

Original Research Article

Listening to Their Words: A Qualitative Analysis of Integrative Medicine Group Visits in an Urban Underserved Medical Setting

Danielle Dresner, MPH, Katherine Gergen Barnett, MD, Kirsten Resnick, BS, Lance D. Laird, ThD, and Paula Gardiner, MD, MPH

Department of Family Medicine, Boston University School of Medicine, Boston, Massachusetts, USA

Correspondence to: Danielle Dresner, MPH, 1 Boston Medical Center Place, Dowling 5 South, Room 5305B, Boston, MA 02118, USA. Tel: 617-414-6206; Fax: 617-414-3345; E-mail: danielle.dresner@bmc.org.

Funding sources: This work was supported by a private family fund.

Conflicts of interest: Danielle Dresner, Katherine Gergen Barnett, Kirsten Resnick, Lance Laird, and Paula Gardiner have no relevant conflicts of interest or financial disclosures.

Danielle Dresner and Katherine Gergen Barnett share first authorship.

Abstract

Objective. Integrative Medicine Group Visits (IMGVs) are an 8-week outpatient medical group visit program for chronic pain patients combining mindfulness-based stress reduction (MBSR), integrative medicine, and patient education. The authors conducted a qualitative study with IMGV participants to better understand the effects of IMGVs on patients' health.

Design. This qualitative study enrolled a convenience sample of 19 participants from the parent prospective observational cohort study of IMGVs (n = 65). All participants in the parent study were invited to participate.

Setting. Boston Medical Center (BMC) is a private, not-for-profit, 496-bed, academic medical center and the largest safety net hospital in New England.

Subjects. Individuals in this study had a diagnosis of chronic pain and/or one or more chronic conditions (e.g., diabetes, depression, or metabolic syndrome), had attended ≥ 1 group visit, and their 8-week session had ended before completing the interview.

Methods. The authors conducted individual semi-structured interviews. Interviews were audio-taped, transcribed, and analyzed.

Results. Participants cite gains from IMGVs including improved self-monitoring, self-regulation, and increased mindfulness. The group setting leads patients to feel “not alone” in their health conditions, gain a sense of perspective on their health, and share coping strategies in a supportive network. These improvements in physical and mental health improved clinical outcomes for participants including reductions in pain.

Conclusions. Group visits and integrative medicine both offer some potential solutions in the treatment of chronic pain. Models such as IMGVs can help individuals living with chronic conditions, addressing their emotional and physical health needs.

Key Words. Group Medical Visit; Integrative Medicine; Chronic Pain; Mindfulness-Based Stress Reduction; Qualitative Methods

Introduction

Chronic pain is a pervasive and costly health issue in the United States today, affecting up to 100 million individual Americans, and costing up to \$635 billion in health care dollars [1]. Even with the billions of dollars being spent, current medical treatments for chronic pain in primary care settings are still often limited to pharmaceuticals such as narcotics and non-steroidal anti-inflammatory drugs [NSAIDs] [2]. Furthermore, primary care physicians who are concerned about chronic pain patients being narcotic seeking, having poor self-management skills, and potentially poor medical compliance,

often undertreat chronic pain [3]. Current evidence suggests that chronic pain is consistently undertreated in patients of low socioeconomic and minority status [4].

Group medical visits (GMVs)—a model where patients get medical care together—are gaining national attention as an effective treatment for some patients with chronic illnesses, such as chronic pain [5]. The GMV helps address some of the barriers to effectively treating chronic pain in patients of low socioeconomic and minority status by improving quality of care, access to physicians, and thus, health outcomes [6–7]. Research on GMVs for the management of chronic disease suggests that this model improves health status indicators such as health-related quality of life, patient satisfaction, and coordination of care [8–10]. There are many theories as to why GMVs are successful including improved social support, enhanced self-efficacy, and increased perceived benefits to the participant—all of which increase the likelihood of initiating and sustaining behavior change [11–13].

Integrative medicine, an approach to care that emphasizes the mind-body connection and views the patient as a whole person, rather than a set of diagnoses, is another growing trend in chronic pain management [14–19]. Integrative medicine emphasizes the importance of a patient’s self-management skills and incorporates lifestyle changes, complementary and alternative medicine (CAM), and mind-body techniques to both prevent and treat chronic diseases [20]. Integrative medicine is well-aligned with the principles of the GMV, focusing on simple self-management skills including nutrition, physical activity, and stress management, as a way of maintaining or restoring health.

