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Recruitment, retention, and adherence in a randomized feasibility trial of Mindfulness-Based Stress Reduction for patients with migraine

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1. Introduction

Migraine is a functional disorder, diagnosed by assessment of symptoms including headache (usually pulsating unilaterally), nausea, photophobia, and phonophobia (International Classification of Headache Disorders (ICHD)-II criteria).(1) There are two classes of medications available for migraine: preventives, taken regularly to prevent the onset of migraine, and abortive medications to treat symptoms after onset. Unfortunately, most preventive pharmaceuticals are not fully effective and are often accompanied by bothersome side effects, including the newer calcitonin gene-related peptide inhibitors, which are very expensive, and for which real-world data on long-term safety is limited.(2–5) Two main

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types of migraine-specific medications--ergot derivatives and triptans—are available for acute treatment but are often accompanied by serious side effects, such as drowsiness, attention deficit, and potential for precipitating medication-overuse headache.(6,7) Non-steroidal anti-inflammatory drugs also have potential side effects, including gastrointestinal issues, renal toxicity and headache.(8–12) While the migraine-specific drug classes have shown efficacy in randomized trials, they have failed to provide sufficient effectiveness for a large proportion of people with migraines; in practice, they are no more than 60% effective.(13–15) Given the limited efficacy and side effects of pharmaceuticals for migraine, a growing number of headache sufferers have found value in the use of complementary and alternative medicine (CAM) to provide symptom relief (16–18) and a growing body of evidence provides support for many of these interventions.(19) In particular, attention has recently focused on the potential of mindfulness practices, such as meditation, for the treatment of many pain conditions including migraine (20–22), the onset of which is often attributed to high levels of stress.(23)

During the past several years, there has been an increase in the use of meditation as a means to provide relief for chronic pain sufferers, both as a preventive and acute treatment option.(24,25) Meditation treats chronic pain by addressing a patient's emotional reactivity to the physical sensations of the pain.(26) Rather than labeling these sensations as negative, the main tenet of a mindfulness meditation practice is awareness without judgment.(27,28) In this way, meditation aids chronic pain sufferers by addressing the negative emotions that often accompany migraine. Research has shown that people with migraine who practice meditation report less-frequent occurrences of migraine episodes and an increased tolerance of pain.(19,21,29,30)

Jon Kabat-Zinn created the technique of Mindfulness-Based Stress Reduction (MBSR) and founded the Stress Reduction Clinic at the University of Massachusetts Medical Center in 1979. MBSR is an 8-week classroom-based intervention that combines mindfulness meditation and yoga, with didactic presentations on stress psychology and group process/experiential education. MBSR has received the attention of clinicians as an effective CAM therapy for physical conditions that are often stress-induced. For example, relaxation often dispels the physiological and psychological preconditions that lead to the onset of migraine.(28) There is evidence that mindfulness practices, such as MBSR, can improve health and quality of life by decreasing the perception of pain; increasing one's ability to tolerate pain; reducing stress, anxiety, and depression; diminishing use of medication; enhancing one's ability to make better choices regarding medical treatments; improving adherence to medical treatments; increasing motivation for positive lifestyle changes (diet, exercise, smoking cessation, self-care); and improving interpersonal relationships and social connectedness.(31,32) A recent meta-analysis by Gu, et al., showed a positive effect of meditation practice on primary headache with particularly strong effects of MBSR.(21)

There is a growing body of literature suggesting that MBSR can be effective for a variety of chronic pain-related conditions, such as tension headaches, chronic migraine, fibromyalgia, and low-back pain. From a few published small pilot studies and case studies, there is some evidence that MBSR may be effective in decreasing the frequency and intensity of moderate-to-severe migraine headaches.(30,33–37) More and larger fully powered studies are needed

to better understand the value and optimal provision of MBSR interventions for this highly symptomatic patient population.(21,30)

In order to ensure the validity and success of late-stage clinical trials, it is essential to understand the effectiveness of alternative strategies for recruitment, retention, and adherence. Common recruitment strategies include physician referral, media advertising, flyers, use of the electronic health record (EHR), support groups, and mailings to the community.(24,35,37–41) However, it is not clear which of these methods is optimal for recruiting participants with migraine. While various recruitment methods are often mentioned, little information is generally provided about what was done to retain study participants, or about the relative contribution of each recruitment method to the overall participant sample. In addition, few published studies provide information on patterns of MBSR class attendance.(24,35,37)

Examining the relative success of alternative recruitment strategies of MBSR for migraine could allow the conduct of more successful, efficient trials. In preparation for a fully powered randomized controlled clinical trial of MBSR for patients with migraine, we conducted a randomized feasibility trial of community-based MBSR vs. usual care. Our main objective was to understand and fill methodology gaps to ensure the success of a future fully powered trial.

