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Beyond the pain: A qualitative study exploring the physical therapy experience in underserved adults with chronic low back pain

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Abstract

Background: Chronic low back pain (cLBP) is a complex condition that is physically and psychologically debilitating, with vulnerable populations experiencing more severe outcomes. Physical therapy (PT) includes evidence-based treatments that can reduce disability, however the experience of PT can vary amongst different populations. Empirical evidence is largely based on majority samples that are predominantly white with high educational attainment. Little is known regarding how people from vulnerable groups (e.g. low income and racial minority) experience physical therapy treatment for low back pain.

Objective: To describe the experience of physical therapy in a predominantly low-income and minority population with cLBP.

Methods: This qualitative study was embedded within a randomized controlled trial for patients with cLBP in urban, underserved communities. We used a convenience sample to interview 12 participants from the 102 who participated in the PT arm of the trial and then performed thematic analysis to describe their experience.

Results: Three major themes emerged: 1) Empowerment through education and exercise; 2) Interconnectedness to providers and other patients; and 3) Improvements in pain, body mechanics, and mood. Divergent cases were few however centered around a lack of improvement in pain

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Declaration of Interest

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or an absence of connection with the therapist. Within the first theme a prevailing sub-theme emerged that aligned with Bandura's theory of self-efficacy: 1) Mastery of experience; 2) Verbal persuasion; 3) Vicarious experience; and 4) Physiological state.

Conclusions: Our participants' insight highlighted the value of cognitive-emotional and interpersonal dimensions of PT. These may be particularly important components of PT in populations that have experienced systemic distrust in providers and disparities in services. Future work could use Bandura's model of self-efficacy to build a PT intervention comprised of fear-based movement exercises, interconnectedness, a strong therapeutic alliance, and mindfulness techniques.

Keywords

physical therapy; self-efficacy; chronic low back pain; biopsychosocial

INTRODUCTION

One in four adults experience at least one episode of chronic pain in their lifetime, with many experiencing episodes of chronic pain several times a year (Dahlhamer et al., 2018). Patients living with chronic low back pain (cLBP) report feeling helpless, isolated, and stigmatized (Esson et al 2020; Liddle, Baxter, and Gracey 2007). Lower socioeconomic status and less education are associated with increase prevalence of cLBP and worse outcomes (Hartvigsen et al., 2018; Karran, Grant, and Moseley, 2020). Racial and ethnic differences also exist in the experience of chronic pain (Meints, Cortes, Morais, and Edwards, 2019). Physical therapy (PT) that involves exercise and patient education is an established and recommended treatment option that can decrease pain and disability among people with cLBP (Qaseem, Wilt, McLean, and Forciea, 2017). However, the experience of physical therapy may vary across culturally diverse groups (Yoshikawa, Brady, Perry, and Devan, 2020). There is a paucity of research examining how vulnerable populations (e.g. lower income, less education, and minority people) experience PT despite the fact that this population is at greater risk of poor health outcomes and compromised care delivery experiences (Anderson, Green, and Payne, 2009; Tait and Chibnall, 2014).

Analyzing the experience of PT in cLBP patients from vulnerable populations is critical to creating patient-centered treatment. This perspective is best ascertained though qualitative inquiry, particularly when psychosocial aspects of treatment are important, as in the case of cLBP (Jette, Delany, and Lundberg, 2019). Qualitative work has distilled salient aspects of cLBP treatment that can inform the delivery of PT. For example, Wilson, Chaloner, Osborn, and Gauntlett-Gilbert (2017) interviewed participants who completed a 4-week group residential pain rehabilitation program to identify patients' beliefs about the treatment and helpful treatment processes. Themes such as: "working with the whole me"; increasing "awareness"; and "working though challenges in the therapeutic relationship" support the importance of a holistic and individualized treatment approach. Similarly, Bunzli et al. (2016) compared interviews of participants with cLBP after undergoing cognitive functional therapy (CFT) delivered by physical therapists. Those who benefited from treatment reported positive changes in their fear of pain, self-efficacy, and stress coping which lead to a greater sense of independence.