Finally, mindfulness-based stress reduction (MBSR) is another promising intervention that has been applied to patients suffering from a number of chronic illnesses,

including pain [21–25]. The 8-week group curriculum draws on the principles of MBSR and includes didactic discussions and experiential practices such as sitting meditation, body scan, walking meditation, and yoga.

Integrative medicine group visits (IMGVs) combine a group medical visit, integrative medicine techniques, and MBSR (see Figure 1). The IMGV curriculum includes health education, stress management (through the principles of mindfulness-based stress reduction: yoga, meditation, and body scan), and health self-management in a “toolkit” of techniques including healthy eating, acupressure, and self-massage (see Table 1). We have previously published a peer-reviewed paper on the curriculum, recruitment methods, and quantitative improvements in pain and depression [26].

In this paper, we present a qualitative analysis of the Integrative Medicine Group Visit model, investigating from a patient’s perspective both how and why the IMGV is (or is not) an effective clinical tool for the treatment of chronic conditions, including chronic pain. We explore critical but often-overlooked details such as types of behavior changes, areas of health improvement, and patients’ perceptions about group care. Lessons learned from this study may help formulate a model for understanding how integrative medicine group visits can be effective for caring for the chronically ill and those living with chronic pain.

Methods

This qualitative study is part of a mixed methods prospective observational cohort study (n=65) of an 8-week outpatient IMGV program at a large, urban safety net hospital in New England. Seven patient groups took place between April 2012 and August 2013. Participants in the program were predominantly low-

BMC Integrative Medicine Group Visits: The Merger of Three Paradigms

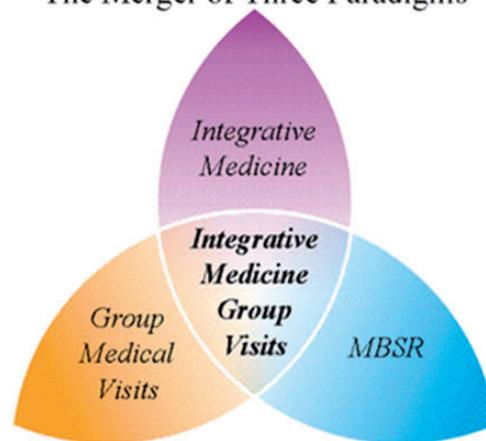


Figure 1 Integrative medicine group visits: The merger of three paradigms.

Table 1 IMGV 8-week curriculum

| | Meditation/Mind-Body Exercise | Evidence-Based Complementary/Alternative Therapy | Mindfulness-Based Stress Reduction (MBSR) Themes | Health/Wellness Themes | Other Topics |
|---------------|----------------------------------|--|---|--|------------------------|
| Week 1 | Raisin eating exercise | – | What is MBSR? Foundations of mindfulness | – | Class guidelines |
| Week 2 | Body scan, Nine Dots | Self-massage techniques | Working with perceptionUpstream/Downstream fable | What is stress?, Stress and the body, Responding to stress | – |
| Week 3 | Mindful yoga | Yoga | Pleasant events | The importance of sleep | – |
| Week 4 | Sitting meditation | – | Unpleasant events | Vitamins and minerals | Mid-session evaluation |
| Week 5 | Thoughts and emotions meditation | – | STOP (stop, take a breath, observe, proceed), Triangle of awareness | Our body and pain | – |
| Week 6 | Walking meditation | Acupressure techniques | Difficult communication, Deep listening | Nutrition: glycemic index, omega-3 fatty Acids | – |
| Week 7 | Sitting meditation | Nutrition: Cooking demonstration | Mindful eating; Passive, assertive, and aggressive behaviors | Depression | – |
| Week 8 | Loving kindness meditation | – | Continuing mindful practice after the group ends | – | Graduation |

*Each week, group starts with participants taking their own weight and blood pressure.

**Healthy meal is provided at the end of each group.

income minority adults and had one or more of the following diagnoses: chronic pain, diabetes mellitus, obesity, depression, or anxiety. The Institutional Review Board of Boston University Medical Campus approved the prospective observational cohort study including the embedded qualitative study.

Recruitment

All 65 IMGV participants were contacted by research staff to request an individual semi-structured interview after the completion of the 8-week IMGV program. Participants were contacted regardless of class attendance in the groups. Nineteen participants (29%) consented to and participated in interviews. Interviews took place in the summer of 2013. The demographics of the participants are as below.