2. Material and methods

2.1. Study design

We conducted a 2-arm, parallel-comparison randomized controlled feasibility trial of community-based MBSR classes compared to a usual-care control arm for patients with moderate-to-severe migraine in two large health systems. Assessments for eligibility included a phone screen, an in-person screening visit, and a 31-day run-in period (additional details of the study design are detailed in the published protocol paper).(42) Institutional Review Board approval was received on April 20, 2016. This trial is registered at clinicaltrials.gov (NCT02824350).

2.2. Setting

This study was primarily conducted at Sutter Health, a large, not-for-profit, mixed-payer integrated healthcare network in Northern California. Participants were recruited from the Palo Alto Medical Foundation (PAMF, a Sutter Health affiliate), which has locations in Alameda, San Mateo, Santa Clara and Santa Cruz counties. We also conducted secondary recruitment at Kaiser Permanente, Northern California (KPNC), a large integrated managed care health system. Recruitment at KPNC focused on members with a primary care provider at KPNC Redwood City (RWC) Medical Center in San Mateo County. All study visits took place at the PAMF Palo Alto site. Community-based MBSR classes were held in Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara, and Santa Cruz counties to accommodate the geographic spread of study participants. The majority of participants attended classes held at PAMF Palo Alto, El Camino Hospital Mountain View, or PAMF San

Carlos. Both El Camino Hospital Mountain View and PAMF San Carlos are located 10 miles from the PAMF Palo Alto site.

2.3. Study participants

The majority of participants were adults who received care for their migraine at either Sutter Health's PAMF site or KPNC-RWC. A few participants received care at other San Francisco Bay Area health systems or private practices. Initial inclusion criteria included adults aged 18 years or older and a frequency of 4–14 headache days per month based on a run-in baseline headache diary. Initial exclusion criteria included the following: previous meditation practice in past 6 months, cognitively or emotionally impaired, pregnant, inability to speak or write English, new or change in migraine medication in the month prior to randomization, incomplete run-in headache diary, and being unable to commit to attending at least 5 sessions of an approved community-based MBSR class. During the course of the study, after consultation with our clinical experts, we modified our inclusion/exclusion criteria to allow for 4–20 headache days per month (see below, Section 4.1).

2.4. Intervention

Participants randomized to the intervention arm attended a community-based MBSR class of their choosing. All available classes were vetted by the study MBSR expert (RS) prior to enrollment to ensure they followed the essential elements of MBSR courses as developed at the Center for Mindfulness at the University of Massachusetts Medical School. All MBSR courses consisted of eight 2.5-hour in-person classes and a one-day retreat. Participants were provided with a list of local approved courses and were permitted to choose the most convenient option (at which they would attend all their classes). Participants in both study arms continued their usual medical care for migraine.

Participants in the control group completed the same data-collection activities as participants in the intervention group. After each participant in the control group completed their 8-month study period, they were offered an opportunity to take an MBSR class paid for with study funds. All participants were compensated up to $175 for completing data collection at the 4, 6, and 8-month time points.

2.5. Recruitment

We used multiple concurrent methods of recruitment and monitored the path of each participant to determine the best approach for successful recruitment. A detailed description of our recruitment strategies is published elsewhere, which included primary care referral letters for PAMF, recruitment letters approved by patients' PCPs at KPNC-RWC, and community-based outreach.(42) Recruitment began at Sutter Health to determine if the entire study cohort could be recruited from a single health system. Because the initial recruitment was somewhat slower than anticipated, we also recruited from KPNC-RWC to meet our feasibility study recruitment goals.

