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Exploring Patients' Experiences of Internet-Based Self-Management Support for Low Back Pain in Primary Care

Adam W. A. Geraghty, PhD,* Lisa C. Roberts, PhD,† Rosie Stanford, MSc,* Jonathan C. Hill, PhD,‡ Dinesh Yoganantham,* Paul Little, MD,*,[a] Nadine E. Foster, DPhil,‡,[a] Elaine M. Hay, MD,‡,[a] and Lucy Yardley, PhD§,¶,[a]

*Primary Care, Population Sciences and Medical Education, University of Southampton, Southampton, UK; †School of Health Sciences, University of Southampton & University Hospital Southampton NHS Foundation Trust, Southampton, UK; ‡Arthritis Research UK Primary Care Centre, Institute for Primary Care and Health Sciences, Keele University, Newcastle, UK; §School of Psychological Science, University of Bristol, Bristol, UK; ¶Department of Psychology, University of Southampton, Southampton, UK

[a]Senior investigators

Correspondence to: Adam W. A. Geraghty, PhD, Primary Care, Population Sciences and Medical Education, Aldermoor Health Centre, Aldermoor Close, Southampton, Hampshire SO16 5ST, UK. Tel: +44-2380241051; Fax: +44-2380701125; E-mail: a.w.geraghty@soton.ac.uk.

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Abstract

Objective. We explored patients' experiences of using Internet-based self-management support for low back pain (LBP) in primary care, with and without physiotherapist telephone guidance. **Design**. Exploratory descriptive qualitative study using thematic analysis, nested within a randomized feasibility trial. **Methods**. Patients with LBP who participated in a feasibility trial of the SupportBack Internet intervention (ISRCTN: 31034004) were invited to take part in semistructured telephone interviews after the three-month intervention period (a convenience sample from within the trial population). Fifteen participants took part (age range = 36–87 years, 66.7% female, characteristics representative of the trial population). Data were analyzed thematically. **Results**. Analysis resulted in the development of six themes (subthemes in parentheses): Perceptions of SupportBack's design (Clarity and ease of use, Variety and range of information provided, Need for specificity and flexibility), Engaging with the SupportBack intervention, Promoting positive thought processes (Reassurance, Awareness of self-management), Managing behavior with SupportBack (Motivation and goal setting, Using activity as a pain management strategy, Preferences for walking or gentle back exercises), Feeling supported by telephone physiotherapists (Provision of reassurances and clarity, Physiotherapists are motivating), Severity and comorbidity as barriers (Preexisting condition or severity acting as a barrier, Less useful for mild low back pain). **Conclusions**. The Internet intervention SupportBack appeared to feasibly support self-management of LBP. Reassurance and ongoing support to implement behavioral changes were central to reported benefits. The addition of physiotherapist telephone support further enhanced the patient experience and the potential utility of the intervention.

Key Words: Back Pain; Behavior; Low Back Pain; Telehealth; Psychology; Primary Care; Physical Therapy

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Introduction

Self-managing and remaining physically active are now the principal recommendations for nonspecific low back pain (LBP) [1,2]. International LBP guidelines for primary care consistently recommend providing evidence-based behavioral strategies above pharmacological or surgical interventions [1], the latter having limited evidence of effectiveness and exposing patients to greater risk of harm [3,4]. With a lifetime prevalence of LBP as high as 85% [5], there is a critical need to examine how strategies that promote self-management and physical activity can be effectively implemented.

The process of self-management is complex. It requires an individual to draw on self-regulatory resources to affect the behavioral, cognitive, and emotional changes necessary to improve or maintain health [6]. In the case of LBP, patients may need support to learn and apply evidence-based self-management strategies, such as maintaining physical activity, in the context of their pain. Within primary care, general practitioners (GPs; family physicians) are unlikely to have the time or the training to support effective behavioral management [7]. Access to NHS services in the UK such as physiotherapy is often variable and can be limited [8]. Therefore, primary care practitioners need to be able to provide accessible, rapid self-management support for those experiencing LBP. This is now particularly important, as guidelines [2] recommend trying to avoid using common medications for LBP in the first instance: Paracetamol alone is no longer recommended [3], and routine use of opioids is not recommended due to small benefits and substantial risks, including overdose and dependence [9].

Internet interventions are typically structured behavioral programs that provide tailored advice and support online [10]. They have the potential to deliver evidence-based, self-management advice that can be accessed widely and immediately by those with LBP. Nicholl et al. [11] recently conducted a systematic review of digital support interventions (including Internet interventions) for LBP. They found substantial heterogeneity and relatively weak evidence of effectiveness; however, the authors also stated that ongoing, as-yet unreported trials had more consistent outcome measures and were likely to yield more useful information [9]. One such trial was the SupportBack feasibility trial [12,13]. This trial explored the delivery and acceptability of an Internet intervention named "SupportBack" with and without additional telephone physiotherapist support compared with usual treatment for patients with LBP in primary care settings. Initial quantitative analyses indicated that the trial design and intervention delivery were feasible, and data suggested the potential of the supported Internet intervention in improving LBP-related function (e.g., day-to-day activities restricted by LBP). The full quantitative findings are presented in Geraghty et al. [12].

Although quantitative data within feasibility trials are useful in determining whether key feasibility outcomes have been met, qualitative studies are important to provide an understanding of patients' experiences using and engaging with the intervention [14]. In this nested qualitative study, we aimed to explore patients' experiences of using the SupportBack Internet intervention, both with and without physiotherapist telephone support.

Methods

Design

We conducted a qualitative descriptive study [15] employing qualitative interviews with thematic analysis informed by Braun and Clarke [16] and Joffe and Yardley [17].

