

Research Article

Evaluation of a Virtual Compassionate Living Group for Patients with Chronic Pain

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2022, volume 7, issue 4
doi:10.21926/obm.icm.2204050**Received:** May 26, 2022**Accepted:** November 08, 2022**Published:** November 14, 2022

Abstract

Chronic pain affects around 28 million people in the UK. Those living with chronic pain can frequently experience internalised self-stigma and negative self-evaluations as a result of the pain itself and due to difficult life experiences. Previous research has found Compassion Focused Therapy to be effective for people living with long term health conditions like chronic pain. The current study sought to evaluate a routine Virtual Compassionate Living Group for patients with chronic pain on the measures of self-compassion, self-criticism and pain self-efficacy. The evaluation took place in a routine clinical setting. 13 outpatients attended the online group across three separate groups. Groups were delivered over eight or ten sessions with the group content focusing on psychoeducation of the Compassion Focused Therapy model and Compassionate Mind Training. Reliable and clinically significant change analyses were used to assess the data. Results showed that there had been improvements on the



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measures of self-compassion with 6 out of 13 patients exhibiting reliable and clinically significant change. Some improvements had also been made on pain self-efficacy and self-criticism but to a lesser extent. Thematic analysis was used to analyse the evaluation feedback forms for the course. Three superordinate themes were identified; *sense of belonging, flourishing and virtual benefits*. The service evaluation indicated that a Virtual Compassionate Living Group for patients with chronic pain can lead to improvements in self-compassion. This is consistent with previous research evidence, but larger scale evaluations are required to verify conclusions.

Keywords

Chronic pain; persistent pain; compassion; therapy; compassionate; self-criticism; virtual; online; group

1. Introduction

Pain is one of the most common reasons patients visit healthcare services each year [1]. Just under 28 million adults in the UK are affected by chronic pain and this is expected to increase due to the aging population [2]. Chronic pain is defined as pain that has persisted for at least 3 months and evidence has shown that people who have chronic pain are more likely to report anxiety, depression, social isolation, relationship difficulties and unemployment [3, 4]. A multifaceted approach to pain management is reported to be the best line of treatment and the biopsychosocial model (BPS) is now the most widely accepted model of treatment [5]. A simplified definition of the BPS model is that there are complex interactions between biological, psychological, and social components that contribute to an individual's pain experience [6].

Evidence has shown that people experiencing chronic pain can benefit from psychological therapies. Currently research into treatments for chronic pain have primarily focused on the benefits of Cognitive Behavioural Therapy (CBT) [7] and Acceptance and Commitment Therapy (ACT) [8]. Systematic reviews and meta-analyses have found both interventions to be effective for reducing pain, pain disability, distress and pain interference, as well as increasing pain acceptance. Effect sizes have been small to moderate across pain outcomes [7, 9]. Pain Management Programmes (PMPs) underpinned by CBT principles have also been effective and have been recommended where a person's physical, psychological and social function has been adversely impacted [10, 11]. Despite this PMPs were removed from NICE guidelines in 2021 as the committee were not able to determine effectiveness from the evidence base for all pain types [12].

More recently there has been growing interest in the use of Compassion Focused Therapy (CFT) as an intervention for chronic pain [13, 14]. CFT is an evolution informed, biopsychosocial model of psychology which posits that mental health problems are due to the evolved functions of the brain which have left humans with a 'tricky brain' that is not their fault but is their responsibility [15, 16]. Compassionate Mind Training (CMT) is a key intervention from within the CFT framework and this helps individuals to build skills in affect regulation and compassion [17]. CFT was originally designed as a transdiagnostic model for people with high levels of shame and self-criticism [15, 17]. CFT shows great promise for people living with chronic pain who can experience negative emotions and self-

evaluations due to the pain itself and due to the high prevalence of stressful life events in this population [3]. Waugh, Byrne and Nicholas found in their study that 38% of people with chronic pain endorsed internalised self-stigma. Furthermore, this was found to be negatively related to self-esteem and pain self-efficacy [18]. A compassion focused approach would help those in pain develop compassionate understanding for their experiences and physical health needs.

