PAIN & AGING SECTION

Original Research Article

Mindfulness for Chronic Low Back Pain: A Qualitative Analysis

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Abstract

Objective. Mindfulness is a nonpharmacologic mind-body therapy that has been shown to be effective in older adults with chronic low back pain (cLBP). There are few first-person accounts in the literature that describe the older adult experience and perspective while learning mindfulness and meditation to treat pain. The objective of this study was to investigate dominant themes present in the experiences of older adults applying mindfulness and meditation to cope with cLBP.

Design. Qualitative analysis of four focus groups.

Subject. Twenty-five adults age 65 years or older who had completed an eight-week mindfulness program.

Methods. The focus groups met for a comprehensive discussion session about their experience with mindfulness and meditation. The audio for each session was recorded, and the discussions were transcribed. Codebook development, qualitative coding, and thematic analysis were performed. The coders each coded all four transcripts, following which they met to adjudicate all coding differences until they were in complete agreement on coding.

Results. Several key themes were brought up by older adults utilizing mindfulness as a means of coping with pain, which included overcoming fear of pain (“Before [learning mindfulness], I used to dread pain”), pain awareness (“You’re focusing more on being aware than the pain; now that’s what helps me”), and pain significance (“It becomes insignificant”).

Conclusions. The themes identify several ways mindfulness impacts older adults with cLBP, including decreased negative emotions related to chronic pain such as fear of pain, a different perspective or change in awareness about pain, and reducing the significance of pain.

Key Words. Mindfulness; Meditation; Older Adult; Low Back Pain; Qualitative Analysis

Background

Chronic low back pain (cLBP) is common in the older adult. Data from the 2011 National Health and Aging Trends Study showed that the overall prevalence of bothersome pain in the last month for older adults was 52.9% and the back was the most common site [1]. cLBP is associated with disability [2,3], depression [4,5], cognitive dysfunction [6], loss of sleep and appetite [7,8], and social isolation [2,9]. Effective treatment for

cLBP is especially difficult to achieve as the older population is more susceptible to the adverse effects of pharmacologic agents. Nonsteroidal anti-inflammatory drugs are among the most commonly used drugs in the United States, yet according to the American Geriatrics Society (AGS) Beers Criteria, it is strongly recommended that older adults avoid chronic use due to gastrointestinal complications and increased risk of adverse effects in patients with cardiovascular disease [10]. Alternative pharmacologic therapies for cLBP such as opioids, antidepressants, and anticonvulsants are also potentially harmful because of increased risk of sedation or falls [11,12]. There is a need for effective nonpharmacologic treatments for cLBP that could also offer a better safety profile in the older population.

Mindfulness is a nonpharmacologic mind-body therapy first introduced by Kabat-Zinn to the medical community in the Mindfulness-Based Stress Reduction Program (MBSR) [13]. He described mindfulness simply as “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment” [14]. The cornerstone of developing mindfulness is meditation that fosters increased awareness through purposeful, accepting and equanimous attention. Mindfulness takes ordinary activities like breathing, lying down, and walking and turns them into a meditation through focused nonjudgmental awareness of sensations, emotions, and thoughts as they arise. While the techniques can be straightforward to learn, it takes practice to apply mindfulness skills in daily life experiences, including the challenges of pain and stress. It is recommended that mindfulness teachers be experienced practitioners themselves so that they can address questions as they arise. The MBSR is taught throughout the United States and Internationally. Certified MBSR teachers are listed at <http://www.umassmed.edu/cfm/mindfulness-based-programs/mbsr-courses/find-an-mbsr-program/>.