Similar findings have been reported in recent qualitative inquiry into psychologically based PT interventions. Themes centered around patient-therapist relationships and physical and psychological well-being emerged from patients with acute whiplash who received a stress-inoculation training delivered by physical therapists (Silva Guerrero, Setchell, Maujean, and Sterling, 2021). Likewise, patients with cLBP who were treated with CFT said they benefitted most from a better understanding of pain, a strong relationship with their physiotherapist, and an acquisition of self-management strategies (Holopainen et al., 2020). Information gleaned from these studies help shape a biopsycho-social PT approach for patients with cLBP. However, these findings may not apply universally to different populations, or different forms of PT. More research is needed to understand the experiences of different PT treatment in diverse and under-represented groups.

The Back to Health Study was a large three-arm, randomized controlled trial that compared yoga, PT, and education in predominantly low-income and minority participants who had cLBP (Saper et al., 2014; Saper et al., 2017). Results indicated that PT was superior to education for improving pain but not disability (Saper et al., 2017). It was one of the first studies to purposefully evaluate PT in an underserved population. The current study uses qualitative data from the PT arm of the trial to further explore the experience of PT in these participants. We aimed to elucidate the aspects of PT that these patients perceived as meaningful.

METHODS

Design

A detailed description of the parent trial and results are published (Saper et al., 2014; Saper et al., 2017). Briefly, the investigators conducted a two-phase 52-week trial that involved a 12-week treatment phase followed by a 40-week maintenance phase. The study was done in a large hospital in Boston, Massachusetts, in conjunction with seven affiliated community health centers in predominately low-income racially diverse neighborhoods. We conducted a secondary qualitative study using an interpretive description design. This method is used to create credible and valid knowledge that reveals common experiences while maintaining the individuality of health and illness (Thorne, Kirkham, and MacDonald-Emes, 1997). The Boston University Medical Campus Institutional Review Board approved the study prior to data collection and was registered at ClinicalTrials.gov Identifier (NCT01343927). All participants provided written informed consent.

Participants and Physical Therapy Intervention

Participants were adults (18–64 years old) with cLBP recruited from the Boston Medical Center and community health centers affiliated with the trial. The PT intervention incorporated aerobic exercise with a treatment-based classification system (Alrwaily et al., 2017; Fritz, Cleland, and Childs, 2007). Participants were classified into either stabilization or specific flexion- or extension-exercises based on clinical examination. Following 30 minutes of these exercises, all participants performed up to 30 minutes of aerobic exercise. Additionally, participants in the PT arm were screened for high fear avoidance beliefs using the Fear Avoidance Belief Questionnaire (≥ 29 on the work subscale). These PT

participants were also given a copy of The Back Book (Roland, 2002) which provides general information about back pain and provides brief cognitive behavioral education aimed at lowering fear avoidance. The physical therapist reinforced this educational content during each PT session.

Recruitment and Data Collection

All participants who completed the 12-week phase of the PT intervention (n=102) were contacted by phone to participate in a one-on-one, semi-structured interview. A convenience sample of 12 participants who responded to our invitation provided data for the current study. Interviews were in English, approximately 30 to 60 minutes long, and conducted in-person by researchers who had experience performing qualitative interviews and were not involved in the PT care of the patient. Interviewers were coached to be impartial to the intervention, questions, and responses. Interviewers used a guide based off prior research (Keosaian et al., 2016) to elicit responses regarding participant's experience, perceptions, and the effects of their treatment particularly on physical or psychosocial factors such as pain, mood and coping. Broad questions like *"Can you tell me about your experience with PT?"* began the interviews and were followed-up with probing questions as needed such as *"How has physical therapy influenced how you feel about LBP?"* (Appendix). Interviews were audio-recorded and transcribed verbatim by research staff.

Descriptive and clinical (e.g. pain and disability) data at baseline and follow-up were obtained from the parent study and linked to all participants in this qualitative study. These data included: demographics; pain (Numeric Rating Scale) (Ritter, González, Laurent, and Lorig, 2006); disability (Modified Roland-Morris Disability Questionnaire) (Roland and Fairbank, 2000); self-efficacy (Pain Self-Efficacy Questionnaire) (Anderson et al., 1995); depressive symptoms (Patient Health Questionnaire-8) (Kroenke et al., 2009); and anxious symptoms (Generalized Anxiety Disorder Scale-7) (Spitzer, Kroenke, Williams, and Löwe, 2006).

