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“We’re All in This Together”: A Qualitative Study of Predominantly Low Income Minority Participants in a Yoga Trial for Chronic Low Back Pain

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Abstract

Objective—To explore the experiences of low-income minority adults taking part in a yoga dosing trial for chronic low back pain.

Design—Individual semi-structured interviews were conducted with nineteen participants recruited from a randomized yoga dosing trial for predominantly low-income minority adults with chronic low back pain. Interviews discussed the impact of yoga on low back pain and emotions; other perceived advantages or disadvantages of the intervention; and facilitators and barriers to practicing yoga. Interviews were audio taped and transcribed, coded using ATLAS.ti software, and analyzed with inductive and deductive thematic analysis methods.

Setting—Boston Medical Center, Boston, MA, USA

Results—Participants viewed yoga as a means of pain relief and attributed improved mood, greater ability to manage stress, and enhanced relaxation to yoga. Overall, participants felt empowered to self-manage their pain. Some found yoga to be helpful in being mindful of their emotions and accepting of their pain. Trust in the yoga instructors was a commonly cited facilitator for yoga class attendance. Lack of time, motivation, and fear of injury were reported barriers to yoga practice.

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CONFLICT OF INTEREST

The authors declare they have no conflicts of interest.

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Conclusions—Yoga is a multidimensional treatment for low back pain that has the potential to favorably impact health in a predominantly low-income minority population.

Keywords

yoga; low back pain; qualitative

INTRODUCTION

Chronic low back pain (cLBP) is a complex condition.¹ Psychosocial factors may play a significant role in how well a person with low back pain (LBP) functions and copes with their pain.^{2,3} Socioeconomic disparities can often exacerbate the severity of cLBP and limit access to treatment.^{4–9} Patients are often not fully satisfied with conventional treatments and seek out alternative therapies, such as yoga.^{10,11} A growing body of research supports yoga's effectiveness for reducing cLBP intensity and improving back-related function.^{12–25} Yoga has also been shown to improve psychosocial outcomes,²⁶ suggesting it may be particularly advantageous as a holistic treatment for complex conditions such as cLBP. Although yoga was used by about 9.5% of adults in 2012,²⁷ yoga use among minorities and individuals with lower socioeconomic status is less common.^{28,29} Similarly, participants in yoga for cLBP trials have been predominantly white middle-class adults.^{13,14,17–20} Few yoga trials have enrolled a diverse lower income population with cLBP.^{16,21}

Two randomized yoga trials for cLBP have reported qualitative findings on participants' yoga experiences.^{12,30} Galantino et al. found that participants were motivated to attend yoga classes by the social aspect of the intervention.¹² They also perceived relaxation and new awareness as a result of yoga. In another study, Sherman et al. reported that stress reduction, increased awareness, improved self-efficacy, and an appreciation for the importance of breathing emerged as perceived benefits of yoga practice.³⁰ Neither of these studies included a discussion of perceived barriers and facilitators to yoga practice and both enrolled a predominantly white population.^{12,30}

In a non-randomized study, Combs et al. interviewed adults with cLBP to collect information on perceived facilitators and barriers to yoga use.³¹ Perceived facilitators included positive expectations about the effects of yoga and the ability to practice yoga with a friend. Participants commonly cited fear of injury, lack of motivation, time constraints, and financial difficulties as perceived barriers. A study by Atkinson et al. found that participants taking a non-disease specific community yoga class contributed positive relationships with their instructor facilitated attendance.³² The interviewed samples for both studies did not report race, ethnicity, or income of interviewees therefore it is unknown how these findings relate to an underserved population.