Participants/Recruitment

Participants were recruited to be interviewed as part of a feasibility trial of the SupportBack Internet intervention for LBP (see Geraghty et al. [12,13]). To be eligible for the trial, primary care patients needed to have LBP documented in their medical notes by their primary care physician, have current LBP, have access to the Internet, and be over 18 years of age. Current LBP was defined as LBP within the last two weeks; it could be acute, persistent, or recurrent. Patients were excluded if they had clinical indicators of potentially serious spinal pathology ("red flags"). The follow-up period for the feasibility trial was three months. Patients were recruited to be interviewed after they had completed their three-month follow-up assessments. A purposive sampling frame was used initially to identify patients to be interviewed (including age, gender, and LBP severity); however, due to the relatively small sample size allocated to the intervention arms (N = 58) and likely nonresponse, we moved to a strategy where all intervention patients were contacted via e-mail and invited to take part in the nested qualitative study (a convenience sample). Ethical approval for the study was granted by a local NHS Research Ethics Committee (Ref. 13/SC/0202). Interviews were conducted between October and December 2015.

Intervention

The SupportBack intervention was designed to support patients to self-manage their LBP, with physical activity as a key behavioral strategy. This approach was based on the evidence of the effectiveness of physical activity for LBP [18] and on UK NICE LBP guidance recommending advice to self-manage and remain active [2,19].

The structure of the intervention can be seen in Figure 1. SupportBack essentially supports patients through a self-tailored, six-week self-management program. Once patients sign up as users, they are able to select from a list of "gentle back exercises" or a walking program and are encouraged to set weekly goals for their

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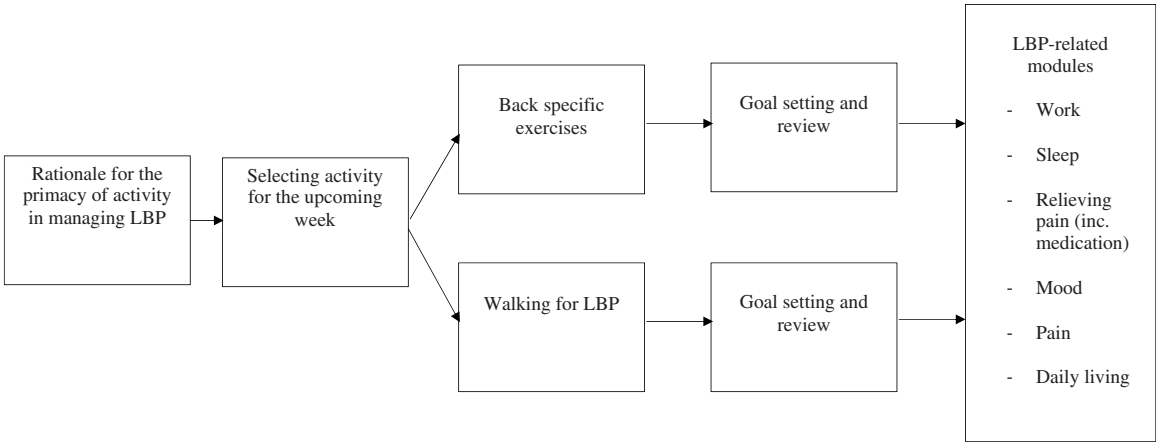

Figure 1. Summary overview of SupportBack structure.

chosen activity. When they are prompted to log in again and complete the subsequent session, they are invited to review their progress. Users receive different feedback and advice depending on whether they have reported meeting or missing their goals. After each review, users select a different back pain–related module to view, including mood, sleep, managing flare-ups, medication, and work. These modules build into a resource that can be accessed along with set goals at any time [13].

The physiotherapist telephone support is described in detail elsewhere [13]. Briefly, patients who were randomly allocated to this treatment arm received (in addition to the SupportBack Internet intervention) three telephone calls (first 30 minutes, second 15 minutes, third 15 minutes; up to an hour in total) from a musculoskeletal physiotherapist. The calls were designed to primarily provide reassurance, address concerns, problem-solve, and encourage continued engagement with the intervention and physical activity goals. To standardize support, a manual was used, and calls focused on LBP specifically.

Theoretically, we drew from social cognitive theory [20,21], self-regulatory theory [22], and self-determination theory [23]. The first two approaches influenced the nature of SupportBack's content: Increases in self-efficacy were targeted through modeling activity, using both videos on how to perform activity and stories from patients who had successfully managed their pain by remaining active. Performance exposure was targeted through encouraging self-practice of graded activity, and persuasion through the provision of rationales for the effectiveness of activity for low back pain. Self-regulatory theory guided the central goal-setting component of the intervention. Users were supported by the intervention to set appropriate goals, were provided with guidance regarding the goal-related behavior, were supported to self-monitor, and received performance-related feedback. Self-determination theory was primarily applied to the delivery of this material: Autonomous motivation was targeted through the provision of choice, as patients chose activities they preferred and set their own level for performance. We also ensured that the tone of the language used was nondirective, and reasons were provided for all suggestions. The aim was to support internalization, enabling patients to make their own informed choices to engage in various behaviors, rather than doing so primarily because they were instructed to by the intervention (see Figure 2 for a logic model).

The Person-Based Approach (PBA) was drawn on to ensure that the evidence- and theory-based content was applied in a way that was persuasive, interesting, engaging, and accessible [24]. The PBA guides the systematic application of qualitative methods to intervention development, ensuring that the intervention is grounded in a rich understanding of the psychosocial context of users [25]. In developing the content of the SupportBack intervention, a separate phase of iterative qualitative interviews was undertaken with 22 people with LBP (15 from primary care settings and seven from a community back pain support group). In an illustrative example from the open in-depth element of these development interviews, participants discussed how difficulties with motivation were key when previously attempting to self-manage their LBP. This indicated the importance of motivation as a target for SupportBack. In the think-aloud [25,26] interviews, participant perspectives were incorporated to modify the application of techniques. Goal setting was one such example; participants consistently reported that a wider range of goals was needed to support greater choice to ensure that this technique was inclusive and did not inadvertently lead to disengagement. Think-aloud interviews continued in iterative blocks, enabling refinements to be made to the intervention following each iteration.

