Physiotherapy Pain Association

Delivering NHS Community Pain Service Pain Management Programmes during Covid 19 via video conferencing: patient and clinician experiences and outcomes

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Abstract

Objective

This article, with patient and clinician authorship, has two parts. Part one describes the development of a co-produced solution-focused (SF) virtual Pain Management Programme (vPMP) in an NHS community setting during year one of the Covid-19 pandemic, using live video conferencing. Part two reports on a service evaluation exploring vPMP outcomes in the context of service aims and objectives.

Design

17 patients with a range of chronic pain conditions completed 9-week multidisciplinary vPMPs from July 2020 - January 2021. Quantitative and qualitative data were collected.

Results

Statistically and clinically significant improvements in pre-post pain self-efficacy, mental well-being, and function, and significant statistical improvement in hope were found (despite no significant changes in pain intensity or interference), broadly consistent with the service's face-to-face (f2f) PMP outcomes and with other studies. An in-house tool "iGro" captured personalised change, with patients reporting an increased sense of their 'best hopes' becoming actualised post-PMP. Thematic analysis identified four main themes; 'Emotional Well-Being', 'Pain Management Solutions', 'Changed Attitude' and 'vPMP Access'. High levels of attendance and engagement were observed.

Conclusions

The practice-based design necessitates caution be exercised with interpretation and generalisability. Nonetheless, preliminary outcomes provide tentative evidence that this SF vPMP was an effective, accessible and meaningful remote intervention.

Contributions of the paper

- A detailed description and evaluation of a real-world NHS practice based PMP (using video conferencing), with reference to clinical and service delivery considerations
- Co-production with expert patients throughout programme inception and delivery, and with patient authorship contributing to written paper
- Highlights psychologically informed solution-focused approaches, and how their use in a community pain management setting can enhance patient experience and engagement

Keywords

Pain management programme, solution-focused, expert patient, video conferencing, community, positive psychology

Introduction

When the UK's first Covid-19 lockdown was announced in March 2020, the typical, dominant f2f method of delivery for NHS Pain Management Programmes (PMP) was no longer feasible, creating a demand for remote forms of delivery. Although there were a handful of papers reporting on interactive VC-based vPMPs, eg[1], no agreed published guidance existed [2]. There was a clear clinical need for timely intervention, with Ecclestone et al [3] highlighting early on in the pandemic that "when people with chronic pain are denied assessment and treatment, their condition can worsen significantly; spontaneous recovery is rare" (section 3). A vPMP offer for patients was therefore developed pragmatically, for efficient implementation.

The Community Pain Service (CPS) is a small team of multi-disciplinary pain clinicians and expert patients. The team works to deliver care to a local population, offering one to one and group work, including PMP. The CPS takes a 'solution-focused' approach to work with patients (from Solution Focused Brief Therapy); essentially being highly curious with people about what is important to them, what their hopes are and finding out what they know already that works, to utilise strengths (see [4] for further articulation of this approach in relation to community PMP delivery and

outcomes). Solution-focused work can be transformative, for the recipients of better practice and for practitioners; instead of trying to be 'fixers' they become 'collaborators' and walk alongside people, families and communities as they thrive. Solution-focused approaches are congruent with the current UK NHS Long Term Plan Personalised Care agenda, which outlines how personalised care gives people choice and control based on what matters to them, their strengths, needs and preferences. This NHS agenda also outlines how this system should aim to make the most of the expertise of people, families and communities in delivering better health and wellbeing outcomes and experiences.

This paper reflects on the development, experiences and outcomes of running a virtual group Pain Management Programme (vPMP) using synchronous video conferencing (VC) in a multidisciplinary NHS Community Pain Service (CPS) setting in the UK. Our best hopes, in the fast moving times of the Covid-19 2020-21 pandemic, were to record and share this clinical work, and to generate learning and discussion.

Part One: Development

Driven by a solution-focused approach, the service firstly explored what a "really great" vPMP might look like (Figure 1).

Figure 1 What might a really great vPMP look like? Clinician and 554 expert patient 'best hopes'

- Enjoyable / effective / makes a difference
- Focus on building wellbeing & function despite pain
- Expert patients involved from start, to share expertise & build hope
- 'Live' interactive sessions, using video to build engagement, group identity, peer support, cognitive shift processes
- Exercise facilitated in live group format
- Creation of opportunities to emulate usual 'tea-break talks', allowing peer support aspects to flourish eg participant what's app group (with consent), break periods
- Feeling of gentle challenge, but also 'safety', as people are invited to take the leap that is not only PMP, but also relies on technology and virtual participation – eg extra time for introductory work built into assessment process, assessment via video link will enable technology skills practice and build confidence, clear governance processes – to be developed and shared with participants, extra staff help troubleshoot when needed, group exercise starts a few sessions in rather than be the first session, options for 1:1 support if required during/after vPMP
- Video platform will ideally enable the above hopes eg allows full view of all faces, allows break out rooms, easy / accessible to use
- Built in time for reflection (clinicians and participants) to learn what works best, as the group evolves and progresses
- Some use of pre-recorded presentations, if fits with the group wishes/needs
- Regular sessions to help develop routine, behavioural change and habit formation
- Consideration of demands of screen work in addition to the usual demands of PMP – eg sessions one hour 10mins maximum; break periods of 20-30 mins; mix the demands of each session eg 'cognitive' topic work followed by 'physical' exercise work
- Use of solution-focused approaches to patient assessment and facilitation; to co-construct the programme and uncover participant expertise
- Easy, swift communication staff–participants; eg dedicated email account
- F2f get together / follow up – if/when able to – and/or attention given to ways to maintain peer support and good habits, post vPMP