CFT proposes a tripartite model in which human functioning is underpinned by three systems. The “threat” system pertains to protection and survival. The “drive” system relates to reward and achievement. Finally, the “soothing” system serves the function of safeness, connection, and self-regulation” [17]. Increases in perceived safety and soothing states are associated with increased availability of endogenous opiates [17], highlighting the potential importance of enhancing self-compassion as a core aim of effective biopsychosocial pain management. Those with high levels of self-criticism or shame can have an overactive threat system which can activate sympathetic nervous system activity and amplify pain [19]. Individuals learn that distress in the threat system can be reduced by developing the soothing system. People are then taught practices that have psychological and physiological benefits, which include mindfulness, soothing rhythm breathing and imagery which activate the parasympathetic nervous system [20-22].

The available evidence for CFT indicates that compassion-based approaches are clinically effective in the domain of mental health [23] and there is an emerging evidence base for the role of this approach in the context of physical health [24]. A modest but promising evidence base is developing for the role of CFT in chronic pain with the majority of research focused on group interventions. Goodling conducted a 12-week CFT group tailored to people with chronic pain [25]. The conclusions drawn from the study were that patients had reduced feelings of isolation, improved ability to self-reassure and increased acceptance over their limitations associated with pain at the end of the group. Penlington [14] and Parry and Malpus [4] found similar benefits from their adapted CFT groups for people with chronic pain [4, 14]. Parry and Malpus targeted a specific sub-population of individuals with chronic pain, who faced specific difficulties with activity management, such as boom-bust cycling [4]. The small amount of available evidence for online CFT interventions provides tentative evidence that they may help reduce analgesic misuse in chronic pain populations [26].

Whilst such findings establish the possibility of CFT being beneficial for effective chronic pain management, there is an ongoing need for further evaluation of current care practices where CFT is used. This service evaluation aimed to evaluate a routine Virtual Compassionate Living Group (VCLG) for patients with chronic pain. It was hoped that by teaching individuals skills in mindful awareness and self-compassion, this would enhance self-compassion, reduce self-criticism and improve their confidence to perform activities while in pain.

2. Materials and Methods

2.1 Method

2.1.1 Sample

The service evaluation was conducted in the “Living Well with Pain” Service at Northumbria NHS Foundation Trust in the North East of England. A total of 21 individuals were invited to attend the

groups, which occurred in three groups between October 2020 and July 2021. A total of 13 adult outpatients (11 female: 2 male) signed up to the group. Patients were aged 18-65.

2.1.2 Procedure

Compassion-focused therapy groups are a part of routine care for patients within the service. Patients with chronic pain were referred into the group if there was evidence of self-critical thinking and/or poor self-compassion or self-care following their initial multidisciplinary assessment for the service. Patients were not eligible to participate in the group if they were unwilling to work in a group format, were unable to access IT facilities, experienced severe mental health problems that would impact on their ability to engage in a group, did not have the availability to commit to the majority of group sessions, or experienced severe cognitive problems which may require more bespoke or adapted individual work. Those who were deemed appropriate for the service but not the group were offered alternative treatment.

Three separate groups were delivered and in response to feedback after the first group, the eight-session programme structure was extended to a ten-session structure, to allow additional time for an individual formulation session and a session on how to use compassion in daily living. The content of the groups remained the same (in terms of delivery of compassion-focused therapy material). Outcome measures were administered before and after the group.

The VCLG was developed using principles of Compassion Focused Therapy and Compassionate Mind Training. It was modified to focus on how compassion could help people to live well with pain. The core content of the group focused on psychoeducation about compassion, introduction to ‘3 systems’, the links between the 3 systems and chronic pain, compassionate mind training, managing self-criticism and how to live compassionately. See Table 1 for session contents.

Table 1 Session Contents.