Other qualitative studies have evaluated yoga as a treatment for other forms of chronic pain. For example, Tul et al. interviewed chronic pain patients in Canada³³ and Cramer et al. analyzed participant interviews after a yoga program for chronic neck pain in Germany.³⁴ Both studies reported body awareness, pain acceptance, and increased control over health as major themes discussed by participants. Furthermore, participants with chronic neck pain perceived improved coping mechanisms and reflected on the social benefits of yoga.³⁴

Given the limited qualitative literature on yoga for chronic pain conditions, it is unclear if participants with cLBP would have distinct experiences different from those with other types of chronic pain.

The current available literature does not include qualitative research that describes the experience of a diverse lower income population with cLBP enrolled in a yoga study. Given the disproportionate impact of cLBP and known challenges with treatment adherence in underserved populations,^{6,35,36} more research is needed to understand the experience of yoga for cLBP in this population. Thus, the current qualitative study aimed to investigate the following in a predominantly low-income minority adult population with cLBP: (1) impact of yoga on cLBP and other physical conditions; (2) nonphysical effects of yoga; and (3) barriers and facilitators to yoga practice.

METHODS

This qualitative study was embedded in a 12-week randomized trial comparing once- versus twice-weekly hatha yoga classes in 95 predominantly low-income minority adults with cLBP.²¹ Participants were recruited through Boston Medical Center, an urban safety-net hospital, and five affiliated community health centers. Participants were recruited from patient populations made up of primarily low income minorities and were not screened based on socioeconomic status. A detailed description of the yoga intervention has been described elsewhere.²¹ Yoga classes were taught by 200-hour certified yoga instructors who received extensive training on a cLBP-specific hatha yoga protocol that included yoga poses, breathing techniques, and relaxation. Classes were supplemented by home practice aided by an audio CD and accompanying handbook. Participants were encouraged to keep home practice logs which were collected each week by the yoga instructors.

Of the 95 participants in the parent dosing study, 62 (65%) indicated willingness to be contacted for additional research opportunities. After completing the yoga intervention, research staff contacted all 62 participants. Nineteen (31%) of these individuals agreed to be interviewed for the current study.

Data Collection

Interviews took place one to three months after completing the 12-week yoga intervention. All participants signed a written consent form prior to the interview. Interviewers (JEK, DD) each had two years of previous experience with qualitative research at the time the interviews were conducted and were not involved in administering the yoga intervention. Interviewers used a semi-structured guide developed by a team with experience leading clinical qualitative research (RP), conducting yoga trials for LBP (RBS), and conducting interviews (RP, JEK, DD). The interview guide was designed to elicit responses regarding motivations, expectations, perceptions, experiences, and perceived barriers and facilitators to yoga practice. Participants were asked open-ended questions such as: “What was your experience like in yoga class?”; “How did your back feel during and after yoga?”; and “What made it harder for you to attend yoga classes?” Questions allowed for open discussion, and participants were encouraged to direct the conversation, focusing on those aspects of the intervention that they considered to be most relevant.

Interviews were conducted in a private office at Boston Medical Center and typically lasted 30–60 minutes. Each interview was audio recorded and transcribed verbatim. Each participant received a gift certificate worth \$25 as compensation for participating in the interviews.

Data Analysis

An initial code list was developed based upon participant written responses to open-ended questions administered as part of the parent dosing study as well as unpublished focus group data from a previous pilot study.^{16,21} Following transcription, each team member read the first four interviews, drafted a summary of predominant themes, and met to compare findings. A revised code list was then developed using a combination of deductive and inductive approaches, allowing both broad researcher observations and direct participant quotes to guide its development. The two interviewers served as the lead coders, and two research assistants (CML, MEG) double-coded every third interview. As line-by-line coding of transcripts progressed, the research team met weekly to update the code list and assure that codes were being used reliably. ATLAS.ti qualitative data analysis software was used for managing the coding process. Ultimately, line-by-line codes were grouped into larger categories. Themes were developed after reviewing code frequencies and merging the highest code yields into distinct thematic categories.