Analysis

We used thematic analysis to systematically analyze and report patterns within our data reflecting the experience of participants who received PT (Braun and Clarke, 2006). First, two primary authors (CJ and KR) familiarized themselves with the data by reading all the transcripts and drafting short interview summaries. Next, an initial coding list was developed by CJ based on the interview responses. One researcher (CJ) performed line-by-line coding of each interview utilizing the code list. After six interviews were coded a second author (KR) independently coded two randomly selected interviews. Codes of the two reviewers were compared and the code list was refined. CJ then coded the next six interviews, and KR independently coded two of those six. A third author (JS) served as arbiter to resolve disagreements in meaning or coding if necessary. Line-by-line codes were then grouped into larger categories and themes using inductive reasoning based on the interpretation of the data. Themes were developed after reviewing code frequencies and categorizing the most frequently occurring codes into distinct themes. Frequency of occurrence within and across interviews was the means to determine the salience of a theme. The research team then reviewed the themes to name and define their conceptual meaning. One theme that was

particularly prominent in our data warranted further exploration. Using Bandura's model of self-efficacy (Bandura, 1977) we then deductively coded our first them into sub-themes. Finally, a report was written using verbatim examples to illustrate the identified themes.

Our six-member research team is a multidisciplinary group of 5 clinicians (physical therapist, medical doctor, and chiropractor) and one medical anthropologist (KR). Authors have significant experience in qualitative (KR and JK), quantitative (CJ, ER, and RS), and mixed (ER and JS) methods. None of the authors were involved in the delivery of PT. Interviews were conducted by research staff supervised by author (RS). We continued to discuss reflexivity throughout the analysis and attempted to interpret and report the meanings of the words of the participants as they were intended. For balance, we present data that are contradictory to our narrative. We also linked our quantitative measures of physical and psychosocial health from the RCT for each participant. This allows for methodological triangulation, whereby alternative sources of data help validate qualitative interpretations (Denzin, 2012). To prevent interpretative bias, coders were blinded to quantitative data until each interview was thoroughly analyzed. For accuracy and rigor in reporting we followed the Standard for Reporting Qualitative Research (O'Brien et al., 2014). All data encoding was performed using NVivo 12 Plus (QSR International, Doncaster, Australia).

RESULTS

Our 12 participants were predominantly female (92%), black (75%), and middle aged (mean=51.9 years, SD=8.6) (Table 1). Highest educational attainment was college graduate (n=2), and gross annual income for all participants was less than $40,000/year. The mean pain and disability scores at baseline were 7.7 (SD=1.3) and 16.9 (SD=6.1), respectively, and only 1 participant was screened for having high fear avoidance beliefs.

Our qualitative analysis revealed three themes that described the participants' experience of PT: 1) Empowerment through education and exercise; 2) Interconnectedness; and 3) Improvements in pain, body mechanics, and mood. Table 2 presents each theme and examples of coded text that comprise that theme.

Findings from our qualitative analysis were mostly consistent with our descriptive quantitative data (Table 3). All participants experienced a decrease in pain (range: 1–6 points) and 10 participants (83%) experienced a decrease in disability (range: 2–10 points). None of our participants reported complete resolution of their pain at 12 weeks.

Empowerment through Education and Exercise

Within this theme, there was a notable and consistent emphasis on empowerment and self-efficacy. Participants often spoke of *"taking charge of healing myself."* This was corroborated in our quantitative data: 9/12 participants experienced an increase in self-efficacy (mean difference: 16.9 points; range: 2–33) and 2 out of the 3 who did not had high baseline self-efficacy scores (53 and 54 out of 60). To aid interpretation, we sub-coded this theme based on Bandura's theory of self-efficacy: 1) Mastery of experience; 2) Verbal

persuasion; 3) Vicarious experience; and 4) Physiological state (Table 4). Each of these elements were uniquely expressed in our data.

