amutio et al’s. (2015) RCT also yielded significant, positive changes in self-reported feelings of anger, anxiety and depression, and anger control for those who participated in a seven-week mindfulness programme as compared to those participants allocated to the wait-list control group. However, the study did not measure pain in any way and therefore the influence of this mindfulness intervention on pain experienced is unknown. In addition, despite these reported benefits in emotional well-being, the study did not report effect sizes or a measure of clinically significant change. A closer look at the scores suggests that the biggest improvement was found on scores of depression.

A similar result was reported by Parra-Delgado and Latorre-Postigo (2013). They recruited thirty-three participants with a diagnosis of FMS and randomly allocated them to either a seven-week mindfulness course or a wait-list control group. articipants in the mindfulness group reported significant improvements on the Beck Depression Inventory (Beck, Steer, & Brown, 1996), which was not found in the control group. However, no significant differences were reported for other measures of psychological wellbeing or pain. A weakness of these studies is that none reported effect sizes or clinical significance so it is difficult to ascertain how meaningful the findings are.

Davis and Zautra (2013) conducted a similar RCT with a larger sample size (n= 79). They found that participants with FMS who took part in twelve mindfulness sessions reported significant improvements in social functioning, coping efficacy and positive affect (as measured by the Positive and Negative Affect Schedule; Watson & Clark, 1999), compared with a wait-list control group. However, again, no improvement in pain was reported.

Overall, these findings suggest that mindfulness could be an effective mind-body intervention for people with FMS, in particular for supporting peoples emotional well-being in the context of living with chronic pain. None of the studies reported a significant improvement in pain perception, but a number found tentative results that suggested participants with FMS felt more confident coping with their pain following mindfulness interventions.

Yoga

Yoga is described by Curtis, Osadchuk, and Katz (2011) as a mind-body practice dating back to the 15th century in India, where "physical yoga postures were practised to prepare the mind for meditation" (p.193). The practice aims to balance "heating and activating properties" with "cooling and calming properties" through a combination of movement and stillness, considered to foster physical and mental health alike. Yoga can be practised individually or in groups, but all recent trials have reported on group data.

Four studies met the inclusion criteria for this review. Carson et al. (2010) conducted a randomized-controlled-trial where fifty-three female participants were assigned to either an eight-week yoga class or wait-list standard care groups, where participants received medical interventions only. Compared with the control group, the authors reported significantly greater improvements on measures of pain level, pain acceptance, pain catastrophising, fatigue and mood for those assigned to the yoga group. A follow-up study in 2012 (Carson et al., 2012) found that improvements were maintained, however, the authors did not provide a breakdown of these new findings. This study was of good quality in that it outlined its randomization process clearly, used a conservative intent-to-treat analysis and there were no significant differences between demographical characteristics of the two groups. Close attention was paid to the risks of participating in a yoga programme and participants were talked through the need to be gentle with the body during chronic illness and were encouraged to work at their own pace. However, participants were also asked to practise yoga at home and complete an on-line diary each day. This diary asked participants to rate a number of scales including: level of pain, relaxation, coping strategies, emotional distress, and vigour. Participants who did not attend were also contacted by the yoga facilitator to problem-solve barriers to practise. In this sense, he study could be considered to report on a number interventions within the experimental condition and the findings should be considered with this in mind.

Curtis, Osadchuk and Katz (2011) recruited twenty-two participants to take part in a study exploring the effects of twice-weekly, seventy-five-minute yoga class over eight weeks on self-reported measures of pain, mindfulness, and measured cortisol levels. Post-intervention, they reported significant improvements in self-reported levels of pain, pain acceptance, pain-catastrophising, and found significantly increased levels of cortisol, as compared with baseline measures. They also found that mindfulness scores mediated self-reported pain catastrophisation scores, which the authors suggest could reflect the “mindful”, non-judgmental observational style that is cultivated through yoga practice. The authors suggest the increased cortisol may demonstrate the yoga programme’s effectiveness in “normalizing one aspect of HPA axis dysregulation observed in women with FM” (p.198). However, a drawback of this study was that participants were not given advice about whether or not to practise yoga at home and therefore there may be some heterogeneity in the level of practice within the experimental condition.

In addition, Hennard (2011) reviewed the effects of an eight-week yoga programme in which eleven people with a diagnosis of fibromyalgia took part. The study reported significant post-intervention improvements in self-reported levels of anxiety, depression, stiffness, as well as increased number of reported “felt good” days and fewer “missed work days”. However this study was small and uncontrolled.

Overall, there is some sound evidence that yoga could be helpful in the management of pain and wellbeing in FMS. However, one trial did not employ a control group and the other studies reviewed compared yoga to a wait-list or medication-only group. Further research comparing yoga interventions to an active control group will further explore the usefulness of this intervention.

Qigong

Qigong practice is considered a mind-body therapy derived from traditional Chinese medicine. It involves "physical movements and postures, breathing practices, and meditative techniques, and there are many forms" (Jahnke, Chi, & Chi, 2002). It is developing an evidence base for the treatment of a number of long-term health conditions (Ng & Tsang, 2009)

Four Qigong studies were identified for the review. Lynch, Sawynok, Hiew and Marcon (2012) conducted an RCT comparing participants undertaking an eight-week Qigong class (with 45-60 minutes recommended home practice) with a wait-list control group which received "their usual care", Significant improvements were reported on standardised measures of pain, sleep quality, depression, anxiety, fatigue, morning tiredness, stiffness, and overall wellbeing, following the eight-week intervention, and at four and six-months follow up.

Sawynok, Lynch and Marcon (2013) also conducted a mixed-methods study exploring the effects of an eight-week qigong intervention (with one hour per day practice for six months) for twenty people with a diagnosis of fibromyalgia. They reported a significant relationship between level of practice at home and improvements on measures of pain and sleep quality. However, 35% of participants dropped out of the and there was no intent-to-treat analysis, which may have overstated the findings. In addition, the study reported that the best outcomes were found for a "highly motivated" group of five participants and reported stronger positive trends for this group. However, the authors did not include an independent analysis of those who were not considered to be in this group and thus this relationship should be seen a descriptive and not causal. They also included qualitative analysis, reporting that participants had cited improvements in asthma, migraines, weight loss, amongst others, following the qigong intervention.

Liu et al. (2012) also conducted an RCT where fourteen participants were randomly assigned to a six-week qigong programme or a "sham body movement class" of the same duration. Participants were also encouraged to practise qigong or the movement exercises at home. They reported significant positive effects on outcome measures of pain, fatigue and "FMS impact" (using the Fibromyalgia Impact Questionnaire; Sisto, 2011) for the experimental, but not the control group. All reported effect sizes were large (Cohen's *d:* 1.56 to 1.58). This study recruited a small sample, but had a small attrition rate (two participants). It is a strength of the design that its control group mimicked the components of the intervention group which were considered non-specific, however the paper provides little detail into what this group entailed. It also seems that there was a difference in group size, with the qigong group practising in groups of four, but the control group described as practicing in "small groups".

Overall, qigong studies for FMS have reported positive findings for measures of pain and emotional well-being. Whilst it is interesting and potentially promising that positive effects have been reported on level of pain, the level of analyses was not thorough. In addition, one author was involved in three of the four studies, contributing a bias to the recent evidence base.

Hypnosis

Hypnosis has been defined as a therapeutic intervention which leads to "altered states of consciousness" where the hypnotized person is said to be in a "trance" and is more receptive to "verbal and non-verbal communications". Such suggestions can be used clinically with the aim of reducing or “alleviating pain” (Cyna, McAuliffe, & Andrew, 2004).

One study on the effects of hypnosis on the experience of fibromyalgia was identified. Picard et al. (2013) conducted a trial where fifty-nine women were randomly allocated to either a wait-list control group or a group which received five sessions of pain-related hypnotherapy over two months. Participants in the experimental group were also encouraged to practise hypnosis outside of the group using a recording of the sessions. No significant improvements were found on measures of pain or fatigue immediately following the group or at six-month follow-up. However, the study reported significant improvements in quality of sleep and participants’ perceptions of the effectiveness of treatments.

Autogenic Training

Autogenic Training (AT) is a mind-body therapy which aims to trigger the body’s “natural state of rest and recuperation” (British Autogenic Society, 2013; Benson, Beary, & Carol, 1970). It uses guided imagery, self-talk and comfortable body postures to facilitate a state of relaxation, which, if practised, clients are said to be able to bring about at will (Sadigh & Montero, 2008). It can be taught individually or in groups, and commonly involves teaching clients a number of subvocalized “formulae” over eight weeks to induce the relaxation response.

Luciano et al. (2011) conducted an RCT comparing standard care (medication) with a nine-week intervention of autogenic training and psycho-education in a primary care setting for people with a diagnosis of fibromyalgia. The authors reported a significant difference in post-measures between the two groups, with those in the intervention group demonstrating greater improvements on measures including pain, physical impairment, fatigue, anxiety and depression. Medium effect sizes were reported for all measures. Response to treatment was mediated by reported anxiety level at baseline, with those who reported less pre-intervention anxiety responding better to the intervention.

Castel, Cascon, Padrol, Sala, and Rull (2012) compared the experiences of people with FMS who were randomly assigned to either a group offering; CBT with autogenic training, CBT with hypnosis, or treatment as usual (consisting of pharmacological interventions only). They found that participants in both CBT groups yielded preferable outcomes on measures for depression, anxiety, physical functioning, pain experience, and work status compared with those in the control group. The authors report that the CBT with hypnosis group yielded significantly better results than the CBT with AT group on measures of psychological distress, catastrophising, FIQ total score, sleep quantity and sleep index scores, however, these differences in outcomes were not maintained for all measures at 6 month follow up (only psychological distress and sleep index problems yielded a significant difference between the two CBT groups) and when a more conservative mixed-model linear analysis was conducted, there was no significant difference in outcomes found between the two CBT groups.

Overall, there is some tentative support for the usefulness of AT for people with FMS on measures of pain and wellbeing. However, the findings are mixed and no recent studies of AT as a standalone intervention were identified.

Table 1. Characteristics of Studies Included in the Review

No	Treatment	Study details	Design	Control condition(s)	Length of intervention	No of participants	Co-interventions	Intention to treat?	Attrition	Clinical significance?	Outcome measures	Internal validity ranking (++, +, or -)	External validity ranking (++, +, or -)
1	CBT	Bernardy et al. (2010)	Meta-analysis	Various	14 RCT studies included	910	No	10/14 studies	No overall drop-out reported	No	Various	Not included in scoring	Not included in scoring
2	CBT	Williams et al. (2010)	RCT	Medication (standard care) vs standard care and internet-based CBT	6-month use of web-based CBT for FM	118	Yes – standard care (medication)	Yes	12	No. Though reported number needed to treat as 5 for one person to receive 30% pain reduction.	SF-36 Physical Functioning Scale; Brief Pain Inventory (BPI; severity scale); Clients Satisfaction Questionnaire	++	+
3	CBT	Miro et al (2011)	RCT	CBT for insomnia in FM vs sleep hygiene	Weekly 90 min session for 6 weeks	40	No	No	4	Yes. Reported 60% of CBT group to make clinically significant improvement on daily functioning	Polysomnography; Attentional Network Test-Intercations (ANTI) – test of altertness, orienting and exec function); FIQ; PSQI; MPQ; HADS	+	+
4	CBT	Kohl et al. (2014)	RCT	3 conditions: Acceptance, cognitive restructuring, neutral statement	Thermode based temperature manipulation from 0.3-49°C. Participants were given either acceptance, cognitive restructuring or neutral statements to influence tolerance.	60	No	No	No	No	Time until button pressed to return to normal temperature; VAS.	+	+
5	Mindfulness	Lauche et al. (2013)	Meta-analy	Various	8-10 weeks	674	No	Not reviewed	No overall drop-out reported	Not reviewed	Various	Not included in scoring	Not included in scoring

			sis										
6	Mindfulness	Davis et al. (2013)	RCT	Wait-list	12 modules lasting 15 minutes each	79 >18	No	Yes	5%= exp, 15%= control	No	FIQ; Positive and Negative Affect Schedule (PNAS); 101 point pain scale.	++	++
7	Mindfulness based CBT	Parra-Delgado et al. (2013)	RCT	Wait-list	8-weekly sessios	33	No	No	11.76%	No	Mini International Neuropsychiatric Interview (MINI); FIQ; BDI	++	+
8	Mindfulness	Cash et al. (2014)	RCT	Wait-list	Weekly 2.5 hour sessions for 8 weeks	91 (Exp= 51, Control = 40)	No	Yes	23 %)	No	Salivary cortisol; Fibromyalgia Impact Questionnaire (FIQ); Visual Analogue Scale (VAS); Perceived Stress Scale	++	+
9	Mindfulness	Amutio et al. (2015)	RCT	Wait-list	7-week programme	32	No	No	No	No	State-Trait Anger Expression Inventory (STAXI); Beck Depression Inventory (BDI); State-Trait Anxiety Inventory (STAI)	+	+
10	Yoga	Carson et al. (2010)	RCT	Waitlist	2 hours for 8-weeks plus home practice	53 All women All over the age of 21	Involved elements of mindfulness with emphasis on gaining “awareness”	Yes	10 (6: exp, 4: control,19%)	Yes – on primary outcome measure, FIQ	Fibromyalgia Impact Questionnaire – Revised (FIQR); Patient Global Impression of Change (PGIC)	++	++
11	Yoga	Curtis et al. (2011)	Uncontrolled pre-post	N/A	2 x 75 min yoga class per week	22	Involved elements of mindfulness in body scan	Yes, but only for cortisol measure	3 (13.6%)	Not reported	McGill Pain Questionnaire (MPQ-SF-2); Numeric Rating Scale (NRS) – for pain intensity and unpleasantness; Sum of Local Areas of Pain (SLAP); Pain Catastrophising Scale (PCS); Pain Disability Index (PDI); Hospital Anxiety and Depression Scale (HADS); Five Facet Mindfulness Questionnaire; Chronic Pain Acceptance Questionnaire (PAQ)	-	+
12	Yoga	Hennard et al. (2011)	Uncontrolled pre-post	N/A	1 hour 8-week programme	25	Involved elements of meditation	No	9 (36%)	Not reported	Fibromyalgia Impact Questionnaire (FIQ)	-	+
13	Yoga	Carson et al. (2012)	RCT	Waitlist	2 hour yoga class for 8-	53	Involved elements	Not reported	Not reported	Not reported	Fibromyalgia Impact Questionnaire – Revised (FIQR); Patient Global		

					weeks plus home practice	All women All over the age of 21	of mindfulness with emphasis on gaining "awareness"				Impression of Change (PGIC)		
14	Qigong	Liu et al. (2012)	RCT	Body movement exercise	2 x training sessions. 1 hour practice for 6-weeks. Daily home practice	14	No	No	2 (28.6%)	Not reported	Short-Form McGill Pain Questionnaire (SF-MPQ), Multidimensional Fatigue Inventory (MFI), Pittsburgh Sleep Quality Index (PSQI), and Fibromyalgia Impact Questionnaire (FIQ).	+	+
15	Qigong	Lynch et al. (2012)	RCT	Delayed treatment/waitlist	3 half-day training sessions plus 1 hour p/w fro 8 weeks	100	No	No	12 (10=exp, 2= control, 12%)	Yes. Reported 30-38% of experimental group reached clinically significant change on outcome measures.	NRSPI; PSQI; FIQ	+	+
16	Qigong	Sawynok et al. (2013)	Mixed methods	N/A	Two half-day lessons plus practice for 1 hour per day for 8 weeks	20	No	No	7 (35%)	Not reported	Numerical Rating Scale Pain Intensity (NRSPI); Fibromyalgia Impact Questionnaire (FIQ); Pittsburgh Sleep Quality Index (PSQI); SF-Health Survey – Physical	-	+
17	Autogenic Training	Luciano et al. (2011)	RCT	Treatment as usual (medication)	9X 2 hour sessions	216 (108, 108)	Yes, psycho-education	Yes	20 (9.7%)	Yes. Said three people needed to take part in intervention for one person to benefit.	State-Trait Anxiety Inventory(STAI); FIQ; Chronic Medical Conditions Checklist (CMCC)	+	+
18	Autogenic Training	Castel et al. (2012)	RCT	Multicomponent CBT inc AT vs multicomponent CBT inc hypnosis vs W/L	14 x weekly 2 hour sessions.	93 (34, 29, 30)	Yes: Multicomponent CBT inc AT vs multicomponent CBT inc hypnosis vs W/L	Yes	6	Yes. 17-19% of CBT and hypnosis group reached clinically significant change on outcome measures.	HADS; FIQ; Numerical Rating Scale; Medical Outcome Study Sleep Scale (MOS)	+	+

19	Autogenic Training	Van Ittersum et al. (2013)	RCT	Written education about pain neuroscience vs relaxation training (inc. AT)	2 weeks to practice at home	114	No	Yes	32 (28%)	No	FIQ; Pain Catastrophising Scale (PCS)	++	+
20	Hypnosis	Picard et al. (2015)	RCT	Wait list	5 sessions over 2 months	59	No	No	Not reported	No	MOS-Sleep; FIQ; PGIC	+	+

Discussion

Summary of the Findings

This paper reviewed the empirical literature of studies exploring the effects of mind-body therapies of the experience of people who have received a diagnosis of fibromyalgia. There have been mixed findings with around half of RCTs reporting significant post-intervention improvements in well-being (as measured by outcome measures for constructs such as depression and anxiety; e.g. Parra-Delgado et al., 2013) and pain *tolerance* (e.g. Kohl, Rief, & Glombiewski., 2014); however, fewer studies reported significant improvements in pain intensity or frequency. This was true of studies exploring therapies which had been reviewed in previous meta-analyses (CBT and mindfulness), which yielded broadly similar findings to each other and to their corresponding, previous meta-papers. Studies of yoga and qigong reported the most consistent benefits in pain, but there were significant methodological issues, with, for example, one study reporting positive findings from a select, “highly-motivated” section of their participant sample (Sawynok et al., 2013). Studies of yoga and one autogenic training (plus psycho-education) study were the only studies to provide convincing findings that there had been significant improvements on measures of the mind *and* the body, with improvements noted on scores of pain as well as depression and anxiety.