RESULTS

Participants' mean age was 49 years old and most were female (Table 1). The majority were non-Hispanic black, employed, and had public health insurance. About half had an annual household income of \$30,000 or less. On average, participants experienced significant improvements in LBP intensity and back-related function during the 12-week yoga intervention. Most participants attended 75% or more of their prescribed yoga classes. There were no meaningful differences between interviewed participants and those that declined to participate.

Four main themes arose from interviews regarding perceptions of the yoga experience: (1) Physical effects; (2) Psychological effects; (3) Body awareness; and (4) Facilitators and barriers to yoga practice.

Physical Effects

Central topics regarding the physical effects of yoga were cLBP relief, perceived importance of the stretching aspects of yoga postures, and the advantages of yoga for other physical conditions. All participants experienced back pain relief that they attributed to yoga practice. While some perceived long-term pain relief, two participants stated that they experienced pain relief only during yoga practice and the few hours following practice. Regardless of whether pain relief was described as long-lasting or short-term, all participants recognized the importance of maintaining regular practice in order to continue experiencing the benefits of yoga. For example, one participant described her plans for future practice:

It's going to have to be something that's part of my life. I'm going to do this for a long time. So I'm looking at it as a medical treatment. It's not just a yoga class.

Many participants believed the physical aspects of yoga—stretching, bending, and strengthening—helped relieve pain, increase mobility, and improve posture. Of those who discussed the benefits of yoga stretching, they perceived an increase in flexibility that they felt contributed to pain reduction. One participant spoke specifically about the importance of stretching and its connection to medication reduction:

Those stretches... it's like you can almost eliminate completely any medication because it just loosens everything up and brings you back to that place of total health.

Five participants viewed yoga as beneficial for physical conditions other than cLBP, such as headaches and joint pain. Similarly, five participants identified yoga as having the capacity to “heal” the body, rather than temporarily conceal pain. One participant explained this perceived healing aspect of yoga:

I felt like I was actually working on the problem, opening up the problem, and not just covering it up with painkillers. Working on the longevity of the healing process. And just medicine doesn't... All it does is just covers it up and you're not dealing with the internal issue of the problem. And yoga class helps with that.

As illustrated by the two quotes above, the topic of pain medication was discussed in a majority of interviews. Thirteen participants reported less reliance on or complete “freedom” from pain medication as a result of yoga practice.

Psychological Effects

Perceived psychological effects of yoga included change in mood, increased ability to self-regulate, and general empowerment and self-efficacy. All participants perceived changes in their temperament, either during practice or overall, that they attributed to yoga. Ten mentioned favorable changes in their overall demeanor or “mindset,” and three felt this mood change was a direct result of pain reduction. One participant specifically connected her chronic pain with her psychological state in this way:

Because with the pain before, people said my attitude wasn't that great. It kept me kind of down with the pain and I can admit myself it wasn't great. [After yoga] I do feel different and I act different.

Eleven participants identified the relaxation and breathing aspects of yoga practice as tools for dealing with stress, managing anger, and increasing feelings of calm in daily life. They described this enhanced ability for emotional self-regulation as an important coping mechanism for dealing with life stressors. Two participants spoke of this ability in the following ways:

A lot of times when I feel stressed or anxious I'll do the breathing. I'll do the breathing when I can't get to sleep at night as opposed to taking a sleeping pill.

When something really gets you heated or you really have that fight or flight, sometimes if you do the three-part breathing, and you put your hand on your stomach and can feel it, you can really settle yourself down.

Fifteen participants expressed a sense of empowerment and greater self-efficacy gained through their yoga practice. They associated this sense of control and capacity for pain self-management with the ability to do activities they had previously avoided such as household chores or exercise. This perceived ability to self-manage back pain was connected to an increase in overall confidence as described by the following participant:

I felt good because I was doing something, not sitting around waiting for a diagnosis, not taking another pill...I was involved in my treatment. That's how I felt.