Mastery of Experience—Mastery of experience, which builds confidence by facing a challenging experience and overcoming it, was the most prevalent code in our data. Successful completion of a situation instills confidence in one's ability whereas failure depletes it.

Our participants reported greater mastery of managing their condition when they learned how to decrease their pain through exercise. One woman explained that if she stretches in the morning before she got up then her back feels better and her muscles are "*put back in shape"* which *"makes me feel good, makes me feel responsible with my body*."

Interestingly, one participant who did not notice improvement in their pain still expressed a better sense of control and willingness to persevere:

> I know it [pain] is something that I'll probably have the rest of my life. And I know the exercise helps it. So as long as I'm able to exercise and keep the pain moderate and not out of control, I can cope with it, I can deal with it. It's ok, I can live with it. I used to be in back pain and I just wanted to stay in bed, just didn't want to do nothing. The pain wasn't even that bad, it would just take over my whole day like that. I was just paralyzed or something. Now, little bit of pain? I get up and walk it off or do something.
>
> [ID:3]

Shifting the focus from passive treatments to more active approaches also fosters a positive change in self-efficacy. This was the product of PT for one participant who was asked how she felt about doing something for her back pain and replied:

> "It felt great. Instead of just taking medication or putting a hot pack on or rubbing some Icy Hot on it... it felt good, you know, I'm taking charge of healing myself, controlling myself."
>
> [ID:4]

Verbal Persuasion—Verbal persuasion, such as encouragement and positive reinforcement, is an effective mechanism to increase self-efficacy when the person providing this reassurance is perceived as a credible and influential source. One participant clearly described the impact her therapist had on her ability to engage in productive behaviors:

> "I did get a lot of thinking positive from my therapist. She did say, you think you can't do it, but what you think you aren't doing, you are doing. Even if it's just a small piece of it, you are still doing it. And I came away, always thinking that when I start something, it may be small, but it is effective."
>
> [ID:5]

Another participant contrasted the interactions she had with other healthcare providers and the support her physical therapist provided. She explained:

> "*when you go to the doctor, they tell you go here, go there. When you go in to see the massage therapist, you know, they do what they do and then that's it. There's not, like, communication, like, but with the PT, he's there with you, he's encouraging you, he's talking to you, he's taking it step by step."* And when asked how this helped her control her pain she replied, *"I feel good 'cause now I feel more educated about what my problem is, and my sickness, [instead of] taking medication and doing all these other things."*
>
> [ID:12]

This participant also spoke of the encouragement her friends and family (other credible sources of verbal persuasion) gave her during the trial saying:

> "When I first started out I wasn't as motivated at home to do it as when I'm there [at PT]. So, you know you need that little push. But then, my nieces, they're like, they started to help me…So now she'll text me, 'it's time to do your exercise.'"

Engaging family members in the support of a patient (e.g. having them in the room during therapy) is a feasible, psychosocially-aligned path toward empowerment.

Vicarious Experience—People innately compare themselves to what others are doing especially when it resembles what they are doing. This comparison can become a source of motivation and inspiration. One participant, when discussing the influence of other patients in PT said:

> "It was positive because I was seeing all the other people and their progress from when they started and hearing, yeah she's doing real good. And these are older women, older ladies, so that was positive to me. If they can do it, I got no business complaining about nothing."
>
> [ID:3]

Although patients in PT are receiving one on one care, they are often in an environment with others working toward parallel goals. Camaraderie and support can be an organic aspect of PT environments and was noted by another participant who said:

> "It was good, everybody talks about their improvement, how they do it. And it was helpful so we talk, we share."
>
> [ID:1]

Physiological State—Somatic information relayed through emotional and physiological states can also influence self-efficacy. cLBP is a common correlate of depression, anxiety, fear avoidance and stress, all of which can deflate self-confidence. Our participants talked about changes in their mood, saying that they felt *"not so snappy"* or that they were *"not so fatigued, jittery, [or] stressed out."* One participant linked her improvement in depression to her improved physical abilities saying:

> "Absolutely. You're not so feeling like, 'Geesh, what can I do?' Depression isn't there. Because it can become a bummer when you're limited like that."
>
> [ID:2]

Participants recognized the relationship between their mood, pain, and self-efficacy:

