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"Making Peace with Our Bodies": A Qualitative Analysis of Breast Cancer Survivors' Experiences with Qigong Mind–Body Exercise

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Abstract

Objectives: Breast cancer treatment leaves breast cancer survivors (BCS) with an array of lasting side effects, including persistent postsurgical pain (PPSP). In this study, we explored the perceptions of BCS with PPSP as they learned Qigong mind-body exercise (QMBE), a multimodal practice rooted in Traditional Chinese Medicine.

Methods: Participants included 18 female BCS treated for stage 0–III breast cancer and experiencing PPSP. Participants were taught QMBE over 12 weeks. Semi-structured interviews were conducted before and after the intervention.

Results: BCS disclosed a disconnect between mind and body that emerged during treatment. They perceived QMBE as moving meditation, which enabled them to reconnect mind and body, lessen their pain, and make peace with their bodies.

Conclusion: These women's experiences both inform the promise of integrating QMBE and related mind-body exercise into PPSP clinical practice guidelines and suggest new areas of research regarding the role of multimodal interventions for holistic healing in BCS.

Keywords: Qigong, mind–body exercise, breast cancer, persistent postsurgical pain

Introduction

Given the complexity of breast cancer and its invasive treatment, breast cancer survivors (BCS) are often left with both physical and emotional scars. In addition to potential changes in body image, fear of recurrence, fatigue, cognitive changes, and sleep disturbances, ~30%–40% of BCS experience persistent postsurgical pain (PPSP).[1] The nature of the pain is variable; it is most commonly reported to be felt in the breast, axilla, side, or arm,[2] and has been described as dull, burning, or aching.[3] Studies have shown that, for some, PPSP can persist as long as 9 years following surgery or longer.[4,5] Along with limitations in physical functioning and impaired overall quality of life, BCS with PPSP are also likely to experience anxiety, depression, and sleep disturbances.[6,7] Furthermore, psychosocial factors have been shown to be associated with a patient's risk of developing PPSP and the ability to cope with it, highlighting the significance of the interaction between psychologic and physical variables.[1,2,7]

Psychosocial approaches in conjunction with pharmacologic treatment have been recommended for supportive cancer care, and pain in particular.[8,9] Qigong mind–body exercise (QMBE) is a multimodal practice with a long history rooted in Traditional Chinese Medicine (TCM). QMBE is characterized by slow, flowing, rhythmic movements, breath work, and focused attention. It is often referred to as a meditation in motion and is practiced regularly in Asia with the intention of improving health.[10,11] Various styles of *t'ai chi* and Qigong (referred collectively as TCQ) have shown promise as a safe way to address the constellations of symptoms that BCS experience.[12,13]

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Several small pilot studies and one larger randomized controlled trial suggest QMBE may lead to improvements in quality of life, mood, and fatigue.[14–18] Qualitative researchers have also conducted studies with BCS regarding their experiences in a range of interventions such as mindfulness meditation,[19] spiritual practices,[20,21] mindful movement,[22] massage,[23] and TCM.[24] These studies suggest perceptions of emotional and physical healing among the study participants, facilitated by shifts in coping and appraisal mechanisms. Interventions involving movement, including conventional exercise-based rehabilitation[25] and mindful movement,[22] may add an additional dimension of healing by directly addressing the physical body. BCS participating in these interventions have described a rediscovery of their body's strength and ability[25] as well as an increased awareness of the importance of movement in its connection with emotional states.[22]

The purpose of this study was to explore the perceptions of BCS as they learned the practice of QMBE. Study participants suffered from PPSP, following multiple surgeries, radiation, and chemotherapy. An underlying assumption of this study is that PPSP is a multifaceted construct not only limited to an individual's perception of the physical sensation of pain but also includes the personal meaning an individual confers to the pain, affective and behavioral changes in response to pain and bodily reconstruction, and perceived influences on personal and community relationships occurring within the BCS sociocultural contexts. We employed qualitative methods to explore BCS perspectives on the mind–body connection with respect to PPSP and their experience of QMBE.