Figure 2 Overview of pilot virtual PMP

	TUE	WED	FRI
INTRO	..	..	'Meet & Greet'- PMP Graduates/Staff Share experiences, explore hope
WEEK 1	Intro, Rules, Icebreaker game Tea break Intro to Exercise	SF work, Best hopes, iGro Tea break Intro to Mindful Living with expert patient	Pain Mechanisms / Neurophysiology Tea break Exercise session
WEEK 2	Attentional Processes & Mindful Living Tea break Exercise session	Activity and Pacing Tea break Mindful Living and Noticing session	Building Emotional Wellbeing Tea break Exercise session
WEEK 3	Muscle Pain Tea break Exercise session	Activities of Daily Living Tea break Breathwork/Mindful Movement	Best Life desp. Pain(Accept./Vals./Direct. Tea break Exercise session
WEEK 4	Flare Ups Tea break Exercise session	Mindful Living and Noticing session Tea break Breathwork/Mindful Movement	30mineach:PainMech rev; Noticing&BH Tea break Exercise session
WEEK 5	Reading / self practice week	GROUP DROP IN SESSION (OPTIONAL)	Reading / self practice week
WEEK 6	iGro; Pleased to Notice Tea break Exercise session	Sleep Tea break Mindful Living; Expert Pt	Flexible - Pt Reflections on vPMP Tea break Exercise session
WEEK 7	Best Hopes final 3 wks &Mindful Noticing Tea break Exercise session	Pain Meds Tea break Mindful Living and Noticing	Communication Tea break Exercise session
WEEK 8	Onward grps egPC+/ML+;Expert Pt networks Tea break Exercise session	Intimacy/Relationships Tea break Breathwork/Mindful Movement	Nutrition incl gut science Tea break Exercise session
WEEK 9	Life after PMP.3rd Sector..Ongoing ex/habits Tea break Exercise session	Q&A Tea break Mindful Living & Noticing	Review & Future; iGro Tea break Exercise session

The service's expert patient group, Pain Clinic Plus, offered unique lived perspectives on potential patient experience, co-developing the new vPMP with clinicians. Consideration was also given to what was already valued about the service's f2f PMP. During the discussions and planning process, potential barriers and challenges arose, but essentially, curiosity was fostered about what might be possible, and a 9 week virtual programme was developed. Figure 2 provides an overview of the content / structure of the pilot vPMP, including live group exercise sessions as well as educative and talking therapy sessions.

The pilot vPMP was facilitated by the CPS multidisciplinary team (clinical psychologist, assistant psychologist, specialist physiotherapists, occupational therapist, pharmacist and GPwSI) and expert patients. Sessions were 3x per week for 2 hours per session (including a 30 min break), for 9 weeks 84 (including a 'break' week). Reflective practice work, participant feedback and outcome data were used to guide delivery throughout, and a solution-focused framework to group work was taken, which firmly places the patient in a position as expert on their life. Rather than rigid delivery of didactic topics, this process allowed sessions to flex around group needs and wishes. Participant expertise was noticed, valued and nurtured, with some sessions purely dedicated to this; other topic areas/sessions were based on modern pain science education, active self management strategies and exercise. Sharry [6] offers a useful explanation of SF group work; also see [4] for more about the Southport and Formby model for PMP.

Personalised patient hopes and changes were captured using a tailored tool – "iGro"[4](developed in-house) and based on solution-focused scaling principles [7], in line with the ethos of the service. Solution focused scaling invites participants to create and work towards a personalised, detailed picture of what 'living well', despite pain, might look like for them. Aspects of the life the individual can 'grow' or develop are measured, as opposed to seeking to measure symptoms of pain. SF scaling side steps some limitations found with more traditional symptom self report approaches. The latter can be limiting as they only serve to re-define problems (eg

aiming to feel less pain), rather than solutions, by default defining 'improvement' in a very narrow way (eg less pain) [8]. Pain self report measures are further limited in that they do not measure pain objectively (pain being unlike other medical indicators that can be more directly tested, eg blood sugar) [9]. Furthermore, it is widely held that drawing attention to pain can exacerbate the pain experience [10]; ie when focusing on (and therefore measuring) pain, pain is influenced. Instead of capturing pain itself, a more objective form of measurement would arguably therefore seek to capture, for example 'what the person is doing now that they weren't doing before'. This SF approach also helps to explore change more creatively, in a 'top-down' way, starting with what the person might want more of, rather than starting with a rating of the problem and hoping this diminishes [8].

As well as drawing on Solution-Focused Brief Therapy, content was also drawn from a wide range of therapeutic modalities including Acceptance and Commitment Therapy, Cognitive Behavioural Therapy, and Mindfulness and Compassion Focused work. Consideration was given throughout to 'life after the programme', with expert patients playing a key role in modelling hope, long term management and community connection. All participants received a manual that included all of the information considered in the sessions, as well as worksheets and links to further information regarding managing chronic pain.