2.5.1. Primary care and neurology recruitment letters—Using methods we had previously validated and published, we identified potentially eligible patients from Sutter Health's EHR who had a primary care provider (PCP) at the Palo Alto Medical Foundation

(PAMF).(42,43) We identified nine PCPs who agreed to serve as physician champions and refer their patients to the study. Invitation letters were sent to their patients intermittently beginning in February 2017. Due to low initial recruitment rates from primary care, we amended our study protocol and began recruiting neurology patients in April 2017. Lastly, in February 2018 we added KPNC-RWC members to our recruitment pool.

2.5.2. Patient portal website/email newsletter—We also modified the protocol to include advertising in a monthly email newsletter in May and November 2017. The message was sent to all PAMF patients enrolled in the health system's online EpicCare® MyChart patient portal, My Health Online (MHO). The message was also posted on the login page for MHO during the same months.

2.6. Outcomes

Primary recruitment and intervention adherence outcomes were the following:

1. Successful recruitment was defined *a priori* as enrollment of at least 18 participants within any 9-week period or enrollment of at least 60 participants within any 36-week period.
2. Intervention adherence was defined as attending at least 5 of the 8 weekly MBSR classes plus the day-long retreat. Successful adherence was defined as at least 80% of participants meeting this goal.

These recruitment criteria were determined in collaboration with the funding agency (the National Institutes of Health / National Center for Complementary and Integrative Health) as acceptable measures for judging short-term and long-term recruitment performance. Our criterion for intervention adherence was determined by the study MBSR expert (RS).

We also measured data-collection adherence at months 4, 6, and 8, which included the following:

1. Completed questionnaire assessments using Research Electronic Data Capture (REDCap) tools.(44) Domains of measurement included headache, pain, function, productivity, quality of life, depression, anxiety, stress, and mindfulness.
2. Completed 31-day headache diaries.

Participants in either group who failed to complete their outcome assessments were contacted by study staff to emphasize the importance of all participants' contributions to the research and to address any barriers to full adherence. Follow-up communication consisted of three email messages, text, or phone calls in one month; those participants who could not be reached with this method were considered lost to follow-up.

2.7. Randomization and participant tracking

Participants were allocated to the MBSR intervention or usual-care groups using simple blocked randomization with randomly chosen, variable block sizes of 2, 4, and 6; the randomization schema was created with the ralloc.ado procedure in Stata, v14.0.(45) The list

was created by a staff member not affiliated with the study and was implemented by transferring the randomization sequence to index cards that were enclosed in sequentially numbered, fully opaque tamper-proof envelopes (by another staff member who was not affiliated with the study). Therefore, the group-allocation assignment for each participant was unknown and inaccessible by any study staff until the moment of the participant's randomization.

Only study staff who interacted with participants could access the randomization list. When each potential participant returned to the clinic with their completed run-in diary, the study staff member verified their eligibility, then an unmasked study staff member opened the next sequential envelope and revealed the group assignment to the participant. The Principal Investigator and analysts were masked to the allocations of interventions.

Attendance at the MBSR class was confirmed by the class registrar who received attendance logs from the instructors. Source of recruitment, MBSR intervention adherence, and secondary adherence outcomes were all tracked using an Excel database, which had pre-populated target completion dates for the headache diaries and REDCap questionnaires to be collected at months 4, 6, and 8. The database was stored on a secure server with access only granted to study staff who were unblinded. Lastly, a "refusal/ineligibility" log was kept in order to document any systematic differences between those patients who ultimately enrolled versus those who declined to enroll or were excluded by the eligibility criteria, consistent with CONSORT guidelines.(46)

3. Results

During the initial eligibility phone screen, 48 individuals did not meet the eligibility criteria with the majority having either too many or too few headache days per month: 16 (33.3%) individuals had >14 migraines per month while 13 (27.1%) had <4 migraines per month.

Physician referral letter was the most successful strategy for recruiting participants, particularly with patients of neurologists and those in the closed KPNC health system (Table 1). While MHO-recruitment contributed a smaller number of patients, this strategy was fairly successful and very inexpensive, providing a particularly cost-effective addition to recruitment efforts for systems in which this type of patient contact is available. Once randomized, participants had generally consistent study completion rates regardless of source of recruitment.