Methods

As part of a single-arm pre/post pilot study evaluating the effects of QMBE in BCS with PPSP, we conducted semi-structured interviews with participants before and after a 12-week QMBE intervention.[26] The main study included a battery of self-reported quantitative outcomes, including pain, perceived stress, fatigue, quality of life, and upper extremity function.[26] Interviews were conducted to inform interpretation of the results of the quantitative study and to discern areas of further interest.[27] Participants provided written informed consent. The study was approved by the Dana-Farber/Harvard Cancer Center Institutional Review Board.

Participants

Participants were women who had undergone surgical treatment for stage 0–III breast cancer and were experiencing PPSP 3 or more months after surgery, chemotherapy, and/or radiation. Patients were ineligible if they had any unstable chronic medical or psychiatric condition, planned surgery during the study period, were pregnant, enrolled in physical therapy, or participated regularly in moderate-intensity exercise or mind–body practices. Subjects were recruited primarily from breast oncology clinics at the Dana-Farber Cancer Institute in Boston, Massachusetts.

The average age of participants was 55 (range 39–79) with an average of 4 years (range 1–10) since their breast surgeries. Most (15) were diagnosed with stage 1 or 2 breast cancer, two with stage 0, and one with stage 3. Thirteen women underwent mastectomy, five with reconstruction, and five underwent lumpectomy only. The majority (12) of the women were white, three were black/African American, one was Asian, and one was more than one race. Most were highly educated, with nine completing a postgraduate degree, two completing some postgraduate work, five college graduates, and two completing some college.

Intervention

Study participants were taught the Eight Strands of the Brocades QMBE over the course of 12 weeks. The Badaunjin protocol we used is one of the most widely practiced and studied *qigong* exercises in the world. There are multiple variants of this protocol. The protocol we used in this study most closely followed that published by Kam-Chuen.[28] More details of our specific intervention can be found in Osypiuk et al.[26] Systematic review of the health benefits of Baduanjin have recently been published.[29] The intention of Qigong practice is to generate and circulate Qi, or ''life force,'' through flowing dynamic postures, integrating breath with movement, and focusing attention somatically, through imagery and metaphor.[30] Participants were asked to attend one 1.25-h class per week for 12 weeks and to practice at home using a provided instructional video for 2–3 h per week. Classes took place at a community-based healing arts center. The program was taught by two experienced QMBE instructors (>25 years of training) who have taught in previous clinical trials.

Qualitative data collection

Researchers used a grounded theory design[27,31] to understand participants' perceptions of PPSP, the mind–body connection, and the influence of QMBE. Semistructured, face-to-face interviews were conducted at baseline and 12-week follow-up, with all participants during study visits. Interview protocols were designed to encourage participants to describe their unique perspectives, while the interviewer listened to discern the meaning of participants' statements. The interviewer probed after participants' initial responses, resulting in thick descriptions of participants' experiences.[32] Interviews lasted $\sim$30–45 min each. Questions focused on subjects' experience with diagnosis and treatment of breast cancer, PPSP, and their reasons for joining the study (baseline), and their experiences and perceived effectiveness of the intervention (12-week follow-up). Interviews were digitally recorded and transcribed by Scribie Audio/Video Transcription (San Francisco, CA). Transcripts were deidentified before analysis. Participants were asked to keep journals (deidentified) of home practice. Participants were moderately compliant with prescribed home practice using digital videos.[26]

Qualitative data analysis

Two of the lead researchers (K.O., K.K.) winnowed transcriptions of participants' interviews to focus on data central to the research questions.[27] Independently, researchers created summary sheets for participants, noting key elements of participants' responses and making researcher notes.[31] Data were organized chronologically and categorically, leading to the development of descriptive codes and tables of categories. The two researchers reviewed each other's analyses, verifying categories.[33] Researchers searched across categories for patterns. As patterns emerged among the categories, researchers looked for relationships, generating themes using the constant comparative method.[27,31]

The two qualitative researchers continually returned to the original data sets to look for contrasting evidence to the emerging themes, engaged in peer review and debriefing,[33] and searched for quotes as exemplars for themes. At monthly intervals, the qualitative researchers met with the larger research team to discuss and finalize themes.