Clinician observations and experiences of vPMP assessment and delivery

Clinicians described an initial sense of trepidation associated with the 'new way of working', but were able to notice personal video conferencing successes with family and friends, and transfer skills to the workplace. Concern was expressed regarding around how to best engender live and interactive delivery over a remote video link using MS Teams (the NHS Trust's permitted platform). However, utilising SF approaches to structure group discussion stimulated meaningful interaction, despite software platform limitations, and clinicians described experiencing a sense of consolidarity and community; of hope; and of ownership and teamwork.

Time and extra facilitators were required to support from both a practical and technological perspective. A 'behind the scenes' instant method of communication/messaging for staff was also invaluable, with frequent MDT-liaison pivotal in relation to enhancing communication and building clinician confidence. vPMP assessment required more time than f2f methods, and delivery took longer; with additional time to 'settle in' required in early sessions to promote social connectedness.

Notable benefits

Virtual working in general during the Covid 19 pandemic led to communication and information sharing between staff and patients becoming easier and more instant. In line with NHS and governance guidance, clinicians could email patients from a dedicated account, and patients were able to email in pictures of materials, and complete outcome measures online. Further, use of internet resources and videos was easy and instant, and not dependent on physical equipment in a group room.

Further considerations

Initial MDT and wider professional networks discussion took place around the ethics, governance and responsibilities of delivering clinical care remotely. Example scenarios included the management of significant patient distress and/or a significant physical health event; and the potential for behavioural avoidance. vPMP assessment work with patients considered potential scenarios and management plans were co-constructed, together with more general guidelines. The guidelines further considered aspects pertinent to VC work from home, including, for example, consent; screen set up (especially for group exercise); privacy and confidentiality. As with f2f group work, co-constructed ground rules proved useful.

Exploring patient preference was fundamental in terms of the virtual offer. A number of patients declined the offer, preferring to continue to wait for f2f PMP. Reasons for this appeared varied, eg not having or feeling confident with technology, not feeling able to dedicate the time due to childcare commitments during lockdown, or feeling that privacy at home would be an issue. Some simply appeared to prefer the more human aspect of f2f work. As the pandemic lengthened beyond many people's expectations, the service found that some patients who previously declined virtual work went on to re-consider. For those for whom technology was a barrier, the service worked closely with a local third sector organisation who were working to enable people to use technology to better engage with their communities.

Patient experiences' of pilot vPMP: a first person account by Susan England

I'd suffered for years with falls, painful sprains and torn tendons associated with joint hypermobility. Severe osteoarthritis in both knees and fibromyalgia caused further problems. Pain was often unbearable and dark clouds of depression constantly hovered. Prior to the COVID 19 pandemic, my GP had referred me to the local NHS PMP.

As the pandemic took hold, hopes of a traditional PMP faded. By surprise, I was contacted about a new virtual PMP. It would be the inaugural programme in my local area. Constant pain and disturbed sleeping patterns had worsened and I sometimes cried all day. Once again I had hope.

I was contacted via phone and video link by various clinical disciplines to assess my hopes and suitability for the course. As it happened, I was enrolled in a virtual writing programme at the time, so technology didn't frighten me. I was assured that there would be an option to go back on the waiting list for a traditional group if I found the virtual course wasn't right for me. The compassion and attentiveness of the clinicians put me at ease, so I made the decision to enrol if a virtual place was offered. An invitation to the group followed, and I looked forward to learning about current pain management theory and techniques for coping with chronic pain, and to hearing from others who suffered chronic pain.

Erratic sleep patterns continued, so I welcomed the realisation I could roll out of bed, bleary-eyed in pyjamas and log onto virtual PMP. Later, I discovered the 'normal' PMP at clinic used to require patients to attend session 3 days a week. Not having a car, I would have either had to depend on often unreliable public transport or pay for taxis. Effort required to shower and dress expends an already limited energy supply. So, it's doubtful I would have been able to fully participate in a conventional course.

Group members slowly developed a bond and formed a Whats App group amongst ourselves to joke, discuss health conditions and everyday life. vPMP sessions invited us to express what we wanted for ourselves and our lives, and we were encouraged to share our successes, however small. We were always treated respectfully by those leading the course and gradually I learned to accept my chronic conditions and realise my chronic pain may never completely vanish.

Regular exercise sessions were difficult in the beginning but over the weeks became easier. I noticed an increase in stamina and have continued to exercise after vPMP to keep myself as fit as possible over the winter. I'm better at pacing myself now and have been able to continue household chores and participate in hobbies I enjoy, and are meaningful to me, such as crafting.

One year on, I continue to use mindfulness and exercise techniques learned on the course, as well as taking time to acknowledge progress I've made toward personal goals. I treasure the love and support of family and friends, and make an effort to regularly meet friends for coffee or a meal. I will be forever grateful for the tools and knowledge gained in the pilot vPMP.

Part 2: vPMP Service Evaluation

Aims and Objectives

The CPS aims to deliver effective, accessible care that helps patients to live well despite pain and to make changes that are meaningful for them. The service was keen to evaluate whether the vPMP would deliver these service aims, and also whether vPMP outcomes would be comparative to previous face to face PMP outcomes. Specifically, the service evaluation objectives were a) to find out the difference vPMP made to patients' self efficacy, wellbeing, pain, function and hopes and b) explore patients' experiences of vPMP from their perspective. Given the paucity of published evidence in the vPMP field, the hope was to present the findings to a wider audience.