KPNC-RWC patients were more likely to decline to participate after their initial telephone informational and screening interview. Of the 22 individuals who were not interested in participating, 15 (68.2%) were KPNC-RWC patients. There was a similar trend for those who were lost to follow-up with 8 (66.7%) individuals also recruited from KPNC-RWC.

After discussion with our headache clinical experts, the eligibility criteria for the maximum number of headache days was relaxed to include individuals with up to 20 headache days per month (see below for rationale, Section 4.1). After changing this eligibility criterion, we enrolled five participants who had 15–18 headache days in the 31-day baseline assessment period (and who would have been excluded under the prior eligibility criteria).

During the allocation process, six intervention-allocated participants withdrew prior to the start of their MBSR classes while one individual from the control group withdrew at the time of randomization because she/he wanted to take an MBSR class immediately. Prior to the 4-month visit, two individuals were lost to follow-up in the intervention group. In the control group, four individuals were lost to follow-up and two withdrew from the study. Two hundred two of the 227 expected data collection forms were completed for an adherence of 90.0%

The first participant was consented to the study on February 2, 2017 and was randomized on March 9, 2017. We met our shorter-term goal of recruiting 18 participants within a 9-week period early in the trial (July-August 2017) after advertising the study on the patient portal website and email newsletter during May-June 2017. However, we did not meet our longer-term goal of 60 recruited patients within 36 weeks. We expanded to KPNC-RWC in February 2018, which resulted in an enrollment spike from May to June 2018. We met our goal on September 21, 2018, and the final enrollment count was 66 participants.

Our study population was predominantly female, married, and white with a mean age of 49.5 years (SD=13.6). Participants tended to have high levels of education with nearly one-third having attended at least some graduate school. At the time of the baseline visit, 44.4% of individuals reported being employed full-time. However, among those who completed the 8-month outcome time point, 52.0% were employed full-time at baseline.

Six participants (17.6%) from the MBSR intervention arm withdrew from the study without attending any classes. For the 28 individuals who were registered for the MBSR classes, adherence to the active treatment arm remained moderately successful (67.9%). However, when we consider at least 5 classes alone (without requiring attendance at the retreat), class attendance adherence was 92.9%. Of the 28 participants who attended at least one class, 25 (89.3%) attended 6 of the 9 classes. Median attendance of the 8 classes and retreat day was 8 (88.9%) out of 9 while mean attendance was 7.4 classes (82.2%). Attendance dropped after the first two class sessions. Twenty-one of 32 (66%) control-allocated participants signed up for a study-funded MBSR class after their closeout visits.

4. Discussion

4.1. Summary of findings

We successfully met one of our two pre-defined recruitment goals for this feasibility study. We recruited 18 participants within a 9-week period after advertising the study through the patient portal website and email newsletter. However, we were not successful in recruiting 60 participants in a 36-week period, suggesting that trialists should be prepared for longer recruitment periods to ensure success for fully powered studies in this population. The most successful recruitment strategies in this migraine population were the use of patient-portal advertising and direct-to-patient communication. With respect to MBSR adherence, 67.9% of participants attended at least 5 of the weekly MBSR classes and the day-long retreat; 89.3% attended at least any 6 of the 9 classes. Adherence to data collection proved very successful, in part by contacting those who had not completed the questionnaires or diaries a week after the target completion date.

As the pilot trial proceeded, we made two changes to the original study protocol. The first change was to modify the inclusion criteria to include migraine patients who experienced more than 14 headache days per month (i.e., 4–20 headache days per month). This decision (which was made after achieving our shorter-term recruitment goal) was instituted for four reasons: 1) Our clinical experts agreed that the widely used 14-day cutoff was arbitrary (and, while commonly used in medication trials due to potential side effects, was not relevant to a safer intervention like MBSR); 2) we had excluded three individuals who just missed the cutoff having had 15 or 16 headache days in the prior month, so patients with more frequent headaches were interested in participating in this MBSR trial; 3) there was no strong *a priori* reason to believe that MBSR would not be beneficial for patients with more frequent migraine episodes; and 4) current research suggested that some individuals can fluctuate between being defined as an episodic or chronic migraine patient from month to month.(47) The upper bound was changed to 20 headaches per month as our neurology consultants felt that more frequent headaches signified a chronic course with a potentially different pathophysiology. Future trials may want to consider this expanded eligibility definition. The second change, implemented in February 2018 to enhance recruitment, expanded recruitment activities to include recruitment of KPNC-RWC patients.