Findings

During baseline interviews, BCS described the mind–body disconnect that had developed during medical treatments. In follow-up interviews, BCS depicted QMBE as facilitating the process of reconnecting mind and body, altering their relationships with their bodies, and becoming aware of the unique effects of integrating movement and meditation. Three overarching themes included the following:

(1) *QMBE enabled BCS to reconnect mind and body and lessened their pain.*
(2) *QMBE enabled BCS to make peace with their bodies, fostering acceptance and renewed confidence in their bodies.*
(3) *QMBE, as a mind–body practice, facilitated changes through the following characteristics.*
   (i) QMBE as a form of *moving meditation.*
   (ii) Focused attention as a means of *being aware of all that is working well and feeling good.*
   (iii) Focus on postures to develop an internal sense of *balanced uprightness (or no more slouching).*
   (iv) ''Less is more'' philosophy as a way of being gentle with their bodies.
   (v) QMBE class as community: w*e were all different; we were all good.*

QMBE enabled BCS to "reconnect mind and body and lessen their pain"

During recruitment, participants received a brochure stating, ''The National Cancer Institute recommends mind–body medicine for management of cancer pain.'' The study's invitation to address the mind–body relationship provided a compelling rationale for many participants. During baseline interviews, 11 BCS explicitly stated the importance of exploring the mind–body connection to address their chronic pain. One participant said the QMBE study, ''sounded like something that probably would be really good both for mind and body, for me, for pain and for ongoing concerns about cancer and cancer recurrence.''

The disconnect between mind and body during breast cancer treatment. BCS described losing the mind–body connection as they stepped onto the ''roller coaster'' of breast cancer treatment.

> I feel like you lose that [connection] in treatment, because it all becomes so objectified like, ''Alright, take this,'' ''cut that off,'' ''cut this,'' and you know, I look different and I feel different, I don't want to think about it, I don't want to feel it. If I think about my body, I worry. If I feel my body, I worry.

The mind–body disconnect emerged early during their breast cancer treatments. Participants described the shock of diagnosis, followed by difficult decisions, traumatic treatments, and ''objectification'' of their bodies.

> I feel that if I can get the body and the mind on the same track together, then it's not defining myself by, ''Oh! I'm breast cancer four generations and I'm stage 1A and I'm TNBC,'' and all these labels, these quantitative markers that says nothing about…all the other ways I'd like to define myself. … This is about the big picture, healing between mind and body, improving the constellation of different symptoms.

For these BCS, the ''big picture'' meant feeling whole again, and reconnecting mind and body.

In baseline interviews, participants described a broad range of PPSP symptoms, including the heavy achiness of lymphedema, sharp pains in their ribs, dull pain along the incision line, and widespread joint pain. One participant lumped all the variations together into a single phrase, ''breast cancer pain.''

> I've come to tolerate pain as part of my life. I have pain in my ribs. … It hurts a little bit a lot of the time. I can't sleep on one side. There's some pain involved with flare-ups and heaviness and achiness from the lymphedema… I definitely can't move as well as I used to. There is that kind of pain, and then I have the aches and pains…in my joints [from the chemotherapy]. All of it, for me, is breast cancer pain.

Despite the range of participants' perceptions of their pain, they noted that QMBE, through the emphasis on mind–body reconnection, began to address both the physical and emotional pain of being diagnosed and treated for breast cancer.

> You've been through a debilitating disease, dealing with questions, like, ''How do you feel about your body? How do you feel about yourself? Do you have any energy? Any lethargy? And can you keep up with your daily chores?'' And I think Qigong helps with all of those things…of dealing with the disease and getting back to life. Qigong really helps the mind-body connection—calming, getting into a meditative state, and acceptance.