Interviews

Semistructured telephone interviews were conducted with participants in the Internet intervention arms of the study in their homes and were audio-recorded (using an Olympus DS-50 digital audio recorder) by the trial senior

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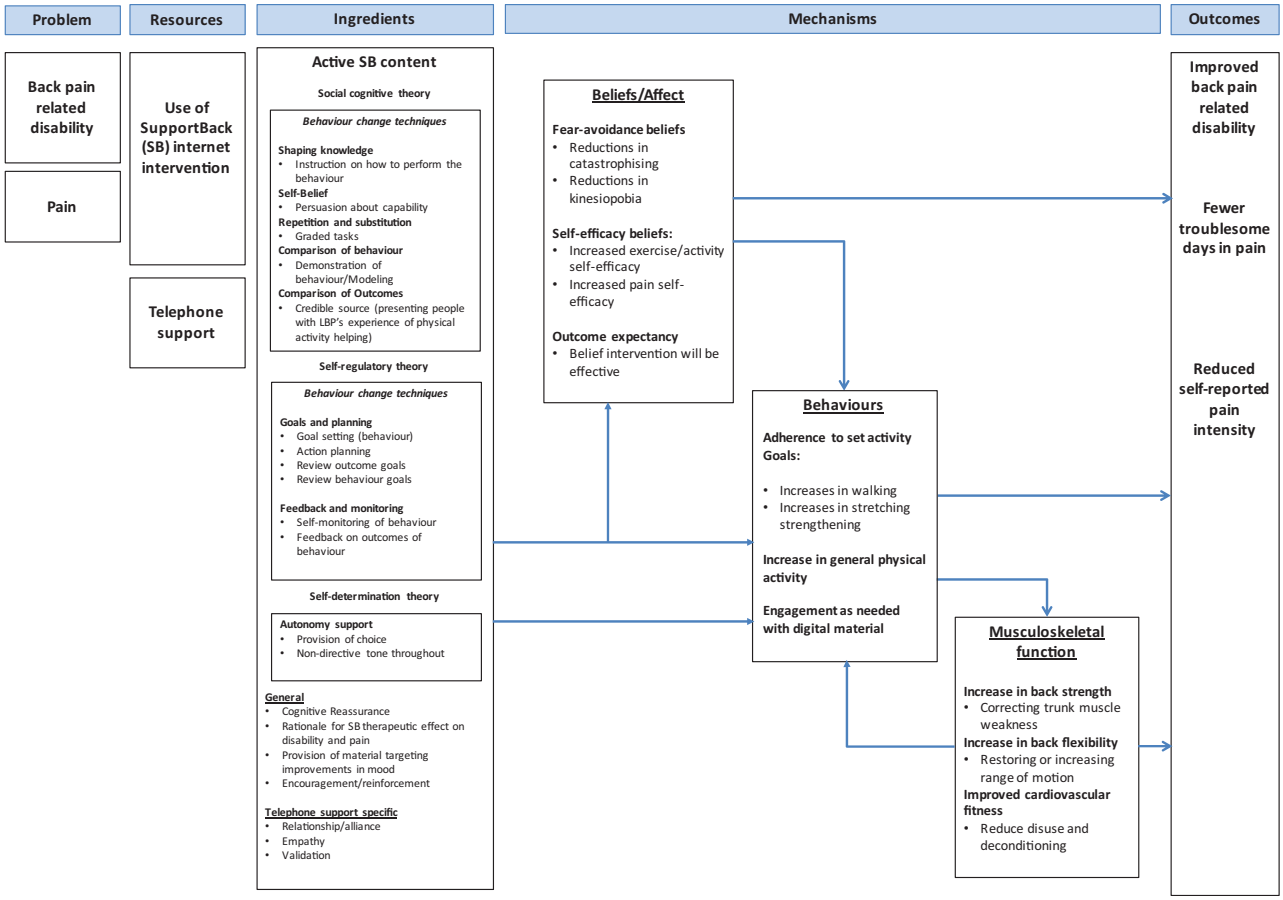

Figure 2. Logic model for the SupportBack intervention.

research assistant (RS, trained in qualitative interviewing [MSc]). RS had brief telephone contact with participants before the interviews as part of the trial procedures. The interviews focused on participants' broad experiences of using the Internet intervention to manage LBP, including their perceptions of the intervention, the impact of the intervention on activity, and perceptions of physiotherapist telephone support for those in that arm. Interviews ranged in duration from 11 minutes to 32 minutes (see the Supplementary Data for the topic guide developed by AG with input from LY and agreed upon by the team).

Analysis

Interviews were transcribed verbatim, and transcripts were read and reread by AG and DY. Analysis was conducted thematically, drawing on aspects of the approach outlined by Braun and Clarke [16] and Joffe and Yardley [17]. AG and DY initially developed codes from independent readings of all the transcripts, from which a coding frame/manual was agreed upon, and themes developed (see Table 1 for a coding example). AG led the development of themes through the identification of patterns and overarching groupings of codes. Within- and between-participant inconsistencies and contradictions were identified and considered when developing subthemes and themes. Throughout the analysis, a data-driven approach was used to generate themes. Paper and digital memos were kept throughout. LY and LR provided input into themes and interpretations in the drafting of the analysis, with agreement from all members of the team. NVivo 11 for Mac was used to manage data, and pseudonyms have been used to maintain anonymity. The sample was judged to provide sufficient information power [27]; it was diverse, clear, and detailed, representing a range of experiences with the intervention. AG is a research psychologist and a mixed methods researcher, LY and LR are senior qualitative researchers (Professors of Health Psychology and Musculoskeletal Health, respectively). DY was a medical student at the time of double-coding under the supervision of AG. All other members of the team have experience in contributing to or leading qualitative health research.