Session number	Session Content	8-week course	10-week course
	What is compassion?		
1	Definition of compassion. Introduction to mindfulness. <i>Breathing meditation</i>	X	X
	The ‘tricky’ brain		
2	How we are shaped through evolution, biology and social experiences. <i>Soothing rhythm breathing</i>	X	X
	The 3 systems		
3	Introducing the 3 systems- ‘threat’, ‘drive’ and ‘soothe’. <i>Compassionate colour meditation</i>	X	X
	The brain/body connection and pain		
4	Understanding how pain interacts with the nervous system and the 3 systems. Learning how compassion can change this. <i>Safe place imagery</i>	X	X
	Individual formulation session (1:1 session)		
5	Formulation of the individual’s 3 systems.		X

	<i>Historical formulation</i>		
	Developing compassionate imagery		
6	Introducing compassionate imagery. <i>Compassionate memory, compassionate self and compassionate other</i>	X	X
	Working with shame and self-criticism. Flows of compassion.		
7	Function of the self-critic. 3 flows of compassion. <i>Loving kindness meditation</i>	X	X
	Building the 'drive' system and enhancing self-care		
8	Linking drive with values. Cultivating self-care. <i>Values sort</i>	X	X
	Compassionate living		
9	Bringing compassion to emotions, thoughts, and behaviour. <i>Multiple selves exercise</i>		X
	Blocks, reflections, setbacks, looking forward... And goodbyes		
10	Reflections on the course. Managing setbacks using compassion. <i>Tale of two wolves</i>	X	X

**italicised content refers to experiential exercises.*

The groups were delivered weekly and lasted 90 minutes per session. A 15-minute comfort break was incorporated into the session. It was delivered virtually on Microsoft Teams. The group was facilitated by a Clinical Psychologist in the team who had a special interest in Compassion Focused Therapy and a Trainee Clinical Psychologist. The session format was as follows; settling in exercise, feedback on homework, psychoeducation relating to session topic, experiential exercise, homework setting. Patients were reminded there was no requirement to share personal information about their history or health but were invited to share as much as they felt comfortable to.

Patients were provided with a link to pre-recorded audio files of the exercises used in sessions to supplement their home practice. They were also provided with 'patient packs' which had all the presentation slides and worksheets. All patients used these as part of the course and homework set.

2.2 Outcome Measures

2.2.1 Self-Compassion Scale-Short Form (SCS-SF)

The SCS-SF is a self-rated self-compassion scale to assess how kindly and caring one is towards the self in difficult situations [27]. It is 12 items and measured on a 5-point Likert scale (1 = almost never to 5 = almost always). The SCS-SF has been shown to have a six-factor structure with good internal reliability [28].

2.2.2 Forms of Self-Criticising Scale/Attacking and Self-Reassuring Scale (FSCRS)

The FSCRS measures a patient's levels of self-criticism and their ability to self-reassure when things do not go to plan [29]. The scale is 22-items measured on a 5-point Likert scale (0 = not at all to 4 = extremely like me). The measure has three sub-scales, two of which measure self-criticism

and one which measures self-reassurance. The *hated self* subscale measures the desire to hurt or persecute the self, whilst the *inadequate self* subscale focuses on a sense of personal inadequacy. The third subscale is the *reassured self* subscale which measures how people self-reassure and support themselves when things go wrong. The measure has been found to have acceptable factor structure and reliability [29].

2.2.3 Pain Self-Efficacy Questionnaire (PSEQ)

The PSEQ measures how confident people with chronic pain feel when performing activities. It is measured on a 6-point Likert scale (0 = not at all confident to 6= completely confident). Findings have shown high internal consistency and test retest reliability with a single factor solution [27].