In our clinical trial of an eight-week mindfulness program for 282 older adults with chronic low back pain (cLBP), we found that it reduced pain and increased function [15]. Yet the full impact of the program on individuals could not be fully captured using the standardized questionnaires because these did not describe how participants used what they learned with mindfulness. There are few first-person accounts in the current literature that describe what older adults experience while learning mindfulness meditation to treat pain. We evaluated diary entries of participants in a pilot study of mindfulness and found themes describing how pain reduction occurred including distraction, better coping, direct elimination of pain, and greater awareness of pain sensation leading to behavior change [16]. The daily diary asked participants if they had any comments without a directive to write about meditation and pain. To further our understanding of the impact of mindfulness on older adults with cLBP, we asked persons who had completed the program in the large clinical trial to participate in focus groups to discuss the impact of

meditation on their lives using a discussion guide. In this context, we conducted four focus group discussions with study participants to further understand the process of learning mindfulness and then applying it for coping with and reducing pain. The goal of this study was to investigate dominant themes present in the experiences of older adults applying mindfulness and mindfulness meditation to cope with cLBP.

Materials and Methods

Participants

Twenty-five participants who had completed the eight-week mindfulness program participated in one of four focus groups. The inclusion criteria of the parent clinical trial consisted of participants who 1) spoke English, 2) were age 65 years or older, 3) had intact cognition (Mini-Mental Status Exam > 24) [17], and 4) had functional limitations due to chronic lower back pain, defined as a score of at least 11 on the Roland and Morris Disability Questionnaire, and had self-reported moderate chronic pain levels on a verbal descriptor scale (pain thermometer) occurring daily or almost every day for at least the previous three months [18]. Participants were invited to participate if they had completed the eight-week intervention and had participated in the monthly booster sessions.

The focus groups met for a comprehensive discussion session about their experience with mindfulness meditation for 90 minutes. Between six and seven people participated in each group. We conducted four focus groups. The number of focus groups was not based on thematic saturation; nevertheless, qualitative methodology literature states that thematic saturation can be achieved with three to five focus groups [19].

The audio for each session was recorded, and the discussions were transcribed and then modified to ensure that sensitive information regarding identity was removed. The discussions were supervised by a moderator (NEM) who directed the conversation based on a list of focused questions that aimed at eliciting several points of interest. The focus group guide is included in the Supplementary Appendix.

Codebook development, qualitative line-by-line coding, and thematic analysis were performed on four focus group transcripts using a combination of editing and template organizing styles to manage the data. We created codes and a codebook and then went through the transcript using these codes to organize and analyze the data (template style). We also went through the transcript line by line (editing style) and added or changed codes from the original codebook. The codebook template was developed through an iterative editing process between two trained qualitative research specialists (JLH, MH) who reviewed the transcripts for recurring and important topics in the focus group discussions. Nineteen codes were initially identified, and a final 22 codes were determined after co-coder discussion. Once

the codebook was agreed upon, the coders each coded all four transcripts using Atlas.ti software, following which they met to adjudicate all coding differences until they were in complete agreement on coding.

Following coding, quotes associated with various themes were reviewed using the constant comparative method to determine similarities and differences between the way focus group participants approached each topic that was coded [20].

Results

Focus group participants described multiple ways in which meditation had impacted or changed their lives, as well as what they used meditation for. Impact ranged from the physical, including pain relief, increased activity, psychosomatic changes such as improved sleep, and the management of comorbid conditions, to the more emotional and social, including stress relief, mood change, improved interpersonal relations, coping with everyday life, and the ability to simply “let things go” that would previously have bothered them. We will focus on the impact of meditation on pain. The mean age of participants was 76.6 years, 18 of 25 (72%) were white, and 15 of 25 (60%) were women (Table 1).

Pain Management

During the focus group, participants brought up the ways in which meditation affected their pain. Some participants stated that meditation helped them live with their pain, which meant that even though they still felt pain, they were no longer as bothered by it. Participants mentioned that they felt a change in their pain—the pain being dissipated or decreased greatly when they started using mindfulness meditation. However, temporality of the pain in relation to mindfulness seemed to be a recurring topic as some participants never felt relief, some participants felt it for very limited amounts of time while others mentioned the pain relief lasting a long time (some mentioned it lasting for months), and some participants mentioned no longer feeling pain at all. A participant noted:

I like this benefit I've found to me fortunately, I was in pain for over a number of years, and joining the study and doing it on a weekly basis, and I was actually pretty good at doing the meditation. I actually eliminated the pain...