> "Like I said it's motivating, It gets you thinking about your own body and your own health, rather than, 'Oh I'm in pain'… I mean with six years of chronic pain, I've been through a lot of depression – and it kind of pulls you out of that. You know what I mean? Where you feel like, 'I'm not going to let that get the best of me.'"
>
> [ID:10]

The mechanisms behind these somatic changes varied. One participant mentioned the calming and positive demeanor of her therapist commenting:

> "…having that positive attitude helps you to relax, your body to relax. And helps, you know, maybe with the stress that you may have going on. Sometimes, she would tell me to just breathe. And that helped. I never thought it would, but I felt myself becoming calm."
>
> [ID:5]

Another attributed it to the exercises she was doing and the carryover effect of working out:

> "Especially when I go do my workout, the next morning I feel so much different, you know? More energetic, not everything is bothering me. Little stuff, I'm like, whatever."
>
> [ID:12]

Interconnectedness

A sense of connectedness between patient-therapist was present in our findings and often linked to the behavior of the therapist. Said one participant:

> "I was able to talk to them openly and we were able to joke around. It was good, it was fun. They made it fun. I was able to just let them know when I was in pain. They didn't judge me."
>
> [ID:2]

The absence of such a relationship was also felt by some participants, particularly when clinicians appeared disengaged. As one participant noted:

> *"The person that I had wasn't really giving me full attention 'cause she was off doing other things, making phone calls."* When asked how this affected her experience she replied, *"I think it would have been more beneficial and more helpful because I'm left on my own."*

Interestingly, this participant also highlighted the value of other patients in PT saying:

> "It was good because you don't feel alone, [and] no matter what the situation you feel alone until you see other people going through what you're going through."
>
> [ID:3].

Though PT is commonly considered a one-on-one treatment between therapist and patient, our participants often spoke about connectedness amongst other patients in PT:

> "It felt good that I wasn't the only one and we can all talk about our progress and how we were feeling and different things."
>
> [ID:4]

When coding our data we found that interconnectedness was usually double-coded as a vicarious experience. Meaning, the connection between patients added to the clinical experience *and* served as a form of motivation.

Improvements in Pain, Body Mechanics, and Mood

Traditional effects of physical therapy such as improving strength, decreasing pain, and increasing flexibility, were also recognized by our participants. Most commonly, participants spoke of changes in their pain, although the magnitude of change and the realization of the change varied. For instance, one participant noted:

> "I know it's helped me for the simple fact that since I've been in the program I'm taking less of my narcotics, so that means actually I'm having less pain."
>
> [ID:10]

Interestingly no participants spoke of changes in their pain in commonly measured parameters (e.g. rating pain 0–10; describing characteristics of pain), but rather through functional perspectives. When asked to describe changes in her pain one participant replied:

> "For instance, at church, I was going twice a week. After doing the exercises I started going four times a week, so it helped."
>
> [ID:8]

On the other hand, not all participants experienced pain relief. As one participant stated:

> "I don't think my pain has really improved. It hasn't gotten any better. I don't know if it ever will."
>
> [ID:7]

DISCUSSION

We conducted a qualitative analysis of 12 minority and low-income participants receiving PT for cLBP to understand their experience. The most salient themes in our data were increased empowerment through exercise and knowledge, a sense of interconnectedness to the physical therapist and other PT patients, and improved physical and emotional symptoms. Descriptive quantitative data complemented these themes and suggest that most interviewed participants improved in physical and psychosocial measures of health and were satisfied with their treatment.

In our vulnerable population, we confirmed the importance of building a therapeutic alliance between a patient and their therapist (Babatunde, MacDermid, and MacIntyre, 2017; Hall et al., 2010; Miciak et al., 2018). Uniquely though, our participants also spoke of a connection amongst other patients as an asset to their experience and a potential source of motivation. This sense of community and support is particularly important, as there is well-documented distrust toward the United States healthcare system among