We learned that it is vital to have study integration within the health care delivery system. This could explain the lower follow-up rates for KPNC patients: KPNC is a closed system with most services offered at the same facility. The KPNC-RWC patients had to not only go to a different health system for study visits but also to a different city. This may have deterred individuals given the different culture of healthcare at Sutter Health where patients are used to receiving services at multiple locations. Future studies that span multiple systems may want to consider a recruitment capabilities at each system.

To promote adherence from the onset, our study was designed to accommodate study participants' busy schedules. We offered the option to complete most study activities virtually (by mail or email) except for baseline and randomization visits. Participants could schedule study visits weekdays from 7am-7pm, to accommodate those who worked full-time (and these participants showed particularly high visit adherence). Those who were randomized into the MBSR group were given the opportunity to select from a list of 15–20 available classes in different cities with varying days and times.

4.2. Strengths and limitations

An important strength of this feasibility study is that it was designed as a pragmatic trial, which incorporated community-based MBSR interventions. Community classes make the intervention more feasible because participants could attend classes that were more convenient and generalizable because if successful, participants could expect a similar effect from available classes. To our knowledge, there are no published studies of MBSR clinical trials that use public classes. In addition, we believe our experience is likely generalizable, in that we attempted recruitment in two different health-system structures and used a variety of recruitment strategies, likely accessible to most healthcare institutions.

This study has several limitations. As noted in our published protocol, there were different follow-up periods depending to which group participants were randomized.(42)

Furthermore, we did not have a protocol for regular communication with participants when no study activities took place. Such was the case for individuals in the usual-care group during the first few months or for those in the intervention group who had to wait for the MBSR class to start; this latter issue may have contributed to our early intervention-group withdrawals. Lastly, the MBSR organizations involved in this study all have different methods of communicating with students once enrolled. For example, some teachers would call individuals if they missed the first three classes while others would not. As a pragmatic trial, the investigators did not try to change how MBSR organizations and teachers encouraged class attendance.

4.3. Implications of future practice and research

While the results of this feasibility study provide important learnings for trialists conducting similar research with their patient populations, more research is needed to determine what motivates individuals to participate in integrative-therapies research. System-level factors, multiple recruitment strategies (including recruitment from both primary care and specialty practice and the use of online patient portals) and realistic enrollment timelines are critical. Additional focus on participant diversity is also warranted, as it is known that patients with higher levels of education have a stronger preference for integrative medicine, also reflected in the demographics of our study participants.(17) Future studies might also include virtual options for the MBSR intervention, online headache diaries, and virtual informed consent to accommodate the busy schedules of patients, addressing issues of intervention accessibility.

5. Conclusions

Our research shows that close monitoring of recruitment activities, flexibility in changing the protocol, and integration with the delivery system are crucial factors for successful participant recruitment, retention, and adherence in mindfulness research among individuals with migraine.

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Highlights:

- Electronic patient-portal advertising was highly cost-effective for recruitment
- Optimal recruitment involved both primary and specialty care
- Participants had consistent study completion rates regardless of recruitment source
- It is vital to have study integration within the health care delivery system