Three themes around pain management emerged, which were Overcoming Fear of Pain, Pain Awareness, and Pain Significance.

Overcoming Fear of Pain

Several participants stated that fear of pain negatively affected their pain experience, by both worsening pain itself and also provoking negative emotions associated with pain, such as anxiety and frustration. One

Table 1 Characteristics of study participants

Characteristic	N = 25
Age, mean $\pm$ SD	76.6 $\pm$ 7.1
Gender, No.	
Male	10
Female	15
Ethnicity, No.	
White	18
African American	7
Education, No.	
Less than high school	2
High school graduate	4
Some college	10
College	4
Master's or greater	5
Low back pain duration, mo*	142
Pain medication, No.†	
Nonsteroidal anti-inflammatory	5
Acetaminophen	3
Tramadol	2
Opioid	1
Cumulative Illness Rating Scale Score, mean‡	4.6
Income, No.§	
<\$10,000	4
\$10,000–\$29,999	9
\$30,000–\$59,999	7
\$60,000 or greater	3

*N = 18.

†N = 10.

‡Measure of comorbidity; higher score indicates more comorbid conditions; scores range 0–13.

§Not all participants chose to disclose their income.

participant reflected upon her experience and stated that through mindfulness meditation she was able to become more aware of her pain, and that this awareness helped her overcome her fear of pain. She stated, “I think...fear of what it's going to be must make the pain worse than if I'm actually immersed in it and could see that it wasn't the end of the world.”

Another participant stated:

Before [learning mindfulness], I used to dread pain, and before when it would just be starting I'd be getting pain medicine, and you know, actually panicky. And I'm just not afraid of the pain anymore. I think that's why it doesn't come back. If it does come back, it's not bad. And I think that's why, because I actually went right into it and could see it wasn't all that bad. That's the way it's helped me.

The participant went on to admit that before mindfulness meditation, her fear of pain and the anxiety of not having an effective treatment at hand drove her to seek

illicit drugs. She stated, "I even had my brother get me street drugs at one point because the medicine I got from the doctor wasn't good enough."

Participants described using mindfulness meditation for pain relief during everyday events where they experienced pain, such as during hospital visits and hospitalizations, social events, walking, sports, gardening, washing dishes, and just sitting or lying in bed. For many participants, the pain they were experiencing made them eliminate or reduce the time they spent doing activities. Due to mindfulness meditation, some of those participants mentioned that they were now able to do some activities once again or feel less inhibited to participate in them.

Now see I've enjoyed, I always did enjoy walking, going out on the rail trails, just being physically active. And I'd given up a lot of that because of pain. Again, the combination of the physical therapy plus this, I'm back to doing that. There are days, yeah, I'm tired. I'm not going to walk the whole route this time; I'll just do a little bit, wherever I can do. But sometimes just walking and meditating while I'm walking, and I can do more. And do it...just so many things that I can do that I've given up hope. And the more I'm able to do...the more I do the more I find the more I'm able to do, and it just really.... Life is good, the world is good again. Yes it is. And I love working in the yard, the garden. Now I do not bend down there and pull weeds. "I'm sorry," the back says, "there are some things you don't really wanna do." And those discs: "You mess with me, I'll mess back." So, okay, I've learned the way to do it. I can get around it. But life's good. It has made life so much better.

Of note, it seems that through mindfulness meditation, once the participants were able to identify their fear and understand its relationship to pain, they no longer had to go through the whole process (meditation and reflection and identification of fear of pain) to overcome their prior fear. One participant shared:

I don't really repeat [the whole process] though. I don't have to. I think a lot of my pain must've been contributed or made worse just by my fear. And I meditate very little, maybe ten minutes at a time through the day, but I don't have to go back to that.

Through mindfulness meditation, participants were able to overcome their fear of pain, which allowed them to further examine pain and form an understanding of it.