Method

Participants

Eight patients with a variety of chronic pain conditions started the 9-week pilot vPMP (July-September 2020). One patient from the cohort discontinued at week 2 for health reasons, and was not included in the analysis. A further 10 patients started and completed the next vPMP (November 2020-January 2021). The drop out rate was therefore 5.5%, with 95% of participants starting and completing the programmes. Data were analysed from a total sample of 17 (12 females and 5 males), who all attended at least 75% of the total vPMP sessions. Patients were diagnosed with a variety of chronic pain conditions (NB multi-morbidities were not excluded) and ages ranged from 24 to 75 years (mean = 49 years). All patients had lived with chronic pain for many years.

The work was defined as service evaluation according to the NHS Health Research Authority decision tool (participants were not randomised to different groups, the evaluation protocol did not demand a change in treatment/care and the findings were not designed to be generalisable or transferable).

Approval for the data to be used for the purposes of a service evaluation was obtained in July 2020 from Lancashire and South Cumbria NHS Foundation Trust Research and Development Team (ID 165). Participants were given information about how, with their consent, their anonymised data would be used for the purposes of service evaluation and possible publication. Participants were made aware that participation in service evaluation was voluntary, that

they would experience the same delivery of service either way, and that they could withdraw their consent at any time during the programme without adverse consequences.

Design

The service evaluation used mixed methods. Alongside standardised pre-post quantitative measures, a personally tailored measure of growth (based on patient 'best hopes') developed by the service - "iGro"[4] was administered. Additionally, qualitative evaluation enabled a more in-depth exploration of participants' experiences of vPMP and its impact, drawing on data from patient completed pre and post experience questionnaires, and from notes made of verbal descriptions of patient experiences during an optional feedback session at week 6. The synthesis of the two sections of the study was undertaken at the time of interpretation of the results.

Standardised Outcome Measures

Outcome measures were digitised and completed by patients prior to the start of the programme, and at week 9 of the vPMP. The measures are used as standard practice in the service and in other pain and long term condition services and are considered to explore the range of domains pain management programmes generally hope to influence. Measures included: Pain Self-Efficacy Questionnaire (PSEQ) [11], Short Warwick–Edinburgh Mental Well-being Scale (SWEMWBS) [12], Brief Pain Inventory (BPI) [13], Sit-to-Stand Test (STST) [14]. The properties of and rationale for using these 251 measures is described in [4]. In addition, the 6-item State Hope Scale (SHS) [15] was administered to the second cohort as a valid self-report measure of goal-directed thinking, with higher scores representing higher hope levels. The outcome measure battery invited participants to check a box if they consented to the use of their data for the purposes of published service evaluation write ups, with all consenting.

iGro

The iGro is displayed as a star - a series of five 0-10cm visual analogue scales (VAS). The tool views the user as the expert on their own life; each scale is labelled by the patient according to the specific area of their life they wish to focus on and develop – their 'best hopes'. Hopes are defined in terms of the presence of something, rather than an absence, with 0 representing their perception of "things at their worst" and 10 representing "things at their best despite pain". Examples provided by patients in this evaluation included 'building confidence', 'doing ballet', 'wrist strengthening', 'building friendships' and 'engaging with hobbies'. Patients rated themselves at the beginning, mid-way and end of the vPMP.

Qualitative Data

From the start of the vPMP and throughout the programme, using SF principles patients were encouraged to think about and notice meaningful change for them eg "what have you been pleased to notice?", as part of their participation in the programme. At week 6, patients' views about the virtual programme were explored through an optional, dedicated group discussion (n=17). Participants were made aware that participation was possible even if they did not wish their comments to be used as part of a written evaluation. All participants consented to the use of their anonymised comments for the purposes of written service evaluation and publication. In addition, anonymised qualitative comments that participants (n=17) attributed to their vPMP experience were collected electronically by survey at the time points of week 4 (mid-programme) and at the final session of the programme, along with the standardised outcome measures. The qualitative survey invited participants to check a box if they consented to the use of anonymised comments for the purposes of published service evaluation write ups, with all consenting. In the survey and group discussion session open questions explored what was useful and good about the programme, as well as what was difficult, and what more useful would look like. Questions were also asked about the difference the programme was making to the person, inviting them to share any changes in themselves and their life. All data were collected prior to analysis by FP (Assistant Psychologist on the programme), who thematically analysed responses according to a six-stage process [16]. Themes were then discussed with RS and checked by SE (a vPMP participant). Thematic analysis was considered to be an appropriate analysis due to its flexibility and theoretical freedom to give an exploratory account of the data [16].

Results

Standardised Outcomes

Excel 2016 was used for handling and analysing the data; data were normally distributed. A series of two-tailed, paired sample t-tests investigated mean differences between pre-vPMP and post-vPMP data for measures of pain self-efficacy, mental well-being, pain intensity, pain interference, function and hope. Table 1 displays the means and p-values for data from each outcome measure pre and post- vPMP. Statistically significant differences were found for self-efficacy, mental well-being, function and hope.