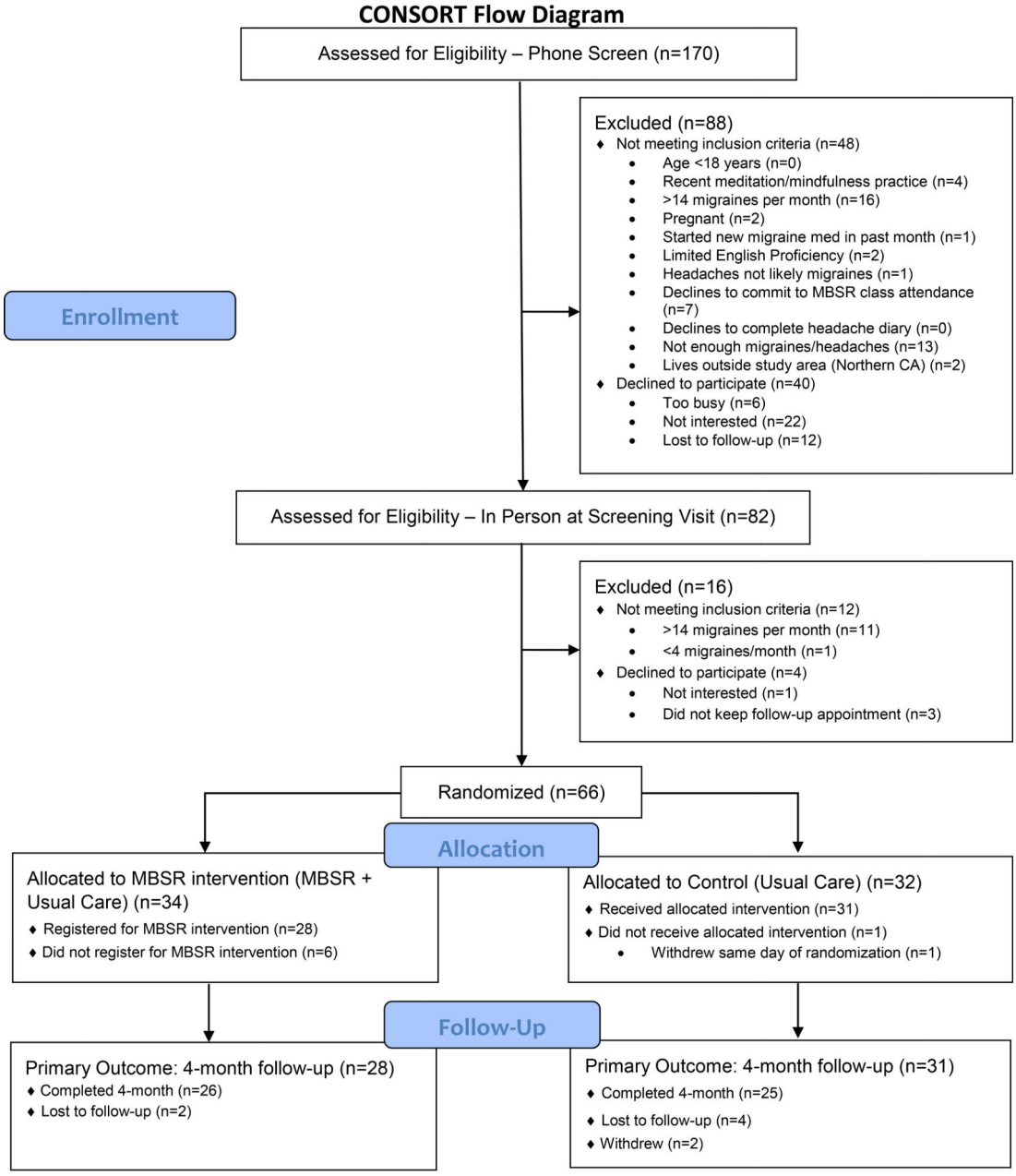

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Figure 1.
CONSORT Diagram

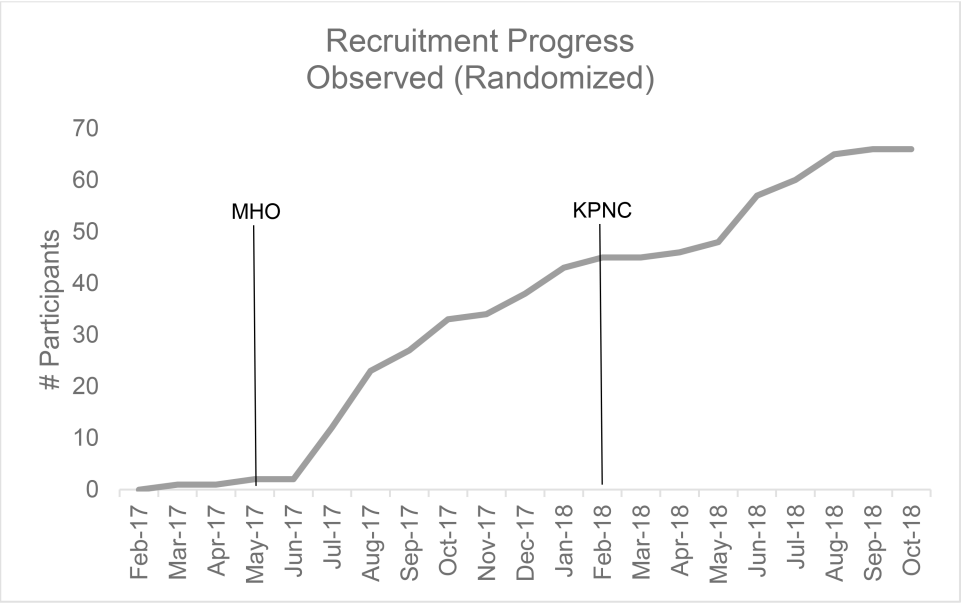

Figure 2.
Recruitment Graph

Table 1

Source of Recruitment by Enrollment Status and Study Completion

Source of Recruitment	Phone Screen		Baseline Visit		Randomized		4-month outcome		6-month outcome		8-month outcome	
	N	%	N	% of Screened	N	% of Screened	N	% of Rand'd	N	% of Rand'd	N	% of Rand'd
MHO Patient portal	55	32.4%	27	49.1%	22	40.0%	14	63.6%	14	63.6%	15	68.2%
Community-based	11	6.5%	10	90.9%	6	54.5%	6	100.0%	6	100.0%	6	100.0%
Physician referral letter	104	61.2%	45	43.3%	38	36.5%	29	76.3%	28	73.7%	29	76.3%
PAMF PCP	*14*	*13.5%*	11	78.6%	8	57.1%	8	100.0%	8	100.0%	8	100.0%
PAMF Neurologist	*39*	*37.5%*	23	59.0%	20	51.3%	12	60.0%	11	55.0%	12	60.0%
KPNC-RWC PCP	*51*	*49.0%*	11	21.6%	10	19.6%	9	90.0%	9	90.0%	9	90.0%
Total	170	100.0%	82	48.2%	66	38.8%	49	74.2%	48	72.7%	50	75.8%

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Table 2

Participant Demographics by Randomized Group

Characteristic*	Baseline Visit**	Usual Care	MBSR + Usual Care