African Americans (Armstrong, Ravenell, McMurphy, and Putt, 2007) and discrimination towards them (Edwards, 2008; Pascoe and Richman, 2009). Our findings suggest that our participants generally felt welcomed and comfortable at their PT appointments, in-part because they connected with other patients. This may be an overlooked benefit of the PT experience. Combined with a therapeutic alliance, promoting peer-support and camaraderie in the clinic may serve two purposes: 1) facilitating trust and engagement between minority populations and our healthcare system; and 2) optimizing patient outcomes through peer-motivation. Opportunities for this include grouping patients together who are going through similar rehabilitation, sharing patients' goals on a "goal-wall," and facilitating inter-patient conversation. Importantly, the value of connection and friendliness amongst patients and therapists may not be universally accepted. It is possible that in different populations, proximity to other patients would be unwelcomed and congeniality between provider and patient perceived as unprofessional. Further research is warranted in this area.

Although we anticipated our participants would emphasize the physical changes they experienced due to PT (e.g. increased strength and flexibility), a striking finding of our analysis was the relationship between self-efficacy, pain, and empowerment. Self-efficacy is an antecedent to empowerment (Rawlett, 2014). One first believes in their ability to control their own well-being (self-efficacy) and then pursues and refines actions to achieve and maintain health (empowerment) (Rawlett, 2014). In contrast to self-efficacy enhancing empowerment, poor pain coping beliefs such as hopelessness and catastrophizing hinder empowerment and are associated with increased disability (Alhowimel, AlOtaibi, Radford, and Coulson, 2018; Lee et al., 2015). Differences in pain coping have been found between White and African American patients in chronic pain (Meints, Miller, and Hirsh, 2016; Meints et al, 2019). For example, an increased sense of hopelessness was found in African Americans compared to Caucasians (Ezenwa and Fleming, 2012). Importantly, this relationship is mediated by perceived discrimination. Meaning, perceived discrimination contributes to feeling hopeless. Thus, when working with populations whom have experienced systemic discrimination, the healthcare provider must recognize the interplay between structural inequality, mental health, and pain. Indeed, it has been shown that a professional caregiver, through strong communication, education, and coaching, can facilitate self-efficacy and empower patients to take control of their pain (Boveldt et al., 2014; Holopainen et al., 2020; Rasmussen, Amris, and Rydahl-Hansen, 2017); and improvement in pain self-efficacy is associated with reductions in pain-related catastrophizing (Cheng et al., 2018; Shelby et al., 2008). Self-efficacy improved in our entire sample (Marshall et al., 2021), which aligns with a recent meta-analysis that found positive effects self-efficacy from psychologically-informed physical therapy (Silva Guerrero, Maujean, Campbell, and Sterling 2018). Our participant insight can be used to augment PT in patients with cLBP by integrating movement, self-efficacy, and interconnectedness.

One approach to address both of the elements that help or hinder empowerment is graded exposure to specific functional tasks that participants would otherwise be fearful or anxious to perform (George and Zeppieri, 2009). Helping patients confront and increasingly perform the feared tasks provide the patient a mastery experience which is key to building self-efficacy. Additionally, motivational interviewing techniques such as utilizing change-talk (Pignataro and Huddleston, 2015) and asking open-ended questions to facilitate shared

goal-setting (Alperstein and Sharpe, 2016) can be incorporated with physical therapy as a form of verbal persuasion to improve exercise adherence, participation, and functional outcomes (Vong et al., 2011). Lastly, mindfulness techniques such as cognitive reframing and paced breathing can help patients become conscious of their physiologic state and provide them with tools to decrease negative physiological arousal that could be depleting their self-efficacy (Anheyer et al., 2017; Turner et al., 2016). While certainly not exhaustive, these examples illustrate the integration of multidisciplinary behavioral medicine in physical therapy curricula and practice that we believe is a necessary and fundamental movement (Sandborgh et al., 2020). Future studies could integrate our findings of interconnectivity and empowerment into a PT intervention. Conducting such research in a marginalized group and measuring impact, acceptability, and satisfaction may guide implementation efforts of similar interventions in other patient populations where disparities exist.

Limitations

Only two of the participants interviewed had not improved with the PT intervention. Thus, a potential response bias is a primary limitation of our study (i.e. participants willing to be interviewed were more likely those who had a positive PT experience). Interviewing additional non-responders or dropouts from the parent trial would have improved the transferability of our findings. While there is no consensus on sample size for qualitative research, 12 participants is a low representation out of a possible 102 participants. This is an unfortunate reality of conducting research in populations of low socioeconomic status, where the demands of child and elder care, lack of transportation, financial insecurity, and homelessness prohibit voluntary involvement in our study.