Table 1 Mean changes in self-efficacy, mental well-being, worst and average pain, pain interference, function and hope from baseline (pre-vPMP) to week 9 (post-vPMP)

Measure	*n*	Pre-vPMP	Post vPMP	*p*-value	Effect size
PSEQ [0-60]	17	16.8	26.0***	0.004**	0.72
SWEMBS [7-35] metric	17	17.4	20.3***	0.005**	1.13
BPI *worst* pain [0-10]	17	6.9	6.1	0.07	0.54
BPI *average* pain [0-10]	17	5.7	5.2	0.13	0.31
BPI interference [0-10]	17	6.8	6.2	0.22	0.38
STST	11	13.7	19.0***	0.014*	0.71
SHS	9	22.1	34.5	<0.001**	1.424

vPMP: virtual pain management programme; PSEQ: Pain Self-Efficacy Questionnaire;
SWEMWBS: Short Warwick-Edinburgh Mental Well-being Scale; BPI: Brief Pain Inventory;
STST: sit-to-stand test; SHS: State Hope Scale; MCID: minimal important clinical difference.
*Significant at .05; **significant at .01; ***MCID met (nb no guidance available to ascertain SHS MCID).

Clinical Significance

On the PSEQ, previous research has reported an improvement of 9 points as a minimal important clinical difference (MCID) [17]. The results, therefore, show clinically significant meaningful change post vPMP. The MCID of the SWEMWBS has been estimated at between one and three points difference [18]; using this estimate, vPMP means show clinically significant change. Using a categorical approach derived from UK population samples, the SWEMWBS data suggests participants moved from the "Low Wellbeing" category up to "Average Wellbeing". On the BPI Pain Intensity scales measuring 'worst', 'least' and 'average' self-reported pain scores, clinically significant improvement has been considered to be any change of two points or more [19], and in line with the statistically significant findings, clinically significant change was not found for the BPI data in this evaluation. Minimal detectable change score for the 1-minute STST is described in the literature as an increase of four or more sit-to-stand repetitions [20]. Table 1 shows this minimal detectable change post-vPMP. The authors are unable to identify guidance to ascertain the MCID for the SHS.

Missing Data

N values vary between the measures for several reasons. The SHS was only administered to the second cohort, as it is a new addition to the service's battery of PMP measures. The reality of busy clinical practice, especially at the start of the pandemic with new ways of working, meant that STS data was only recorded for one patient in the first cohort (the assessment process was then improved and prompted better data collection for the second cohort).

iGro

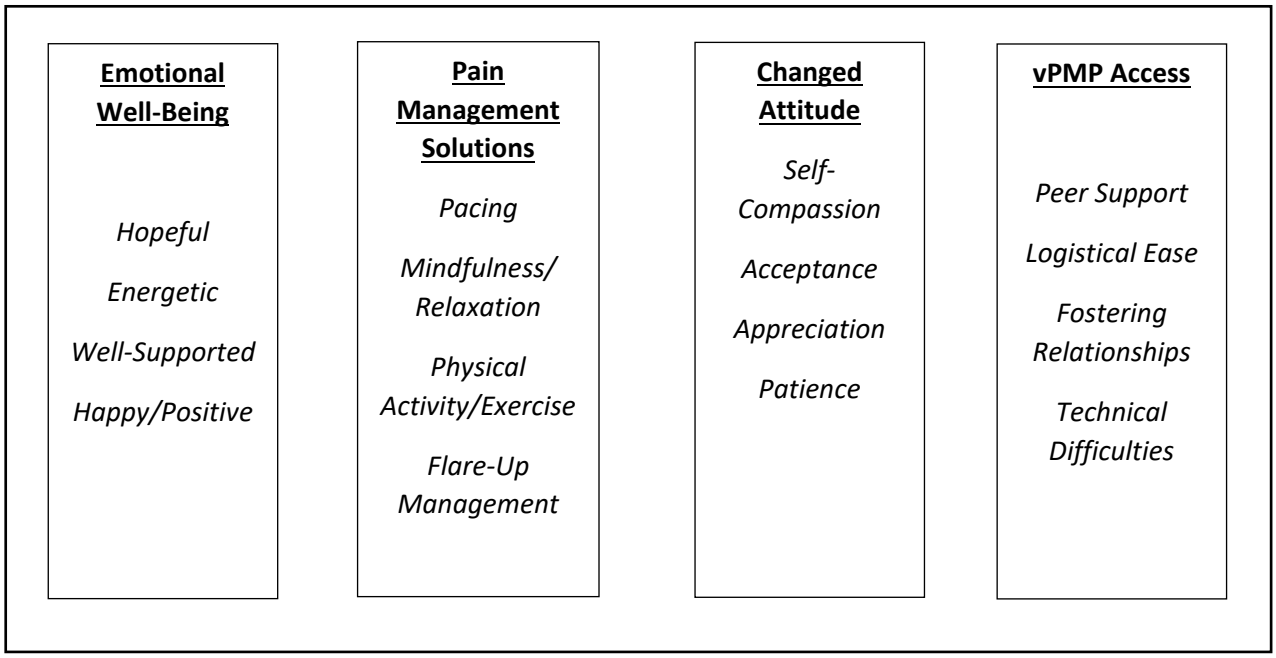
16 participants fully completed the iGro, identifying 79 'best hopes' (usually 5 per person); 70 of which showed growth from week 1 to week 9 (indicating a sense of greater closeness/progression to one's best hopes), 3 decreased and 6 remained the same. 14 out of 16 participants showed an increase in closeness to all or 4 out of 5 of their identified 5 best hopes by week 9. The remaining 2 participants showed a mixed picture of increased closeness in 3 of their 5 areas, with one patient identifying 1 maintenance and 1 decrease; and another patient showing 2 decreases.