N	81	32	34
Age, M (SD)	48.9 (12.6)	50.5 (11.8)	47.2 (12.8)
Gender (%)			
Female	81.5%	84.4%	82.4%
Male	17.3%	15.6%	14.7%
Unknown	1.2%	0.0%	2.9%
Race (%)			
White	81.5%	84.4%	79.4%
Black/African American	1.2%	0.0%	0.0%
American Indian or Alaskan Native	0.0%	0.0%	0.0%
Asian	9.9%	9.4%	14.7%
Native Hawaiian or Other Pacific Islander	0.0%	0.0%	0.0%
More than one race	3.7%	0.0%	0.0%
Other	3.7%	3.1%	5.9%
Unknown	1.2%	3.1%	0.0%
Hispanic (%)	4.9%	0.0%	8.8%
Marital Status (%)			
Single, never married	22.2%	12.5%	29.4%
Married or domestic partnership	61.7%	68.8%	58.8%
Widowed	0.0%	0.0%	0.0%
Divorced	13.6%	15.6%	8.8%
Separated	2.5%	3.1%	2.9%
Unknown	0.0%	0.0%	0.0%
Education (%)			
Less than high school diploma	0.0%	0.0%	0.0%
High school graduate, GED, or alternative	0.0%	0.0%	0.0%
Some college or associate's degree	13.6%	6.3%	17.7%
Bachelor's degree	37.0%	34.4%	38.2%
Some graduate school	7.4%	12.5%	2.9%
Graduate school degree	42.0%	46.9%	41.2%
Unknown	0.0%	0.0%	0.0%
Occupational status (%)			
Not working at the moment	37.0%	37.5%	29.4%
Part-time (<15 hours per week)	4.9%	3.1%	8.8%