It is interesting to consider the findings of this review in relation to the dominant mind-body theory of pain; gate control theory. In some ways the findings of the review support the premise that the experience of pain can be mediated by positive interventions at a cognitive or physical level in order to “close” the sensory feedback gate in the spine. Parra-Delgado et al. (2013) reported that participants reported improved wellbeing following a mindfulness intervention, which suggests that, at the least, mind-body interventions can be helpful in supporting mental well-being in the context of physical pain. However, whilst previous research suggests that increased experiences of pain increases the risk of poorer mental health (Gatchel, 2004), these interventions do not provide conclusive evidence that the relationship is equally reciprocal. Few studies provided unequivocal evidence that the mind-body therapy they reviewed led to improvements in the physical experience of pain, perhaps challenging gate control theory's assertion about the two-way relationship between physical pain and other sources of sensory feedback.

Methodological Critique

Whilst studies in this review clearly pointed to enhanced wellbeing over pain reduction, there were a number of methodological limitations which should be considered. Firstly, it was noticeable that few of the studies reported significant improvements in pain scores following intervention. Those that did used either the Short-Form Mcgill Pain Questionnaire (Melzack, 1987) or the Brief Pain Inventory (Cleeland & Ryan, 1994). Studies using the Visual Analogue Scale (Campbell & Lewis, 1990) or the Fibromyalgia Impact Questionnaire did not report significant improvements. Looking at the questionnaires in more detail, the MPQ-SF2 and the BPI are both more detailed inquiries into the dimensions of pain, with the MPQ-SF2 asking for ratings of "mild", "moderate" or "severe" on eleven pain descriptors, including "throbbing", "stabbing", and "heavy". The VAS and the FIQ are more general measures of pain on a 10-point scale. Given that pain is subjective and likely to be a complex and multi-dimensional, it may be that some studies have inadequately explored the nuances of pain change over the course of their interventions and that future studies would benefit from more sophisticated outcome measures or qualitative feedback analyses.

The issue of statistical versus clinical significance is also relevant in that many studies reported statistically significant results but few reported on clinical significance. This may mean that participants were still experiencing pain and or sub-optimal wellbeing, despite the authors reporting a statistical change in the sample scores. Given the multifaceted nature of fibromyalgia, it may be difficult to determine a "core symptom" or symptoms in which to measure clinical significance by way of "movement of more than two standard deviations away from the 'clinical' population" (Jacobson & Truax, 1991). Few studies reported clinical significance levels and thus claims about reduction in fibromyalgia distress following a particular mind-body therapy should be considered with caution.

Studies also varied in their attempts to address possible mechanisms of change. Luciano et al., (2011) suggested that comorbid "trait anxiety" was found to reduce the likelihood of yielding benefits from their autogenic training and psycho-education interventions, but they did not elaborate as to how they imagined this process to occur or why they thought reduced anxiety could support the effectiveness of the intervention on the outcome measures they used. Indeed there is the potential for a tautological argument in that anxiety was one of the outcome measures used in the study, so their argument could be interpreted as "people do not reduce their level of anxiety following the intervention because they are too anxious". Other studies used their discussion to suggest future research into possible mechanisms of change (e.g. Davis et al., 2013).

Implications for Clinical Practice

The summary and critique outlined above suggest there is some evidence to support the delivery of mind-body therapies for people diagnosed with FMS. All interventions reviewed offered at least one study which reported a significant improvement in either physical pain or emotional well-being. However, importantly, the findings were mixed and further research is needed to confidently ascertain the effectiveness of such treatments for this client group. In addition, more studies reported benefits on outcomes of psychological wellbeing, such as depression or anxiety than they did on outcomes of physical pain. Despite the limitations with the pain outcome measures used by a number of studies, it may be necessary to manage the expectations of patients who are in pain that any mind-body intervention may help them to feel better in terms of their mood, but there may not be dramatic improvements in their level of pain.

Future Research

The generalisability of the findings is limited given the largely homogenous sample characteristics. Many more women took part in the studies than men and the reported ages ranged from 21 to 65 years old. This corresponds with previous research findings that women are more likely to receive a diagnosis of FMS or have been involved in research more often than men with FMS (Weir et al., 2006). Mease (2005) reported that the high female-to-male ratio was most stark in clinical, community settings and suggested that this could reflect women's greater likelihood of seeking help or a diagnosis for their pain. However, this may mean that the findings of interventions studies reflects the experiences of a predominantly female group, who may be more likely to seek help for their distress. Further research could explore the experiences of groups underrepresented in these studies, including men, younger and older people with a diagnosis of FMS. In addition, given the controversy around the diagnosis itself, future research could consider the benefits of mind-body therapies for those who do not have the FMS diagnosis but may benefit from these interventions.

In addition, only one of the studies reviewed included any qualitative feedback and, aside from the quantitative outcome measures, there was little sense of how acceptable participants had found the interventions. This may be particularly relevant to this client group, who have historically been portrayed as reluctant to acknowledge potential psychological aspects of their pain (Saperia & Swartzman, 2012) and have expressed dissatisfaction with the patient-practitioner relationship (Haugli et al., 2004). Future research could gain new insight into how interventions for FMS are experienced and work towards empowering patients by inviting qualitative feedback on mind-body interventions.

Conclusion

The findings of the review suggest that there is some sound evidence that mind-body therapies can be helpful in promoting psychological wellbeing and pain management for people diagnosed with fibromyalgia. CBT and yoga trials reported significant improvements in self-reported pain intensity as part of randomised controlled trials. However, the review found more evidence that mind-body therapies as effective in improving emotional wellbeing without necessarily improving the experience of pain, with at least one study for all interventions except hypnosis reporting improvements on psychological outcome measures. This perhaps challenges the gate control theory’s position that positive cognitive and affective sensory feedback can “close the pain gate” and reduce experiences of pain. However, numerous methodological limitations were noted, such as poor representation of men and varied standardised measures, and the findings should therefore be considered with caution. People diagnosed with fibromyalgia may benefit from research findings that pain does not always subside following mind-body interventions and a thoughtful balance should be struck between truthfully managing expectations and fostering hope for improved wellbeing. In addition, future research could explore participant experiences in more depth using qualitative designs and, when change occurs, focus on the how this comes about. This may provide useful insights into potential mechanisms of change and which aspects of mind-body interventions could be built on to improve future interventions.

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SECTION B: EMPIRICAL PAPER

Autogenic training for women experiencing chronic pain: A grounded theory study

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A thesis submitted in partial fulfilment of the requirements of
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Doctor of Clinical Psychology

APRIL 2015

SALOMONS
CANTERBURY CHRIST CHURCH UNIVERSITY

Abstract

Aims: The aim of this study was to explore the process of an eight-week autogenic training (AT) programme for people experiencing chronic pain, as perceived by participants, and to hypothesise about mechanism of change, where reported.

Method: Eleven semi-structured interviews were conducted with women who had taken part in AT at a hospital in a metropolitan area of England (N=8) or with a private practitioner accredited by the British Autogenic Society (N=3). A grounded theory design was employed to build an inductive model “grounded” in the qualitative data.

Findings: A core category of *“accepting versus fighting the pain”* emerged from the data. In addition, six main categories were identified*: 1) “Nobody knows what’s wrong with me”: Trying to get help for the pain; 2) “Going into the pain”: The process of AT for chronic pain; 3) “Something my body wanted more of – like nectar”: The effects of AT; 4) “Bringing us back”: Practising AT with other(s); 5) “Giving yourself permission to stop”: Practising AT independently;* and *6) “Not just free-falling”: Comparing AT with other therapies*. A number of inter-related sub-categories and dimensions were also identified.

Discussion: The present study suggests that AT is a useful therapeutic tool with benefits for both physical and psychological well-being for people experiencing chronic pain. It illuminates the inter-connected nature of these areas of health, which have historically been treated as distinct entities. Further research is needed to explore a potential role for AT in management of stress, pain and wellbeing.

Keywords: autogenic training; chronic pain; mind-body therapy; grounded theory.

Introduction

Autogenic Training

Autogenic training (AT) is a mind-body therapy which is thought to trigger the body's "natural state of rest and recuperation" (British Autogenic Society, 2014; Benson, 1974). It can be taught individually or in groups, and commonly involves teaching clients to scan the body to observe physical sensations as well as a number of phrases or "formulae" over eight weeks to induce a calm state of mind and body. These phrases are based on experiences and measurements of people in the hypnotic state (Schultz & Luthe, 1959). As well as cognitive statements, the technique also encourages a number of physical postures and is suggested to work with the body's homeostatic system to enhance parasympathetic functioning and reduce sympathetic tone. The changes brought about by AT are said to be those which are "diametrically opposed to changes elicited by stress" (p.1).

Definition of Chronic Pain

Chronic pain is defined by the National Institute of Health (NIH, 2014) as "pain lasting more than twelve weeks". It is differentiated from acute pain, which typically follows actual or perceived tissue damage and, with treatment, subsides over a short, predictable timeframe (Grichnik & Ferrante, 1991). Whilst some forms of chronic pain are clearly linked to organic damage, such as in cancer, the causes of other chronic pain, such as fibromyalgia (FM,) are relatively poorly understood and treatment varies considerably (Dworkin et al., 2008). Approximately 6.4 per cent of people in the UK experience some form of chronic pain each year, and the British Pain Society (2012) reported that older age, being female, poor housing and heavy manual work all significantly increase the risk of developing chronic pain.

Despite a number of different theories about chronic pain, there is some consensus that the experience of chronic pain influences and is influenced by biological, psychological and social factors (Ehde, Dillworth, & Turner, 2014). Those experiencing chronic pain frequently report co-occurring symptoms such as reduced sleep quality and frequency, reduced movement, and reduced social activities as well as psychological distress such as anxiety, depression and a difficulty focusing on tasks (Turk, Swanson, & Tunks, 2008).

The of Chronic Pain

National Institute for Health and Care Excellence guidelines and Health Improvement Scotland increasingly recognize the need to support people experiencing chronic pain within a mind-body or bio-psycho-social framework (NICE, 2009; HIS, 2013). Pharmacological, psychological and physical interventions are all recommended, and this, more broadly, corresponds with a national push to bridge the gap between mental and physical heath (Department of Health, 2011; 2014) and integrate these models of care. However, despite this progress, treatment outcomes remain modest and people often continue to experience some degree of pain after treatment (e.g. McCracken & Turk, 2002). As such, the emphasis of intervention is often on the management of chronic pain, rather than its complete alleviation, and there remains significant scope for the development of interventions.

Brief Overview of Theories of Chronic Pain and Mechanisms of Change

Gate control theory Gate control theory was proposed by Melzack and Wall in 1967 and was radical at the time for suggesting a mediating effect of the brain and mind on the subjective, physical experience of pain. They argued that the body possesses a “gating” mechanism (in the dorsal horn of the spine) which can modify sensory information about painful stimuli before it reaches the brain. This “gate” can “open” and “close” in accordance with sensory feedback from other parts of the body, including those derived from thoughts, feelings and behavior. This has paved the way for interventions at all these levels with the aim of actively reducing the experience of pain. Indeed, McCracken (2005) argues that patients can be supported to “close” the pain gate by cultivating positive thoughts of control over the pain, distraction, pacing activities, balancing work and rest and supporting emotional wellbeing.

Chronic pain and stress Otis (2007) describes stress as the arousal that occurs when a person perceives a situation or an event as “overwhelming, beyond her abilities to cope, and threatening to her well-being”. The relationship between stress and chronic pain has been well explored, with many studies suggesting a circular relationship (Gatchel, 2004). For example, being in pain that is experienced as difficult to cope with or successfully manage can be a cause of significant stress. In turn, feeling stressed can have a negative effect on a person’s mood and increase the experience of pain. A study in Sweden reported that 23 per cent of participants with a diagnosis of “non-malign” chronic pain met diagnostic criteria for post-traumatic stress disorder and Otis, Kean and Kerns (2003) report that PTSD symptoms are associated with higher levels of pain, emotional distress and disability. Sharp and Harvey (2001) suggest that stress and chronic pain are mutually maintaining conditions and, as such, there is a strong case for promoting treatments and therapies which support a relaxation response and perhaps help to process past stresses.

Mindfulness and acceptance-based approaches for chronic pain. A “third-wave” of cognitive-behaviour therapies, including mindfulness, has encouraged people to cultivate a state of passive, non-judgmental awareness of thoughts, feelings and physical sensations. Instead of avoiding the pain - psychologically or behaviourally - mindfulness for chronic pain encourages people to practise observing their pain and physical sensations and distinguish them from thoughts and evaluations that accompany the pain. Through this process, the patient is thought to learn to see and accept the pain for what it is, and not to add to it by negatively evaluating the pain, catastrophising, or worrying about the future. McCracken, Vowles, Eccleston (2004) reported that greater acceptance of pain was associated with reports of less pain, anxiety, depression, avoidance and disability.

Research on Autogenic Training and Chronic Pain

Despite AT having been practised since the mid-twentieth century (Shultz, 1959), there remains a paucity of literature exploring the effects or mechanism of AT for people with chronic pain. Luciano et al. (2011) reported that participants with fibromyalgia-related chronic pain who were randomly assigned to an intervention of psycho-education group and autogenic training reported significant improvements in pain intensity, fatigue, anxiety and depression as compared with a control group of participants who received medication only. In addition, Kanji (2000) also outlines how AT has yielded benefits for people with conditions such as long-term tension headaches (Ter Kuile et al., 1994), cancer pain (Rancour, 1994) and back pain (Yamazaki, Hoshino, Ito, Matsuo, & Katsura, 1985). However, most of the studies he cited were relatively old and a number of them were case studies. In addition, Castel et al. (2012) reported that CBT combined with hypnosis yielded superior outcomes on measures of anxiety, depression, physical functioning, pain experience, and work status as compared to CBT combined with AT. This effect did not hold at six-month follow-up and was eliminated following a more conservative statistical analysis. However, the literature remains mixed and there is significant scope to further explore the process of AT for chronic pain.

A small number of studies have explored the effects of AT in the treatment of other conditions, which may co-occur with chronic pain. For example, Bowden, Lorenc and Robinson (2012) reported significant improvements in sleep quality, sleep onset and energy levels for people experiencing insomnia following taking part in an AT programme. And Yurdakel, Holttum and Bowden (2009) conducted one of the few qualitative studies of AT, and reported enhanced well-being and coping, relaxation and reduced worry in a grounded theory study exploring AT for people experiencing anxiety, many of whom also had chronic physical conditions.

The Present Study

Mixed findings in the literature suggests there remains significant scope to better elucidate the process of AT for people experiencing chronic pain. Evidence from studies exploring the effects of AT on conditions associated with, but not limited to, chronic pain, such as anxiety and insomnia, suggest there may be potential therapeutic gains to be made from AT. There is also reason to believe that AT may have some mechanisms in common with mindfulness-based therapies, with both encouraging a position of non-judgmental awareness of physical sensations. However, there are key differences between the two approaches, with AT containing a more prescriptive cognitive component in the form of formulae or phrases. In addition, to date, there have not been any qualitative studies specifically exploring the experiences of people with chronic pain who take part in AT. Quantitative studies, whilst important in ascertaining therapeutic effectiveness, rely on average scores on validated constructs and may therefore overlook atypical experiences or different interpretations of the intervention. In contrast, qualitative studies can allow for rich exploration of a given process and allow for deeper understanding of how different people experience an event. The present study aimed to better understand the process of autogenic training as experienced by people with chronic pain. Specifically, it enquired into the following three questions:

Research Questions

a. What experiences does a sample of people with chronic pain report after undergoing autogenic training?
b. What appears to be the process of change at play when people with chronic pain participate in AT and report benefits?
c. If other therapies are used, what changes do people attribute to autogenic training and other approaches?

Methodology

Research Design

This study adopted a qualitative grounded theory research design which Urquhart (2013) suggests “is useful in areas where no previous theory exists” (p.55), and where the aim is to develop a rudimentary understanding of people’s experiences of a particular event. Given the limited, and mixed, empirical and theoretical literature exploring AT and chronic pain, and the aim of elucidating the process or mechanism of AT in this context, a grounded theory design was considered appropriate.

Epistemological Position

The present author adopted a critical realist approach to the research study (Bhaskar, 1978). This approach assumes that there is a “reality” independent of the human mind that can be observed, and therefore, in this sense, it is aligned with a fundamental principal of positivism. This reality is thought to be a “complex, multi-layered, multi-causal web of interacting forces” (Oliver, 2011, p.4). However, the critical realist approach also acknowledges the “human” role in “creating” knowledge as it assumes that science and knowledge are “inevitably mediated (if not determined) by human language and social power” (Gorski, 2013). This approach appears to fit well with the assumptions and epistemological beliefs espoused by Strauss and Corbin (1998), whose methodological text guided the present study. In practice, this involved one-to-one interviews with people who had experienced AT for chronic pain, followed by an iterative coding process, where the interview data were used as the basis or “grounding” of a theory.