Data Collection

Individual semi-structured interviews were conducted with all 19 consenting participants. The goal of the interview was to evaluate on a more subjective level (questionnaires with validated survey tools were distributed as part of the parent pilot study) participant's thoughts

about the IMGV program. The interview was conducted as a conversation, allowing the participant to express fully his or her thoughts about the program. An interview guide (see Appendix 1) was used as a prompt by the interviewers (DD, KR). The guide was designed to broadly evaluate the IMGV program and specifically elicit responses around the following topics: lessons learned from the group visit program; perceived changes or benefits to physical, emotional, and mental health; and the impact and relevance of the group to the overall experience. All participants signed a written consent form prior to the interview. Interviews were conducted by research coordinator (DD) and a research assistant (KR) in a private room at the Boston Medical Center, Boston, MA. Interviews lasted 25-50 minutes and were audio recorded and transcribed verbatim by three research assistants (KR, SC, IH).

The research team consisted of two family medicine physicians (KGB, PG) who designed the group visits program and served as the group facilitators, the research coordinator (DD) and three research assistants (referred to as the data team), and a medical anthropologist (LL) with extensive experience planning, conducting, and analyzing qualitative studies. All members

of the data team were trained in conducting qualitative interviews.

Data Analysis

The interview coding and analysis process was led by the data team. Interviews conducted by one member of the data team were coded by the second member and vice versa. To assure consensus over code use, every fourth interview was double coded by one of the transcribing research assistants (SC).

The data team used a thematic analysis approach, combining deductive and inductive methods to refine the code list [27–29]. Thematic analysis was chosen as it is the most basic qualitative data analysis process, and would allow for themes to emerge naturally, guided by participant feedback. The initial codebook was driven by deductive thematic analysis; codes were based on the tenets of group visits and the interview guide questions. This codebook was revised periodically using inductive coding, allowing themes to emerge naturally from the participant interviews. The team revised the list a total of four times using inductive thematic analysis before coding began based on predominant interview themes. *Atlas.ti* qualitative data analysis software was used for managing the coding process. After coding all transcripts, the team developed broad themes by reviewing all coded quotes and code frequencies. Frequency of occurrence was used to determine the salience of a code rather than statistical significance. Coded quotes were then regrouped into these broader themes.

Results

Nineteen participants were interviewed for the present study. Table 2 summarizes their demographic information. The goal of these interviews was to better understand the impact of the IMGVs on the participants' lives. Those interviewed summarized a range of changes in their chronic pain and conditions that conceivably affect pain levels (anxiety, diet, exercise, self-regulation, etc.). In total, four main themes arose during interviews, as determined by frequency of codes: 1) feeling "not alone" in one's experience with pain and illness; 2) gaining a sense of perspective on one's pain and illness from others' experiences; 3) learning how to manage one's chronic pain and overall health through self-regulation and mindfulness, diet and exercise, and self-monitoring; and 4) thoughts about receiving care for chronic pain and other health conditions in a group versus individually from a care provider.

Theme 1: Feeling Not Alone in One's Experience with Pain and Illness

One participant explains that the realization of not being alone in her experience with pain changed her life: "You learn that you're not by yourself with the same pain,

Table 2 Demographics

| Average age (mean) | 53.1 | |
|-----------------------|------|-----|
| | N | % |
| Sex | | |
| Male | 6 | 32% |
| Female | 13 | 68% |
| Race/Ethnicity | | |
| Black | 12 | 63% |
| White | 5 | 26% |
| Hispanic | 2 | 11% |
| Health | | |
| Chronic pain | 16 | 84% |
| Depression | 10 | 53% |
| Diabetes Mellitus | 4 | 21% |
| Hypertension | 8 | 42% |
| n = 19 | | |

that a lot of people are doing the same thing you are, you know, dealing with it. I guess I just don't feel like I'm by myself anymore. That's one of my biggest problems, you know. Especially when I'm supporting my family. I got five kids and I work three, four jobs, you know... My back was killing me. So it feels better to know that a lot of people having the same problems you have and the way they deal with it. It's like they open up a little something to you, a little information, how they deal with it. Then maybe you can use that on your life."

Ten participants noted a strong sense of feeling less alone or isolated as a result of being able to share, and hear others share, their challenges and experiences managing their health. One participant's discussion of being in the group highlights the sense of connectedness that she gained from learning that others also had difficulties managing their anxiety: "I thought I was the only one in the group going through panic attacks and I found out a couple more were going through it, too. We were all crying at the same time in group. So, it helps out a lot because you're not the only one. You find out you're not the only one going through it. So it does help out a lot."