Characteristic*	Baseline Visit**	Usual Care	MBSR + Usual Care
Part-time (15–34 hours per week)	12.4%	12.5%	11.8%
Full-time	44.4%	43.8%	50.0%
On temporary leave	1.2%	3.1%	0.0%
Health status (%)			
Excellent	7.4%	6.3%	11.8%
Very good	39.5%	50.0%	38.2%
Good	39.5%	28.1%	47.1%
Fair	11.1%	15.6%	2.9%
Poor	2.5%	0.0%	0.0%
Unknown	0.0%	0.0%	0.0%

* Participant reported at baseline visit

** Missing demographic data for one individual No comparisons between Usual Care and MBSR + Usual Care are significant at p=0.05.

Table 3

Participant Demographics by Enrollment Status and Study Completion

Characteristic*	Baseline Visit**	Randomized	4-month Outcome Complete	6-month Outcome Complete	8-month Outcome Complete
N	81	66	49	48	50
Age, M (SD)	48.9 (12.6)	49.1 (13.8)	50.6 (13.6)	51.4 (13.9)	50.9 (13.8)
Gender (%)					
Female	81.5%	83.3%	79.6%	81.3%	80.0%
Male	17.3%	15.2%	18.4%	16.7%	18.0%
Unknown	1.2%	1.5%	2.0%	2.1%	2.0%
Race (%)					
White	81.5%	81.8%	87.8%	85.4%	86.0%
Black/African American	0.0%	0.0%	0.0%	0.0%	0.0%
American Indian or Alaskan Native	0.0%	0.0%	0.0%	0.0%	0.0%
Asian	9.9%	12.1%	10.2%	12.5%	12.0%
Native Hawaiian or Other Pacific Islander	0.0%	0.0%	0.0%	0.0%	0.0%
More than one race	3.7%	0.0%	0.0%	0.0%	0.0%
Other	3.7%	4.5%	2.0%	2.1%	2.0%
Unknown	1.2%	1.5%	0.0%	0.0%	0.0%
Hispanic (%)	4.9%	4.6%	6.1%	6.3%	6.0%
Marital Status (%)					
Single, never married	22.2%	21.2%	18.4%	18.8%	18.0%
Married or domestic partnership	61.7%	62.1%	61.2%	62.5%	62.0%
Widowed	0.0%	0.0%	0.0%	0.0%	0.0%
Divorced	13.6%	13.6%	16.3%	14.6%	16.0%
Separated	2.5%	3.0%	4.1%	4.2%	4.0%
Unknown	0.0%	0.0%	0.0%	0.0%	0.0%
Education (%)					
Less than high school diploma	0.0%	0.0%	0.0%	0.0%	0.0%
High school graduate, GED, or alternative	0.0%	0.0%	0.0%	0.0%	0.0%
Some college or associate’s degree	13.6%	13.6%	12.2%	12.5%	12.0%
Bachelor’s degree	37.0%	34.9%	32.7%	31.3%	32.0%
Some graduate school	7.4%	7.6%	8.2%	8.3%	8.0%
Graduate school degree	42.0%	43.9%	46.9%	47.9%	48.0%
Unknown	0.0%	0.0%	0.0%	0.0%	0.0%
Occupational status (%)					
Not working at the moment	37.0%	34.9%	36.7%	39.6%	38.0%
Part-time (<15 hours per week)	4.9%	4.6%	2.0%	2.1%	2.0%

Characteristic*	Baseline Visit**	Randomized	4-month Outcome Complete	6-month Outcome Complete	8-month Outcome Complete
Part-time (15–34 hours per week)	12.4%	13.6%	6.1%	6.3%	6.0%
Full-time	44.4%	45.5%	53.1%	50.0%	52.0%
On temporary leave	1.2%	1.5%	2.0%	2.1%	2.0%
Health status (%)					
Excellent	7.4%	7.6%	8.2%	8.3%	8.0%
Very good	39.5%	31.8%	28.6%	27.1%	28.0%
Good	39.5%	45.5%	44.9%	45.8%	46.0%
Fair	11.1%	12.1%	14.3%	14.6%	14.0%
Poor	2.5%	3.0%	4.1%	4.2%	4.0%
Unknown	0.0%	0.0%	0.0%	0.0%	0.0%