One participant, however, initially wondered, if QMBE would benefit her.

> During the first class, I was thinking, ''Oh these movements are not going to do anything, it's not really pushing me.'' [Then] after the first two weeks or so, it definitely felt different. In the end, it felt like [Qigong] was pushing me to focus more… I felt stretched…a release of tension… I didn't realize it would feel as good as it felt. … To be able to come through the trauma [of breast cancer] and have a calm place to reconnect was really good for me.

As the QMBE class progressed, participants noted that the reconnection of mind–body through QMBE changed their relationship with their bodies as they became aware of emotions expressed through physical sensations.

> How you feel about your body is a challenge after you've had breast cancer. … [But] mind and body have to be interconnected. All of it together [in QMBE] relaxes you and helps you stretch out a little bit, calm you down, help you think about your body in a different way, and trust your body–to get inside yourself in a different way. It doesn't mean you're not going to get cancer again, but it could mean that you're more at peace with your own body.

Participants noted that reconnecting mind–body through QMBE enabled them, as one participant said, ''to make peace with her body.''

QMBE as a way to make peace with their bodies

Participants described a sense of feeling physically stuck in pain, unable or afraid to move, a characteristic of their mind–body disconnect. One participant noted, ''It's like a car being stuck without any lubrication in the gearbox or the transmission.'' Another said, ''I'm a pretzel, it's just a lot of pain to move that I never had before. I feel the need to stretch, but instead I contract, because of the pain.'' Others described feeling stuck emotionally, due to pervasive anxiety. Pain triggered fear, and fear of pain triggered contraction and less movement.

As one participant said, ''I had this giant ball of stuck anxiousness. The pain causes anxiety. … I can't calm my brain. … My anxiety is paralyzing.''

After QMBE, participants described ''becoming unstuck'' as they learned to release tension and move, physically and emotionally.

> The more you do QMBE, the more you loosen things up. So, between the concept of being in the moment and feeling the pain and not judging the pain, and then just moving in this very gentle way, that's how I think it helped [diminish the feeling of] being stuck.

When women learned of their breast cancer diagnosis, they described the feeling of being betrayed by their bodies. The sense of betrayal persisted as they endured difficult treatments. Participating in QMBE began the process of trusting their bodies again.

> I needed to [learn] how to work with my body and not resent it and not feel it betrayed me. …I was mistrusting my body, thinking, ''You let me down, seriously.'' All the stuff that was going wrong. Then [I] take [these] classes, and discover, ''Actually this body is doing a pretty good job, for somebody who's been through what it's been through.''

Participants had been afraid to exercise or go to the gym. They avoided situations where they were unable to execute certain movements due to pain or limited range of motion; nor did they want to offer explanations for their limitations. While participating in QMBE, BCS began rebuilding trust in their body.

> I was anxious…I thought, ''Am I gonna be able to [exercise]?'' But I absolutely could do everything that they needed me to do [in QMBE]. …But, [it was a process of] feeling different parts of your body and being calm and being peaceful and figuring out what part of your body felt what way at any given time.

Other participants expressed gratitude for what their bodies could do.

> It's things like [being] grateful for your body and acknowledging [your body] more and thinking about all the amazing things it's doing and not focusing on what it's not doing or what you can't do. …But [also asking us] how do your knees feel? How do your feet feel? How does your back feel? How does your head feel? I've started to pay attention to [all of my body] and to be more gentle with myself.

Acceptance: what I can do now. Trusting their bodies meant a growing acceptance of their bodies. Participants explained the process of reconnecting mind and body and enjoying the sensations of movement.

> I never felt physical limitations with the QMBE movements. It was about mentally slowing down and focusing on the movement. My mind felt freer, clearer. I felt more energized and more at peace.
>
> You start connecting to your body more and being more forgiving of your body more. … I was moving forward and feeling more positive. … I think the most important thing for me is to go to that state of acceptance about where I am, and that can be good in and of itself. You can always build on this. There's always something you can do. I think it just helps me maintain a positive focus.