As yet unpublished data gathered by the service offers a correlational analysis on iGro data gathered from f2f PMPs in the same service. This indicated that positive changes on the iGro were significantly associated with improvements on PSEQ, WEMWBS and STS, suggesting that increased feelings of closeness to 'best hopes' may be associated with increased mental wellbeing, self-efficacy and function.

Qualitative Reports

Four main themes were identified from the analysis, each of which incorporated four subthemes (Figure 3). Supportive quotes are provided for each theme. The analysis was iterative and led by the data, and no attempt was made to impose a theoretical model on the data.

Figure 3 Thematic Analysis of Participant Responses



Theme 1: 'Emotional Well-Being' captures participants' reporting mainly increased positive emotions such as happiness, enthusiasm and hopefulness despite still experiencing chronic pain and at times difficult emotions. For example, when invited to reflect on what has changed through doing the programme, one participant commented, "I am more positive about doing things I used to, recognising that I am living with my worst fear of being less able but still getting through because of what the programme has taught me and I am more hopeful about life in general". When reflecting on the group aspects of the programme, comparing experiences with other people with pain appeared to generate further emotions for some, with another participant commenting, "I feel guilty because it seems like other people are suffering with more pain than me". For this person, however, this also seemed to lead to an appreciation of their own capability (see also theme 3).

Theme 2: 'Pain Management Solutions' captures participants' actively self-managing chronic pain through the development of physical, psychological and practical skills on the programme. Most of the participants described trialling management strategies that were new to them, including pacing, mindful living, flare-up management and exercise, often reflecting on improved function: "Flare-ups are less debilitating now and I am doing more even on the bad days". Another participant said, "I am doing more and pacing myself which is something my husband has also noticed, and making progress with 23 years of decluttering in my home". Related to these changes, participants appeared to feel more in control of their life and pain: "I have noticed I am able to cope better since I have been doing more exercise and mindfulness which is something new for me".

Theme 3: 'Changed Attitude' captures many participants' describing being more accepting and compassionate towards their pain experiences. In particular, participants reported responding to themselves with greater kindness and patience, during circumstances beyond their control. One participant commented, "I am able to bring kindness to approaching myself, a growing sense of acceptance in allowing the pain to join my party and it being okay that it is there simply because it is, rather than fighting and getting caught up in a struggle with it". Participants also described how they were better able to notice and value aspects of themselves (for example, their qualities, roles) in the context of earlier perceived inadequacies, with another participant commenting, "I feel less of a burden and more of a father".

Theme 4: 'vPMP Access' captures participants' experiences of using a virtual platform to access a pain management programme. Several participants acknowledged being able to circumvent travel, employment commitments and financial implications as a result of the virtual programme. In particular, access to a virtual programme during a national lockdown appeared to ensure that participants had access to local peer support which was recognised and valued throughout the programme; some participants further paired up for walks when lockdowns permitted. One participant said, "We are all walking our own path but we have been

united in our struggles. We have helped each other out in one way or another. I now know I am not alone and not going mad and that the pain is real". However, technical problems with Microsoft Teams were described as an obstacle by some participants, with one person saying, "Most of the difficulties have had to do with the issues with MS Teams. I wish the platform hadn't been so temperamental".

Discussion

This service evaluation suggests that in delivering vPMP, the Community Pain Service has met service aims and objectives in providing effective, accessible care that helps patients to live well despite pain, and make changes that are meaningful for them. In line with existing evaluation work examining f2f PMPs facilitated by the CPS[4], statistically significant improvements were found in patient self efficacy, mental wellbeing, physical function, and in hope (with clinically significant change also identified in the first three domains), despite no statistical / clinical change in pain intensity or interference. These findings are supported by qualitative patient reported improvements in psychological wellbeing, cognitions and affect, self-management skills, and activity and functioning, as well as progress towards personal hopes and goals reported via the iGro. This is very much in line with the aim of PMPs, ie to "shift the clinical agenda away from pain control, toward… allow<ing> individuals to function and live well in the face of ongoing pain" [19] (p. 5).

Furthermore, vPMP participants reported benefit in having control and choice over their energy expenditure and an increased ability to pace that is not typically afforded with f2f clinic attendance, consistent with the NHS 'personalised care' agenda [5] and particularly relevant in the context of pain self management. Virtual delivery enabled timely peer support during the pandemic; and as reported in previous work [4], delivery to a cohort based in a local community better-enabled people to make long standing connections with others living locally with chronic pain. Anecdotally, patients also reported greater confidence in accessing other virtual initiatives after vPMP.