Results

Fifteen trial intervention participants responded (25%) and agreed to be interviewed, seven from the Internet intervention + usual care arm, eight from the Internet intervention + telephone support arm + usual care. The resulting sample had a broad range of reported

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Table 1. Coding example

Theme	Example Subtheme	Example Codes	Example Data Excerpt
Feeling supported by telephone physiotherapists	Physiotherapists are motivating	Provided accountability	So, okay I need to keep doing this. And I think there was an element of that with the phone calls as well because you want to be able to say, "Well no this is working and this isn't or I'm having a bad week and I'm having a bad week because I've tried, but that hasn't been my week." If I didn't have those phone calls, it's much easier to give up! (Debbie)
		Supported realization that you can manage	I think it [telephone physiotherapy] makes you focus on the pain, as in, it makes you realize it doesn't have to be—it's something that you can manage and should manage, as opposed to saying, I've got back pain and don't do anything. (Rebecca)
		Knowing they would phone motivated	I knew that I was supposed to be doing. . .. Well, I think as well the fact that I was going to be phoned up as well makes it that, well, I can't have done nothing to help myself. (Victoria)
		Website alone would not have been enough	I think if it had just been the website alone it may not have been enough. I may have needed that prompting, and I needed somebody to phone me up and having somebody go, "You know you're doing really well," that's really nice to hear. (Debbie)

LBP-related disability (Roland Morris Disability Questionnaire [RMDQ] scores) at baseline, a range of ages, and gender was relatively balanced. Participant characteristics are shown in Table 2. In comparison with the full feasibility trial sample (FTS) intervention groups (see Geraghty et al. [12]), this qualitative subsample (QSS) was comparable: mean age (SD): FTS = 56.2 (12.7), QSS = 59 (14.6); percent female: FTS = 64.3%, QSS = 66.7%; baseline mean RMDQ (SD): FTS = 7.1 (4.6), QSS = 6.8 (5.0); three-month follow-up mean RMDQ (SD): FTS = 5.5 (4.8), QSS = 5.9 (4.0). Additionally, use of the intervention was broadly similar; 87% completed at least session 1 (the core session) in the current QSS, and 80% completed at least session 1 in the FTS sample. A sample size of 15 was appropriate, drawing on Malterud et al.'s [27] concept of information power, whereby smaller sample sizes are considered appropriate when a specific sample is asked about a specific phenomenon or experience (e.g., use of the SupportBack intervention).

Findings

Six themes were developed through the analysis (subthemes in parentheses): a) Perceptions of SupportBack's design (Clarity and ease of use, Variety and range of information provided, Need for specificity and flexibility), b) Engaging with the SupportBack intervention, c) Promoting positive thought processes (Reassurance, Awareness of self-management), d) Managing behavior with SupportBack (Motivation and goal setting, Using activity as a pain management strategy, Preferences for walking or gentle back exercises), e) Feeling supported by telephone physiotherapists (Provision of reassurances and clarity, Physiotherapists are motivating), (f) Severity and comorbidity as barriers (Preexisting condition or severity acting as a barrier, Less useful for mild low back pain). Each theme and related subtheme is discussed below. A diagram of the themes and their relationships is presented in Figure 3.

Perceptions of SupportBack's Design

Clarity and Ease of Use. The majority of participants reported finding the intervention easy to use and clear, valuing the simplicity of the design and navigation system. Participants commonly appreciated the volume of the material, commenting that it was presented in manageable "pieces."

> There's lots of information there that you don't get overloaded with it. You can pick the pieces you want to look at, and each page contains a succinct short piece of information behind which you can delve into more about it should you so wish. (Kate, 67, Internet Intervention, RMDQ = 4)

> I found the website, for me, quite easy to negotiate and that sort of thing. Yes, I didn't find any real problems with it at all. I found it quite interesting. (Mark, 67, Internet Intervention plus Telephone Support, RMDQ = 11)

Variety and Range of Information Provided. A prominent aspect of the intervention was a module menu. The menu enabled users to select from a wide range of LBP-related topics, from sleep, to mood, to occupational issues. This range of strategies was seen to be positive by some of the participants. Kate (quoted below) suggested that the intervention helped her acknowledge the benefit of a multifaceted approach to self-management:

> Well I suppose the variety. It wasn't just you should be active. There were reasons behind and the self-awareness. I think it's complete. Maybe I haven't thought about how back pain can be looked at from more aspects, because I have had help over many years like physiotherapy and the rest of it, but it's all bitty isn't it? On this website it

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Table 2. Participant characteristics

Characteristic	No. (%), Median (IQR), or Mean ± SD
Female	10 (66.7)
Age, y	59.8 ± 14.6
Marital status	
Married/partner	12 (80.0)
Single	2 (13.3)
Divorced/separated	1 (6.7)
Widow/widower	0
White ethnicity	14 (100)
Age left education, y	18.0 ± 3.0
Left education before degree	11 (64.7)
Employment status	
Full-time	4 (26.7)
Part-time	3 (20.0)
Retired	6 (40.0)
Self-employed	1 (6.7)
Not working due to disability	1 (6.7)
Other	0
Income, annual income in GBP, up to:	
£10,000	1 (7.1)
£20,000	1 (7.1)
£30,000	5 (35.7)
>£40,000	7 (50.0)
Median days of pain in the last 4 wk (IQR)	10 (3–28)
Time since you had a whole month without pain	
<3 mo	3 (20.0)
3–6 mo	0
7–12 mo	4 (26.7)
1–2 y	3 (20.0)
3–5 y	0
6–10 y	4 (26.7)
>10 y	1 (6.7)
Back-related physical function (RMDQ) at baseline	6.8 ± 5.0
Goals set in intervention	
Walking	1 (6.7)
Gentle activity	1 (6.7)
Combination of walking and gentle activity	13 (86.7)
Modules chosen	
Work	5 (33.3)
Sleep	9 (60)
Daily living	9 (60)
Mood	8 (53.3)
Reliving pain	12 (80.0)
Flare-ups	8 (53.3)

IQR = interquartile range; RMDQ = Roland Morris Disability Questionnaire.