Quality Assurance

A number of steps were taken to check and ensure the quality of the research (Mays & Pope, 2000). Firstly, the author engaged in a bracketing interview so that, as far as possible, biases could be explicitly acknowledged. This revealed the researcher’s own position of considering the experience of chronic pain to be a mutli-facted condition, which was considered to be influenced by both physical and psychological phenomena. (See Appendix K for further discussion) A research diary was also kept to note the author's responses to the interviews and data and to ensure a transparent "research trail" of code to theory progression (Appendix L). To monitor the author's coding practice, a sample of transcripts were sent to both supervisors and discussions were had about decision making throughout the research process.

Participants

Eleven participants volunteered to take part in the study. Six participants had received a diagnosis of fibromyalgia and five participants who identified as having experienced generic chronic pain. Table 1.0 outlines demographic information, co-occurring diagnoses and details about their AT practice.

Sample

A naturalistic sampling approach was adopted where all former patients who met the inclusion criteria were invited to take part. Due to the relatively small number of patients who were eligible to take part in the study, the scope to use a "theoretical sampling" approach (where participants are sampled on the basis of emerging concepts; Strauss & Corbin, 1998; p.214) was limited. However, rigorous "open" and "selective" coding allowed for the early identification of emerging themes, which went on to inform questions in subsequent interviews

Table 1. Participant Information

Participant name	Age Range	Reason for referral to AT	Time since AT completed at time of interview (participant's approximation)	Number of sessions completed	Individual or group AT	Previous experience of other therapies	Still practising AT?	Face to face or telephone interview
Karen	50-60	Fibromyalgia, anxiety, depression, insomnia	1 year	6/8	Group	CBT, Reflexology, Pain management course (CBT)	Yes	Face to face
Susan	40-50	Fibromyalgia	5 months	5/8	Group	CBT	Yes	Face to face
Lily	40-50	Fibromyalgia	2 months	5/8	Group	Tai Chi, Reiki, Meditation	Yes	Face to face
Abigail	40-50	Fibromyalgia	1.5 years	4/8	Group	Hydrotherapy; Mindfulness	No	Face to face
Nicola	30-40	Fibromyalgia Hypermobility	8 months	7/8	Group	Counselling, Mindfulness	Yes	Face to face
Layla	30-40	Chronic face, back and neck pain	6 months	8/8	Group	Pain management course (CBT-based)	Yes	Telephone
Elizabeth	40-50	Chronic fatigue syndrome.; chronic pain; arthritis	7 months	8/8	Group	CBT; EMDR; Meditation	yes	Telephone
Maddie	50-60	Anxiety and chronic pain	4 months	6/8	Group	Mindfulness	Yes	Face to face
Theresa	40-50	Fibromyalgia	6 months	8/8	Individual	Pain management programme (CBT-based)	Yes	Face to face
Caroline	50-60	Anxiety and chronic pain	Continuing practice	7/8	Individual and teaching AT	Meditation	Yes	Telephone
Anna	60-70	Chronic pain; chronic fatigue syndrome; panic attacks	Continuing practice	8/8	Individual	Reflexology; Herbal medicine; Epsom salts; Osteopathy	Yes	Telephone

Procedure

Recruitment Invitations to take part in the study were sent via two main channels. The first was via written invitation from the second supervisor, working at a hospital in a metropolitan area of England, who identified patients eligible to take part and sent out an information sheet outlining the details of the study. Patients who were interested in participating were invited to contact the second supervisor or return a reply slip consenting to be contacted by the author. Interested candidates were offered either a face-to-face interview or a telephone interview.

Originally, the authors only invited people to participate who had a diagnosis of fibromyalgia (a particular type of chronic pain); however, of the 30 invitations sent out to this patient group, only five people responded and subsequently took part. It was therefore decided (with ethical approval) to broaden the inclusion criteria, and to invite participants with all types of chronic pain. From this round of invitations (N= 18), a further three people volunteered to take part.

The second channel of recruitment was via the first supervisor who invited practitioners of AT who were 1) member of the British Autogenic Society and 2) teaching AT to people experiencing chronic pain to inform their patients about the study. Those who were interested in taking part were invited to contact the researcher to hear more about the study before they made a decision about participation. Three people responded to this invitation and all proceeded to participate in the study.

The Group AT Programme The hospital from which participants were recruited regularly runs an eight-week autogenic training (AT) programme, where groups of between six to eight patients meet weekly for two hours to learn and practise AT over eight sessions. Participants are guided through a structured meditation where they are encouraged to scan the body and focus on physical experiences of relaxation, warmth, heaviness of the limbs, slower breathing, a cool forehead and abdominal warmth. This process is supported by statements such as “my right arm is heavy” and “my forehead is cool” which participants are taught to repeat to themselves whilst focusing on the relevant part of the body. Participants are encouraged to practise AT techniques in bursts of 5-10 minutes three times a day in between sessions at the hospital and to keep a reflective diary of their practice. The sessions are not designed to “treat” a specific condition, and each group will involve participants referred with a range of clinical presentations.

In addition, “offloading exercises” are taught, which encourage participants to verbalise out loud, but in a private, feelings of worry, anger or sadness, as well as to intentionally make noise and move about as they wish. The intention is to actively express emotion and impulses, which are assumed to cause emotional and physical harm whilst they remain unacknowledged and unexpressed, and which can disrupt autogenic relaxation (S.Holttum, personal communication, August 20, 2014). The offloading exercises are demonstrated by the therapist but not practised as part of the group.

Individual AT Three participants had practised AT privately and engaged in one-to-one sessions as opposed to group sessions. Private practitioners were sought through the British Autogenic Society (BAS, 2014). Like the group, participants engaged in eight weekly sessions, combining the standard AT exercises with offloading exercises. Two participants had also gone on to train to teach AT, and thus were practising and teaching regularly.

Interviews All participants took part in a semi-structured interview which explored questions about 1) their experience of chronic pain and how they had managed this prior to taking part in AT and 2) the participant’s experience of taking part in an autogenic training programme. Interviews lasted between 60 to 90 minutes.

Transcribing, Coding and Analysis All interviews were transcribed by the first author soon after they took place and each interview was "open coded", line-by-line prior to the subsequent interview. This aided the process of "constant comparison" where data were compared and theoretical memos were written to postulate links between categories and note similarities or differences between participant experiences. A process of "axial coding" followed this where, in keeping with Strauss and Corbin's (1998) guidance, categories were organized "along the lines of their properties and dimensions" (p.124). An example of the coding process is illustrated in Table 2. Finally, the author hypothesised links between a core category, main categories, dimensions and sub-categories to develop a preliminary model of the process of AT for people experiencing chronic pain. Whilst this process was rigorous, the small sample size and the parameters of the first author's doctoral programme meant that not all categories reached "saturation", where no new codes emerge through coding (Strauss &Corbin, 1998; p.136). However, key categories did appear to do so.

Ethical Considerations The study received ethical approval from the Oxford C NHS Research Ethics Committee. Effort was made to minimise the physical impact of taking part in the study by offering a range of locations and ways to take part (i.e. face-to-face or via telephone interview). The study adhered to the BPS code of conduct.

Table 2. Example coding process with transcript excerpt.

Transcript excerpt	Open codes	Theoretical memo	Dimension	Category
“One of the main gifts of AT is that – when something comes up – a challenge comes up, you go into it. You move towards it rather than away from it.-and that’s on a physical level – with pain and emotions.”	AT as a gift “going into” a challenge Linking AT with this attitude. Moving towards physical and emotional pain. Linking physical and emotional pain.	Participant seems to say that there is something positive, a “gift” , about AT teaching her and others to approach or “go into” emotional and physical pain. Is this instead of avoiding or minimising it? Link to CBT?	Going into the pain	AT for chronic pain: “Going into the pain”

Results

A core category of "*accepting versus fighting the pain*" emerged from the data, which was considered alongside six main categories (See Table 3). Contained within each over-arching category were a number of key "dimensions" and "sub-categories" which served to organize the data and make theoretical links between low and higher order codes. Each will be discussed below alongside verbatim quotes. These categories formed the basis of a grounded theory of the process of AT in the context of chronic pain, which will be presented. Additional quotations can be found in Appendix L. The core category and six main categories are as follows:

1) Core category: Accepting versus fighting the pain
2) "Nobody knows what's wrong with me": Trying to get help for the pain
3) "Going into the pain": The process of AT for chronic pain
4) "Something my body wanted more of – like nectar": The effects of AT
5) "Bringing us back": Practising AT with other(s)
6) "Giving yourself permission to stop": Practising AT independently
7) "Not just free-falling": Comparing AT with other therapies (not included in Figure 1)

Table 3 Core category, main categories, dimensions and sub-categories in AT for chronic pain.

Core category: Accepting versus fighting the pain	
Category one: Trying to get help for the pain: "Nobody knows what's wrong with me"	*Unlearning to push feelings away*
Dimension 1: Pre-AT symptoms	*Using the phrases to cope*
Sub-categories	
Long-standing pain	***Dimension 3: Giving the pain a voice***
Pain in multiple parts of the body	***Sub-categories***
Reduced pain threshold	*Bringing subconscious thoughts to consciousness*
Emotional impact of the pain	*Connecting with emotional pain*
Reduced energy levels	*Increased dreaming*
Difficulty sleeping	*Connecting with past trauma*
Difficulty focusing	*A mind-body conversation*
Dimension 2: Trying to make sense of the pain	***Category three: AT over time: "Something my body wanted more of – like nectar"***
Sub-categories	***Dimension 1: Changes in pain***
Nobody knows (what is wrong with me)	***Sub-categories***
It's all in your head	*Reduced pain intensity*
Negotiating with employer	*Accepting the pain*
Pain as invisible	
Unsupported by society	***Dimension 2: Improved well-being***
	Sub-categories
Dimension 3: Trying to reduce the pain	*Relaxation*
Sub-categories	*Feeling calmer*
Negative experience of medication	*Improved sleep*
Trying therapy	*Increased energy levels*
Failure of pain relieving strategies	*Regaining focus*
Dimension 4: Ambivalence about starting AT	***Dimension 3: Self Care***
Sub-categories	***Sub-categories***
Not knowing about AT	*Learning to pace self*
Scepticism about AT	*Acknowledging own care needs*
AT might be good for me	
Readiness for change	***Dimension 4: AT over time***
	Feelings of pleasure as reinforcing
Category two: The AT process for chronic pain: "Going into the pain"	*Forming a habit*
Dimension 1: Creating an environment for healing	*Conditioned response to AT*
Sub-categories	*Feeling empowered*
Stopping and looking in	
Finding quiet	***Category four: Practising AT with other(s): "Bringing us back"***
Routine and repetition	***Dimension 1: Relationship with facilitator***
Physical comfort needs	***Sub-categories***
Dimension 2: Going into the pain	*Calming voice*
Sub-categories	*Experience and guidance* in AT
Acknowledging physical and emotional feelings	*Empathy versus authority*
Letting go (of control)	*Holding the boundaries*

Dimension 2: Group processes
Sub-categories
Listening and feeding back
Normalising feelings
Competition and envy within the group
Category five: Practising AT independently: "Getting permission to stop"
Dimension 1: Loss of the facilitator
Sub-categories
Difficulty "staying with" emotions
Coping with distractions
Giving yourself permission to "stop"
Finding energy to practise
Dimension 2: Committing to AT
Sub-categories
Forming a habit
AT as flexible and portable
Using the offloading exercises
Category six: **Comparing AT to other therapies: "Not just free-falling"**
Subcategories
AT as part of a "bigger picture"
AT as more "active" than other therapies
More relaxing than mindfulness

Core Category: Accepting Versus Fighting the Pain

A key theme which ran through the interview data was that of participants’ dilemma around wanting to fight or in some way beat their pain, weighed up against finding ways of accepting their pain may not ever completely go away, but nonetheless finding some meaning and wellbeing in spite of it. For example, Nicola stated:

> *“I didn't want to do that [accept the pain] to start with, I just wanted to get better, and then you realise, you can’t control it [the pain] – you have to make the acceptance happen again. Because the more resistance you've got, the stronger it will get.”*

This appeared to be a long, arduous process with participants seeming to oscillate between a process of hope and motivation, where they sought a new kind of pain relief, and that of disappointment and anger when a new treatment did not alleviate pain in the way they hoped. Many participants described the process of AT as facilitating an acceptance of their pain, where they didn't have to fight it, but could be curious about its meaning and, somewhat paradoxically, experience a degree of pain reduction and improved wellbeing. For example, Anna put it as follows:

> *“What you learn from AT is to allow it [the pain], to accept. Erm…then what happens, you come to the end of it and suddenly there’s peace and it's all over.”*

Category One: Trying to Get Help for the Pain: *"Nobody Knows What's Wrong With Me"*

A category emerged describing people's attempts to manage their pain prior to participating in AT. This category yielded four dimensions; *pre-AT symptoms, trying to make sense of the pain, trying to reduce the pain,* and *ambivalence about starting AT,* each with a number of sub-categories. This category seemed to capture the real "fight" that people had embarked upon in order to try and alleviate their pain and how this has often been a long and uncertain journey for people moving through the healthcare system.

Dimension one: Pre-AT symptoms The first dimension related to participants' accounts of a wide range of *pre-AT symptoms.* These included *long-standing pain, pain in multiple parts of the body, reduced pain threshold, emotional impact of the pain, reduced energy levels, difficulty sleeping,* and *difficulty focussing*. For example, Susan described the pain as "like having toothache all over your body" and Anna described the experience of not being able to focus as follows:

> *"...it feels like an elephant has stepped with its paw on my brain and there are little pieces that are scattered and I can't put those pieces together. So this piece here (gestures) is not connecting with this piece here"* (Anna)

Dimension two: Trying to make sense of the pain

Participants described their distress at first experiencing their pain and working hard at *trying to make sense of the pain.* These explanations varied and included hypotheses about viruses, injuries and personality traits as possible causes of their pain. Participants also commented on their frustration that *nobody knows (what is wrong with me)* describing their sense that healthcare professionals struggled to know how to manage their distress.

> *"Because I think the difficulty is if you have got a chronic illness they don't always know – if you go just to doctors they don't really know what's going on – so nobody really knows how to help you or what to do with you and that gives you a real sense of despair."* (Nicola)

This was often accompanied by comments of feeling misunderstood. Some participants felt that others did not believe their pain was real or that they were labelled as mentally unwell (*it's all in your head).*

> *"Because if you go there with your pain and you're crying and you're asking for help – she [GP] doesn't understand. She thinks you're neurotic."* (Lily)

Participants also spoke of their employer's difficulty in understanding their pain (*negotiating with employer)* as well as feeling unsupported by society. This was often accompanied by comments about *pain as invisible* and therefore unnoticeable to others. Layla commented that:

> *"It [pain] isn't really helped by this government and society thinking that you look alright therefore you must be alright*." (Layla)

Dimension three: Trying to reduce the pain All participants spoke of various attempts to manage their pain prior to participating in an AT programme. Sub-categories relating to *negative experiences of medication* and engaging with various forms of therapy (*trying therapy*) emerged. Despite attempts to manage or alleviate pain, almost all participants noted, to varying extents, a *failure of pain relieving strategies*. Some participants felt that other forms of therapy or medication had been partially helpful, but all felt that their pain had not significantly reduced following these methods and that the emotional and physical implications of living with chronic pain remained. Anna described her reasoning for taking part in the AT process in relation to taking medication as follows:

> *"I thought it [AT]* might be helpful. Because I had done medication. And I didn't think *I'd done very well with medication in the past and I wondered if this system might be better for me."* (Anna)

Dimension four: Ambivalence about starting AT Participants spoke of their journey to taking part in AT with many noting their ambivalence about starting AT, which formed dimension four. Some noted that they did not know much about AT prior to starting the course (*not knowing about AT*) whilst others noted a *scepticism about AT* that it might be "airy fairy" (Layla) and that, like other interventions they had tried, it might be ineffective.

> *"When you look on line there's not a lot of info that tells you what it is. It's really weird. Well, what actually happens in it? What do you do?"* (Nicola)

This scepticism was often balanced by a hope or belief that *AT might be good for me* and a feeling that their experience was such that they wanted to "feel better" (Maddie) and were open minded about interventions which might help alleviate their suffering (*readiness for change).*

> *"Call it intuition…but I knew that there was something there saying to me – even though I had doubts about whether it would be too similar to mindfulness – 'you need to do this'."* (Theresa)

Category Two: The AT Process for Chronic Pain: "*Going into the Pain*"

A further category *The AT process for chronic pain* emerged with a number of related dimensions and sub-categories. Together, these seemed to describe a core process where participants developed a new, dynamic awareness of the relationship between their emotional and physical pain, and also made connections with past sources of pain which had not been previously acknowledged. When AT was helpful, the process seemed to facilitate a degree of acceptance of the physical and emotional pain that was present and to use the AT postures and phrases as an alternative to "fighting the pain". This process was described as necessarily dependent on an experiential "staying with the pain" (Karen) rather than something which could be considered purely on a cognitive level.

> *"It's letting the emotions out. It's suddenly being in touch with the emotional pain and what it says. It's not something you can just work out in your head – you have to go into a state where you accept it* [the physical pain]. *And then ask, ask the pain, "What is this pain about?"* (Caroline)

Dimension one: Creating an environment for healing The first sub-category which emerged was the initial process of *stopping and looking inwards* and finding quiet. A number of participants spoke of the importance of developing a routine and repeating AT (*routine and repetition*) and how practice encouraged healing by continually returning to a relaxing space.

> *"Yes and repeating. Repeating, because we like to forget. And transformation doesn't happen – I mean the transformation itself happens like that – but erm the working up to it, has to be a process of repetition."* (Caroline)

Others spoke of the importance of the AT environment catering for their *physical comfort needs* when they were in pain; some said that they would have liked more space to lie down or that they were concerned the AT postures would cause them additional pain, and others commented on the benefit of "having a comfortable chair" (Maddie) whilst practising.