2.3 Analyses

Clinical outcomes were assessed by calculating indices of reliable and clinically significant change using the 'Clinsig' package [30] within RStudio [31]. The reliable change index (RCI) indicates whether the observed change in outcome is a reflection of reliable change in the outcome measure, or an artefact of measurement error. For the RCI calculations, previously published alpha coefficients of 0.83, 0.88, 0.87, 0.86, 0.89 were used for the SCS-SF, PSEQ, FSCRS-Hated, FSCRS-Reassured and FSCRS-Inadequate, respectively [32-34]. It was not possible to calculate alpha coefficients for the sample directly, due to the modest sample size. In this situation, it is recommended that previously published alpha coefficients are adopted [35].

Clinically significant change (CSC) analysis indicates whether any observed change in an individual's score is clinically meaningful, which is defined as a post-treatment score that is more likely to belong to a "non-clinical" distribution of scores, than a "clinical" distribution of scores [36]. Criterion C determines whether such a change has occurred, through the use of normative data for the outcome measure in question. For the present analysis, the norms were adopted from Kotera and Sheffield [37], and Baião, Gilbert, McEwan and Carvalh [34]. Normative (i.e., scores of the measure when administered to the general, non-clinical population) are not available for the PSEQ. In which case, criterion A was adopted. Criterion A provides an estimation of whether an individual's score has moved 2 standard deviations from the original mean of the 'clinical' group, and is advised when normative data is not available to inform the analysis [35].

For further details and a worked example of this method, see Evans [38]. Note that we did not perform null-hypothesis significance tests because of the modest sample size. Analysis of reliable and clinically significant change is not dependent on large samples.

The course evaluation feedback forms were also analysed using thematic analysis. Braun and Clarke's six phase process was used to analyse the data [39]. This involved *familiarisation, coding, generating themes, reviewing, defining and naming themes and writing up*. In order to ensure validity of the themes triangulation between researchers was used.

The project was a service evaluation, which was verified by using the publicly available decision tools from the NHS Health Research Authority of the United Kingdom. We report on routinely collected outcomes and the project involved no changes to care. All patients provided their informed consent to participate in the intervention. No personally identifiable information is reported on. The service evaluation received approval from the Clinical Audit Department of Northumbria NHS Foundation Trust (reference number: 7889).

3. Results

All 13 patients who signed up to the group completed it. Despite this six people missed at least one session. The median missed session number was zero, with a maximum missed session number of three. Ethnicity was predominantly White British with English being their first language. 77% of people were in some type of employment. Pain conditions were mixed but their main conditions were fibromyalgia syndrome (46%), musculoskeletal pain (38%) and neuropathic pain (16%). All pain conditions had been diagnosed prior to referral into the Living Well with Pain Service as the service is non-medically led.

3.1 Quantitative Results

Table 2 presents the results of the RCI and CSC analyses across all outcome measures. For the SCS-SF, approximately half of participants (6/13) attending the CFT group exhibited both clinically significant and reliable improvement. A small number of participants exhibited clinically significant change for the PSEQ (2/13) that was not due to measurement error, with a further two participants demonstrating reliable improvement that was not categorised as clinically significant. The majority of participants exhibited no change for the FSCRS-Hated (12/13), with only 1 participant demonstrating clinically significant and reliable improvement. Clinically significant and reliable improvement was found in approximately a quarter of participants for the FSCRS-Reassured (3/13) and a third of participants for the FSCRS-Inadequate (4/13), with a further two participants demonstrating reliable improvement that was not categorised as clinically significant using the adopted criteria. No participants were found to have deteriorated across any of the measures.

Table 2 Reliable and clinically significant changes in scores for participants N = 13.

<i>Measure</i>	<i>Reliable Change</i>			
	<i>Clinically Significant Change</i>	<i>Deterioration</i>	<i>Improvement</i>	<i>No change</i>
<i>SCS-SF</i>				
Not significant	0	1	2	
Okay at baseline ^a	0	0	4	
Significant change	0	6	0	
<i>PSEQ</i>				
Not significant	0	2	7	
Significant change	0	2	2	
<i>FSCRS-Hated</i>				
Not significant	0	0	5	
Okay at baseline ^a	0	0	6	
Significant change	0	1	1	
<i>FSCRS-Reassured</i>				
Not significant	0	2	2	
Okay at baseline ^a	0	1	4	

Significant change	0	3	1
FSCRS-Inadequate			
Not significant	0	2	2
Okay at baseline ^a	0	1	2
Significant change	0	4	2

^a Participants who scored in the 'non-clinical' range pre-treatment. This categorisation is automatically applied by the 'Clinsig' package.