The physical treatments for breast cancer, by necessity, had involved pain. However, complex issues regarding uncertainty and mortality had become embedded in their pain. QMBE was a step toward unraveling that complexity.

QMBE as a form of moving meditation

Participants used the phrase, ''moving meditation'' repeatedly as they described QMBE. They were curious about the efficacy of QMBE and noted key qualities of the movement.

> What's unique … is that combination of meditation and movement. Instead of feeling like you have to jump around, stretch and do aerobic stuff, I found that the slowness of the movement, which felt very hard at first, became comforting very quickly. … Slowing down, being conscious and being aware of it, calmed me down a lot.
>
> I got used to the rhythms and paying attention to [the movements] and knowing that I was supposed to try to stop thinking. But it was different from [sitting] meditation because it was a focus on this movement as opposed to ''stop thinking and focus on not thinking!'' It's a moving meditation.
>
> I've never been able to sustain a meditation practice, but with Qigong it was almost immediate…. You are focusing on the movement, and the breath, and your body. You get there a lot faster.

Participants also described characteristics of QMBE that created a sense of moving meditation.

Focused attention: "what is good in their bodies". Focused attention became a means to renew their relationship with their bodies as they carefully attended to somatic sensations and breathing.

> Qigong is very slow and forces you to focus on your body, the sensations in your body, and your breathing.… You're really trying to pay attention to how things feel in your body. And it's done at such a slow pace that it really gives your brain a chance to sense what's happening. A lot of times athletic classes can be very much about movement, but you don't spend the time trying to feel what a certain movement does to the rest of your body.

Posture: straightening up, no more hunching. Participants noted the QMBE emphasis on an upright posture. One BCS realized that she had been ''slouching'' since her surgery.

> I realized from Qigong the importance of standing. When I added the Qigong to my exercise routine, [I had] at least a half hour in my regular routine that I was standing up. I became aware of being upright more and how much I was retreating to chairs all the time, slouching.… [Now I am] straightening myself up, both when I'm sitting and standing and walking…. Posture is probably the biggest thing.

QMBE encouraged women to gently engage in movements that supported lengthening and opening their bodies.

"Less is more": moving without pain. Participants were surprised to hear instructors urging them to do less, not more, 70%, not 100%. The tone set by the instructors emphasized slow, gentle movement.

> [The instructors] put a stress on 'less is more' instead of 'no pain, no gain.' It was a completely different attitude [compared to other types of exercise].

Several participants described, ''less is more,'' as a gentle quality to the movements that resulted in less pain and, ultimately, more capacity for movement.

> One of the lessons from QMBE is that it's good to do less rather than more. In the beginning I was trying to do [more], and I had pain in my left arm [PPSP]. So, when I asked, [the instructor said,] ''You just go where the limit is for that side.'' So, you do less and [then later] I could do just a little bit more.

Social interactions of QMBE: "We were all different; we were all good". Participants told us that they enjoyed doing a movement class with other BCS, particularly those who had PPSP. They were unaware that other BCS had experienced similar chronic pain. As one participant said, ''Oh I'm not alone. Everybody [in this class] here has been where I've been.'' Another explained, ''I thought it was just me that had chronic pain.''

Participants described meditative movement, with a focus on healing and wholeness, as a unique and powerful group experience.

> It feels different to be with other women who have experienced [what I experienced].… A lot of us were in ''the same window,'' a certain number of years out [from breast cancer treatment] …But, the most helpful thing was knowing that we had that connection while we were doing something else. It wasn't, a conference or support group.…This class was doing something physical, knowing that we were pushing ourselves but in a supportive place and that we were all sharing in that experience. It was really powerful.

One participant explained the sense of being an individually distinctive member of the QMBE class community.

> Our cancer journeys were all very, very different. But, everybody came in wherever they were in the process. We did 60 to 75 minutes of Qigong. We were all at different stages of our cancer journey, and we were all very good.