Dimension two: Going into the pain A second dimension emerged where participants spoke of a process of *going into the pain* during AT. This started with participants identifying *acknowledging physical and emotional* feelings as an important prerequisite for being able to "go into" the pain and for healing. Some spoke of being more "in touch" (Susan) with how they were feeling. Acknowledging feelings also seemed to require a degree of *letting go (of control)* which nearly all described as anxiety-provoking and requiring some degree of *unlearning to push feelings away.* This was often associated with experiences of *intense emotions* and many participants described learning to "stay with" (Maddie) the pain by *using the phrases* rather than trying to push it away. Nicola described how this was a difficult but ultimately useful process for her:

> *"It was all about going into the pain and sticking with it. And again that made me really angry to start with because I thought "that's ridiculous – why would I want to do that?" All I want to do is get away from it. But actually it works really well."* (Nicola)

Dimension three: Giving the pain a voice The third dimension described *giving the pain a voice*, with related sub-categories of *bringing subconscious thoughts to consciousness* and *connecting with emotional pain.* Participants described how engaging in the process of AT helped them to listen to the pain in the body and that staying with the pain allowed previously subconscious thoughts to surface. Many described a sense of healing when they connected with emotions felt to be "behind" the pain.

> *"Doing AT it can cause the body to think in a way and then transfer the thought for us to have consciously…– I focus on it and I think oh yes that's what the problem was. Maybe it's subconscious."* (Susan)

Some described how they experienced *increased dreaming* which was often interpreted as part of the AT process of bringing relevant information about their pain to mind. The sub-category *connecting with past trauma* also emerged, with a number of participants describing painful or traumatic memories and dreams. Often this was associated with healing.

> *"And then suddenly you just get memories and images [about past emotionally painful experiences] and then your whole body wants to know. Using this method, you begin to lose the pain…. and it actually reveals what it's about."* (Theresa)

A number of participants described how these experiences of going into the pain and connecting with subconsciously stored information allowed for a new *mind-body conversation*, where participants developed a new curiosity about what their body was trying to communicate through pain. Theresa describe this process as follows:

> *"The AT actually encouraged to look at me, and be aware of me being a body and mind and the body and mind being connected. And working together or not which is where you really do get problems."* (Theresa)

Category Three: AT Over Time: "Something my Body Wanted More of – Like Nectar"

The third category to emerge was *AT over time: "Something my body wanted more of – like nectar."* This alluded to the changes people noticed in their bodies and well-being after taking part in AT. Again, participants described how accepting their pain was associated with reduced physical pain and improved wellbeing and this effect appeared to be reinforced as AT was practised over time.

Dimension one: Changes in pain Participants spoke of an increased awareness of the pain following AT, which, paradoxically, was often coupled with a comment about *reduced pain intensity – "It's amazing how it* [accepting pain] *can take the pain away"* (Layla). Others commented on feeling more *accepting of the pain*, saying that this was related to improved wellbeing.

Dimension two: Improved wellbeing The sub-categories *relaxation* and *feeling calmer* emerged, with participants commenting on the physical and emotional components of these experiences and the role of acknowledging when they are trying to "fight" or avoid the pain.

> *"*I think *[with the AT] identifying…and realising that you're constantly in the stress* response, being able to step out of it as often as you can, and as much as you can in a really positive way - *I think that's really crucial for healing to even start to occur.*

> Because I don't think the body can start to heal when it*'s in fight or flight response."* (Nicola)

Other participants commented on experiences of *improved sleep* as well as *increased energy* following training in AT.

> *"When I first started the course…err…I was incredibly exhausted. I didn't know if I could make it to the tube station from the hospital. But after about three sessions I found that I was more able to make that walk to the hospital."* (Maddie)

A number of participants commented on a sense of *regaining focus* following the AT course, with a sense that the process of AT allowed them to stop and gather their thoughts.

> *"If I'm having a terrible morning [and]…my head is all over the place or whatever, I know that if I go and do a session of AT, I come back to my desk and suddenly I become really switched on and really focused."* (Theresa)

Dimension three: Self-care *Learning to pace self* and *acknowledge own care needs* also emerged as sub-categories, which seemed to have come from an increased awareness of the body and the emotions associated with their pain.

> *"The AT allowed me to use my brain to the best of its abilities. And my body to work to the best of its ability…and I also learnt to pace myself.*" (Anna)

Dimension four: AT over time A number of participants commented on *feelings of pleasure as reinforcing* their practice in AT, whereby they felt more encouraged to engage with AT as they experienced positive feelings of relaxation and reduced pain. This was related to the sub-category of *forming a habit* where participants spoke of the discipline they required when the AT was painful and they needed to “stay with the pain” (Theresa).

> *“I think a lot of it depends on how useful you think the exercise is. I believe that the AT is really beneficial…so I feel much more motivated to maintain it* .” (Anna)
>
> *“It was something my body wanted more of – like nectar.”* (Nicola)

Others spoke of a *conditioned response to AT over time* where they felt their body was used to the positive effects of engaging with a whole session of AT and this meant they could yield the same positive results from completing a shorter version of the AT.

> *“If I don't have time to do AT and I’m in a moment where I need to find that stillness, all I need to do is go to the very end and say “I am at peace” and my body automatically relaxes.”* (Theresa)

Participants spoke of *feeling empowered* by AT, saying that it can “give you tools to help yourself” (Anna) and that these could be called upon independently, without having to wait or pay to see a clinician.

Category Four: Practising AT With Other(s): *“Bringing us Back”*

The third category concerns subcategories relating to participants’ experiences of *practising AT with other(s).* A number of sub-categories emerged spanning participants’ experiences of practising AT either in a group or during one-to-one sessions. These mainly related to the dimension: *relationship with the facilitator.* However, some group-specific sub-categories emerged which are presented under the dimension heading: *group processes.* In both cases, a sound relational process of AT appeared to facilitate an environment where participants felt safe enough to try accepting their pain and asking for support to help them through this.

Dimension one: Relationship with the facilitator Core to processes of AT in group or one-to-one settings was the *relationship with the facilitator.* A number of participants commented on the "*calming"* (Maddie) nature of their facilitator's voice, valuing their *experience and guidance* in AT, as well as striking a balance between being empathic and reassuring, with a more authoritative position (*empathy versus authority).*

> *"She was very clear about what I had to do – basically, just bloody do it. But sometimes she was very supportive. Obviously she understood human nature."* (Elizabeth)

A related sub-category of *holding the boundaries* also emerged, where participants commented that it was easier to practise AT in the group or during one-to-one sessions when the facilitator (and other group members in group AT) were holding them to account and sharing the responsibility to keep the focus on AT. This sub-category emerged for those taking part in individual and group AT. However, in group AT it seemed that there were more people to *hold the boundaries*.

> *"You know that* [in AT practice] *someone is waiting for you to 'come back' so you take yourself through the second and third versions and you're back in the room. There is an expectation in the room that you're going to finish*." (Karen)

Dimension two: Group processes A number of participants commented on the value of connecting with the group as part of the therapeutic process of AT, which was aided by a weekly process of *listening and feeding back*. Some spoke of a sense of *normalising feelings* through "having the same reaction as someone else in the class" (Layla). This seemed to relate to a sense of value of being able to relax in the group "without feeling pressurized to talk" (Maddie).

Not all experiences of the group were positive and a sub-category emerged relating to *competition and envy within the group.* Participants described a sense of pride of being able to attend group sessions even when their pain meant they would rather not and many participants commented on those who dropped out of the group.

> *"I had to be really disciplined about getting myself there to do it* [AT] *even if I was in pain. Where as other people would call in sick and say 'I've got a virus' or 'I'm in too much pain to attend today.'*"(Karen)

Others commented on feeling "jealous" (Abigail) if other group members appeared to be benefitting from AT more than themselves.

Category Five: Practising AT Independently: "Giving Yourself Permission to Stop"

A fifth category *Practising AT independently* emerged with a number of participants comparing the process of practising AT independently less favourably than practising in the group. It seemed that the tendency to revert to a position of fighting pain and trying to push it away was much stronger without the support of a facilitator or group members. However, some participants found ways of adapting and sticking with the AT process after the course had finished.

Dimension one: Loss of the facilitator Participants described a sense of loss of their relationship with the facilitator, saying that they missed their voice, presence and guidance (loss *of the facilitator).* For some, this related to a *difficulty "staying with" emotions* (Abigail) when they practised independently. Abigail described feeling overwhelmed by emotion when she practised AT alone:

> *"I was getting so angry, that…I would just give up. Because at times when I tried to recover my composure and say 'okay, you just need a bit more time' or whatever… something else would happen and I would completely lose it.*" (Abigail)

A number of participants spoke of *coping with distractions,* which could take the form of interrupting emotions or external distractions, such as noise, or requests of time from loved ones. Related to this was a sub-category *"giving yourself permission to stop"* (Layla), where people said they found it difficult to prioritise their own care needs. This was often accompanied by a sense of guilt that "stopping" was somehow a "waste of time" (Theresa).

Others spoke of needing to *find[ing] the energy to practise* AT, with some saying that they found their past positive experience of AT motivating, whilst other said they found it difficult to find the energy when they were in pain.

Dimension two: Committing to AT

Where participants described more positive experiences of incorporating AT into their everyday life, they spoke of a process of c*ommitting to AT* and f*orming a habit through repetition.* Others spoke of experiencing *AT as flexible/portable*, allowing them to adapt the practice to fit in with them.

> *"When I'm suffering and I can take myself off somewhere for fifteen minutes and go through the autogenics and get myself back to a place where I can work again."* (Layla)

A number of participants commented on the usefulness of the *offloading exercises*, saying that they provided a safe way to express previously unacknowledged emotions away from the taught AT sessions. Anna said:

> *"Often I would go into my bathroom and say to myself 'I am absolutely scared out of my senses!' and having let it out I would just go off to these meetings."* (Anna)

Category Six: Comparing AT to Other Therapies: "Not Just Free-Falling"

Participants often spoke about their experiences of other therapies and were encouraged to make comparisons with AT. A number of sub-categories emerged under the main category c*omparing AT to other therapies.*

A number of participants spoke of AT being useful as part of *holistic care for chronic pain*, suggesting that AT had formed part of a "bigger picture" of interventions to manage pain and support well-being, with some noting that other interventions (such as financial support from the government, Layla) would be more helpful still. Nicola described how AT had complemented other interventions:

> *"And I think that's what I have learnt – that some things have given me little bits of information, and things often lead to other things. And it's lucky I did think that because it [the AT] is something that I found helpful. So…I think that little bits and pieces can come together and feed in, even if it's not the whole answer."* (Nicola)

A key dimension was the opinion that AT was a more *"active" process* than other therapies, particularly mindfulness. Participants described finding it useful to have phrases to focus on when they were trying to get "in touch" (Maddie) with physically and emotionally painful material.

> *"What I really liked about AT was that you weren't just free-falling [like in meditation] – so the repetition of the words is very meditative.*" (Nicola)

The phrases were thought to "give you something to do" (Anna) and "something almost tangible to hold on to" (Elizabeth) which seemed to provide a sense of containment during AT practice whilst also, for some, fitting with a value system that it is important to be "doing something" (Layla) for that activity to be valuable.

Nearly all participants compared AT with mindfulness, and *AT as an "active" process* contrasted with the opinion that mindfulness promoted a position of passive observation of thoughts and physical sensations. AT was thought to encourage inquiries into what those experiences meant and to start a "conversation" between the mind and body (*mind-body conversation*).

> *"Mindfulness was just calming the thoughts down so that you don't get caught up in that chatter. AT was more of a conversation*." (Elizabeth)

Some spoke about the difficulties of practising AT in comparison with other therapies. Karen described how she had found hypnosis recorded onto tape more useful than practising AT when she was alone as it made her feel as though she was still being guided by a facilitator.

The sub-category *AT as more relaxing [than mindfulness]* emerged, with participants describing a deeper sense of relaxation and also a greater confidence that AT would lead them to this state of mind.

> *"With mindfulness you can find…a place of stillness. But it may be more difficult to – to completely switch off. But with AT you've got… techniques that are going to take you deeper into the relaxation stage."* (Anna)

Overarching Theory of AT and Chronic Pain

A core category of *accepting the pain versus fighting the pain* emerged from the data, and a number of subcategories were related to this category to develop a coherent grounded theory. This category appeared to be key to the process of change (or not) in the context of AT and chronic pain and therefore all subcategories are considered with this in mind. A visual representation of this theory is presented in Figure 1 (Note that the category "comparing AT to other therapies" is not included in the visual model).

The model suggests that experiences of services and attempts at pain relief prior to taking part in AT influenced participants' expectations of AT, and that past failed attempts at pain relief had left many feeling sceptical of new "treatments". This led to an ambivalence about engaging in AT, with those who were open to AT being helpful but perhaps not a "cure" for their pain finding the process most helpful. As Nicola commented: "…and I think that's what I have learnt that little bits and pieces [therapies and treatments] can come together and feed in – even if it's not the whole answer…".

The model also suggests that the AT experience facilitates a key process of accepting pain in a number of ways. Firstly, the AT experience seemed to give many participants permission and instructions to "stop" and "look inwards" which was counter to past ways of coping, which often included "fighting" the pain by mentally pushing it away or keeping busy. "Going into the pain" and "giving the pain a voice" by sitting with it and being guided to consciously enquire about what the pain was "saying" was considered an important part of the AT process and the path to acceptance. This pointed to the counterintuitive process of going into the pain or accepting it as a way of reducing its intensity. As Theresa stated: *"It was all about going into the pain and sticking with it…*it actually works really well." This seemed to allow people to develop a different relationship with their pain, where the person could make room for the pain, rather than spending energy trying to combat and eliminate it, which often was experienced as a futile and disappointing endeavour.

The findings also point to the role of bringing unconscious thoughts, feelings and experiences to consciousness and the AT process providing a space to enquire and examine the significance of the content without judgment. Participants often spoke about how the pain associated with repressed or "blocked out" experiences was more difficult to tolerate outside of the AT experience, and that learning the AT phrases allowed for a type of self-soothing when attempting to connect with (and accept) emotional and physical sources of pain. Repeating this over time appeared to provide participants with some confidence that the source of their pain was not something to be frightened of, but something to be curious about and that they could use the AT tools to tolerate it when it arose.

The model suggests that, over time, the benefits of AT for those experiencing chronic pain were many and varied. The main benefit of feeling more relaxed is perhaps explained by increased tolerance of pain, meaning less energy is required to "fight" the pain and ward off unconscious memories or feelings previously suppressed. In addition, participants reported a sense of "chaos" and a "foggy mind" before learning AT, and it is perhaps the phrases in AT which provide an anchor or something tangible to focus on whilst in an emotional and painful state which are grounding and allow a renewed sense of focus. As Maddie put it in response to a question about the role of the phrases in AT: "I know that if I go and do a session of AT, I come back to my desk and suddenly I become really switched on and really focused". In addition, there seemed to be conditioning process, whereby, when AT was practised frequently, over time the body came to anticipate the relaxation process associated with AT, and this "autogenic state" could be achieved more quickly, without necessarily going through all of the phrases learnt in teaching sessions. In turn, these benefits often motivated participants to maintain their practice.

The findings also suggest that the context in which AT takes place plays a vital role, with the facilitator and other group members (when learning in a group) providing useful information, insights and importantly permission to "stop" and carry out AT. In addition, there seemed to be a relational process at play, where people described feeling more confident to practise AT when someone else (the facilitator or the group) was there to "bring them back” from the AT relaxation state. The role of a facilitator appeared as a key theme for those who took part in AT independently and as part of a group.

A key part in the AT process appeared to be the adaptation to independent practice after the course had finished. This brought about key challenges, such as coping with distractions and the loss of the relationship with the facilitator. Those who found AT most helpful in the long term seemed to find a way of committing to regular practice, as well as adapting the taught techniques to fit their individual circumstances.