3.2 Qualitative Thematic Analysis

From the data, three superordinate themes were discovered, all with varying subordinate themes which are presented in Figure 1. These themes are discussed below, alongside relevant quotes extracted from the data.

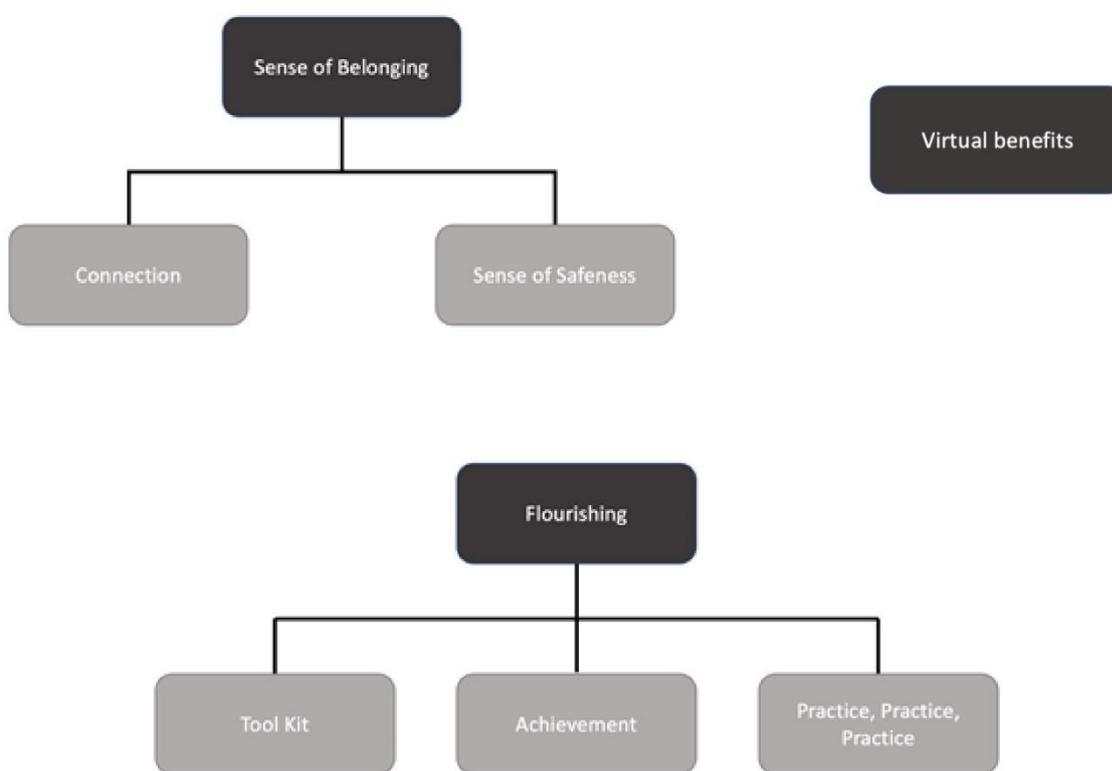


Figure 1 Themes. Final superordinate themes (dark grey) and their subordinate themes (light grey).

3.3 Superordinate Theme: Sense of Belonging

This superordinate theme illustrates how participants felt the group gave them a sense of belonging. Participants said being with others with chronic pain helped to normalise their experiences.

3.3.1 Subordinate Theme: Connection

Participants reported that the group helped them to feel less alone and better connected as a result of the group.

“Realised I am not alone and being able to have a connection with people experiencing similar difficulties.”

“Nice to know you’re not alone.”

“I’m not alone.”