Theme 2: Gaining Perspective on One's Pain and Illness from Other's Experiences

When participants heard their peers' stories and experiences with chronic pain, they described not only feeling connected, but also reported gaining a sense of perspective on the severity of their own conditions (n = 9). One participant puts it quite simply, "I think I got more from listening to other people's pain than talking about my own."

Sharing with fellow group members helped participants better understand their own chronic diseases: "You may

think you are depressed, but there is probably another person who is more depressed than you. And you may say, 'Wow, boy I have this problem. But it's not that bad. I can work with it. I can deal with it.' Or I can learn from that other person, 'Well I do this for it'. And you can share information and help each other, even with the person who suffers. With the group we can all share experience. It makes a difference."

Theme 3: Learning How to Manage One's Pain and Overall Health

Participants in IMGV describe acquiring a variety of health-directed behaviors and skills. Within the large theme of learning to manage one's health, three unique subthemes emerged: enhanced self-regulation and mindfulness, changes in diet and exercise, and improved self-monitoring. The results of adopting these constructive attitudes and approaches, as enumerated by the participants, include enhanced self-efficacy, a greater engagement in life, and the improvements in health expected from a better diet, more physical activity, and greater self-management.

Self-Regulation and Mindfulness

Self-regulation of emotion was a constructive approach adopted by many participants. Most frequently they cite using the mindfulness techniques of MBSR to handle difficult emotions and sensations. In order to more effectively cope with pain, manage stress and anxiety, and control difficult emotions like anger, participants used tools such as the body-scan, sitting meditation, and yoga.

One participant explains how she learned to *"listen to your breathing, try to block everything...that helps a lot when I'm tryin' to deal with my family and myself at the same time."*

Participants connect relief from pain with doing one of the meditation exercises learned in class and twelve individuals describe a reduction in physical pain as a result of the group visits. Says one participant of his pre-group self, *"Before, I would have just okay, popped a pill, sat on a chair, let the TV watch you instead of you watching TV. Now I am more aware of what happens around me and I wasn't aware [before the group]".* Two participants talk about a greater awareness of physical pain and more specifically, triggers to the pain, *"But now I'm more aware of my body, more aware of the pain, and you know what's going on and I try, when I don't feel right with a certain thing, I try not to do that anymore."*

Says one participant: *"I use it [meditation] now. I try to concentrate the most that I can and breathe through a lot of my pain."* Some individuals see meditation as a way of concentrating, others see it as a way of relaxing and clearing the mind: *"my health changed by relaxing;*

I know how to relax my knee now when I'm in pain. I just try to not think about it. Not think about the pain. Cuz sometimes it's in your mind, like the lady said. But if you can clear your mind, and just not think about it, sometime it eases the pain, and that works."

As one participant illustrates, *"When my body is relaxed the pain is still there but it's not as throbbing and intense. So I did find that certain times when I came in [to the group], I might be like on a nine. But, after sitting, relaxing, breathing, chatting, it would ease a little."* Another participant describes the pain relief as being longer lasting and more general: *"I've had less pain. I've noticed less pains, let me tell you, that I can tell you [laughing]!"*

With regards to prescription medication, one participant describes her group visits "toolkit" as her first line of defense: *"When I get up in the morning I do some tai chi. I do a lot of meditation, I do that. Especially when it's time to take my medication, sometimes I gotta wait a little longer to see if the pain goes away with the meditation."*

For participants with anxiety and depression, self-regulation helped mitigate escalating emotions. Four individuals describe being able to recognize emotions like anger and fear and the resulting stress response of the body. *"When I get into a panic attack I think about something lovely, like the water or the beach, and just say, 'It's a panic attack, it's a panic attack, it's a panic attack, you can control it, you can control it.' So, that helps."* Says another, *"the deep breathing exercises have been really helpful to me. Especially with my anxiety, I still use those daily; even in traffic coming over here, I was running late and I was like [breathes deeply] 'just breathe, just breathe, you're gonna get there. It'll be alright.'" Another participant describes needing less anxiety medication as a result of the group: "I was not taking any of the, very few anti-anxiety medications at that point...during the eight weeks the anxiety kind of went down."*