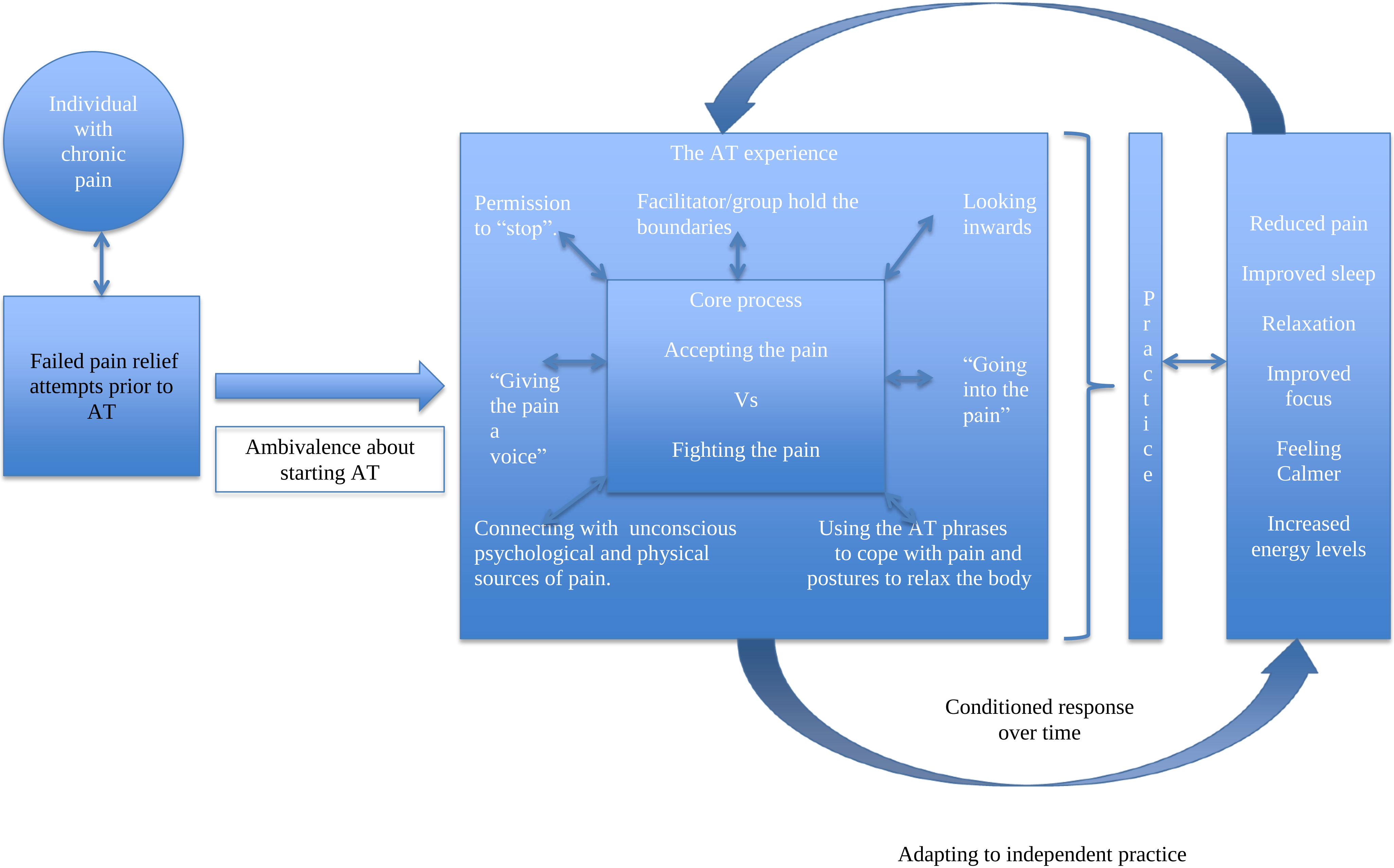

Figure 1. Model for the process of AT for women experiencing chronic pain

Discussion

Summary of the findings

This study explored the process of autogenic training for people experiencing chronic pain. One core category of *accepting versus fighting the pain was identified* along with six other main categories: *Pre-AT symptoms, Trying to manage the pain before AT, AT for chronic pain: a mind-body conversation, Practising AT in a group,* and *Practising AT independently.* Participants described AT as catering for both their physical and emotional needs in what was termed a "*mind-body conversation"* by some, suggesting that a key part of the AT process was bringing physical sensations and thoughts to consciousness and enquiring about how they could be related. In addition, yielding benefits from AT appeared to require an experiential process of "going into the pain", where physical and emotional pain was accepted rather than fought or avoided. Reported benefits included feelings calmer, improved sleeping and regaining focus, and the findings suggest that practising AT over time may reinforce these benefits. Similar benefits were reported by those taking part in AT individually or as part of a group, however, practising AT as part of a group seemed to give rise to a number of additional strengths, such as "*normalising feelings",* as well as some more challenging experiences, such as feeling envious of other group members' progress.

Theoretical Considerations

The finding that participants experienced improved wellbeing in the context of chronic pain following AT relates to previous research on mindfulness and chronic pain, which suggests that becoming more aware of physical and emotional sensations from a non-judgmental vantage point can yield therapeutic rewards in the form of reductions in physical pain, but more often in increased well-being (Chiesa & Serretti, 2011). However, an interesting finding from this study is that participants often compared AT more favourably to mindfulness, saying that there was an additional, "active" component of AT which was containing and prevented a feeling of “free-falling”. This is interesting given the literature suggesting that people with chronic pain (particularly fibromyalgia) often report what could normatively be considered as “over-active” lifestyles prior to their pain onset and difficulties with “stopping” and self-care (Van Houdenhove et al., 2001). Participants described something more “acceptable” about AT as compared to mindfulness in that it provided a framework to stop and relax while, paradoxically, also cultivating a sense of “doing something”, which seemed to fit well with a number of participants’ values.

This paradox of relaxation on the one hand, with experiencing and “sitting with” emotional and physical pain on the other can also be seen in participants’ descriptions of “going into the pain” coupled with “relaxation”. It seemed that there may have been two inter-related processes at play in the AT process in the sense that participants learnt to accept their pain as well as to step outside of a “stress response” to the pain. It is perhaps by giving up these coping strategies, which - despite intentions - can add to feelings of tension in the body, that participants learnt to both “accept” their pain, as well as feeling a sense of relaxation.

It is also interesting to consider these findings in relation to participants’ accounts and the literature on the “function” that pain can serve within a range of systems (including families, health care systems and society). For example, a number of participants reported difficult relationships with their partners and families, where they felt they were not understanding to their pain. Bendelow, (1993) proposes that some systems are more accepting and sympathetic towards individuals experiencing physical pain as compared to emotional pain, and that as such, individuals can be (consciously and unconsciously) motivated to express emotional pain as a physical experience. This bias towards physical pain is perhaps evident even at a policy level where there has been the need to produce a report calling for “parity of esteem” between physical and mental health services in order to redress the balance of respect and power between the two systems (Department of Health, 2011; 2014). It was interesting to hear people who had been referred to the AT programme for physical pain felt they had benefitted from a process which allowed them to safely express their emotional pain (and perhaps drop past defences) and that the two were subjectively understood to be connected.

Limitations of the Study and Future Research

There were a number of limitations of the present study. Firstly, the authors originally intended to recruit participants who had a diagnosis of fibromyalgia and had taken part in the autogenic training programme at the hospital from which most participants were recruited. However, due to difficulties with recruitment, it was necessary to broaden the inclusion criteria and to invite people from private practice or those with a different type of chronic pain. As such, there will have been some variation in the AT process undertaken and the type of pain that people experienced. However, Urquhart, (2013) points out that this can be an advantage when using grounded theory methodology as it allows you to test out your hypotheses which inform you theory on people with the characteristics most relevant to the emerging categories (theoretical sampling). Whilst the small recruitment pool and the scope of the project did not allow for complete theoretical sampling, to some extent the emerging hypotheses were tested on a heterogeneous sample, which could be seen as a strength as well as a limitation of the study.

Furthermore, this study employed a qualitative grounded theory methodology, underpinned by a critical realist epistemology. Whilst this research approach assumes there is something “real” to observe, it also acknowledges that the way in which these observations are made are influenced by a number of subjective processes. The author attempted to consider her own biases by engaging in a bracketing interview prior to conducting the interview and checking codes with supervisors. However, it is possible that these influenced the research process or that a different researcher would have developed different findings.

In addition, the researcher offered to conduct interviews with people face-to-face or via telephone. This was considered appropriate as some people who had practised AT privately lived a long distance from the researcher's base and others felt more comfortable speaking on the telephone. Although participants did not appear to "hold back" more or less during either interview process, it is possible that the rapport between the researcher and the participant varied according to the medium the interview took place via and thus this should be considered when viewing the findings.

Finally, a key mechanism for therapeutic change seemed to be the acknowledgement and "release" of emotion (sometimes associated with past trauma), coupled with reduced arousal. Given the relationship between stress and chronic pain and the high prevalence of PTSD in this client group, it may be that AT provides a forum within which to express and process trauma and that this could be considered a therapeutic goal in itself for people experiencing chronic pain. Future research could employ qualitative and quantitative methods to explore this hypothesis further and perhaps incorporate information about the relationship between stress, wellbeing and pain into patient leaflets of guidance to AT.

Clinical Implications

With the caveats outlined above, AT could be considered for women with chronic pain in the management of physical pain, and to support emotional wellbeing in the context of living with chronic pain. However, not all findings were positive and Abigail noted that she found it much harder to practise AT at home than in the group. This perhaps points to the importance of a sound therapeutic relationship and the role of the facilitator "*holding the boundaries*". Acknowledging the importance of this relationship may be important in supporting patients to *"let go"* in the sessions. In addition, finding ways to support patients to maintain practice at home (such as recording AT sessions onto audio-CD, as suggested by some participants) may be important in supporting participants to maximise the benefits of AT.

In addition, some participants described how AT was helpful as part of a "*bigger picture*" in the context of their lives and other useful interventions. This study explored AT for people experiencing chronic pain through the lens of a mind-body framework, however the findings should not be taken as a linear model of AT as a "cure" for chronic pain. Whilst the intervention yielded clear benefits, clinical consideration should be made about systemic factors contributing to patients' symptoms and wellbeing and AT may be best understood as a helpful mind-body intervention in the context of comprehensive, holistic care. Framing AT as one tool that could help patients manage their pain, rather than completely alleviate it, may go some way to managing expectations and encouraging active participation early on.

Conclusion

The study suggests that an eight-week AT programme can form a useful mind-body intervention for women experiencing chronic pain. In particular, the intervention seemed to support participants to acknowledge emotional and, to some extent, physical pain previously unacknowledged. Over time, this led to feelings of relaxation, improved sleep and improved focus for many, and there appeared to be a mind-body feedback at play when participants commented that they could enter the AT state in shorted amounts of time as they continued to practise. However, not all findings were positive, with some saying that it was difficult to practise AT independently. As such AT clinicians may wish to consider ways in which they could encourage home practice. Further research could explore a potential role for AT in managing the relationship between stress, well-being and pain, and how to support patients who may benefit from AT to maintain their practice.

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SECTION C: APPENDICES OF SUPPORTING MATERIAL

A thesis submitted in partial fulfilment of the requirements of
Canterbury Christ Church University for the degree of
Doctor of Clinical Psychology

APRIL 2015

SALOMONS
CANTERBURY CHRIST CHURCH UNIVERSITY

Appendix A: Ethics approval letter

This has been removed from the electronic version

Appendix B: Ethics amendment letter

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Appendix C: Reviewed studies quality checklist table (see overleaf)

AUTOGENIC TRAINING FOR PEOPLE EXPERIENCING CHRONIC PAIN: A GROUNDED THEORY STUDY

CHECKLIST	WILLIAMS ET AL	MIRO ET AL	KOHL ET AL	DAVIS ET AL	PARRA DELGADO	CASH ET AL	AMUTIO ET AL	CARSON ET AL	CURTIS ET AL	HENNARD ET AL	CARSON ET AL	LIU ET AL	LYNCH ET AL	SAWYNOK	LUCIANIO	CASTEL ET AL	VAN ITTERSUM	PICARD ET AL
											Follow up stud.	no full results available						
1.1 Is the source population or source area well described?	++	++	++	++	++	++	+	++	++	+		++	++	++	++	++	++	++
Was the country (e.g. developed or non-developed, type of healthcare system),																		
setting (primary schools, community centres etc.), location (urban, rural), population demographics etc. adequately described?																		
1.2 Is the eligible population or area representative of the source population or area?	+	+	+	++	+	++	+	++	++	++		++	++	++	++	++	++	++
					no male patients													
Was the recruitment of individuals, clusters or areas well defined (e.g. advertisement, birth register)?																		
Was the eligible population representative of the source? Were important groups under-represented?																		
												+						
1.3 Do the selected participants or areas represent the eligible population or area?	+	+	+	+	+	+	+	++	++	++			+	+	+	+	+	+
						51 of original 166 respondents iddnt take part. Only reason given in severe mental illness												
Was the method of selection of participants from the eligible population well described?	V few men took part in the studies																	
What % of selected individuals or clusters agreed to participate? Were there any sources of bias?																		
Were the inclusion or exclusion criteria explicit and appropriate?																		
Section 2: Method of allocation to intervention (or comparison)																		
2.1 Allocation to intervention (or comparison). How was selection bias minimised?	++	++	+	++	+	++	+	++	N/a	N/a		+	++	N/A	++	+	+	+
					Randomisation procedure not well ds		poorly described					randomisation process not described.						
Was allocation to exposure and comparison randomised? Was it truly random ++ or pseudo-randomised + (e.g. consecutive admissions)?																		
If not randomised, was significant confounding likely (−) or not (+)?																		
If a cross-over, was order of intervention randomised?																		
2.2 Were interventions (and comparisons) well described and appropriate?	++	++	++	++	++	++	++	++	+	++		++	++	N/A	++	++	++	+
Were interventions and comparisons described in sufficient detail (i.e. enough for study to be replicated)?																		
Was comparisons appropriate (e.g. usual practice rather than no intervention)?																		
2.3 Was the allocation concealed?	++	++	N/R	++	N/R	++	N/R	++	N/A	n/a		++	++	N/A	++	+	+	+
Could the person(s) determining allocation of participants or clusters to intervention or comparison groups have influenced the allocation?																		
Adequate allocation concealment (++) would include centralised allocation or computerised allocation systems.																		
Comments:																		
2.4 Were participants or investigators blind to exposure and comparison?	-	-	N/R	-	-	+	N/R	+	N/A	N/a		+	+	N/A	+	+	+	+
						randomiser was blinded to treatm		randomiser was blinded to treatment groups/participants but not poss to blind to interventions										
Were participants and investigators – those delivering or assessing the intervention kept blind to intervention allocation?																		
(Triple or double blinding score ++)																		
If lack of blinding is likely to cause important bias, score −.																		
Comments:																		
2.5 Was the exposure to the intervention and comparison adequate?	++	+	-	+	+	++	++	++	++	++		++	++	N/A	+	+	+	+
			17 patients dropped out of cold test due to floor effects at pre test															
Is reduced exposure to intervention or control related to the intervention (e.g. adverse effects leading to reduced compliance)																		
or fidelity of implementation (e.g. reduced adherence to protocol)?																		
Was lack of exposure sufficient to cause important bias?																		
Comments:																		
2.6 Was contamination acceptably low?	++	-	++	+	+	++	-	++	N/A	N/a		++	++	N/A	+	+	+	+
		Lots of Sleep hyigiene int covered in CBT and vice versa. Only dysfucntional					Control group condition poorly described. What was treatment as usual?											
Did any in the comparison group receive the intervention or vice versa?																		
If so, was it sufficient to cause important bias?																		
If a cross-over trial, was there a sufficient wash-out period between interventions?																		
2.7 Were other interventions similar in both groups?	++	++	+	++	-	++	+	+	N/A	N/a		++	++	N/A	+	+	+	+
					control Ps had treatment as usual. Don't know how they were interacted with.													
Did either group receive additional interventions or have services provided in a different manner?	NO																	
Were the groups treated equally by researchers or other professionals?																		
Was this sufficient to cause important bias?																		
2.8 Were all participants accounted for at study conclusion?	++	-	+	+	++	+	-	++	++	++		++	+	-	+	+	+	+
							Not reported							7/20 drop out				
Were those lost-to-follow-up (i.e. dropped or lost pre-,during or post-intervention) acceptably low (i.e. typically <20%)?	attition 10.2%	all Ps included in pre post	5 - 15% drop		11.76 int 0% control			18% attrition										
		also - no mention of intent to treat or drop out																
Did the proportion dropped differ by group? For example, were drop-outs related to the adverse effects of the intervention?																		
			17 Ps were excluded from cold tolerance analyses due to pre test floor scores															
2.9 Did the setting reflect usual UK practice?	+	+	+	++	+	+	+	+	+	+		+	+	+	+	+	+	+
Did the setting in which the intervention or comparison was delivered differ significantly from usual practice in the UK?																		
For example, did participants receive intervention (or comparison) condition in a hospital rather than a community-based setting?																		
2.10 Did the intervention or control comparison reflect usual UK practice?	+	+	+	++	+	+	+	+	+	+		+	+	+	+	+	+	+
Did the intervention or comparison differ significantly from usual practice in the UK? For example, did participants receive																		
intervention (or comparison) delivered by specialists rather than GPs? Were participants monitored more closely?	Yes, Ps were monitored more closely than would otherwise be																	