Local outcomes in the context of wider findings

vPMP outcomes appear to align with existing research in the area of wellbeing and pain, for example Iddon et al [22] reported that in a UK persistent pain population, higher levels of wellbeing were predicted by greater levels of positive goal engagement (that is, the extent to which one can identify and pursue meaningful personal goals), and presented tentative evidence for the protective or 'buffering' role of positive goal engagement in enabling individuals with chronic pain to maintain a sense of mental well-being. Hopefulness research indicates that hope is related to optimism, self-efficacy, problem solving, life satisfaction, quality of life and future orientation [15]. Optimism and hope are related to adjustment in individuals with chronic pain [23].

The lack of significant change in BPI rated pain interference / intensity on vPMP is also in line with the recent findings of the NICE NG193 intervention evidence review for PMPs delivered in outpatient/community settings [24]. In terms of the 18 NICE-included mixed chronic pain population clinical studies, for post PMP outcomes (vs usual care) no clinically important difference was found for physical function, psychological distress, pain interference, and pain reduction. Clinically important benefit was found for quality of life and for 4 out of 5 studies which looked at self efficacy. With regards pain self efficacy, the NICE review analysed PSEQ data from 4 studies (n=271), calculating mean self efficacy in control groups as 32.26, increasing to 38.37 in intervention groups. The mean self efficacy (16.8) in the pre-vPMP cohorts reported in this service evaluation was much lower than the control groups in the NICE review, possibly suggesting a more vulnerable starting cohort (although it must be emphasised that this data set has significant limitations, as discussed below).

The high attendance rates and engagement of patients on the vPMPs seems noteworthy (drop out rate for vPMP was a very low 5.5%) . For comparison, Oosterhaven et al [25] conducted a systematic review on dropout in patients with chronic musculoskeletal pain in interdisciplinary pain management settings and found reported dropout rates varied widely, ranging from 10-51%. Careful consideration was given to maximising engagement when developing the vPMP, with various strategies being employed, including careful initial exploration of patient 'best hopes' to ensure a good 'fit' with PMP aims, solution-focused co-development before and during the programme, expert patients modelling hope and live interaction to help to build social connection and engagement (with it being recognised that 'group process' can be a powerful aspect of PMP [26]). It is beyond the scope of this evaluation to definitively ascertain the reasons for high engagement, but taking into account patient and clinician feedback, it seems likely that all of these strategies helped maximise engagement and success. Consistent with this reflection, other researchers exploring patient experiences of PMPs, eg Roach [27] suggest that relationships between group members and between members and staff, and time allowed to give patient feedback can be all important to the success of programmes. Roach also suggests that outcomes should be defined not only in terms of clinical outcomes but also in terms of what is important to the patient.

Methodological limitations and considerations

The findings and observations must be tempered however by the significant limitations to the vPMP dataset and analysis. The vPMPs were delivered in a relatively unusual context of ever changing external circumstances due to the pandemic, with no control group, and the data is practice based and small scale by nature of the newness of this initiative. Time and resource limitations allowed only for brief thematic analysis, rather than more extensive qualitative study. The evaluation did not control for social desirability bias as the clinicians who facilitated vPMP also collected and analysed the quantitative and qualitative data, and authored the work. It could be argued that participants may have wished to please the clinicians. Likewise, clinicians may have been invested in demonstrating a successful service, and may have been biased by their impressions of participants prior to and during the programme. Participants' behaviour may have been influenced through their awareness of being observed and the work being a pilot project. Whilst awareness and reflection were brought to these issues during the project, it remains that all of these factors reduce internal and external validity.

The outcomes from the small scale evaluation reported in this paper would seem to compare favourably in relation to the NICE findings; however it must be acknowledged that in no way would this small, practice based evaluation meet the rigours of NICE inclusion criteria, making it difficult to draw meaningful comparison.

Clinical and research implications

The ecological validity of this paper lends itself to offering clinical implications to consider in future practice. In the experience of the service, co-production with people with lived experience has been an informative and effective process. Despite some technical frustrations at times (for all parties!), vPMP has enabled greater patient accessibility to PMP intervention. In addition to future f2f offers, vPMP will enable greater reach into the community for those unable or unwilling to attend a community clinic. Although virtual assessment processes were found to take longer than f2f work and required greater admin support; there were further clear advantages for the provider too, for example reduced need for clinical space. Future research might explore engagement and processes in further depth, to better understand the excellent low attrition rate.

Conclusion

vPMP allowed a level of service delivery to be possible at a time when virtual working was the only method available. Akin with many other NHS services who swiftly developed virtual offers during the Covid-19 pandemic, the authors conclude that a legacy of greater patient choice will, and indeed should, remain. Whilst not without challenges, tentative findings suggest that vPMP offers a workable remote intervention for patients with chronic pain who are able to (and wish to) access the appropriate technology. Live video conferencing allows human interaction and engagement, and a solution-focused approach (focusing on hopes and strengths) has appeared to lend itself nicely (and safely) to remote working. Despite no change in pain intensity / interference following vPMP, psychosocial wellbeing constructs and physical functioning appear to have shown improvement. More data is required before wider conclusions can be drawn regards effectiveness.

Conflict of Interest

At the time of writing, two authors RS and FP, worked to deliver the vPMP in the service where the evaluation was undertaken and one, SE, was a patient of the service.