CONCLUSION

Our participants' insight highlighted the value of cognitive-emotional and interpersonal dimensions of PT. These may be particularly important components of PT in populations that have experienced systemic distrust in providers and disparities in services. Future work could use Bandura's model of self-efficacy to build a PT intervention comprised of fear-based movement exercises, interconnectedness, a strong therapeutic alliance, and mindfulness techniques.

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Appendix -: Interview guide for physical therapy participants

Experience:

These questions are meant to assess how satisfied or dissatisfied the subjects are with the physical therapy intervention.

1. What was your initial experience like with physical therapy?

a. How did you feel after your first session?

2. What was your overall experience like with physical therapy? What did you feel like it helped you with?
   a. Describe your experience/interactions with physical therapist.
   b. What was it like being in a study with other people with LBP?
   c. How would you compare a one-on-one treatment like physical therapy to a group treatment (like yoga)? Do you have a preference? How did the study influence that preference, if at all?
3. Describe the effects physical therapy had on you that are NOT related to your LBP.
   a. Mood? (e.g., being less snappy or not as quick to react in difficult situations)
   b. Relationships?
   c. Other physical, e.g., weight loss, muscle tone, etc.?
   d. Anxiety/depression?
   e. Your overall diet?
   f. Connectedness? (with yourself or others)
   g. Mind-body relationship?
   h. Inner peace? Introspection? (Looking inside yourself?)
4. How has physical therapy influenced how you feel about LBP? How you cope with it?
   a. How have you managed your pain?
5. **How do you plan to incorporate what you have learned in this study into your life in the future?** (LBP related and/or not)
6. Thinking about what you got out of your physical experience, which is more important to you—the mental effects (ex. better mood) or the pain relief? Why?
7. How has your perception of physical therapy changed over the course of this study?
   a. How do you think your perceptions of physical therapy previous to the study affected your experience?

Conclusion:

Is there anything else you want to talk about that we haven't already discussed or that you think it would be helpful for us to know about?

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Table 1.

Baseline Characteristics of 12 Participants Receiving Physical Therapy

Participant ID	Age	Sex	Race	Pain*	Disability†	Education
1	63	Female	Other	6	11	College graduate
2	49	Female	Black	8	12	High School graduate
3	47	Female	Black	8	23	High School graduate
4	55	Female	Black	7	22	High School non-graduate
5	62	Female	Black	6	21	Tech School or College non-graduate
6	32	Female	Hispanic	7	10	High School graduate
7	57	Male	White	8	6	High School non-graduate
8	49	Female	Black	10	22	Tech School or College non-graduate
9	60	Female	Black	7	21	College graduate
10	46	Female	White	7	23	High School graduate
11	54	Female	Black	10	13	High School non-graduate
12	49	Female	Black	8	19	Tech School or College non-graduate

*Numeric Rating Scale (0–10; higher = more pain);

†Modified Roland-Morris Disability Questionnaire (0–23; higher = more disability)

Table 2.

The experience of physical therapy in underserved participants with chronic low back pain