Enhanced Awareness

Fifteen participants described changes in awareness and spirituality in a variety of ways; however, common themes included body awareness, the notion of an "inner" self, and the association between spirituality and pain. Participants described attaining greater body awareness and learning to "listen to" the body. One participant described what he learned about understanding and connecting with his body in the following way:

Always try to stay in tune to your body. You know, if you're breathing, and something doesn't seem right or feel right, that's your body talking to you. And you always have to be aware of your body, because it's very important. It's the most important thing.

Four participants described greater realization and acceptance of their personal physical limitations. Others linked greater body awareness to better understanding and self-management of their health. One participant said:

I see [yoga] as a self-healing, becoming more aware of what's going on inside of my body, so that way I can find out the right way to take care of it.

Eight participants noted an expanded emotional awareness resulting from yoga practice. Four mentioned how yoga practice helped them discover an "inner" self. Two described their increased emotional awareness in the following ways:

[Spirituality] is a feeling of calmness, and... it gives you a way where you can direct your feelings more, so you have more control over your inner self... You really get an understanding of the breathing and how it affects you, how it affects your feelings about things.

[Yoga] is about just getting connected with your inner side, with your mind, focusing spiritually, just getting in contact with yourself.

Several participants identified an association between their emotions and pain. One said, "[Yoga] has helped me to look inward, to all the parts of my body, to how they are all connected, to think about it more." Six referred to the mind-body connection nurtured through yoga as "spiritual." Participants described that focusing on the connection between their mind and body allowed them to better regulate their experience of pain. The following individual described how she learned to re-direct her attention with deep breathing when she feels pain:

[Breathing] probably takes your mind off of the pain, and focusing on the health of your body [...] bring[s] your mind to the positive.

Facilitators and Barriers

Perceived facilitators of yoga practice included positive relationships with the yoga instructors, comradery between participants, and support from family. Ten participants mentioned the positive relationships with their yoga instructors as facilitators to class attendance. Participants generally recognized and appreciated the effort put forth by the teachers to tailor the yoga to each individual and create a safe class environment. One participant explained:

They didn't allow interruptions, and so you had a sense of security that people there were going to keep you safe, they knew what they were doing, they weren't going to have you doing any poses that weren't good for you. So there was a trust there.

Four participants discussed identification with other participants in their yoga classes as a facilitator to attendance. These participants explained that because everyone in the class suffered from cLBP, there was a shared goal of cLBP improvement among members of the class. One participant described identifying with his classmates in this way:

Most of the other study participants also had low back pain or they had some type of issue with their back. So it just made me feel as though we're all in this together.

Support from family and friends facilitated yoga practice for twelve participants. Seven participants indicated that their improved mood was recognized and supported by family, friends, and coworkers. For example, one participant mentioned that when she seemed irritable, her daughter would often ask if she had done her yoga practice. She also stated:

I was having trouble finding [the time] to do it. I tried and I tried because when I was finished with the kids, I would get so tired but my daughter is a big inspiration because she'd say 'C'mon ma!' and we'd do it [together].

Eleven participants felt that lack of time was a barrier to yoga class attendance or home practice. Several participants expressed an internal struggle between the desire to practice and the challenge of making it fit in their schedules. For seven, taking the initiative to practice at home was a challenge without the structure of a class. The following participant shared how she struggled to find the motivation to practice at home:

It was hard to do it at home the way we did it in class. I wasn't... well, I had a hard time turning the TV off, probably the biggest reason. I think it's just more, myself, in my head, and just not following up at home on my own as much as I would have liked.

Four participants cited fear of injury as a barrier to yoga practice. However, these individuals reported that any initial fear was mitigated by trust in the yoga instructors early in the intervention. The following participant described how the yoga teachers eased her fear that she would hurt her back:

[The instructors] made sure that they told us all the different ways to do things, to make sure we didn't hurt ourselves. If we were feeling any pain, they made sure we let them know or made us stop so we weren't hurting ourselves.