Pain Awareness

Participants reported that meditation made them more aware of their pain or that they viewed it differently than they had before. Participants tended to report interacting with their pain through meditation so as to decrease

its severity. Prior to mindfulness meditation, many participants attempted to avoid their pain, driven by the idea that looking at their pain would make it worse. Regarding her first experience with mindfulness meditation and its emphasis on awareness, a participant shared, "What [the instructor] was telling me...was contrary to common sense.... Who in their right mind would want to look at your pain?... You're going to intensify it. You're going to see it. It's going to hurt, it's going to get worse. Your mind is on it. And that was my normal expectation of things." Once acquainted with the actual process of mindfulness meditation and experiencing it firsthand, however, she revised her prior statement by saying, "But to go in and try to see my muscles, to see the tenseness, see them actually spasming, and to feel that they were spasming, see what they were connected to.... Next thing you know, you're letting go and you're off somewhere else and it's not bothering you."

In other instances, participants recognized that before their experience with mindfulness meditation, they never felt the need to look at their pain, to assess and understand it. One participant remarked, "I've had to deal with vanity for 20 something years, and that's why I have a lot of pain, because I refused to get shoes that had a lift on.... [Now] a lot of that pain has faded. So [without] dealing with the pain and looking at it and understanding what I contributed to it, I could've never landed in a lot of this." Both of these participants brought up awareness of pain as a crucial process that allowed mindfulness meditation to be effective.

Some participants explained their experience further by describing how awareness of pain eventually led to acceptance of pain.

I think the body scan that [a participant] mentioned, helps to find out where the pain is. And then to stop at that place, and like just be with it. Just be.... Sometimes, I just don't know, I just feel awful. And if I do the body scan, then I find out where the pain is, and listen to it.

Another factor was a change of awareness about pain. This was an approach to dealing with the pain. Some talked to the pain, some ordered it to go away, and others used visualization to imagine the pain physically leaving their body. While some mentioned trying to eliminate or make their pain leave, in other cases participants mentioned that by focusing in on the pain, they were able to manage it, live with it, confront, or let go of it. A participant mentioned:

I think I'm more aware. I'm more aware of the pain, but it's not there as much.... No, and you're not wondering where it went but you just say it's not there. Sometimes it makes you think, is this really pain that I'm going through? Or is this in my head that I'm having pain, that it relaxes me that much. But when you're doing the breathing

exercise, you're really... I guess it could be called aware because you're doing that, then you calm—you're focusing more on being aware than the pain. Now that's what helps me.

One subject eloquently described this process of increased awareness:

I find that I can be very busy and [have] all kind of things going on, [but] if I decide that I'm going to settle in on meditation, it's like putting myself on the right track, and I immediately come down. That's the only way I can describe it. I become still and quiet, and depending on what I'm going to do, I can do it without being bothered, and that it includes my problems with my back... I can direct my thoughts to that and it kind of dissipates the pain, and quiets it down and I can get up and I have new energy and I can continue my work.

Through mindfulness meditation, participants were able to be differently aware of their pain, allowing them to let go of pain, which decreased the bothersomeness of the pain and/or led to pain acceptance.

Pain Significance

The significance, meaning, or importance that participants gave the pain seemed to be related to the amount of pain they experienced. For some, focusing on the pain allowed them to go through processes (as mentioned above) that allowed them to give less significance or meaning to pain in their lives. Others found that distractions or focusing away from the pain was what changed their pain's significance. Some described a change in life perception to be the catalyst for changing the meaning of pain. In the end, giving less significance, meaning, or importance to pain resulted in less pain or in being able to live with the pain. This participant talked about how mindfulness helped give less significance and power to the pain:

I've never thought that the pain dissipated during the meditative experience, but what I recognize out of the meditation times or the mindfulness times, my perspective on so much of my life has changed and particularly on the pain. It doesn't have the significance that it had. Now sometimes it can still take my breath away. You know, but it does not have the significance and power that I gave it at another early or let's say prior to my beginning the mindfulness experience. It has less significance and less importance. It's almost like, "Well, we know you are here and you're not going away..."