> covers all the different aspects, not just what to do with your body. Some of it is to do with your mind as well. (Kate, 67, Internet Intervention, RMDQ = 4)

> I particularly liked the extra bits at the end [Module menu]. You had all the extra little boxes, and the extra little tips that I particularly liked. I wasn't expecting them. (Suzanne, 44, Internet Intervention, RMDQ = 8)

Need for Specificity and Flexibility. A small number of participants discussed how they would have liked the intervention to have been more specific to their needs. Additionally, the intervention asked people to choose from walking or gentle activity goals each week (users were not able to select both in one particular week); patients suggested that they would have liked to have some further functionality to mix these within one session.

> The only criticism I had of the website was a lot of it was in very general terms and wasn't specific enough to identify the problem without knowing the individual and the individual's lifestyle. I think you need to know more information. For example, I don't think you asked me about lifestyle or diet. (David, 87, Internet Intervention, RMDQ = 12)

> I hadn't realized it was a choice, you could only do one or the other, and then you can't see down the other route, so initially I chose exercises and then I was like, ooh, can I add a bit of walking in, and you couldn't then see that on the site. But that was fine. I cottoned on to this, and so the next time I chose walking and was able to do that bit. (Jane, 36, Internet Intervention plus Telephone Support, RMDQ = 10)

Engaging with the SupportBack Intervention

The majority of participants reported weekly use as recommended by the intervention, using the weekly e-mails as a trigger to log in and work through their next session.

> Well I received the information from the website. I don't know that I did anything immediately. But the next day I would go through the website and tick off or do the exercise or do the walking, etc. I would continue to do that for a week until I got the next set of instructions. And then the same thing would happen again. (David, 87, Internet Intervention, RMDQ = 12)

Some participants discussed engaging more thoroughly and frequently with the earlier sessions of SupportBack. They returned to use the digital component of the intervention less as time went on, describing how they had engaged with what they felt they needed to or how their pain had reduced over time, lessening the need for use.

> I think the access is easy, yes, so it was I could go to it at any time and pick whatever topics I needed and actually once I'd used it for a few weeks I actually didn't need to go back to it too much because it sort of implanted it in my brain what I needed to do. So it helped me psychologically. (Polly, 47, Internet Intervention, RMDQ = 3)

Promoting Positive Thought Processes

Many participants talked about how the intervention positively affected the way they thought about LBP and its management. The two central areas discussed within this theme were reassurance and increased awareness of self-management.

Reassurance. It was common for participants who accessed both the supported and unsupported Internet intervention to talk about the importance of reassurance

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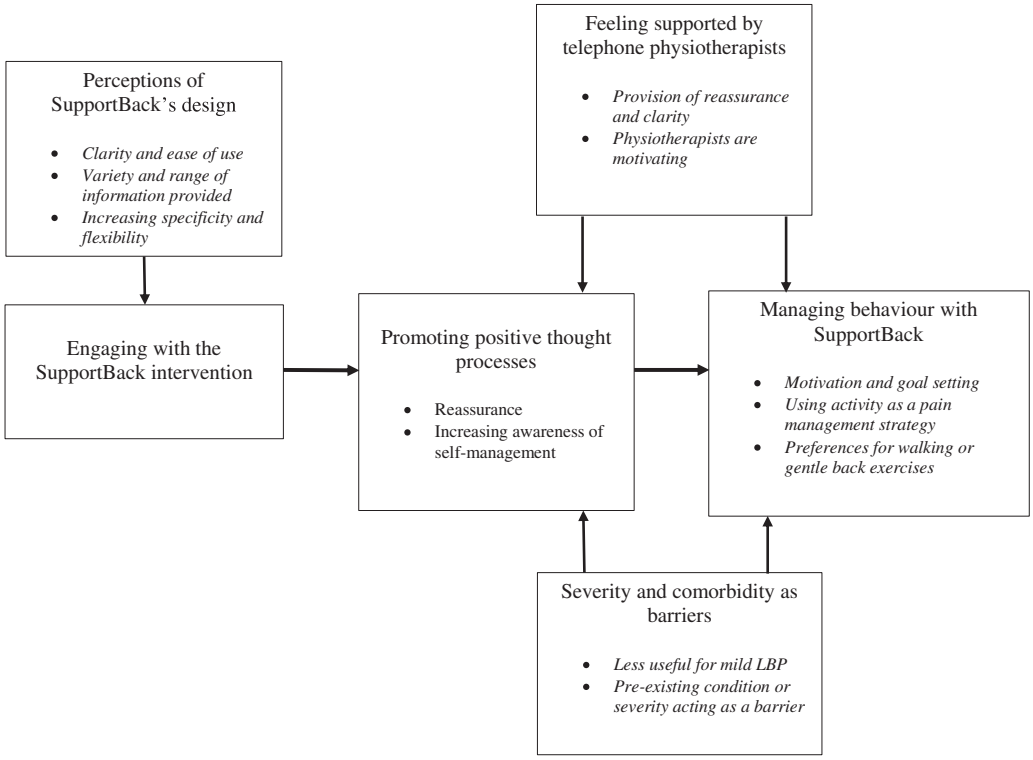

Figure 3. Schematic of developed themes.

when reflecting on their experience. Participants spoke about reassurance in terms of having an accessible resource that they could go back to when they were having a "rubbish day," as well as reassurance regarding the specific use of activity to manage their LBP. Specifically, some participants described how the intervention reduced the fear related to discomfort that may occur when engaging with activity for LBP.