Section 3: Outcomes																		
3.1 Were outcome measures reliable?	++	++	+	++	++	++	++	++	++	++		+	++	++	++	++	++	++
Were outcome measures subjective or objective (e.g. biochemically validated nicotine levels ++ vs self-reported smoking –)?																		
How reliable were outcome measures (e.g. inter- or intra-rater reliability scores)?																		
Was there any indication that measures had been validated (e.g. validated against a gold standard measure or assessed for content validity)?																		
3.2 Were all outcome measurements complete?	++	+	-	+	+	+	-	+	++	+		++	+	+	+	++	+	++
							Don't know as attrition not reported											
Were all or most study participants who met the defined study outcome definitions likely to have been identified?		Looks that way but doesn't note dropout or intent to treat, so diff to tell.																
3.3 Were all important outcomes assessed?	+	++	+	++	+	++	+	+		++		+	+	+	+	++	+	+
							No pain outcome measures											
Were all important benefits and harms assessed?																		
Was it possible to determine the overall balance of benefits and harms of the intervention versus comparison?																		
Comments:																		
3.4 Were outcomes relevant?	+	++	++	++	++	++	++	++	+	+		+	++	+	++	++	++	++
Where surrogate outcome measures were used, did they measure what they set out to measure? (e.g. a study to assess impact on physical activity assesses gym membership – a potentially objective outcome measure – but is it a reliable predictor of physical activity?)	didn't measure any emotional/MH outcomes																	
3.5 Were there similar follow-up times in exposure and comparison groups?	++	++	-	-	++	++	++	++	+	+		+	++	N/a		++	++	+
If groups are followed for different lengths of time, then more events are likely to occur in the group followed-up for longer distorting the comparison.																		
Analyses can be adjusted to allow for differences in length of follow-up (e.g. using person-years).																		
3.6 Was follow-up time meaningful?	++	-	-	-	+	+	+	-	+	+		+	++	-	-	++	++	++
					3 months	2 months	3 mts	no follow up					4 months	No follow u	no follow u	3 and 6 mts fo	6 mts	3 and 6 mts
Was follow-up long enough to assess long-term benefits or harms?																		
Was it too long, e.g. participants lost to follow-up?																		
Section 4: Analyses																		
4.1 Were exposure and comparison groups similar at baseline? If not, were these adjusted?	++	+	++	++	+	++	+	++	N/A	N/A		+	+	N/a	+	++	+	++
		sig diffs in age																
Were there any differences between groups in important confounders at baseline?																		
If so, were these adjusted for in the analyses (e.g. multivariate analyses or stratification).																		
Were there likely to be any residual differences of relevance?																		
4.2 Was intention to treat (ITT) analysis conducted?	++	N/R	N/R	++	-	++	N/R	++	++	++		N/R	N/R	N/R	++	++	++	N/R
Were all participants (including those that dropped out or did not fully complete the intervention course) analysed in the groups (i.e. intervention or comparison) to which they were originally allocated?																		
4.3 Was the study sufficiently powered to detect an intervention effect (if one exists)?	++	+	-	++	++	++	N/R	++	++	++		N/R	N/R	N/R	N/R	N/R	N/R	++
A power of 0.8 (that is, it is likely to see an effect of a given size if one exists, 80% of the time) is the conventionally accepted standard.		powered to 70%																
Is a power calculation presented? If not, what is the expected effect size? Is the sample size adequate?																		
									++									
4.4 Were the estimates of effect size given or calculable?	++	+	+	++	++	++	++	++		++		N/R	N/R	N/R	++	N/R	++	N/R
		Only given for CBT daily functioning effect																
Were effect estimates (e.g. relative risks, absolute risks) given or possible to calculate?																		
4.5 Were the analytical methods appropriate?	++	++	++	++	++	++	++	++	++	++		++	+	+	++	++	++	++
													Cherry picked those with clin sig improvements					
Were important differences in follow-up time and likely confounders adjusted for?																		
If a cluster design, were analyses of sample size (and power), and effect size performed on clusters (and not individuals)?																		
Were subgroup analyses pre-specified?																		
4.6 Was the precision of intervention effects given or calculable? Were they meaningful?	++	++	++	++	++	++	++	++	++	++		++	+	+	++	++	++	++
Were confidence intervals or p values for effect estimates given or possible to calculate?																		
Were CI's wide or were they sufficiently precise to aid decision-making? If precision is lacking, is this because the study is under-powered?																		
Section 5: Summary																		
5.1 Are the study results internally valid (i.e. unbiased)?	++	+	+	++	++	++	+	++	-	-		+	+	-	+	++	++	+
									No control group									
How well did the study minimise sources of bias (i.e. adjusting for potential confounders)?																		
Were there significant flaws in the study design?	no follow ups in many studies																	
5.2 Are the findings generalisable to the source population (i.e. externally valid)?	+	+	+	++	+	+	+	++	+	+		+	+	+	+	+	+	+
	95% female sample, but ratio 1.6:1 in prevalence samples.							from beginnning/title - said it would only recruit women with FM, so results can be more easily generalised to this well defined source population.										
Are there sufficient details given about the study to determine if the findings are generalisable to the source population?	No follow ups in most studies																	
Consider: participants, interventions and comparisons, outcomes, resource and policy implications.	some studies used measures of pain, while others used MH outcomes. Few used both.																	

Appendix D: Consent form

Salomons Campus at Tunbridge Wells

CONSENT FORM

Title of Project: The experience of augogenic training for people with fibromyalgia.
Name of Researcher: Catherine Porter (c.f.porter292@canterbury.ac.uk)

Please initial each box

1. I confirm that I have read and understand the information sheet dated.................... for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected. ☐

3. I agree to the use of audio/video-taping by means of data collection during this study. ☐

4. I agree that anonymous quotes from my interview may be used in published reports of the study findings [if applicable] ☐

5. I agree to take part in the above study. ☐

Name of Participant____________________ Date________________

Signature ___________________

Name of Person taking consent ______________ Date_____________

Signature ____________________

Appendix E: Reply Slip

Canterbury
Christ Church
University

Reply Slip

Thank you for reading through the information sheet about a study Catherine Porter (Trainee Clinical Psychologist) will be conducting about the experiences of taking part in autogenic training in the context of living with fibromyalgia.

Please could you return this reply slip to XXX Hospital, in the envelope provided.

My name is ______________________________

Please tick one of the boxes below

I **am interested in** taking part in this study and would like to hear more ☐

I **would not** like to take part in this study ☐

If you are interested in this study and would like to hear more, Catherine Porter will ring you when you have returned this reply sheet. She will answer any questions you may have. Please write your telephone number below. Alternatively, you can email John Hughes at the XXX hospital or john.hughes@uclh.ac.uk or the lead researcher Catherine Porter on c.f.porter292@canterbury.ac.uk.

If you would not like to take part in this study, you will not hear from the us again about the study.

My telephone number is ________________________

Many thanks. Your help with this study is appreciated.

Appendix F: Information Sheet

Participant Information Sheet

Exploring the experiences of autogenic training for people with fibromyalgia.

Hello. My name is Catherine Porter and I am a trainee clinical psychologist at Canterbury Christ Church University. I would like to invite you to take part in a research study. Before you decide it is important that you understand why the research is being done and what it would involve for you.

Talk to others about the study if you wish.

(Part 1 tells you the purpose of this study and what will happen to you if you take part. Part 2 gives you more detailed information about the conduct of the study).

What is the purpose of the study?
The purpose of the study is to explore how people with fibromyalgia (FM) experience autogenic training (AT). By exploring the effects of AT, this project hopes to develop an understanding of how any changes come about, and which aspects of AT are helpful and less helpful in treating FM.

Why have I been invited?
You have been chosen to take part in the study because you have a diagnosis of fibromyalgia and have taken part in the autogenic training programme within the last two years. Around thirty others will take part in the study; they will also have a diagnosis of FM and have participated in AT.

Do I have to take part?
Taking part in this study is entirely voluntary and it is up to you if you decide to join the study. If you agree to take part, I will then ask you to sign a consent form. You are free to withdraw at any time, without giving a reason. This would not affect the standard of care you receive.

What will happen to me if I take part?
If you decide to take part in the study you will be asked to attend an interview with the researcher (Catherine) at The XXX Hospital where you took part in the autogenic training programme. You will be asked a number of questions about your experience of living with fibromyalgia and taking part in the autogenic training programme. We understand that some experiences can be difficult to talk about, and you will be free to talk at your own pace. The interview will last between one and one and a half hours, though you will be free to take breaks or move around to accommodate your physical needs. The interviews will be audio-taped so that the researcher can accurately record what you say. There will be a space to discuss your experience of the interview process at the end, or there are other people you can contact if you would rather talk to someone other than the researcher (see below). All of your experiences will remain anonymous and will be destroyed if no longer needed. If the anonymised results are published, we will ask for your consent.

Expenses and payments
You are able to claim for the travel costs of participating in the study. A form for this is enclosed.

What are the possible disadvantages and risks of taking part ?
When considering taking part in research, it is important to bear in mind the possible disadvantages. This might be that it is uncomfortable for you to sit in a fixed position for 45 minutes, though we will make every effort to ensure a comfortable environment and allow time for breaks as needed. Also, to get a clear understanding of your experience, some of the questions may feel quite personal. The researcher will aim to ask these in a sensitive manner, and you are free not to answer or ask why they are asking this. It is worth considering this before volunteering to take part in the study.

What are the possible benefits of taking part?
If you choose to take part in the study we have an opportunity of gaining a better understanding of the experience of people like you, living with fibromylagia, who have completed the autogenic training programme. This may help us to improve the autogenic programme and to offer it to more people with fibromyalgia. It may also help us better understand what it is like to live with fibromyalgia and improve the treatments we can offer.

This completes part 1.
If the information in Part 1 has interested you and you are considering participation, please read the additional information in Part 2 before making any decision.

Part 2 of the information sheet

What will happen if I don‟t want to carry on with the study?
Should you wish you withdraw from the study at any point, you are free to do so without having to give reason. This will not affect your care rights in any way.

What if I want to make a complaint?
If you have a concern about any aspect of this study, please speak to me and I will do my best to answer your questions. If you remain unhappy and wish to complain formally, you can do this by following the Canterbury Christchurch University complaints procedure or by contacting Professor Paul Camic, Research Director at Salomons, Canterbury Christ Church University (Tel: 03330 117 114).

Will my taking part in this study be kept confidential?
Anything you tell the researcher will be kept strictly confidential and your name and any other identifiable details will be removed. This data will be kept on a secure, password-protected memory stick and will be destroyed when no longer needed for this study.

What will happen to the results of the research study?
The results of this study will be reviewed by Canterbury Christ Church University’s research panel as partial qualification for the Doctorate in Clinical Psychology. This may then be considered for publication in a psychology journal. You will not be identified in any publication.

Who is organising and funding the research?
The research is being funded by Canterbury Christ Church University as partial qualification for the Doctorate in Clinical Psychology. University College Hospitals NHS Trust are involved

in the organisation and supervision of the research.

Who has reviewed the study?

All research in the NHS is looked at by independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by Oxford C Research Ethics Committee.

Further information and contact details

If you would like further details about the study, please feel free to leave a message for me on a 24-hour voicemail phone line at 01892 507673. Please say that the message is for me (Catherine Porter) and leave a contact number so that I can get back to you. Alternatively, you can contact me via email at: c.f.porter292@canterbury.ac.uk

Appendix G: Interview Schedule

INTERVIEW SCHEDULE

Project title: The experience of autogenic training for people with fibromyalgia

This document provides an outline of the interview schedule for the proposed study. The content of the questions asked will remain within the subject areas outlined, in line with the conditions of ethical approval. However, the nature of the methodology (utilising a semi-structured interview approach and generating new hypotheses as the study progresses) means there may be some variation in the framing and wording of the interview questions.

Introduction

- Introduce self and thank the participant for agreeing to take part.
- Outline the purpose of the interview and the wider study
- Provide consent form.
- Outline timeline, check that the participant is comfortable and offer breaks when necessary.

GENERAL – HISTORY TAKING AND RAPPORT BUILDING

1. How long have you been living with fibromyalgia?
2. Could you start by telling me what first attracted you to take part in autogenic training?
3. Did you have any prior understanding of what AT might entail?

RESEARCH QUESTION A: WHAT EFFECTS DO PEOPLE WITH FIBROMYALGtrIA REPORT AFTER UNDERGOING AUTOGENIC TRAINING?

4. Can you tell me a bit about the beginning of your AT course? What was that like? (Aim: to encourage free speech on the experience of the early stages of the process.)
5. How, if at all, did your experience change over the course of AT?
6. Did you notice any changes in yourself (how you felt, behaved, thought) following the AT course?

RESEARCH QUESTION B: WHAT COMPONENTS OF AUTOGENIC TRAINING SEEM TO BE THE MOST EFFECTIVE AND WHY? WHAT IS THE MECHANISM OF CHANGE?

7. What components of AT do you think have been the most effective for you personally? Why do you think this?

RESEARCH QUESTION C: IF OTHER THERAPIES ARE USED, WHAT CHANGES DO PEOPLE ATTRIBUTE TO AUTOGENIC TRAINING AND OTHER THERAPIES?

8. Have you participated in any previous forms of therapy? If so, what kind and when?

9. How did your experience of AT differ to that of other forms of therapy you have participated in?

10. What did you learn from taking part in AT that was different to other forms of therapy you have participated in?

11. What sense do you make of the difficulties you have described [relating to chronic pain or otherwise] following the AT course?

Appendix H: Letter to Ethics Committee

This has been removed from the electronic version

Appendix I: Journal guidelines

Author Guidelines for the Journal of Psychology and Psychotherapy: Theory Research and Practice

Psychology and Psychotherapy: Theory Research and Practice (formerly The British Journal of Medical Psychology) is an international scientific journal with a focus on the psychological aspects of mental health difficulties and well-being; and psychological problems and their psychological treatments. We welcome submissions from mental health professionals and researchers from all relevant professional backgrounds. The Journal welcomes submissions of original high quality empirical research and rigorous theoretical papers of any theoretical provenance provided they have a bearing upon vulnerability to, adjustment to, assessment of, and recovery (assisted or otherwise) from psychological disorders. Submission of systematic reviews and other research reports which support evidence-based practice are also welcomed, as are relevant high quality analogue studies. The Journal thus aims to promote theoretical and research developments in the understanding of cognitive and emotional factors in psychological disorders, interpersonal attitudes, behaviour and relationships, and psychological therapies (including both process and outcome research) where mental health is concerned. Clinical or case studies will not normally be considered except where they illustrate particularly unusual forms of psychopathology or innovative forms of therapy and meet scientific criteria through appropriate use of single case experimental designs.

1. Circulation

The circulation of the Journal is worldwide. Papers are invited and encouraged from authors throughout the world.

2. Length

All articles submitted to PAPT must adhere to the stated word limit for the particular article type. The journal operates a policy of returning any papers that are over this word limit to the authors. The word limit does not include the abstract, reference list, figures and tables. Appendices however are included in the word limit. The Editors retain discretion to publish papers beyond this length in cases where the clear and concise expression of the scientific content requires greater length (e.g., a new theory or a new method). The authors should contact the Editors first in such a case.

Word limits for specific article types are as follows:

• Research articles: 5000 words • Qualitative papers: 6000 words • Review papers: 6000 words • Special Issue papers: 5000 words

3. Brief reports

These should be limited to 1000 words and may include research studies and theoretical, critical or review comments whose essential contribution can be made briefly. A summary of not more than 50 words should be provided.

4. Submission and reviewing

All manuscripts must be submitted via http://www.editorialmanager.com/paptrap/. The Journal operates a policy of anonymous peer review. Before submitting, please read the terms and conditions of submission and the declaration of competing interests.

5. Manuscript requirements

- Contributions must be typed in double spacing with wide margins. All sheets must be numbered.

- Manuscripts should be preceded by a title page which includes a full list of authors and their affiliations, as well as the corresponding author's contact details. A template can be downloaded here.

- Tables should be typed in double spacing, each on a separate page with a self-explanatory title. Tables should be comprehensible without reference to the text. They should be placed at the end of the manuscript with their approximate locations indicated in the text.

- Figures can be included at the end of the document or attached as separate files, carefully labelled in initial capital/lower case lettering with symbols in a form consistent with text use. Unnecessary background patterns, lines and shading should be avoided. Captions should be listed on a separate sheet. The resolution of digital images must be at least 300 dpi.

- For articles containing original scientific research, a structured abstract of up to 250 words should be included with the headings: Objectives, Design, Methods, Results, Conclusions. Review articles should use these headings: Purpose, Methods, Results, Conclusions.

- All Articles must include Practitioner Points – these are 2-4 bullet points, in addition to the abstract, with the heading ‘Practitioner Points’. These should briefly and clearly outline the relevance of your research to professional practice.

- For reference citations, please use APA style. Particular care should be taken to ensure that references are accurate and complete. Give all journal titles in full and provide DOI numbers where possible for journal articles.

- SI units must be used for all measurements, rounded off to practical values if appropriate, with the imperial equivalent in parentheses.

- In normal circumstances, effect size should be incorporated.

- Authors are requested to avoid the use of sexist language.

- Authors are responsible for acquiring written permission to publish lengthy quotations, illustrations, etc. for which they do not own copyright.

- Manuscripts describing clinical trials must be submitted in accordance with the CONSORT statement on reporting randomised controlled trials (http://www.consort-statement.org).

- Manuscripts describing systematic reviews and meta-analyses must be submitted in accordance with the PRISMA statement on reporting systematic reviews and meta-analyses (http://www.prisma-statement.org).

For guidelines on editorial style, please consult the APA Publication Manual published by the American Psychological Association.

6. Multiple or Linked submissions

Authors considering submitting two or more linked submissions should discuss this with the Editors in the first instance.

7. Supporting Information

PAPT is happy to accept articles with supporting information supplied for online only publication. This may include appendices, supplementary figures, sound files, videoclips etc. These will be posted on Wiley Online Library with the article. The print version will have a note indicating that extra material is available online. Please indicate clearly on submission which material is for online only publication. Please note that extra online only material is published as supplied by the author in the same file format and is not copyedited or typeset. Further information about this service can be found at http://authorservices.wiley.com/bauthor/suppmat.asp

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If the OnlineOpen option is selected the corresponding author will have a choice of the following Creative Commons License Open Access Agreements (OAA):

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9. Colour illustrations

Colour illustrations can be accepted for publication online. These would be reproduced in greyscale in the print version. If authors would like these figures to be reproduced in colour in print at their expense they should request this by completing a Colour Work Agreement form upon acceptance of the paper. A copy of the Colour Work Agreement form can be downloaded **here**.

10. Pre-submission English-language editing

Authors for whom English is a second language may choose to have their manuscript professionally edited before submission to improve the English. A list of independent suppliers of editing services can be found at http://authorservices.wiley.com/bauthor/english_language.asp. All services are paid for and arranged by the author, and use of one of these services does not guarantee acceptance or preference for publication.

11. OnlineOpen

OnlineOpen is available to authors of primary research articles who wish to make their article available to non-subscribers on publication, or whose funding agency requires grantees to archive the final version of their article. With OnlineOpen, the author, the author's funding agency, or the author's institution pays a fee to ensure that the article is made available to non-subscribers upon publication via Wiley Online Library, as well as deposited in the funding agency's preferred archive. For the full list of terms and conditions, see http://wileyonlinelibrary.com/onlineopen#OnlineOpen_Terms

Any authors wishing to send their paper OnlineOpen will be required to complete the payment form available from our website at: https://onlinelibrary.wiley.com/onlineOpenOrder

Prior to acceptance there is no requirement to inform an Editorial Office that you intend to publish your paper OnlineOpen if you do not wish to. All OnlineOpen articles are treated in the same way as any other article. They go through the journal's standard peer-review process and will be accepted or rejected based on their own merit.