Participants experienced additional difficulties in continuing their practice after the 12-week study. Nine participants expressed the desire to attend a community yoga class but had concerns about attending a class that wasn't specifically focused on relieving cLBP. Two of these participants also cited an inability to pay for community yoga classes.

DISCUSSION

In this qualitative study of predominantly low-income minority adults with cLBP, participants reported reduced back pain, greater self-efficacy in pain management, improved mood, increased body awareness, and a stronger mind-body connection resulting from yoga practice. Participants generally attributed pain reduction to physical and emotional awareness as well as an ability to be actively involved in their pain management. Commonly discussed facilitators included positive relationships with yoga teachers and classmates; barriers to yoga practice included time constraints, lack of motivation, and fear of injury.

Pain Management and Empowerment

Participants felt they gained tools for regulating and managing cLBP, such as breathing techniques, stretching exercises, and adaptive coping strategies. This knowledge of how to self-manage pain provided participants with a sense of accomplishment and reassurance. The perceived benefits of the intervention and sense of empowerment resulting from newly acquired skills further reinforced participants' confidence in their own abilities to manage their cLBP. Through improved confidence to manage pain and a desire to continue yoga practice, participants learned acceptance of their LBP as a chronic condition that requires ongoing lifestyle adjustments. Many described yoga as a more desirable alternative to pain medication, highlighting the importance of yoga as both a short and a long-term treatment for pain rather than an absolute, permanent cure. These findings align with previous yoga qualitative studies,^{30,33,34} and further emphasize the importance of self-efficacy as an outcome of yoga practice.

Body Awareness and Mind-Body Connection

Previous qualitative research has discussed awareness as a key perceived benefit of yoga for chronic pain.^{12, 30–34} In the current study, participants discussed a newfound body awareness and understanding of their pain as a result of yoga. Many described how deep breathing promoted this awareness and was used as a tool for pain management. Participants explained how yoga practice helped them discover a connection between their physical health and emotions, a concept that modified how they coped with their cLBP. Some participants described exploring the mind-body connection through inward reflection as a spiritual experience. An enhanced sense of spirituality may support self-efficacy beliefs, as spirituality is associated with feelings of being in control during times of stress or illness.^{37, 38} These findings support the need for a more comprehensive definition of spirituality in yoga³⁹ and a greater consideration of this construct in yoga research.⁴⁰

Facilitators and Barriers

Participants in the current study emphasized the relationships built through the yoga intervention as a key facilitator to their yoga experience. The instructor-participant relationship was fostered through trust and mutual respect; yoga teachers were trained to be attuned to each individual's abilities and pain level, adapting poses and using modifications based on individual needs. These relationships facilitated class attendance as well as mitigated fear-avoidance beliefs. These findings support the importance of a trusting relationship with yoga instructors in overcoming established pain beliefs in cLBP patients. Other qualitative research has also commented on the social aspects of yoga as a key facilitator to practice.^{12,31} The group aspect of yoga practice is an important motivator that may promote yoga as a favorable treatment for cLBP.

Although all participants aspired to continue regular yoga practice, many cited time constraints, finances, and motivation as challenges to practicing consistently. Fear of injury was discussed as a concern in attending yoga classes with unfamiliar instructors outside of the study. While previous qualitative studies have reported similar facilitators and barriers to yoga practice,³¹ participants in the current study placed an especially high value on the trust and relational components of the yoga intervention. Figure 1 depicts these key facilitators and barriers to yoga practice and how they may be mediated by outcomes of yoga practice.

Future research is needed to determine if our findings are unique to a predominantly minority population. Within the research setting, conditions for potential barriers and disparities unique to low income minorities were mitigated, such as cost, location (yoga classes were held in the community), and flexible scheduling. However, without the structure of a research study, it is uncertain if our findings would be different. Further qualitative research in a more real-world pragmatic setting should be conducted to further understand possible barriers unique to this population.