> When I found the information I was looking for, it helped a lot, and the comments on there about you feel quite normal. That's reassuring because otherwise you get into a bit of a cycle of, "I'm doing this exercise and actually I'm feeling a bit worse than I was before," but actually when you read these things and see that that's not unusual to be feeling that, that's quite a reassuring thing. (Debbie, 39, Internet Intervention plus Telephone Support, RMDQ = 2)

Awareness of Self-Management. As well as discussing feeling less fear, it was common for participants to suggest that the intervention highlighted the centrality of self-management for their LBP, bringing it to mind, and keeping it in awareness. This appeared to help with their plans to engage with and maintain their chosen physical activity.

> It made me less afraid of doing stuff. I think that's the main benefit of it, the fact that it just brings it to the forefront of your mind all the time, and so when I got the e-mail saying you can go on and look at your next sessions, I'd go and do that, and then I'd go, oh, yes, okay, right, making sure I'm doing this, and it sort of peters off toward the end of the week, and then you're like, okay, come on, let's do this again. (Jane, 36, Internet Intervention plus Telephone Support, RMDQ = 10)

> Well it's brought it to the forefront of my mind again, what else I could do to help myself. (Kate, 67, Internet Intervention, RMDQ = 4)

Managing Behavior with SupportBack

The majority of participants discussed the overt impact that the intervention had on their self-management behaviors. This theme contained subthemes relating to motivation and goal setting, as well as the process of engaging with physical activity, particularly how activity was used as a pain management strategy.

Motivation and Goal Setting. A number of participants discussed how SupportBack motivated engagement in specific activities suggested in the intervention (back exercises or walks) and physical activity more generally. Some participants referred specifically to the importance of prompting as part of the intervention, seemingly supporting them in goal maintenance. Others highlighted the importance of the suggested weekly time schedule, motivating them to complete their goals within the week.

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> I pushed myself to get a lot out of it, and I pushed myself to get more out of it, but saying that if it hadn't been for the e-mail prompting me that you need to go on and do the next bit, that gave me the push to keep going as well. If it had just been a website that I was given access to without those prompts, I don't know if I'd have got as much out of it as I did. But it's because you're getting those e-mail prompts it's pushing you to continue. (Debbie, 39, Internet Intervention plus Telephone Support, RMDQ = 2)

Some participants discussed the benefits of having flexibility to set and amend particular goals over multiple sessions. Participants described gradually increasing goals week to week, so as to avoid unrealistic targets. Additionally, having the distinct goals set was discussed as a driver of behavior, seemingly creating a form of accountability.

> Again, I think it was down to my own discipline, because I chose to, where it gave you more or less, not the examples but the things to work on, as far as you could choose what exercises to do to help you, and you could also then either adjust the exercises up or down or stick where you are with them, as far as the number of types of movement you were doing each night. . . . It was to help you, but it was up to the individual to work with it. If you didn't bother, then you're obviously not the sort of person that would get much out of it, but I think, because in a way it helped and made you perform with it. (Mike, 62, Internet Intervention, RMDQ = 2)

Using Activity as a Pain Management Strategy. The majority of participants described how they had engaged with activity to manage their LBP. Some participants described walking more, and the benefits perceived after "just getting moving"; others described stretching and twisting after noticing discomfort when sitting. Thus some used the activity suggestions in the intervention in a "reactive" way, using particular exercises when they experienced pain. Others discussed implementing activity on a more regular basis, as a regime.

> One of the main things that I took away from it is not to sit there. Don't just sit there; keep moving and get on the floor and do a couple of those exercises. So it's helped my back in that respect, as in, if I've done a lot or been in the car a lot and it's really hurting, before I might have just took some painkillers and sat in the chair. Now I think, ah no; actually, I will do some stretching, because that's going to help it. (Rebecca, 50, Internet Intervention plus Telephone Support, RMDQ = 7)

It was common for participants to discuss the self-reinforcing nature of the activities they tried, with Rebecca suggesting that the exercises had stayed with her "purely because they worked." Others discussed the benefits as being unexpected.

> I think it was reassuring that, "Yes, go ahead and do it, keep moving, keep exercising even when it's really bad," because first thing is to think sit down and collapse, and rest it. The website really says you've got to keep moving and keep going, and sometimes had to really hard and really painful, but then often once I got moving then it would ease up again. So what I found is actually, if my back's feeling particularly painful, is I make sure I go for a walk and get it moving, because often it would be easier afterwards. It's like the opposite of what you'd expect it to be really. (Sarah, 52, Internet Intervention plus Telephone Support, RMDQ = 17)

Preferences for Walking or Gentle Back Exercises. Participants differed in their preferences for either form of activity supported in the intervention, walking or "gentle back exercises." These preferences were often based on their past experiences of how the suggestions had affected their pain, highlighting the importance of supporting variety; participants could select the activity they felt was right for them, fostering autonomy.