	Examples
Empowerment through education and exercise	*Q: And how did it feel to be doing something to help your back pain finally?* *A: It felt great. Instead of just taking medication or putting a hot pack on or rubbing some Icy Hot on it... it felt good, you know, I'm taking charge of healing myself, controlling myself.* *…come to find out now before the study that I wasn't doing the right exercises I should be doing it because of my back, so I was kind of hurting myself a little bit. So since the study I've learned a lot of new ideas and stuff that helps me now, other than when I was doing it on my own.* *You know, cause' I realized the more I start to work out, you lose some weight, so you start to feel better, and every time you work out you start to feel more energetic, and you know, you lose a pound here and there and you're like "oh my goodness, ok."*
Interconnectedness	
Patient-Therapist Relationship	*Yeah, I like my experience with them because they were very friendly because that is the most important thing when you are a client, when you have rapport, good relationship with them.*
Patient-Patient Relationship	*Q: And what was it like being in a study with other people like you had had low back pain?* *A: It was good! It felt good that I wasn't the only one and we can all talk about our progress and how we were feeling and different things.*
Negative Patient-Therapist Relationship	*I just saw what the other staff was doing with their patients and comparing it to what my therapist was doing. You know, they was full-on, they never left their side. They wasn't making phone calls and trying to call a friend, and all over the place.*
Improvements in pain, body mechanics, and mood	
Improved Mood	*You're not so feeling like, 'Geesh, what can I do?' Depression isn't there. Because it can become a bummer when you're limited like that.*
Decreased Pain	*Because usually when I first came, I was bending when I'm walking, bending, I can't walk straight. Now I can walk straight. Before if I walked, like, few steps, I would be feeling [inaudible] on my leg, feeling pains. All those ones now I don't feel it anymore, for now.*
Increased Flexibility	*Q: So it hurt the first time?* *A: The first time, yeah because I was just stiff. And then when I started to relax, bend, do this, do that, I found that my body was, my muscles were a little more flexible.*
Improved Strength/Posture	*Yeah I think about [posture] more every time I just let go. And I said I gotta keep myself up, and then so my muscles can be strong.*
No Change in Pain	*Well, at least I don't think it's helped. It may have helped as far as making my back stronger, but I still feel a lot of back pain most of all the time, so it hasn't gone away.*

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Table 3.

Baseline and 12-Week Measures of Physical and Psychosocial Health and Patient Satisfaction

ID	Baseline Pain*	12-Week Pain	Baseline Disability†	12-Week Disability	Baseline Self-Efficacy‡	12-Week Self-Efficacy	Baseline Depression§	12-Week Depression	Baseline Anxiety‖	12-Week Anxiety	Satisfaction
1	6	3	11	2	38	49	1	0	2	0	Somewhat satisfied
2	8	5	12	10	30	53	3	2	3	2	Very satisfied
3	8	3	23	19	18	20	20	21	21	13	Very satisfied
4	7	5	22	16	35	55	7	0	4	0	Very satisfied
5	6	4	21	15	22	55	4	3	3	0	Very satisfied
6	7	3	10	0	13	45	21	11	15	11	Very dissatisfied
7	8	7	6	7	41	50	19	23	18	18	Very satisfied
8	10	4	22	12	41	55	9	7	0	3	Very satisfied
9	7	6	21	12	42	50	5	0	3	0	Very satisfied
10	7	6	23	23	27	18	6	11	6	11	Somewhat satisfied
11	10	6	13	11	55	51	4	0	0	4	Very satisfied
12	8	5	19	10	54	53	4	0	0	0	Very satisfied

*Numeric Rating Scale (0–10; higher = more pain);

†Modified Roland-Morris Disability Questionnaire (0–23; higher = more disability);

‡Pain Self-Efficacy Questionnaire (0–60; higher = more self-efficacy)

§Patient Health Questionnaire (0–21; higher = more depression);

‖Generalized Anxiety Disorder, (0–24; higher = more anxiety)

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Table 4.

Bandura's Four Components of Self-Efficacy Exemplified in Physical Therapy

	Mastery Experience	**Verbal Persuasion**	**Vicarious Experience**	**Physiological State**
Description	Successfully completing or enduring a challenge or a task that one perceived they were incapable of	Verbal motivation and encouragement from trusted and respected people	"If they can do it, I can do it." Observing others overcoming similar challenges	Somatic sensations of stress, anxiety and depression deplete self-efficacy whereas calmness instills self-efficacy
Physical Therapy Example	Using graded exposure to engage in and accomplish a feared task. Practicing parts of movements that the patient reports as painful	Coaching patients to move and exercise in ways they felt unable to, i.e., encouraging patients to ambulate with a lesser assistive device; providing positive reinforcement	Seeing other patients with similar functional restrictions overcome them. Facilitating camaraderie amongst patients. Performing PT in groups of patients with similar conditions	Working on breathing techniques to calm anxiety. Teaching mindfulness strategies to control negative thoughts and emotions. Using biofeedback to alter somatic sensations