Limitations

A key limitation of this study is potential response bias. The sample comprised only 20% of the parent dosing study. Interviewed participants may not have captured the perspectives of those with less favorable experiences. Most individuals that were dissatisfied with the intervention or with low attendance declined to be interviewed or could not be reached despite multiple attempts. However, two participants interviewed for this study attended less than half of prescribed yoga classes and one of these participants reported being "neither satisfied nor dissatisfied" with yoga as a treatment for cLBP during the parent dosing study.

CONCLUSIONS

The complex nature of cLBP requires multidimensional treatments that address both the physical and psychosocial components of health. In this regard, a structured therapeutic yoga program for cLBP may be promising for patients who are able to participate and have access to yoga. The present study builds on prior qualitative studies of yoga for chronic pain management and compares these observations to a predominantly low-income minority population who typically had less experience with yoga than the general population.

Findings from the current study suggest that a focus on improving self-efficacy, increasing awareness of a mind-body connection, and building trusting relationships are vital components of yoga practice for a low-income minority population. Additionally, mitigating potential barriers such as cost and holding yoga classes in more low-income or minority neighborhoods may help to reduce disparities in yoga use among this population. These findings support the use of yoga as a potentially beneficial multidimensional treatment for cLBP that addresses patients' physical, psychological, and spiritual health.

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HIGHLIGHTS

- Qualitative interviews with predominantly low-income minority individuals enrolled in a yoga research study reveal that perceived effects, barriers and facilitators of yoga practice are similar to previous research findings with mostly white individuals.
- Participants viewed yoga as a means of pain relief as well as attributed improved mood, greater ability to manage stress, and enhanced relaxation to yoga.
- Findings suggest yoga may be a multidimensional treatment for back pain that has the potential to favorably impact health in a predominantly low-income minority population.

Figure 1.
Barriers and Facilitators to Yoga Practice.

Table 1**Participant characteristics**

Interviewed participants (N=19)	
Mean age (range)	49 (30 – 64)
Female – N (%)	14 (73.7%)
Race and ethnicity – N (%)	
Non-Hispanic white	5 (26.3%)
Non-Hispanic black	9 (47.4%)
Hispanic	2 (10.5%)
Other	3 (15.8%)
US born – N (%)	16 (84.2%)
Education – N (%)	
High school or less	4 (21.1%)
Some college or more	15 (78.9%)
Employed – N (%)	10 (52.6%)
Annual income \$30,000 – N (%)	9 (47.4%)
Public health insurance – N (%)	12 (63.2%)
Duration of LBP ≥ 4 years – N (%)	8 (42.1%)
Group assignment – N (%)	
Once-weekly yoga	9 (47.4%)
Twice-weekly yoga	10 (52.6%)
Satisfaction with yoga intervention ^a – N (%)	
Very satisfied	14 (73.7%)
Somewhat satisfied	4 (21.1%)
Neither satisfied nor dissatisfied	1 (5.2%)
Class attendance rate – N (%)	
75%	12 (63.2%)
50–74%	5 (26.3%)
<50% ^b	2 (10.5%)
Mean change in LBP intensity ^c (SD)	–2.1 (3.1)
Mean change in RMDQ score ^d (SD)	–4.1 (5.9)

^aSelf-reported satisfaction with yoga for cLBP during the parent study. Five participants in the parent study indicated they were “somewhat dissatisfied” with the intervention; none of these individuals agreed to be interviewed. No participants in the parent dosing study reported being “very dissatisfied” with the intervention.

^b Both interviewed participants with attendance <50% were in the twice-weekly yoga group. One attended 2 classes and the other attended 5 classes total over 12 weeks.

^c Change from baseline to 12 weeks; measured on an 11-point (0–10) numerical rating scale where 0=no pain and 10=worst possible pain.

^d Change from baseline to 12 weeks; RMDQ = Roland Morris Disability Questionnaire, a measure of back-related function with scores ranging from 0–23, where higher scores reflect poorer function.

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