Another participant spoke about how the pain became insignificant:

I think pain takes on...becomes insignificant. It becomes insignificant. In fact, as I was listening, I use different words now. I have this pain in my back, and some doctor is going to say, "Oh, its osteoarthritis, spinal stenosis, it's got names and

diagnostic definitions. And it used to be if someone said "Well how are you doing?" I would say, "Fine, but I still have that back pain." It loses the significance, I don't talk about it anymore. It's just there. Some days it's going to aggravate me more than others, but some days it's not pain, its ache. And some days it's a quick stab and I don't feel it for the rest of the day. It has variations of how it is with me, and how I am with the pain. And I have a confidence of what is changing that is that time of mindfulness, that quiet time, where I lose—I don't pay attention to time or space, but just to the very rhythm of life, to the very breathing we talk about. A baby taking its first breath and someone taking their last breath, and all those myriad times in between that we're breathing over this lifetime [makes circular motion as she speaks about breathing]. That, to me, is so much larger that it shrinks the meaning, and therefore different words for the pain. It's not the same. When little kids are learning the alphabet, they say, "Big C, little C, big D, little D," so I'd have to say, "Big P, little P." It loses its significance for me.

Regarding his perception of pain prior to mindfulness meditation, a participant described:

It was something that had the power to grip me...a stabbing knife...[something that] had mechanical power to grab me, and inject pain into me... It was something [out of] a monster show that could grab you and hurt you.

Another participant described how mindfulness helped reduce pain intensity as well as changed their image of pain from something large and heavy to something lighter and in the background.

And while you're in the deep meditation, you don't have that pain. Where it goes, I have no idea, but I relax enough that whenever I come back, and I'm finished, my energy is increased, and I don't have the same pain that I had before. It hurts, but it doesn't pain me. What is my image of it? It's there and it's awfully big. It's like something that is hanging over me, but I can make it go away by meditating, or lighten it...enough that I don't pay attention to it.

Several participants shared that mindfulness meditation helped them reduce the significance of pain once they accepted the fact that it would be a constant presence in their lives. One participant described his experience by saying, "The pain is still there.... But I have learned to just...relax, breathe.... And it's just not that important [anymore].... It's not going to go away...but I move [it] into the background. And it's back there somewhere, but that's okay. I can deal with that now."

He elaborated further by saying that, in fact, he recognized that his everyday attitude toward pain and his

conversations regarding pain had changed since this shift in significance. He stated, "I use different words now... it used to be if someone said 'Well how are you doing?' I would say, 'Fine, but I still have that back pain.'.... [But] I don't talk about it anymore. It's just there.... It loses its significance for me."

Discussion

Our study findings suggest a variety of ways mindfulness meditation affects cLBP in older adults to make it more manageable. Dominant themes that we identified included Overcoming Fear of Pain, Pain Awareness (assessing and understanding pain), and Pain Significance. Some of these processes likely happened in a linear fashion with one precipitating the other, but most were likely simultaneous processes with ongoing influences to one another. The themes we identified extend our earlier work. These themes did not emerge in our earlier publication, likely because in the current study we were able to conduct in-depth discussions with participants.

In the focus groups, there was an emphasis on the positive psychological impact of mindfulness meditation, namely its effectiveness in reducing negative emotions associated with pain, such as fear. Overcoming fear of pain not only helped to reduce pain intensity and associated negative emotions such as frustration and anxiety, but also reduced fear of physical activity. Reducing fear of pain suggests one possible mechanism through which mindfulness meditation works to treat chronic pain. Fear avoidance beliefs are a well-described finding associated with chronic pain conditions and with decreased physical activity [21]. In a recently conducted longitudinal survey, Larsson et al. [22] demonstrated that fear avoidance beliefs played a more important role in predicting future physical activity levels than pain characteristics in older adults. It was postulated that increased fear of movement, avoidance behavior, and ultimately disuse led to depression and further exacerbation of chronic pain. Mindfulness can provide an option for patients to reduce or even overcome their fear of pain. In Day et al.'s [23] study of mindfulness-based cognitive therapy for the treatment of headache, patients also described reducing the fear of pain and changing the significance of the pain as part of the process of working with the pain.