Diet and Exercise

Reference was made 63 times by 14 unique patients to changes made in eating habits and types of foods. Participants cite two major changes: incorporating new foods and changing meal frequency or pace of eating. Summarizes one patient, *"I left the junk food alone and starting eating more, like salads, and a lot of fruits, and eating smaller meals throughout the day."* Another gentleman shared *"I don't eat fried foods anymore, not really; I eat them every once in a while but it's not an everyday thing anymore, to eat fried foods and high spicy foods; I don't even desire them anymore."*

Participants discussed the new meals they were making and foods they had incorporated into their diets as a result of being in the group: *"I ate avocado. I'd never eaten avocado in my life. That quinoa, I didn't even*

know how to pronounce it so you knew I didn't eat it. And now I go in there [to the grocery store] and I go looking for it." All cited the meals served post-visit as the most helpful tool in encouraging shifts in eating behavior: "I try to encourage my wife and myself to keep on the diet that we've been taught here [in group] because—remember when I come in here and saw all the different luncheons that we had—it encouraged me to eat more vegetables."

In addition to adding new foods, participants discussed making swaps in their diet, trading unhealthy options for more nutritious ones: "I kind of changed my eating habits... that salad that we made in one of the classes, I still use that right now. I usually make it and put it in a little bowl and when I wanna munch on something I get that salad rather than trying to get some ice cream."

In addition to types of food, 10 individuals discussed changing how they ate, both frequency and pace of meals. This was referred to as "mindful eating" in the curriculum. One participant explains mindful eating for the interviewer: "If you take time to eat slower, the digestive system will work better. When you eat fast, you have an upset stomach and you're not feeling good. The way I was eating, and my mind, my mind, which I was feeling, it's like I need to eat fast. My mind was fast. The meditating helped me relax, enjoy it. It's helping me enjoy it [food]."

Twelve individuals mention increasing daily exercise. One participant explains how being in the group encouraged her to stick to a workout routine: "Like I knew it, but wasn't doing it. This [exercise] has been planted in my mind... now I go to the pool every day. I'm going to my physical therapy, and going to the pool every day. You know, I'm doing my yoga; it's not every day but I do it."

As a result of improved diet and exercise, four participants discuss marked improvements in their weight. One participant notes his weight loss as somewhat of a surprise, even to him, "Some of those handouts were interesting, especially about the mindful eating, because I've never tried that before. And it seemed to work because I've lost a lot of weight!" Another participant summarizes his success on his own terms, "I don't know what my weight is, but my belt went down a notch. It was next to last one; now it's in the last one."

Self-Monitoring

Six individuals discussed monitoring their health, specifically relevant clinical markers like blood pressure, weight, and blood sugar. Four participants mentioned their blood pressure; two mentioned buying a scale and weighing themselves; and two mentioned other outcomes, like blood sugar and cholesterol. Says one participant: "I monitor my blood pressure and my sugar every day. Well I don't do my blood pressure every day;

I do it a couple of times a week. But, I monitor my blood sugar every day."

Participants noted that the increased awareness of their health resulting from self-monitoring is incentive to continue to make behavior changes. "Yeah, the monitoring part, it helped me to keep records of my blood pressure, because my blood pressure is up and down so much that I've learned to just write it down. Take my blood pressure down, I usually just take it and look at it and say, 'Okay, it's that high, so I need to calm down.' But I never charted down so that got me to doing that."

Described by another participant, "My numbers have gone down; my blood sugar level has gone down."

Theme 4: Reflections on the Group Model: Care in Community

With regards to receiving care in a group setting, five participants stated that they thought group care was superior to a one-on-one primary care visit and three thought that group care could replace individual time with a provider. "I think in the group it was more beneficial because I was participating with somebody and not just seeing the doctor one on one." Participants felt that group care was superior due to the additional time spent with a physician (n=6) as well as the amount and breadth of education they received (n=6). "Believe it or not in the group I think I got a little more than I did in an individual PCP. I don't know how that's possible but it felt like I got more time. Well okay, seeing you guys weekly, and for a couple of hours." Cited another: "The doctor let us ask questions in a way that you can't ask your primary care doctor. Like you get that 10 minutes to deal with whatever your massive problem is, and you're sitting there and you're like, 'oh and then there's this and then there's this' you know, and you try to jam it all in cuz you got that copay, you know... like, we had that opportunity to really talk about it, and understand the concepts behind it, that we didn't, or I didn't ever have with primary care doctor." Another participant stated, "We had more of an opportunity to talk with the doctor than we would have in an office setting. Um, to ask questions, to get questions answered, and even to, even after group, ask her outside of group, you know like a question, you know we couldn't ask inside at group. You know, have access basically."