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References

1. Scriven H, Doherty DP, Ward EC. Evaluation of a multisite telehealth group model for persistent pain management for rural/remote participants. Rural and Remote Health 2019; 19: 4710.
2. Walumbe et al. PMPs via VC: a rapid review. Scand J Pain 2021; 21(1): 32–40
3. Eccleston C, Blyth FM, Dear BF, Fisher EA, Keefe FJ, Lynch ME, Palermo TM, Reid MC, C de C Williams A. Managing patients with chronic pain during the COVID-19 outbreak: considerations for the rapid introduction of remotely supported (eHealth) pain management services. Pain 2020; May 161(5): 889–893.
4. Simm, R., and Barker, C. Five years of a community pain service solution-focused pain management programme: extended data and reflections. British Journal of Pain 2018; 12(2): 113-121.
5. NHS England (2019) Universal Personalised Care – Implementing the Comprehensive model. Available

at: https://www.england.nhs.uk/wp-content/uploads/2019/01/universal-personalised-497 care.pdf (Accessed 26 Jan 2021)
6. Sharry, J. Solution-focused Group Work. 2nd ed. London: SAGE; 2007.
7. Ratner H., George, E., and Iveson, C. Solution-focused brief therapy: 100 key points and techniques. London: Routledge; 2012.
8. Bray, D., Groves, K., Latham, J., Iddon, J. and Weymouth, E. (2015). 'First, do no harm': a solution-focused approach to pain measurement and management. European Journal of Palliative Care 22(4), pp.190-193.
9. Xu, X., and Huang, Y. (2020). Objective pain assessment: a key for the management of chronic pain. F1000 Research 9(35), pp.1-7.
10. Crombezm G., Van Damme, S., Eccleston, C. (2005). Hypervigilance to pain: an experimental and clinical analysis. Pain 116, pp.4–7
11. Nicholas M.K. Self-efficacy and chronic pain. In: Annual conference of the British Psychological Society, St. Andrews, 4 April 1989.
12. Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J. and Stewart-Brown, S. (2007). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development 512 and UK validation. Health and Quality of Life Outcomes, 5(1), p.63.
13. Cleeland, C.S., and Ryan, K.M (1994). Pain assessment: global use of the Brief Pain Inventory. Ann Acad Med Singapore, 23(2):129-138.
14. Bohannon, R.W. (1995). Sit-to-Stand Test for Measuring Performance of Lower Extremity Muscles. Perceptual and Motor Skills, 80(1), pp.163–166.
15. Snyder CR, Sympson SC, Ybasco FC, Borders TF, Babyak MA, Higgins RL. Development and validation of the State Hope Scale. Journal of Personality and Social Psychology 1996; 70: 321–335.
16. Braun, V. and Clarke, V. (2006). Using Thematic Analysis in Psychology. Qualitative Research in Psychology, 3(2), pp.77–101.
17. Maughan, E.F. and Lewis, J.S. (2010). Outcome measures in chronic low back pain. European Spine Journal, 19(9), pp.1484–1494.
18. Warwick Medical School. Collect, score, analyse and interpret WEMWBS. Available at: https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/using/howto/ (Accessed 16 Mary 2021).
19. Farrar, J.T., Pritchett, Y.L., Robinson, M. et al (2009). The clinical importance of changes in the 0 to 10 numeric rating scale for worst, least, and average pain intensity: analyses of data from clinical trials of duloxetine in pain disorders. J Pain, 11(2), pp.109–118.
20. Segura-Ort , E., and Mart nez-Olmos, F.J. (2011). Test-retest reliability and minimal detectable change scores for sit-to-stand-to-sit tests, the six-minute walk test, the one-leg heel-rise test, and 531 handgrip strength in people undergoing hemodialysis. Phys Ther, 91, pp.1244–1252.
21. Gauntlett-Gilbert, J. and Brook, P. (2018). Living well with chronic pain: the role of pain-management programmes. BJA Education, 18, pp.3-7.
22. Iddon, J.E., Taylor, P.J., Unwin, J., et al. (2019). The role of positive goal engagement in increased mental well-being among individuals with chronic non-cancer pain. British Journal of Pain, 13 pp.230-238.
23. Wright, M.A., Wren, A.A., Somers, T.J., et al. (2011). Pain Acceptance, Hope, and Optimism: Relationships to Pain and Adjustment in Patients With Chronic Musculoskeletal Pain. The Journal of Pain, 12, pp.1155-1162.
24. National Institute for Health and Care Excellence (2021) Chronic pain (primary and secondary) in over 16s: assessment of all chronic pain and management of chronic primary pain [C] Evidence review for pain management programmes for chronic pain (chronic primary pain and chronic secondary pain) NICE guideline NG193 Intervention evidence review April 2021. Available at https://www.nice.org.uk/guidance/ng193/evidence/c-pain-management-programmes-chronic-primary-pain-and-chronic-secondary-pain-pdf-9071987008 (Accessed 22 June 2021).
25. Oosterhaven, J., Wittink, H., Mollema, J., Kruitwagen, C., Devill , W. (2019). Predictors of dropout in interdisciplinary chronic pain management programmes: A systematic review. J Rehabil Med, 51(1), pp2-10.
26. Dargan, P.J., Simm, R. and Murray, C. (2014). New approaches towards chronic pain. British Journal of Pain, 8(1), pp 34-42.
27. Roach, P. (2004). An exploration of the aspects of pain management programmes patients consider important. PPA News; Dec(18), pp.16-26.