12. Author Services

Author Services enables authors to track their article – once it has been accepted – through the production process to publication online and in print. Authors can check the status of their articles online and choose to receive automated e-mails at key stages of production. The author will receive an e-mail with a unique link that enables them to register and have their article automatically added to the system. Please ensure that a complete e-mail address is provided when submitting the manuscript. Visit http://authorservices.wiley.com/bauthor/ for more details on online production tracking and for a wealth of resources including FAQs and tips on article preparation, submission and more.

13. The Later Stages

The corresponding author will receive an email alert containing a link to a web site. A working e-mail address must therefore be provided for the corresponding author. The proof can be downloaded as a PDF (portable document format) file from this site. Acrobat Reader will be required in order to read this file. This software can be downloaded (free of charge) from the following web site: http://www.adobe.com/products/acrobat/readstep2.html. This will enable the file to be opened, read on screen and annotated direct in the PDF. Corrections can also be supplied by hard copy if preferred. Further instructions will be sent with the proof. Hard copy proofs will be posted if no e-mail address is available. Excessive changes made by the author in the proofs, excluding typesetting errors, will be charged separately.

14. Early View

Psychology and Psychotherapy is covered by the Early View service on Wiley Online Library. Early View articles are complete full-text articles published online in advance of their publication in a printed issue. Articles are therefore available as soon as they are ready, rather than having to wait for the next scheduled print issue. Early View articles are complete and final. They have been fully reviewed, revised and edited for publication, and the authors' final corrections have been incorporated. Because they are in final form, no changes can be made after online publication. The nature of Early View articles means that they do not yet have volume, issue or page numbers, so they cannot be cited in the traditional way. They are cited using their Digital Object Identifier (DOI) with no volume and issue or pagination information. E.g., Jones, A.B. (2010). Human rights Issues. *Human Rights Journal*. Advance online publication. doi:10.1111/j.1467-9299.2010.00300

Appendix J: Extract from research diary

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Appendix K: Bracketing interview

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Appendix L: Example codes

Core category: Accepting versus fighting the pain		
Example quotes	Links with other main categories	Theoretical memos
“Because I think the difficulty is if you have got a chronic illness they don't always know – if you go just to doctors they don't really know what’s going on – so nobody really knows how to help you or what to do with you and that gives you a real sense of despair.”	Pre-AT symptoms	So people were really trying to find ways of managing or getting rid of their pain by seeing professionals, and often feeling deflated/disappointed when this didn't materialise. Often made the fight stronger
“I didn't want to do that [accept the pain] to start with, I just wanted to get better, and then you realise, you can’t control it [the pain] – you have to make the acceptance happen again. Because the more resistance you've got, the stronger it will get.”	Going into the pain	Seems there was an understandable resistance to sitting with pain as this seemed counter-intuitive as a process for healing. But there was some value in doing it and a belief that the more the pain/emotions are fought, the stronger they are felt.
“What you learn from AT is to allow it [the pain], to accept. Erm…then what happens, you come to the end of it and suddenly there’s peace and it's all over.”	Going into the pain	Accepting the pain was sometimes followed by peace/pain reduction.
“It’s letting the emotions out. It’s suddenly being in touch with the emotional pain and what it says. It’s not something you can just work out in your head – you have to go into a state where you accept it [the physical pain]. And then ask, ask the pain, “What is this pain about?”	Going into the pain	Seemed that people often experienced therapeutic change when they stopped pushing the emotional and physical pain away and became more curious about it.
“It was all about going into the pain and sticking with it. And again that made me really angry to start with because I thought “that’s ridiculous – why would I want to do that?” All I want to do is get away from it. But actually it works really well.”	Going into the pain	Again, sticking with sitting with the pain as opposed to avoiding it or fighting it appeared to be helpful for people. What enabled them to do that? Relationships with group/facilitators? Relaxing space? AT phrases/postures?
“And then suddenly you just get memories and images [about past emotionally painful experiences] and then your whole body wants to know. Using this method, you begin to lose the pain…. and it actually reveals what it’s about.”	Going into the pain	So following acceptance of the pain, do people become more curious about its source? Is it this process that eases the pain?
I think identifying that and realising that you’re constantly in the stress response, being able to step out of it as often as you can, and as much as you can in a really positive way - I think that’s really crucial for healing to even start to occur. Because I don't think the body can start to heal when it’s in	AT over time	So the AT seemed to have facilitated an awareness of “stepping out” of the fight or flight response and perhaps away from fighting or avoiding the pain? This seemed to be a positive experience for her. Were

fight or flight response.		there any other feeling associated with this?
"I think a lot of it depends on how useful you think the exercise is. I believe that the AT is really beneficial…so I feel much more motivated to maintain it ."	AT over time	There seemed to be a reinforcing effect of sticking with AT and the pain, as in, as people started to experience more wellbeing, some were more motivated to maintain it.
"You know that [in AT practice] someone is waiting for you to 'come back' so you take yourself through the second and third versions and you're back in the room. There is an expectation in the room that you're going to finish."	Practising AT with others	Seemed easier to "stick with" pain when others were around and perhaps holding the boundaries of the practice. Someone/others would take the lead in when it would start/stop?
"I had to be really disciplined about getting myself there to do it [AT] even if I was in pain. Where as other people would call in sick and say 'I've got a virus' or 'I'm in too much pain to attend today.'	Practising AT with others	Seemed to be a bit of a "fight" with the pain to get to the AT sessions at all. This seemed a source of pride for some when they got there. Is it as simple as accepting/fighting the pain? Does it depend on the context as to when each approach is more or less useful.
"I was getting so angry, that…I would just give up. Because at times when I tried to recover my composure and say 'okay, you just need a bit more time' or whatever… something else would happen and I would completely lose it."	Practising AT independently	Seemed to be harder for some to stay with the pain and not avoid/fight it when practising independently. What helps people adapt to this/make transitions?
"What I really liked about AT was that you weren't just free-falling [like in meditation] – so the repetition of the words is very meditative."	Comparing AT to other therapies	So it seemed as though the structure and phrases of AT allowed people to sit with their pain more and become an observed without feeling overwhelmed at the lask of structure or feeling as though they were free-falling.

Main category: ***Trying to get help for the pain: "Nobody knows what's wrong with me"***			
Dimensions	**Open codes/subcategories**	**Example participant quotes**	**Theoretical memos**
Pre AT symptoms	Long standing pain	'I was in pain from 2007' 'I've been in pain for years'	So long periods of pain prior to AT. How did this affect expectations of AT when they started?
	Chronic pain in multiple parts of the body	'pain in my lower back and neck' 'I had rheumatoid arthritis before I got the diagnosis of FM' 'It's like having tooth-ache all over the body, all the time'	
	Reduced pain threshold	'Even carrying my own handbag at times no matter how minimum I pack it is a problem and painful'	
	Emotional impact of the pain	'I have to think twice about everything and during flare ups it gets worse and makes me feel down emotionally and teary very much.'	So there is a mind-body connection already apparent. Does this go both ways or just thought of as emotional consequences of physical pain?
	Difficulty sleeping	'Trouble sleeping, a lot of tiredness and feeling of exhaustion' 'you wake up in the morning and your battery hasn't charged so you wake up with an empty battery'	Does this relate to lack of energy and/or levels of physical pain?
	Reduced energy	I had it described a long time a go my an ME specialist that everybody goes to sleep at night – their battery fills up so they've got a full charge when they wake up. But for ppl with chronic fatigue and fibro, you wake up in the morning and your battery hasn't charged so you wake up with – I thought it was a particularly good analogy. And that is how it feels, I have no energy.'	
	Difficulty focusing	"…it feels like an elephant has stepped with its paw on my brain and there are little pieces that are scattered and I can't put those pieces together. So this piece here (gestures) is not connecting with this piece here"	Clear from multiple symptoms/categories that chronic pain is a multifaceted condition which can affect a range of areas of functioning.
Trying to make sense of the pain	Nobody knows what's wrong with me	'Because I think the difficulty as well is if you have got a chronic illness they don't always know – if you go just to doctors they don't really know what's going on – so nobody really knows how to help you or what to do with you and that gives you a real sense of despair' 'taking [medication], it had awful awful side effects taking the tablets, so every time I was prescribed taking the new tablets , because the previous one had been unsatisfactory thinking what's this one	

		going to do?' 'And lots of doctors don't like that. They find me very very threatening because I go in knowing my body because I'm the one who lives in it I know how it works. And I'm the one who lives with it 24/7.' 'So there seems to be a lot of complications. It's difficult to know which pain is what.'	
	Trying to make sense of the pain	'I found that it's the muscles, it's this bug that enters the nervous the nervous system and controls the nerves.' I think, and I have heard actually that this disease that attacks you is not only a viral thing it's a when a person is a very, very conscious [conscientious?] and responsible and erm and er …all sorts of things. This type of character of a person could bring on this sort of illness	People seem to be looking for explanations for their pain? Phsyical and psychological reasons given
	'It's all in your head'	'Because if you go there with your pain and you're crying and you're asking for help – she [GP] doesn't understand. She thinks you're neurotic.' 'Well the problem is, you know that something is wrong, the pain is real. … So for 11 years, once you realise that your instinct was right and there was something wrong. Eleven years is a hell of a long time.'	Real sense that health professionals don't understand, believe or know about their pain. Invalidating experiences of healthcare?
	Pain as invisible	'And it's depressing. And because it's not visible, it's not anything that shows…'	
	Feeling unsupported by society	'It isn't really helped by this government and society thinking that you look alright therefore you must be alright.'	
	Negotiating with employer	'I was ringing into work, not in pain, although that is what I told them, but just because I could not get out of bed.'	
Trying to reduce the pain	Negative experience of medication	I thought it might be helpful. Because I have done medication. And I didn't think I'd done very well with medication in the past and I wondered if this system might be better for me.' 'It's err, then, by going to GPs, being given antidepressants –antidepressants numb your brain.' 'taking [medication], it had awful awful side effects taking the tablets, so every time I was prescribed taking the new tablets , because the previous one had been unsatisfactory thinking what's this one going to do?'	People had tried a lot of different treatments before AT. What did failed treatments do to their expectations and sense of hope?
	Trying therapy	'I'd don't lots of meditations and guided meditations before – did at one point train as a meditation teacher. '	Many were socialised to mindfulness/meditation. How was this same/different

		‘I had CBT prior to the group. AT was different – more personal. It brought up stuff and helped me to find peace and relaxation. The effects of AT lasted beyond the session.’	to AT?
	Failed pain relief strategies	‘it was when I started taking medication that I became most sort of erm anxious. Because when I go to the doctor – I get anxious about actually going to the doctor and knowing that I was going to get perhaps new medication and it made me feel really awful.’ ‘I didn't think that I had mastered it [meditation]. I just cant think of any really concrete results. Ive been shown how to meditate but I didn't think it was doing anything for me.’	
Ambivalence about starting AT	Not knowing about AT	but when you look on line there’s not a lot of info that tells you what it is. Its really weird. ‘well what actually happens in it – what do you do?!’ ‘I had no idea. I hadn’t got any idea about it. I didn't know what to expect’. ‘I didn't know what to expect. I suppose I might have thought it might have been like meditation but maybe a bit different.’	People often went in “blind” as to what they were going to do in AT. What expectations did this set up? What got people there in the first place if they didn't know what it was? Were people relying on hope after past failed pain relief strategies?
	Scepticism about AT	‘I thought it might be airy fairy…but I was curious to see if it could help me’ ‘And I mainly thought that’s lots of woo woo, but I thought I’ll go and check it out.’ ‘Erm – I’m open to most things because I do lots of spiritual woo stuff anyway so people can get as airy fairy with me as they like.’ ‘Yeah a healthy skepticism. I’ve tried loads of things over the years’	
	AT might be good for me	‘I thought it might be helpful. Because I have done medication. And I didn't think I’d done very well with medication in the past and I wondered if this system might be better for me.’ ‘I thought it might be good for me’ ‘It is. Yep but that is – it was that. And it was also the fact that erm – somehow at some level I knew that this could really help me. And I thought ‘this is an opportunity here I cannot afford to miss’. ‘call it intuition, but I don’t know. I cannot explain, but I knew that somehow there was something there saying to me – even though I had doubts about whether it would be too similar to mindfulness, there was something, somewhere that was saying to me you need to do this.	So there was a hope and an ‘intuition’ that AT could be helpful and that it might be a bit like meditation.

		‘No, at that stage I wasn’t this knowledgeable about it. I just went along because intuitively I felt this is good for me.’	

Main category - AT for chronic pain: “Going into the pain”			
Dimensions	**Open codes/subcategories**	**Example participant quotes**	**Theoretical memos**
Ambivalence about starting AT	AT might be ‘airy fairy’	I thought it might be airy fairy…but I was curious to see if it could help me’ ‘And I mainly thought that’s lots of woo woo, but I thought I’ll go and check it out. ‘Yeah a healthy skepticism. I’ve tried loads of things over the years’	Seems as though some people have tried other therapies that haven’t given them everything they’ve wanted. With AT, people seemed to weigh up curiousity/wanting to get better with skepticism. Does this affect who takes part? Who doesn’t?
	Not knowing about AT	‘When you look on line there’s not a lot of info that tells you what it is. It’s really weird. ‘Well what actually happens in it – what do you do?!’	Ask if others knew about AT before they started? Did this influence their mindset/attitude to practice?
	AT might be good for me	**‘**I went with an open mind after having done meditation…I just had a sense that it was something my body wanted more of – like nectar.’ ‘I thought it might be helpful. Because I have done medication. And I didn't think I’d done very well with medication in the past and I wondered if this system might be better for me.’ ‘I thought it might be good for me’ ‘It is. Yep but that is – it was that. And it was also the fact that erm – somehow at some level I knew that this could really help me. And I thought ‘this is an opportunity here I cannot afford to miss’. ‘call it intuition, but I don’t know. I cannot explain, but I knew that somehow there was something there saying to me – even though I had doubts about whether it would be too similar to mindfulness, there was something, somewhere that was saying to me you need to do this. No, at that stage I wasn’t this knowledgeable about it. I just went along because	Seems like intuition, almost a faith played a part in motivating people to attend AT classes in the first place. I wonder if it was being familiar with meditation and feeling like this was something that might be built on in AT, or if it was hope, or a ‘good’ feeling people got from how it was described to them by their referrer.

		intuitively I felt this is good for me.	
	Readiness for change	I very much wanted to get better! ‘ ‘You’re reaching rock bottom. And im not saying it in a suicidal, defatest way, but really saying I don't want to be part of this anymore – and that is a journey’.	
Creating an environment for healing	Stopping/looking inwards	‘It’s about stopping and accepting…as long as there is food on the table, we’ll be okay.’	Something about regularly stopping and accepting things as they are which is calming/reduces anxiety.
	Routine/repetition	‘…so the repetition of the words is very meditative’. ‘I liked the routine of it. I liked the repetition of it’ ‘But with the AT, by repeating the exercise phrases that helped me – you know it might not be like that for everybody. But having those phrases, it gave me something positive to do and I felt that was helpful and reassuring.’ ‘Yes and repeating. Repeating, because we like to forget. And transformation doesn't happen – I mean the transformation itself happens like that – but erm the working up to it, has to be a process of repetition’	Routine/repetition seemed important to practice. Developing a predictable routine as important for relaxation/reduced anxiety? Link with anxiety/attachment lit? Do people internalize a new attachment model when practicing over a long period of time? Reduced arousal?
	Creating an environment for healing	‘what was helpful to me was that I had a very comfy chair. That helps.’ (JR) ‘I told the assessor all of these things that I was in pain and I need to lie down. And I wanted to say why are you inviting people in pain if you haven’t got the provision for them to lay down. Because I’ve been to other pain courses where they've had plenty of cushions and things for people to use and lay down or move around and I just thought you have to take that into account. (JG) ‘I didn't like about AT is the positions you’re supposed to adopt while you do it. With the problems I have with my upper body I found that the sitting on an edge of a chair was a real problem’ (KT) ‘The room was quite small and although we were told at the first session we could use the floor but not much space or mats for people to get comfortable as possibly could be’	So there is something about the environment which enables (or doesn’t?) people to ‘let go’ and release their pain? Again, attachment seems relevant. Why is this easier in session versus at home for some? Ask about this more.