The women's combined engagement in QMBE created social interaction among the group that differed from a breast cancer support group, yet felt supportive as they moved toward healing mind and body. Most participants preferred practicing Qigong with the group rather than individual practice with the instructional video. However, half of the participants reported using the instructional video consistently between sessions, as a way to remind themselves not only of the movements but of the meditative qualities of the form as well. One participant noted that the practicing with the instructional video helped her maintain ''that sense of peacefulness … and keeping the pain level down.''

Discussion

As part of a broader study evaluating a variety of quantitative health outcomes following a QMBE intervention, we conducted qualitative interviews with BCS with PPSP to understand their experiences with chronic pain and QMBE practice. Themes emerging from analysis focused on participants' perceptions of reconnecting mind and body, changes in their relationship with their bodies, and the qualities of QMBE making it a multidimensionally effective intervention. Below we discuss our findings in the context of the BCS mind–body experience, considering how these women's perceptions offer insights into current research and future clinical recommendations.

Study participants told us that the experience of living through breast cancer diagnosis and treatment can feel objectifying and traumatic, leading to a disconnect between mind and body. Emphasis during treatment was placed on surgical procedures, drug regimens, and diagnostic tests. These women did whatever they needed to do to survive. During treatment, these women's sense of self narrowed to the pathology of their cancer—what had gone wrong in their bodies and what needed to be fixed, a finding noted by other BCA researchers.[34,35] As participants explained, the mind–body disconnect began early in treatment and continued as they struggled with unexpected, enduring pain. Persistent pain kept their focus on the pathologies of breast cancer and continued the sense of mind–body disconnect.[36–38] In contrast, participation in QMBE challenged these women to assume a different perspective, to step away from the cancer ''lens,'' and to view themselves through a holistic ''lens.'' QMBE facilitated participants' reconnection between mind and body by integrating movement and meditation.

Exercise has been well researched and frequently recommended for BCS, demonstrating not only physical benefits but also psychologic effects, such as improved body image and self-confidence.[25,39,41] A significant concern among researchers has been that BCS exercise less often than is recommended; their prediagnosis exercise practices reportedly decline during treatment.[41–43] BCS face barriers that restrict adherence to these interventions, including breast cancer-related symptoms (e.g., fatigue), low expectations of benefit, and fear of injury.[44,45] Some studies suggest BCS have lost confidence in their bodies and are confused about the best way to move forward physically.[22,41,43] Participants in this study affirmed that view; they commented on their deconditioned state and worried about the kinds of exercise they could do without triggering pain or injury. These concerns are shared by older BCS who also expressed confusion regarding appropriate and safe exercise.[22,43] Exercise regimens or therapeutic modalities encouraging participants to push their limits may be less appealing to BCS who suffer from chronic pain or BCS who are older.

The ''less is more'' philosophy of QMBE differs from typical forms of exercise. Our findings suggest that BCS respond well to the gentle movement of QMBE, its adaptability to individual needs, and the novelty of integrating movement with meditation. As they participated in gentle movement, women learned that they could move more and without pain. As these women witnessed themselves doing more than they had expected, they developed renewed confidence in their physical abilities. Our findings parallel prior studies in patients with chronic medical conditions in which Qigong and related mind–body practices have been described as a gateway exercise, gradually leading to greater exercise self-efficacy.[46]

An additional concern for our participants was persistent pain. PPSP was a constant reminder of their breast cancer

diagnosis and treatment and changes in their body. The pain often triggered fears of recurrence, a common concern of BCS.[47,48] Participants also feared that movement would trigger pain. Guarding patterns to protect from pain, such as hunching or slouching, made exercise more difficult. These women were reluctant to engage in forms of exercise, such as going to gym class or jogging, that potentially involved additional pain or stress. Researchers have speculated that long-lasting pain results in counterproductive patterns of beliefs and actions. Many of our participants, for example, described feeling stuck, physically and emotionally.[49–51] Other researchers have proposed that developing alternative beliefs and actions must be facilitated by some form of movement.[50,52,53]