When discussing the benefits of group, 14 participants mentioned the importance of learning from their peers. Being able to share coping strategies in a supportive network led to meaningful learning and behavior change. "In a group you learn from different people. It's not just your doctor; when there are different people you learn from them." Explained another participant, "I think that the group is beneficial because somebody always has a question that you don't have. You know, based on their life experience, you know like me, like I thought I knew a lot and people were asking questions

and she was giving answers and I was learning something.” The groups, being heterogeneous in terms not only of age, sex, and race/ethnicity, but also of diagnosis, presented a unique learning opportunity for the members: “We had a very diverse group and I liked that. If everybody in that group was like me and has you know, osteoporosis, degenerative arthritis, I wouldn’t have learned as much as I did. And I learned things to watch out for. Things to be aware of, health-wise.”

Finally, two participants cited that the groups helped decrease confusion around health care navigation. One participant described an unsatisfactory conversation with a health care provider as a way of juxtaposing the care he was used to receiving versus the attention and education he received in the group. “I went to a nutritionist...she goes like this, (mimics nutritionist handing the patient a paper) ‘take that home and I’ll see you in a month and follow the diet’. ‘But I have questions’ (patient recounting response to nutritionist). ‘Well, you know what? I don’t have time. Take it home—it’s all in here, you read it, and follow it.’” (Patient mimicking nutritionist’s response to him.)

Not all participants shared the opinion that the group was beneficial to individual care. One participant expressed that group care was inferior to a one-on-one visit and one felt that the group had no effect on his health. Three participants thought that group care could complement rather than replace individual visits. Commented one participant, “Sometimes hearing everybody talk about their own things and what they do that helped them...it’s comforting, it’s helpful. It won’t take the place of a one-on-one with your doctor. But, it helps.”

Discussion

Based on this qualitative analysis, the IMGV is a promising approach to the delivery of care for chronic conditions, including chronic pain, in an urban underserved setting. Our previously published paper on the impact of IMGV showed that of the initial patients that went through the IMGV program in 2013–2014, the majority had a statistically significant decrease in pain and depression, and clinically significant improvements in sleep quality and perceived stress. Across the board, those who suffered from high blood pressure had a decrease in both their systolic and diastolic blood pressure [26]. This current qualitative analysis helps further elucidate some of the potential reasons for IMGV’s efficacy including: self-monitoring, self-regulation, and increased mindfulness. Additionally, the theme of the medical visit occurring in the group setting led patients to feel “not alone” in one’s health condition, gaining a sense of perspective on one’s health by listening to other’s stories, and share coping strategies in a supportive network. Our qualitative study supports previous studies in showing that medical groups support behavior change, self-monitoring, and self-regulation [6–10,26]. Furthermore our IMGV analysis supports other studies showing that

improvements in physical and mental health regulation had significant clinical outcomes for participants [6].

Consistent with other mindfulness-based interventions, our participants in IMGV also describe less stress/anxiety, improved mood, and increased self-awareness, described as an ability to recognize thoughts, emotions, and sensations [23–24,30–31]. Participants in the IMGVs who gained mindfulness and stress reduction (meditation, yoga, body scan) tools tended to view life as more meaningful and manageable than before the intervention and were able to take better care of their symptoms, including their pain and anxiety.

Another important theme was the additional effect of the group setting. Patients reported feeling “not alone” in their health conditions and gaining a sense of perspective on their health. Additionally, participants in IMGVs cited learning more about pain management in a group setting where they had more time and access to a physician as well as connection to their peers. These themes have emerged in previous qualitative studies on group visits [7].

While the results of IMGV support both the group visit literature and the integrative medicine literature [14–19], it is unique in that it bridges outcomes from both fields which, until now, had been largely separate. However, because the results found in this study align with results reported in other studies of group medical visits, it is difficult to attribute improvements in pain or other benefits specifically to the integrative medicine component of the groups. Future studies of integrative medicine group visits should compare a conventional group visit model to the IMGV program to better understand how integrative medicine curriculum may or may not enhance the GV model.