Going into the pain	Letting go	‘I needed to make changes to my relationships, to accept and let go of what happened in the past…I needed to focus on what was important and not material stuff…I had to learn my own limits’ (Susan) ‘I think I learnt to let go of control of my children and partner…I cant control them.’	Combine letting go and accepting pain together?
	Unlearning to push feelings away	‘Often we learn to suppress them. Some people can do it but others find it draining. I had learnt to be a good girl and push something down, so it was very welcome’ ‘So what was helpful was the fact that they help you to express things that normally have to stay inside.’	Links with societal expectations of girls and what people should ‘do’ with emotions – i.e. push them down. Seems almost like a liberating process to learn how to express feelings in AT.
	Accepting the pain	‘And I do think you have to maintain that attitude of I am gonna get there but that’s different to me to I’m gonna win.’ ‘And I thought oh gosh that [sitting with pain] is very positive and it gives you a feeling that you really might just be able to improve your situation. You know not necessarily get better but if you can improve on the state you’re in. that’s good.’	Changing mindset from ‘beating’ the pain to accepting it and improving situation from there.
	Intense emotions	‘Because it was just like I couldn't do it during the day and then during the evening suddenly someone would start shouting on the street or a helicopter would pass and erm flying around the state and I will just, I will just, it will just make me very angry’ (Abigail)	Hard to cope with intense emotions at home. Link to creating an environment for healing and therapeutic relationship?
	Accepting of feelings	‘You can let go of control…you can feel sad and that’s okay,’ ‘It’s letting the emotions out. It’s suddenly being in touch with the emotional pain and what it says. It’s not something you can just work out in your head – you have to go into a state where you accept it.’	This seems key to improving wellbeing. Maybe this releases emotional tension that is ‘stored’ as pain or adds to physical pain. Follow up on role of acceptance of feelings. Hwo different/same to acceptance of pain.
Giving the pain a voice	Mind-body conversation	‘It’s letting the emotions out. It’s suddenly being in touch with the emotional pain and what it says. It’s not something you can just work out in your head – you have to go into a state where you accept it.’ It’s letting the emotions out. It’s suddenly being in touch with the emotional pain	So there is something about scknowledging both emotional and physical feeelings including pain and consciously noticing with

		and what it says. It's not something you can just work out in your head – you have to go into a state where you accept it. And then ask, ask the pain, what is this pain about? ' 'So it did give me that little bit of conversation to see what needs work and why. I didn't get hat with mindfulness. Because its more of an in the moment bring it all back down to a manageable level. AT allowed alittle bit more of a conversation to go on in that you can notice what youre feelng and then track it .' 'Yeah. the AT allowed for a mind-body conversation. Mindfulness doesn't allow for that mind body conversation. In the same way unless you specifically go into your body while youre doing it.' 'the AT actually encouraged to look at me, and be aware of me being a body and mind and the body and mind being connected. And working together or not which is where you really do get problems.' 'The AT allowed me to use my brain to the best of its abilities. And my body to work to the best of its ability' 'The body scan element at the beginning as it taught me to get in tune with my body and try to relax areas,' ''Breathing and trying to get more in touch (than EFT) and 'talk' to your muscles to relax.' 'AT helps you to have a personal conversation. It's personal and physical. I really valued having the facilitator there.'	'mind' what you are thinking and feeling an how these might be connected. Anything else happen? Almost like this is a process in itself – developing a more ?mindful perspective. How is this similar/different to mindfulness?
	Bringing subconscious thoughts to consciousness	'Doing AT it can cause the body to think in a way and then transfer the thought for us to have consciously…– I focus on it and I think oh yes that's what the problem was. Maybe it's subconscious.' 'something about the AT session or method that can kind of dig deep into our subconscious and bring forward some memory or solution.' ' I can only speak for the acute – but combining that with the offloading exercises – having the ability to lean into the pain and allowing it to express what it's about –	At process allowinig people to consider past thoughts that were not previously accessible/acknowledgeable? How does this happen? Related to stopping/dropping defenses?

		it allows it to tell what's going on elsewhere.'	
	Increased dreaming	'I think she was quite encouraged [by dreams]. She took the point of view that the AT was doing its job' 'Or if it causes a period of dreaming and memories. Because it stirred my memories in many respects. So I think it was very beneficial to me really to discuss things' 'And then suddenly you just get memories and images and then your whole body wants to know. Using this method, you begin to lose the pain…. and it actually reveals what it's about.' 'It gives you very vivid dreams…like they're happening as you wake'	Again this seems to relate to unconscious thoughts/feelings coming to the surface. Interesting that it is experienced as beneficial yet sometimes frightening. What encourages people to stick with it?
	Connecting with past trauma	'I could also see – for ex when we reach the solar plexus training in the initial exercises, I had a very strong digestive response and that's where all my trauma was based' 'And a lot of emotional stuff as well, which I think is very involved. So to actually be able to give that thing a voice…that's another aspect I think – how you can use pain to actually gain something.' 'It showed me when I was sitting forward in that chair – I could see where different bts of my body were rather more painful than others. Erm – I was like okay – what has happened there in the past? 'But you also know the emotional self much better, you know I get very uptight when people don't listen to me because my mother was deaf. And the impact was that I had lots of traumatic experiences as a child' 'Erm – I'm just trying to think if there's anything else. There is something very significant. On the application form we had to say something about our birth. And I did know that I was born actually strangled by the birth chord and it took a long time to revive me. Because they didn't have incubators and thinkgs like that. After a lot of back slapping I breathed and lived. So actually when I did the application and I totally forgot all about that. Something about the AT – there's a line 'it breathes me' and it seems when I learned to say 'it breathed me' within the sequence of phrases it helped me breathe and it was wonderful'	This is interesting. So connecting with past trauma and processing this seems to be helpful. How? Lit on trauma suggests that reprocessing/storying is useful. Helps to reorganize memories and reduce arousal/triggers.

Main category: AT over time: *“Something my body wanted more of – like nectar”*			
Dimensions	**Open codes/subcategories**	**Example participant quotes**	**Theoretical memos**
Changes in pain	Reduced pain intensity	‘So when I’ve had times pain killers aren’t working I’ve just had to you know concentrate on thinking about the pain going away and that can work but this is more involved than that and I was quite surprised by just how quickly pain would subside whilst you were in the middle of the process.	So some noticed a reduction in pain intensity, but not everyone. Why did some and not others?
	Accepting the pain	“It’s amazing how it [accepting pain] can take the pain away”	
Improved well-being	Relaxation	The body scan element at the beginning as it taught me to get in tune with my body and try to relax areas,’ ‘‘Breathing and trying to get more in touch (than EFT) and ‘talk’ to your muscles to relax.’ ‘I had CBT prior to the group. AT was different – more personal. It brought up stuff and helped me to find peace and relaxation. The effects of AT lasted beyond the session. ‘During the course I felt more relaxed and muscles relaxed more’	Lots of people said they felt more relaxed. Is this a key benefit? How does this relate to physical pain? Are people still in pain when they feel relaxed?
	Feeling calmer	‘Oh yes it felt calm. And also, some of that calmness I would attribute to the teacher.’	
	Improved sleep	‘I noticed the various improved bits of sleep or even just a couple of hours not worrying about why I was ill or what was going to happen to me.’	
	Increased energy levels	‘Erm – when I first started the course, err, I was incredibly exhausted. I didn’t know if I could make it to the tube station from the hospital, but after about 3 session I found that I was more able to erm make that walk to the hospital’	
	Regaining focus	‘There are little pieces that are scattered and I cant put those pieces together. So this piece here is not connecting with this piece here…’ and I’m having to – and with the AT when I’m in that state – it’s quite difficult, but I’ve done it – even if I’m at work, it’s terrible but I go to the toilet and I – by, by doing that practice it slowly brings the two pieces together – that’s what it feels like.’ ‘if I’m having a terrible morning, particularly days where things are not going well because, whatever, my head is all over the place or whatever, I know that if I go and do a session of AT, I come back to my desk and suddenly I become really switched on and really focused. ‘	Something about AT which allows for greater focus. Is it being able to “stop” and think without becoming overwhelmed? Are the statements calming, reducing anxiety and therefore improving focus. Do the statements give people something to focus and this effect is generalised?

		‘Well because I could focus – and the AT has forced me to learn to focus’	
Self-care	Learning to pace self	‘The AT allowed me to use my brain to the best of its abilities. And my body to work to the best of its ability…and I also learnt to pace myself.’ ‘and get myself back to a place where I can work again. Rather than having to call in saying, “sorry I cant get in today I’m in too much pain.’	
	Acknowledging own care needs	I’m not very good at looking after myself that is a lot to do with being in my family and what I went through. So for me yes I’ve got to do that – so I am going to make a particular effort to do the relaxation techniques during those two weeks because erm – A it’s relaxing. B erm it’s a focus thing.	Hard for some to acknowledge own care needs. How did this affect ability to engage in AT and to prioritise practice after training had finished?
AT over time	*Feelings of pleasure as reinforcing*	“I think a lot of it depends on how useful you think the exercise is. I believe that the AT is really beneficial…so I feel much more motivated to maintain it .” “It was something my body wanted more of – like nectar.”	People feel more motivated to pursue/continue AT if it feel it has benefitted them in some way. Is this the same for everyone?
	Forming a habit	But then I err – it’s a habit isn’t it? It’s a habit.’ Well building up the habit was having to go back week after week and having to report on what I was doing if I’m having a terrible morning, particularly days where things are not going well because, whatever, my head is all over the place or whatever, I know that if I go and do a session of AT, I come back to my desk and suddenly I become really switched on and really focused. And ive seen it and that is what helps me. Because sometimes you think I haven’t got time for this, maybe today or tomorrow, but it doesn’t matter’	Seems there was a sense that discipline as well as feeling some benefits was involved in forming a habit after AT training finished. Seems this was easier to form a habit when had someone to report progress back to. How long does this take? How did people cope with loss of this relationship?
	Conditioned response to AT	“If I don't have time to do AT and I’m in a moment where I need to find that stillness, all I need to do is go to the very end and say “I am at peace” and my body automatically relaxes.” I think it is that the AT is something you can use almost anywhere. If youre having a bad spell and youre in a meeting and you can go off to the loo.’	
	Feeling empowered	‘it really gives you tools that help to help yourself’ ‘It gives you tools to use whenever…I still use it now. Not as prescribed, but when I need it ‘Although I might not use the AT as much as when I was first learning it – it is still a	So there seem to be reinforcing effects of the effects of AT which further motivate people to pursue it. This appears to be empowering as people can take their therapy intot their own

		tool to deal with pain. Mmm. And it was a very good tool. And it means im not going back to the Dr saying can I have some more tablets. So that is always more beneficial.	hands and have ways of reducing their pain independently.

Main category: Practising AT with others: Bringing us back			
Dimensions	**Open codes/subcategories**	**Example participant quotes**	**Theoretical memos**
Relationship with the facilitator	*Calming voice*	Oh yes it felt calm. And also, some of that calmness I would attribute to the teacher.’ ‘She was a really good teacher. She has a peaceful way, in fact erm sometimes when I’m doing it now I can think back to her voice. I found her way of teaching calming’	
	Experience and guidance in AT	I suppose most of the teachers will use that technique, but it was the being taught it that gave me the reassurance.’ ‘Also because she’s done it so many times she’s professional and experienced I guess.’	
	Empathy versus authority	‘She was very clear about what I had to do – basically, just bloody do it. But sometimes she was very supportive. Obviously undersatdning human nature and that’s just the way things go.’ ‘Yes you have got that permission and I suppose there’s a certain amount of authority that goes with it because that person is deemed to be an authority figure so therefor if they’re telling you to do it you do it.’	So there needed to be a balance between guidance and empathy from the facilitator. Seemed the facilitator played a key role in holding boundaries and keeping focus of the group as well as offering some understanding and expertise to the group members. Was this the same for group and individual sessions?
	Holding the boundaries	‘And also I appreciated that it was – it was guided in a way, and taught, and kind of like supervised. I don't know if that’s a good way to explain it and I thought it was a good programme.’ ‘you know, that someone is waiting for you to come back so you take yourself thorough the second and third versions and you’re back in the room. So you know that there are a whole bunch of people waiting for you to come back. There is an expectation in the room that you’re going to finish’ ‘Because if you come everybody’s got to do it and you’ve got a lady saying sit	Seemed easier to stay with pain when someone was around.

		down, think about your arm and think about your leg. So yeah definitely [it's helpful to have someone teaching you.'	
Group processes	*Listening and feeding back*	'I was able to sit and listen to what other people had to say and erm you know I didn't have to do a lot or talk a lot during those two hours. …It was unpressurised' 'The recent session was very nice but –we got along, everybody was fine, we listened to each other, but I have found I work better alone.' 'Erm – I thought that was very good actually. That was beneficial being in the group. And its also very interesting seeing other peoples problems and er what they need and so on. And their experience. Because when we did the AT, she would ask someone how they got on the previous week – how did they find it and people would say whether they managed to do it and what was difficult and results and so on.'	So is the social aspect of ATimportant to the process? What was it like for people who did AT 1:1
	Normalising feelings	'And to elicit our reactions because oddly enough I would have almost the same reaction as someone else in the class and someone else would have a similar experience to someone else	
	Competition and envy within the group	'Because I had to be really disciplined about getting myself there to do it even if I was in pain. Where as other people would call in sick and say I've got a virus or I'm in too much pain to attend today.' 'Well what happened was in fact that week by week people dropped out and it ended up with me and one other lady. Fairly quickly' ''Erm – I think most of the time I did do it for the three times [a day]. I don't think everybody did. There was one chap who had a pretty busy job to do and he found it – he said in the class he found it difficult.' 'In a way I was a bit jealous of that because I was unable to err I felt that I didn't give it, it's almost like I didn't give it a chance to work on me because of all these other problems, it felt a little bit wasted – I wish I could have done it erm at a different time when maybe things were not so hectic around me.	I wonder if group AT or individual AT works better for different people. Seems group can be a pro and a con.

Main category: ***Practising AT independently: “Getting permission to stop***			
Dimensions	**Open codes/subcategories**	**Example participant quotes**	**Theoretical memos**
Loss of the facilitator	*Difficulty “staying with” emotions*	‘At times when life takes over and pain is so much it is difficult to concentrate [at home] and get the best out of AT practices.’ ‘It was hard to say with the feelings at home.’	
	Coping with distractions	‘I was fine if I was there with Dr X, erm fine if someone else was guiding it, if it’s me doing it myself I was gone and I get lost.’ ‘The problem I had when I was trying to do it by myself was that I was living with two building sites at very noisy stages, where they were using drills and …so there was a lot of noise. All day long there was a lot of noise.’	
	Giving yourself permission to “stop”	‘Why do we need to give ourselves permission? I think it’s because – I think it’s because at some level we identify non-action as a waste of time and when youre sitting down just doing nothing, you appear to be doing nothing.’ But our society is all about going out and working and making money erm and do, do, do, do, do, so it does make that quite difficult for anybody I think I have this illness, I have to do this cos it’s not like taking a tablet. And there is certainly a psychological dynamic to this that we are driven to get up and do and so to try and sit down and focus on yourself, focus on your own welfare is quite difficult. ‘and I just feel really anxious and guilty if I’m not doing something’.	Seems to be a common theme – that people struggle to stop and relax. Something about needing permission to do this, with others’ needs often prioritised before their own.
	Finding energy to practice	‘where as when you get home you've got the washing to do you've got to cook dinner, you've got to put the pots away – there’s stuff to be done. People tend not to sit down until everything’s done – erm so you tend to sort of think oh ive got to do that before I do my exercise [AT], and by the time you do that I suppose, you’re shattered, it’s the end of the day, you just want to sit down and watch television for an hour or something.’ ‘The course, the sessions stopped here and then I tried to do it for a bit longer and then I just stopped. The fact that it was difficult in the day and it was fighting it and it was just taking too much energy from me. And in that sense I’m not sure if I should have stuck with it a bit longer.	

Main Category: Comparing AT to other therapies: “Not just free-falling”			
Dimensions	**Open codes/subcategories**	**Example participant quotes**	**Theoretical memos**
	AT as part of a “bigger picture”	‘And I think that’s what I have learnt – that some things have given me little bits of information, and things often lead to often lead to other things. And I think I just thought you never know and it’s lucky I did think that because it was something, it is something that I found helpful. So erm – I think that’s something I have learned – that little bits and pieces can come together and feed in – even if it’s not the whole answer’ ‘I don't AT was everything [that needed to change for improved wellbeing]. I think changes had to be holistic. I needed to make changes to my relationships, to accept and let go of what happened in the past…I needed to focus on what was important and not material stuff…I had to learn my own limits.’ ‘I probably should have kept it (AT) up because I didn’t know that CFS comes with auto-immune and so it would have been beneficial, but I just didn’t know that. When you go to see a professional they tend to focus on one thing. Which is why this (AT) is so good, because it looks at the other aspects of illness as well [it’s holistic]’.	So it seems that for many AT was a significant experience which taught new tools to relax, regain focus and sometimes reduce pain, but this was often part of a bigger picture of care.
	AT as more “active” than other therapies	‘what I really liked about it was that you weren’t just free-falling [like in meditation] – so the repetition of the words is very meditative’. ‘with the AT, I almost feel as though – not that I have something almost tangible to hold on to – but something tangible to deal with. As compared to meditation where you have to sort of go into yourself and try not to think as it were’ ‘with mindfulness you can use - a place of stillness. But it may be more difficult to – to completely switch off from erm well I guess it depends on the individual. But for me – with AT you've got – those are the techniques that are going to take you deeper into the relaxation stage’ ‘you don't just stay as an observer – you become more of the – you’re more in control – you’re not more in control you – there’s another step which is more of an action step where you just go more deeper inside yourself.’ ‘And in fact when I started to do meditation a few years before I found that all sorts of stuff was coming up and I didn't know what to do with it. So when I	This seems important. So many participants said that AT was useful as it gave them ‘something to do’ when sitting still. So mindfulness was good but challenging if distressed, where as AT seemed to serve to distract from pain as well as a sort of anchor to stay with the exercuses

		came across AT it was like a treasure tray because finally I was being shown what I could do with the voice that needed to be expressed’ ‘And you know, having all sorts of options and you know – do something for yourself instead of waiting for the next three hours for your next painkiller’	
	More relaxing than mindfulness	‘And yeah you can get that from mindfulness, but with AT it’s more that it’s driven – you know you’re going to get there and you know what you’re doing as opposed to going into mindfulness erm a state where you may feel more or less relaxed and you may get to a deeper state of relaxation, you may not.’	

Appendix M: Example transcript

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