As they practiced QMBE, participants noticed a reciprocal relationship between their emotions and physical sensations of tenseness or relaxation. By incorporating physical movement with focused attention in a calm, encouraging environment, QMBE enabled these women to unravel counterproductive patterns of movements and beliefs associated with pain and to develop new patterns through awareness and appreciation of the positive aspects of their physical selves. This process ultimately lessened their pain and renewed trust in their bodies. Older BCS in a study evaluating a mindful movement protocol also reported a sense of acceptance of their bodies, rediscovery of the joys of movement, and heightened somatic awareness.[22]

Given the physical and emotional toll of breast cancer, it is evident that BCS need an intervention that can foster multidimensional healing, addressing physical, emotional, and spiritual concerns.[54,55] Meditative practices employed in mindfulness-based therapies, such as mindfulness-based stress reduction or mindfulness-based cancer recovery, have been shown to help BCS cope with both physical side effects and emotional sequelae of cancer treatment.[19,54–56] Interestingly, several of our participants explicitly used the phrase, ''moving meditation,'' to describe QMBE. They also compared QMBE with other meditative practices they had experienced previously, observing that they were able to acquire a meditative state more easily through QMBE than through sitting meditation practices. Qigong has been previously identified as a meditative movement, a distinctive form of integrated exercise and meditation with broad health benefits.[57] Body and mind integration, through meditative movement, may facilitate a multidimensional form of healing.[58,59]

Participants in the QMBE study valued the opportunity to learn QMBE practice in concert with their BCS peers. They described the unusual qualities of connecting with one another through choreographed QMBE meditative movements. They noted that the class did not feel like a BCS support group. They enjoyed the social connection through movement and having their collective focus broadened beyond the pathology of breast cancer to a focus on health and well-being. Traditionally, Qigong has been practiced in groups to foster wellness and improve health.[10] Participants in the MMP study also described the shared movement as an alternative form of support for BCS, different from more traditional support groups.[22] Meditative movement in groups may have additional benefits for BCS and others with chronic medical conditions.[46]

Limitations

This small qualitative study is not generalizable to larger populations nor is it intended to be. Through an in-depth study of the perceptions of a small group of women with PPSP engaged in QMBE, we identified credible patterns of change over time[33] in their perceptions of pain and movement, including the importance of mind–body integration. Themes from this study pose questions for further investigation. One possible limitation of this study is that subject selection was not based on pain levels and that participants had relatively low levels of pain at baseline. However, while pain ratings were low, our qualitative findings revealed that even low levels of pain cause significant distress. These findings highlight the value of employing a multidimensional approach to measuring the extent of this burden. Another potential limitation is that we did not attempt to distinguish pain or distress caused by specific treatments (e.g., pain related to antiestrogen therapy). Our interests were to explore participants' perceptions of pain from a biopsychosocial framework. Participants' narratives revealed complex attributions for the sources of their pain and influences on their quality of life. Future larger scale studies could explore the nature of pain as it relates to types of chemotherapeutic and surgical interventions. Future randomized controlled trials might look at connections between emergent themes and objective measures of function, mood, and posture, and compare how unimodal versus multimodal therapies compare (e.g., symptom-targeted physical therapy vs. QMBE).

Conclusion

QMBE may be one way to help BCS stay ''grounded'' in a broader holistic perspective over the course of cancer treatment. Several participants noted that QMBE was a gentle intervention that could begin earlier in the treatment process. Future studies may explore the value of QMBE as a form of coherent and integrated supportive care during treatment. Other populations who may benefit include other cancer survivors or patients with other forms of chronic pain. These populations face complex challenges as they make sense of their experiences and move forward. Meditative movement practices such as QMBE have the potential to foster healing on multiple levels.

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Author Disclosure Statement

P.M.W. is the founder and sole owner of the Tree of Life Tai Chi Center. His interests were reviewed and managed by the Brigham and Women's Hospital and Partner's HealthCare in accordance with their conflict of interest policies. The other authors declare no competing interests.

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