> I've had all those exercises before that you put up there years ago, and it didn't do me any good. My back got worse doing them, but it was interesting to see what you said and the exercises you have given, but what did help me was the walking and I walk more and more each time. So though I couldn't do the exercises, I did do all the walking, and also it's made me think about my back more and I'm now starting to go swimming. (Juliet, 76, Internet Intervention, RMDQ = 7)

> I think, for pain relief, the back exercises are good, because walking actually makes my back hurt. (Rebecca, 50, Internet Intervention plus Telephone Support, RMDQ = 7)

Feeling Supported by Telephone Physiotherapists

Provision of Reassurances and Clarity. The majority of participants who received the Internet intervention with additional telephone calls from a physiotherapist talked about feeling reassured by their remote contact with a physiotherapist. Rebecca described the importance of "actually speaking to someone," and that was preferred compared with online communication. Other participants often described it as a "backup" to the Internet intervention, which enabled them to clarify any elements of the online suggestions they were unsure about.

> I don't think there was anything I didn't like because if he didn't get hold of me, he would ask me when it would be convenient for him to phone. So it wasn't an intrusion in any way. He was supportive. I don't think there was

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> anything negative about it, actually. I felt that it was a back-up to it, so it did help. (Rebecca, 50, Internet Intervention plus Telephone Support, RMDQ = 7)

Physiotherapists Are Motivating. Some participants discussed how they found the additional support motivating, both through the encouragement received in the calls and through accountability, the knowledge that there would be regular physiotherapist contact. Some described how it would have been easier to give up and disengage without the physiotherapist contact.

> So it really helped to pick me up and actually having someone talk. Physio phoned up and spoke to me a few times, and that was really, really helpful, because it's really encouraging that, "No, it's all right keep moving, keep going." (Sarah, 52, Internet Intervention plus Telephone Support, RMDQ = 17)

In comparison with discussion of the digital aspect of the intervention and participants' perceptions of engaging with activities, for some participants, the description of their experience of the physiotherapist support was relatively brief:

> That was good, yes. Well it's sort of encouraging. It gives you a chance to speak to somebody about it. (Paul, 69, Internet Intervention plus Telephone Support, RMDQ = 13)

Although the majority reported that they had found the physiotherapy support useful, one participant, Jane, described how she felt the addition of telephone support had not really impacted her experience:

> It was nice to have that talk and feel that you weren't just sort of alone to do this, and that you could check certain things. Yes, but I don't know if it particularly made a major difference to anything I was doing. I think I would still have followed the SupportBack website just the same. (Jane, 36, Internet Intervention plus Telephone Support, RMDQ = 10)

Severity and Comorbidity as Barriers

Preexisting Condition or Severity Acting as a Barrier. Some participants found the intervention less helpful for their LBP due to other health conditions that were concurrently ongoing at the time. Participants discussed stroke, fibromyalgia, and chronic obstructive pulmonary disease as conditions that affected the benefit they felt they received.

> It's been no different, but simply because I've got so many other problems going on, so it's not through lack of problem with the website, it's just from my fibromyalgia and chronic pain as well. (Suzanne, 44, Internet Intervention, RMDQ = 8)

> I thought it was very good for people that weren't as bad as I am, but having said that, it did jerk me into doing some walking which I wasn't doing before. (Juliet, 76, Internet Intervention, RMDQ = 7)

For these participants, their comorbidities, and importantly their perception of their comorbidities or severity, appeared to limit their engagement with the intervention.

Less Useful for Mild Low Back Pain. A small number of participants described low levels of pain and reported finding the suggestions too simple. For instance, Judy would have appreciated aspects that were more challenging:

> Maybe because I wasn't suffering it was very simple, very basic exercises: walking, for example. I appreciate someone with a very, very, very bad back would have benefited from that and some of the sort of sitting exercises, and just things like that. Some of the exercises for me were a little bit simplistic. For people who are recovering that maybe were able to walk, some slightly more, not intense because obviously you don't want to make it worse, but some slightly harder exercises to challenge the muscles in your back may have benefited, if that makes sense. (Judy, 53, Internet Intervention, RMDQ = 1)

Discussion

Determining how best to support behavioral self-management for LBP is a priority. Internet interventions have the potential to help patients initiate and maintain beneficial behaviors beyond health care consultations in their day-to-day lives. The aim of the present study was to explore participants' experiences of using an Internet intervention to manage LBP in a primary care context. Based on our findings and descriptive themes, the provision of the SupportBack Internet intervention appeared to be a feasible way of supporting self-management of LBP. The intervention seemed to increase the salience of self-management and the key role for activity while providing reassurance. The range of goals with prompts and reminders helped with the implementation and reported maintenance of behaviors. For some, the apparent effectiveness of the recommended approach provided the reinforcement to support continued behavior change. For a smaller number, barriers such as comorbidities, high perceived severity, or low relevance due to mild LBP, led to less reported engagement and perceived benefit. The physiotherapist telephone support appeared to add additional reassurance and motivation for those in that arm.

For Internet interventions to be effective, engagement is critical, ensuring exposure to relevant advice and appropriate behavior change techniques [28,29]. For initial engagement, our findings suggest the importance of presenting rationales and behavior change techniques concisely and clearly, as well as the necessity of ease of use. Participants discussed the usefulness of short "pieces" of information that could be expanded if needed and finding information easy to "negotiate," all of which are

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likely to build confidence in continuing to use the intervention.

Over time, participants engaged with the intervention in different ways, with the suggested weekly pattern of use being common. Other participants engaged more initially, then, apparently having internalized the suggestions, found less use for the digital aspects of the intervention. The latter pattern of use relates to the idea of "effective engagement," where users engage with interventions to a degree sufficient to achieve their intended outcomes [29]. The breadth of material included also appeared to be important for engagement. Although the promotion of physical activity was a key part of the intervention, participants' positive responses to the range of information covered suggest the importance of acknowledging the multidomain impact of LBP [30]. The presence of such elements may promote engagement with the intervention across a wide range of users, particularly for those who are less mobile, where physical activity is more difficult.