An increased awareness of self plays an important role in facilitating mindfulness meditation.

Kerr et al. [24] found in their qualitative analysis of diary entries that an observing attitude (observing experiences nonjudgmentally or reperception) occurred to some degree by the end of the mindfulness program for all participants. They postulated that the emergence of this observing attitude is necessary before the more global changes noted in participants could occur [25]. Our findings support this theory. Awareness—or being differently aware of pain—developed by participants through

meditation is consistent with an observing attitude. Participants described awareness as being key to coping with both the negative affective response (fear) and the physical sensation of pain.

Our study is consistent with a prior qualitative analysis we carried out of diary entries from older adults involved in a pilot study of mindfulness for cLBP [16]. Both studies' participants described an increased awareness of how pain affected them. However, the current study describes in more detail how awareness led to a change in their understanding of the pain or how they were differently aware of it.

Several participants stated that mindfulness meditation worked to reduce pain significance rather than characteristics of pain, such as pain intensity or frequency. While several participants stated that mindfulness meditation did indeed decrease the intensity or frequency of chronic pain, others stated that they did not feel there was a difference in the quality of pain; rather, it was the change of their perception of pain, the reduction of its significance, that granted them increased functionality and quality of life. The reduction in pain significance, as well as letting go of the fear of pain, indicates a shift from negative affect to positive affect, which is a potential mechanism by which mindfulness affects pain.

Some participants noted that they were able to shift from a rejecting or resisting attitude toward their pain to a more flexible and accepting attitude, which seemed to lessen the significance or power of pain in their lives. This occurred as they became willing to observe the pain as it is in the moment, rather than continuously struggling with the sensations, thoughts, and feelings related to pain. This cultivation of psychological flexibility is a hallmark feature of acceptance-based treatments such as MBSR and Acceptance and Commitment Therapy (ACT) [26,27]. In a 2011 systematic review, MBSR and ACT had small to medium effects on physical and mental health outcomes in chronic pain, which is similar to the effects of cognitive behavioral therapy [28].

Our findings suggest that mindfulness affects known negative psychological (negative affect) and behavioral responses (decreased activity) toward chronic pain. Further research is needed to uncover the relationship between an observing attitude and a change in pain awareness to pain intensity, pain coping, and pain disability, as well as the relationship between pain awareness and pain significance.

Limitations of this Study

This was a small study that comprised predominantly white, older adults with chronic lower back pain. Its results may not be generalized to a wider population.

A uniform structure was implemented for each focus group discussion, and while all participants contributed

to the conversations, some spoke more than others or elaborated more on one theme than others. It is notable, however, that despite these differences, consistent themes were identified regarding mindfulness meditation and its impact on chronic pain.

Summary

Several key themes were brought up by older adults utilizing mindfulness meditation as a means of dealing with pain, which included Overcoming Fear of Pain, Pain Awareness, and Pain Significance. These themes give us a better understanding of how mindfulness meditation works to help older adults cope with chronic pain and offer further points of interest to be pursued for further research. In particular, they shed light on the mechanism of mindfulness meditation and suggest that its impact is associated with decreasing negative emotions related to chronic pain, such as fear of pain as well as reducing the significance of pain through a different perspective or change in awareness about their pain.

In conclusion, our study complements the findings of the Aging Successfully with Pain clinical trial that mindfulness meditation is an effective adjunct method for treating cLBP in older adults. This study focused on the perceived benefits of mindfulness from the older adults' perspective on their cLBP as well as their reflections on learning mindfulness skills. Arguably, this population would benefit the most from additional modes of treatment as older adults are more susceptible to the adverse effects of pharmacological agents. In addition, our study supports a mind-body as well as a medical approach to patients with chronic pain disorders and underscores the potential for mindfulness to not only improve pain coping skills, but to also decrease pain intensity and pain-related disability.

Supplementary Data

Supplementary Data may be found online at <http://pain.medicine.oxfordjournals.org>.

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