3.3.2 Subordinate Theme: Sense of Safeness

The group produced a safe space in which people felt they could both receive and give support to others. Participants spoke about a bi-directional process in which the space allowed them to be able to take information in, as well as provide advice to others.

“Really helped to be listened to and believed, felt validated.”

“It is probably the most I have talked openly to people about my issues.”

3.4 Superordinate Theme: Flourishing

This superordinate theme illustrates that participants were able to use the information and tools to be able to start making positive changes to their lives.

3.4.1 Subordinate Theme: Toolkit

Several participants reported feeling equipped with the right tools to help them with the management of their pain.

“I feel like I have a fantastic toolbox to help me live with my pain and its effects.”

“I now have the tools.”

3.4.2 Subordinate Theme: Achievement

A few participants reported feeling like they had achieved something after completing the group.

“I felt personally that I have achieved something for myself.”

3.4.3 Subordinate Theme: Practice, Practice, Practice

Several of the participants acknowledged that for the intervention to have a lasting effect they needed to practice what they had learnt.

“The flower needs water every day to get there but confident I will.”

“It’s important to implement and practice what you learn in order to help you to evolve and grow.”

3.5 Superordinate Theme: Virtual Benefits

The final superordinate theme considers the benefits of doing a CFT intervention virtually.

A couple of participants discussed how the intervention was more accessible to them when held online over Microsoft Teams. They found that this format eliminated some of the practical issues that would occur if it was held in person. As well as this, the opportunity to turn cameras off if they were upset and needed a short break was also reported as a benefit of virtual groups.

“I had no stress about getting somewhere (...) it was nice to have the safety of switching off your video if needed.”

“As it was virtual it had minimal impact on my work.”

4. Discussion

The aim of the evaluation was to ascertain whether a Virtual Compassionate Living Group (VCLG) for chronic pain achieved its intended aims of improved self-compassion, reduced self-critical thinking and increased pain confidence.

Analysis of clinically significant and reliable change indicated that almost half the patients showed improvements in self-compassion that were both clinically important and also unlikely to be an artefact of measurement error. Importantly, the results show that none of the participants displayed signs of deterioration, highlighting the acceptability of this intervention within the service. The findings are consistent with emerging research evidence that has shown that self-compassion increases following a compassion focused therapy group for people with pain [4, 13]. The thematic analysis discovered an overarching theme; *sense of belonging*, which was central to the group's experience. This theme suggests that group members felt a *sense of safeness* being in a group with people going through similar experiences. In line with CFT theory, it is possible that this safeness facilitated reduced threat and/or drive-based activation, making them more open and receptive to compassion. Nearly all individuals described a *connection* which may have acted as a vehicle for co-regulation, enhancing flows of compassion; to others, from others and to the self. Connection is highly relevant to the CFT model and is frequently written about in the literature as a key motive for humans in order to counteract disconnection and loneliness which would otherwise bring a sense of threat [40]. This connectedness is also important to the nourishment of the soothe system due to the caring affiliation which can help to switch on the parasympathetic nervous system with the added potential to 'wind down' pain.

A smaller number of patients were found to have clinically significant and reliable changes in the domain of pain self-efficacy. It is possible that this finding reflects a need to incorporate additional aspects of pain management into the group programme. Alternatively, the observed findings may reflect the nature of the participants, many of which had PSEQ scores within a reasonable range before the start of the intervention. The majority of people taking part in the course were high functioning individuals in employment and therefore radical changes were less likely to be observed. The benefits of compassion-focused pain management groups in the context of individuals with more severe or disabling pain presentations warrants further investigation. Clinical and reliable change in the domain of self-criticism was only observed in one patient. Again, this is likely a reflection of low self-criticism levels pre-treatment. In addition, the content of the group sessions placed a greater emphasis on self-compassion than self-criticism, with only one session being

dedicated to this. Despite this the themes highlighted that group members felt as though they were *flourishing* and had a *toolkit* to take away with them. Previous research by Gooding found similar themes where participants with chronic pain reported having new ways of coping following a CFT group intervention [25].