Additionally, our model of care is innovative and our study is one of the first of its kind to report qualitative outcomes of an IMGV model in a low-income safety net hospital. The results of the IMGV model, while compelling, can also be well framed within larger theoretical models, such as Bronfenbrenner’s ecological systems theory whereby a human is framed within their “microsystems” (immediate environment), “mesosystems” (connections), “exosystems” (indirect environment), “macrosystems” (social and cultural), and “chronosystems” (changes over time) [32]. It could be argued that part of IMGV’s success for participants is that it addresses many of these layers of the individual in his or her larger context and thus, as a result, helps individuals move to the “chronosystem,” or change over time. This movement can be particularly valuable when working with chronic health conditions, such as chronic pain, in an urban underserved minority population.

Limitations

There were several limitations to our qualitative study. The first is that not all participants were interviewed at

the same time interval after completing the groups, leading to some bias in recall. Second, the interviews were not done anonymously. Third, there may have been some skewed reporting as many of the participants had met the study staff prior to being interviewed. Fourth, not all of the participants in the larger IMGV study spoke English as their first language. Fifth, the majority of the interviewees were high attenders and had therefore had very favorable opinions of IMGVs. Participants with negative views of IMGVs and/or those who did not experience any benefit declined to be interviewed. This limitation is particularly important to bear in mind for clinicians and researchers wishing to implement such a model in their home institution as the qualitative results of this study are potentially biased in favor of IMGVs by our interviewee self-selection.

Conclusion

Chronic pain and the often-associated chronic illnesses are largely undertreated in today's traditional medical system secondary to many issues including lack of access, lack of individual time with a clinician, and lack of a large array of options for treatment. Group visits and integrative medicine both suggest some potential solutions in the treatment of chronic pain. Models such as IMGVs can potentially be invaluable for individuals living with chronic conditions, such as chronic pain, for, in addressing their needs in a broader context of emotional and physical health and connectedness to others, participants in IMGVs are generally more able to make changes in their health over time. However, in order to continue to build better models for the improvement of health and wellbeing, it behooves us to listen to the patients' voices about what works and what does not. We must turn to those suffering with pain and illness as our guides forward in developing successful treatment options.

Acknowledgments

The authors wish to thank the study participants, the staff of the Family Medicine Clinic at Boston Medical Center, the meditation instructors, integrative medicine providers, and curriculum contributors for making the Integrative Medicine Group Visits possible. The authors also wish to thank research assistants and transcribers Susan Chung and Isis Hinojosa, and the Development Office at Boston Medical Center. This study was generously supported by a gift from an anonymous family foundation. The funder had no role in the design, conduct, analysis, or reporting of the study.

References

1 Relieving pain in America: A blueprint for transforming prevention, care, education and research. Institute of Medicine. 2011. Available at: http://www.nap.edu/catalog.php?record_id=13172 (accessed June 2013).

- 2 Schnitzer TJ. Update on guidelines for the treatment of chronic musculoskeletal pain. *Clin Rheumatol* 2006;25(suppl 1):S22–9.
- 3 Upshur CC, Luckmann RS, Savageau JA. Primary care provider concerns about management of chronic pain in community clinic populations. *J Gen Intern Med* 2006;21(6):652–5.
- 4 Green CR, Anderson KO, Baker TA, et al. The unequal burden of pain: Confronting racial and ethnic disparities in pain. *Pain Med* 2003;4(3):277–94.
- 5 Gaynor CH, Vincent C, Safranek S, et al. FPIN's clinical inquiries. Group medical visits for the management of chronic pain. *Am Fam Physician* 2007;76(11):1704–5.
- 6 Jaber R, Braksmajer A, Trilling JS. Group visits: A qualitative review of current research. *J Am Board Fam Med* 2006;19(3):276–90.
- 7 Lavoie JG, Wong ST, Chongo M, et al. Group medical visits can deliver on patient-centred care objectives: Results from a qualitative study. *BMC Health Serv Res* 2013;13:155.
- 8 Wagner EH, Grothaus LC, Sandhu N, et al. Chronic care clinics for diabetes in primary care: A system-wide randomized trial. *Diabetes Care* 2001;24(4):695–700.
- 9 Clancy DE, Brown SB, Magruder KM, et al. Group visits in medically and economically disadvantaged patients with type 2 diabetes and their relationships to clinical outcomes. *Top Health Inf Manage* 2003;24(1):8–14.
- 10 Sadur CN, Moline N, Costa M, et al. Diabetes management in a health maintenance organization: Efficacy of care management using cluster visits. *Diabetes Care* 1999;22(12):2011–7.
- 11 Lorig KR, Holman HR. Self-management education: History, definition, outcomes, and mechanisms. *Ann Behav Med* 2003;26:1–7.
- 12 Bandura A. *Social Foundations of Thought and Action*. Englewood Cliffs, NJ: Prentice-Hall; 1986
- 13 Marks R, Allegrante JP, Lorig K. A review and synthesis of research evidence for self-efficacy enhancing interventions for reducing chronic disability: Implications for health education practice (Part I). *Health Promot Pract* 2005;6:37–43.