Our participants spoke of the Internet intervention resulting in reassurance and less fear around the use of activity to manage their pain. Reassurance and fear reduction have long been acknowledged as central constructs in psychosocial theories of management of LBP [31–34]. Internet interventions may be an effective, scalable means of automatedly delivering this cognitive reassurance [31], tailored to the individual. A further, seemingly cognitive, benefit of the intervention was the increased awareness of the necessity of self-management. Participants discussed intervention reminding them of "how they can help themselves," bringing this to the "forefront of their minds." Increased awareness may prime planning for activity; thus it can be considered part of the "reflexive motivation" component of the COM-B model of behavior [35]. These combined factors, reassurance and heightening the primacy of self-management thoughts, may be necessary cognitive precursors to recommended behavioral changes/activity increases for LBP.

Supporting increases in physical activity was a central aim of the SupportBack Internet intervention. Regular prompting through automated e-mails was described as important for maintaining the motivation to engage in activity. The ability to set and amend specific goals appeared to facilitate regular implementation of the behaviors, providing qualitative support for the utility of goal-setting protocols in digital interventions aiming to increase activity [36,37]. Directly experiencing the effectiveness of physical activity in managing pain appeared to serve as a strong motivator for future engagement in the behavior. Thus, conceptually, the intervention provided opportunities for "performance exposure," a key construct in promoting self-efficacy [38,39]. That this effectiveness was sometimes unexpected suggests the importance of effective behavioral support; simple strategies such as increasing activity may be overlooked by patients despite potential effectiveness. More broadly, the majority of participants reported actively using physical activity/behavior as a pain management strategy. This highlights the feasibility and potential of digital programs like SupportBack [12,40,41] to play a role in the implementation of recent recommendations to move away from unnecessary medical and surgical intervention toward behavioral interventions for LBP [1].

Providing remote health care professional support with Internet interventions is commonly found to increase effectiveness [42]. Participants' perceptions of the physiotherapist telephone support in the current study suggest that it had a bolstering effect on processes initiated through the Internet materials, providing additional reassurance and motivation. Some participants' discussions reflected a form of "supportive accountability" [43]. Incorporating social presence and elements of performance monitoring [43] into SupportBack appeared to provide additional extrinsic motivators; for example, knowing the telephone call was scheduled increased motivation to engage in activity before the call. Although there were indications that not all participants interviewed found value in the telephone support, the majority were positive, and initial positive results from the quantitative study [12] highlight the feasibility of supported delivery.

Participants who reported less benefit from the intervention in the current study often discussed issues they perceived as barriers to the advice and guidance provided. This primarily included people who had comorbidities (e.g., COPD, stroke) or perceived their back pain symptoms to be very severe. It is possible that these individuals may need further support to help address concerns and beliefs that reduce self-efficacy [20] and limit intervention engagement. This support could come from a primary care physician or physiotherapist when first recommending such an intervention. Alternatively, it may represent a key role for telephone support, to help tailor use to suit individuals with more complex health needs.

This study represents a continued person-based approach to intervention development [25], with qualitative work in feasibility trials representing the latter stages of this iterative process [24]. Our findings share similarities with those reported by Lilje et al. [44] in a qualitative study of text messages to support home exercise following manual therapy for LBP in older adults. Lilje et al. reported that the messages served as key reminders and motivators to support continued engagement with the activity. Additionally, a recent qualitative study [45] of a pain management app for cancer pain in adolescents highlighted accessibility and the provision of a range of novel information as key benefits reported by users. These similarities demonstrate how qualitative research can help determine the feasibility of digital approaches and highlight central processes through which digital interventions support self-management.

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There are some limitations to be considered with the current study. Due to a relatively small trial sample size (from which the present sample was drawn) and the subsequent response rate, we were not able to purposively sample across a range of characteristics. Interviewing all those who responded after inviting the full sample may have meant that the individuals we spoke with had a more positive view of the intervention. Nonetheless, it is important to note that the current qualitative sample had very similar characteristics to the full trial sample in terms of age, gender, baseline LBP-related disability, postintervention LBP-related disability, and use of the intervention. In future work with larger samples, we will employ fully purposive maximum variation sampling [46]. The sample had a mean age of 58 years, and of those who reported ethnicity (N = 14), all were white. These characteristics are likely a result of our recruitment location for the feasibility trial, a relatively rural area in the south of the UK. Further research is needed with more diverse and hard-to-reach samples to explore the consistency of themes and identified processes in diverse groups. Participants' experiences were based on the use of the specific Internet intervention, SupportBack. However, many of the behavioral principles applied in the SupportBack intervention are likely to be targeted by others when developing digital interventions for LBP and other musculoskeletal conditions; thus our findings may contribute to the development of future digital interventions. With regard to reflexivity, RS was a research assistant on the feasibility trial when conducting interviews, and she also contributed to the development of the intervention. AG is a psychologist and approached this analysis with an understanding of behavioral theory and self-management principles. AG was also involved with the development of the intervention. DY, who independently coded with AG, was not involved in development. The broader team has a range of backgrounds, including health psychology, physiotherapy, and general practice medicine, enabling a broad range of perspectives to feed into the analysis. Finally, our presented analysis remained primarily descriptive. Although this was our intention, further interpretive work may build on this foundation to move toward theory-building. A future large nested qualitative study within our ongoing full effectiveness trial of SupportBack (ISRCTN: 14736486) will enable this theory-building work.

To conclude, this study indicates the feasibility of digital support for the self-management of LBP in primary care with and without telephone support from a physiotherapist. Participants reported being reassured, particularly regarding using physical activity to manage their back pain. Broadly, the intervention appeared to act on key self-regulatory processes likely to impact and support effective self-management. Our funded, multicenter full trial will determine the clinical effectiveness and cost-effectiveness of the SupportBack intervention, while further elucidating mechanisms of action.

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Supplementary Data

Supplementary data are available at *Pain Medicine* online.

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