Despite the variation across the measures it is noteworthy that no patients showed deterioration across any of the measures, providing some tentative evidence of the safety and acceptability of compassion-focused therapy pain management groups. Although the groups were small to begin with there were no dropouts across any of the groups which is highly unusual in our experience.

Group members also showed a sense of inner wisdom that in order to integrate the work they needed to *practice, practice, practice*. There were also *virtual benefits* found from the group format which made the course more accessible. This is particularly pertinent to those living with long term health conditions such as chronic pain where attendance at groups can be difficult [41]. Being able to remove this barrier and still be able to demonstrate improvements is an important finding and may explain why dropout rates were so low.

4.1 Limitations

Despite the promising results caution should be taken due to the small sample size, which precluded null hypothesis significance testing and calculation of effect size. The choice to adopt “small n” analysis (clinically significant and reliable change) offers an alternative approach to understanding changes in clinical outcomes, but larger scale projects that adopt inferential statistics are required in order to verify whether this “practice-based evidence” applies beyond our individual service. In addition, due to the nature of the project (a service evaluation of routine treatment, as opposed to a research trial), the evaluation did not feature a control group or random allocation – this was beyond the scope of a routine service evaluation. It is therefore possible that the reported improvements are due to factors other than the intervention alone.

There was no provision for follow up data to be collected, and as such it is uncertain if the observed improvements persist over time. All groups were run online due to the COVID-19 pandemic and therefore we do not know if this intervention was any more or less effective than running the group face to face. People living with chronic pain have been found to be disproportionately affected by the pandemic due to threats on autonomy, social connection and justice [42] and therefore finding an intervention which helps accessibility is an important feature. Future research could look to run a similar study as an RCT with face to face versus online groups and with a control.

The course content mainly focused on psychoeducation of the 3 systems with a focus on building the soothe system. Only one session was dedicated to managing self-criticism so perhaps it is not surprising that less progress was made on this measure. This was primarily a psychoeducation group and, in the future, it may be worthwhile considering a follow up group with more of a focus on group therapy. This may include sessions on chair-work where techniques are used to separate parts of the self into different chairs. Compassion is then applied to these different parts to bring about regulation and integration [43]. It is also important to note that the clinically significant change analyses on the SCS-SF and the FSCRS were measured against normative data from a non-clinical sample who are not in pain. It could be argued that to use a healthy population as a benchmark is a high standard to compare against and therefore an overly cautious analysis [44].

The other limitation worth highlighting is that the group intervention changed from eight sessions in group one, to ten sessions in groups two and three. This change was adopted in response to feedback about patients wanting further content. Nevertheless, this may limit the conclusions that can be drawn. For example, it is possible that the results are an underestimate because some people got a smaller number of sessions.

4.2 Conclusion

In conclusion our findings demonstrate that the group has the potential of producing clinically significant and reliable changes in self-compassion for some attendees. It had less impact on their levels of self-criticism and confidence to do activities with pain. The reasons for this may have been affected by the session content being more focused on psychoeducation and toning up of the soothe system. As such, compassion-focused groups may offer a valuable dimension of support to individuals with chronic pain, in the context of a broader, holistic, biopsychosocial care package. The group effect continues to be an important factor in bringing a sense of community and common understanding for people living with similar conditions. The benefits found from delivering the content virtually also adds to the sparse literature base on this form of delivery, and it is hoped that future research can compare the effectiveness to face to face groups.

Acknowledgments

Thank you to the Living Well with Pain team for their support with this service evaluation.

Author Contributions

Alicia Brown (Conceptualisation; Project administration; Investigation; Writing – original draft; Writing- review and editing). Caitlin Woodcock (Formal analysis; Writing – original draft; Visualisation). Kelly Cocallis (Formal analysis; Writing- original draft). Alan Bowman (Methodology; Formal analysis; Writing – review and editing).

Competing Interests

The authors have declared that no competing interests exist.

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