Qualitative Analysis of Integrative Medicine Groups

- 14 Calonge N. Primary care interventions to prevent low back pain in adults. Agency for Healthcare Research and Quality. 2004. Available at: <http://almacen-gpc.dynalias.org/publico/Primary%20Care%20Interventions%20to%20Prevent%20Low%20Back%20Pain.AHRQ.pdf> Accessed June 2013.
- 15 Chou R, Huffman LH, American Pain Society, American College of Physicians. Nonpharmacologic therapies for acute and chronic low back pain: A review of the evidence for an American Pain Society/American College of Physicians clinical practice guideline. *Ann Intern Med* 2007;147(7):492–504.
- 16 Cherkin DC, Eisenberg D, Sherman KJ, et al. Randomized trial comparing traditional Chinese medical acupuncture, therapeutic massage, and self-care education for chronic low back pain. *Arch Intern Med* 2001;161(8):1081–8.
- 17 Manheimer E, White A, Berman B, et al. Meta-analysis: Acupuncture for low back pain. *Ann Intern Med* 2005;142(8):651–63.
- 18 Sherman KJ, Cherkin DC, Wellman RD, et al. A randomized trial comparing yoga, stretching, and a self-care book for chronic low back pain. *Arch Intern Med* 2011;171(22):2019–26.
- 19 Cherkin DC, Sherman KJ, Kahn J, et al. A comparison of the effects of 2 types of massage and usual care on chronic low back pain: A randomized, controlled trial. *Ann Intern Med* 2011;155(1):1–9.
- 20 Snyderman R, Weil AT. Integrative medicine: Bringing medicine back to its roots. *Arch Intern Med* 2002;162(4):395–7.
- 21 Shapiro SL, Carlson LE, Astin JA, Freedman B. Mechanisms of mindfulness. *J Clin Psychol* 2006;62(3):373–86.
- 22 Dobkin PL, Qinyi Z. Increased mindfulness: The active component of the mindfulness-based stress reduction program. *Complement Ther Clin Pract* 2011;17(1):22–7.
- 23 Grossman P, Niemann L, Schmidt S, et al. Mindfulness-based stress reduction and health benefits: A meta-analysis. *J Psychosom Res* 2004; 57(1):35–43.
- 24 Moss AS, Reibel DK, Greeson JM, et al. An adapted mindfulness-based stress reduction program for elders in a continuing care retirement community: Quantitative and qualitative results from a pilot randomized controlled trial. *J Appl Gerontol* 2015;34(4): 518–38.
- 25 Dobkin PL. Mindfulness-based stress reduction: What processes are at work? *Complement Ther Clin Pract* 2008;14(1):8–16.
- 26 Gardiner P, Dresner D, Gergen Barnett K, et al. Medical group visits: A feasibility study to manage patients with chronic pain in an underserved urban clinic. *Glob Adv Health Med* 2014;3(4):20–6.
- 27 Daly J, Kellehear A, Gliksman M. *The Public Health Researcher: A Methodological Approach*. Melbourne: Oxford University Press; 1997.
- 28 Boyatzis R. *Transforming Qualitative Information: Thematic Analysis and Code Development*. Thousand Oaks, CA: Sage; 1998.
- 29 Crabtree B, Miller W. A template approach to text analysis: Developing and using codebooks. In: Crabtree B, Miller W, eds. *Doing Qualitative Research*. Newbury Park, CA: Sage; 1999:163–77.
- 30 Eyles C, Leydon GM, Hoffman CJ, et al. Mindfulness for the self-management of fatigue, anxiety, and depression in women with metastatic breast cancer: A mixed methods feasibility study. *Integr Cancer Ther* 2015;14(1):42–56.
- 31 Carlson LE. Mindfulness-based interventions for physical conditions: A narrative review evaluating levels of evidence. *ISRN Psychiatry* 2012;2012: 651583.
- 32 Bronfenbrenner U. *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press; 1979.