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Chronic pain; Integrated primary care; Psychoeducational group; Cognitive behavioral therapy

Abbreviations

CDC: Centers for Disease Control; ACT: Acceptance and Commitment Therapy; PSEQ: Pain Self-Efficacy Questionnaire; VAS: Visual Analogue Scale; CDC: Centers for Disease Control; FQHC: Federally-Qualified Health Center

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Review Article

The Pain Academy: An Evaluation of a Primary Care Brief Psychoeducational Program for Persistent Pain

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Abstract

Persistent pain affects 20% of adults and can impair one's daily functioning and well-being. Psychoeducational group interventions can be effective in aiding pain management and coping strategies, however the time commitment for most evidence-based programs (10-20 hours) leads to access barriers and delivery challenges in primary care. A mixed-methods, program evaluation was conducted on a low intensity, three-session, manualized group pilot psychoeducational intervention in a primary care practice, emphasizing pain education, behavioral strategies, and pain-alleviating activities. Eighty-two percent of the clinic's panel of individuals with persistent pain and being prescribed opioid pain medication (N=128) attended at least one class (N=105). Attendees experienced significant pre-post improvements in self-reported pain functioning and favorable satisfaction ratings by patients and medical staff. However only 51% attended all three groups, despite frequent class offerings and heavily encourage by the patient's medical providers. This study reviews the potential promise and limitations of a low-intensity, limited session pain group to aid pain-related functioning. Additional investigation is warranted to optimize participant attendance, group format and frequency, and outcome assessment.

Introduction

Pain affects over 100 million Americans yearly, and approximately 10-15% experience persisting pain [1,2]. Chronic, or persistent, pain is categorized as any aversive physical discomfort that is consistently ongoing for at least three months [3]. Chronic pain has substantial deleterious impacts on daily functioning, maintaining gainful employment, personal well-being, and family and societal burden [1,4,5]. The evolution of persistent pain care shifted from multi-disciplinary pain treatment teams to patients' primary care providers with the emergence of opioid medications and the limited financial viability of the multidisciplinary pain center in an American managed care environment [6]. Further transformational shift in persistent pain treatment has occurred due to the confluence of recent, multiple factors, including:

a) Escalations in overdose deaths from the opioid epidemic;

b) Research highlighting the limited benefits and heightened risks of opioid over alternative medications (e.g. non-steroidal anti-inflammatory drugs or NSAIDS); and

c) Demonstrated improvements in functioning when psychosocial treatments are added to care [7-9].

The recent recommendations of the Centers for Disease Control (CDC) advocating for reducing the utilization of opioid medications in non-cancer pain and the expanding interdisciplinary care offerings for pain have had downstream reverberations in reducing the utilization of opioids in the policies of insurance payers, pharmacies, care organizations, and provider practices [10,11]. The change in narcotic pain medication prescribing trends has reestablished a need to help people cope better with the distressing and functionally impairing symptoms of pain. Psychological interventions provide a potentially powerful option to help fill this glaring need, and can be readily deployed in the primary care environment, to ease burden on both patients and medical care providers [9]. Current models of persistent pain, including central sensitization, propose that the brain becomes hypersensitive to pain, and pain sensation can be heavily influenced by patterns of thinking, life stressors, and environmental cues [12]. Moselely has indicated that educating individuals with persistent pain on the biological, social/contextual, psychological, movement-oriented, and self-management aspects of ongoing pain can create a new internal understanding, leading to different pain attitudes, beliefs, and behaviors [13,14]. In the last two decades, there has been a rapid increase in the integration of behavioral health providers into primary care and FQHCs [15]. This co-location of services and shared care movement provides a prime opportunity for behavioral health clinicians to utilize evidence-based interventions with demonstrated effectiveness for improving patient's daily functioning, symptoms of psychological distress and substance use, and self-management coping skills in response to pain [15,16]. Brief, evidence-based group treatments, such as Cognitive Behavioral Therapy, Acceptance and Commitment Therapy (ACT) and skills-based psychoeducation can be readily applied in the primary care environment to a broad spectrum of patients and can be tailored by clinicians to match patient needs [17-19]. A major challenge in primary care is to provide highly effective, dose-limited, evidence-based treatments to a subset of patients with a given need [20]. Group interventions, while a convenient and cost-saving format, can be challenging for primary care participants to attend, especially across an extended multi-session format [21]. This is particularly true for individuals with chronic pain, given the barriers experienced in daily functioning, discomfort, and financial resources that can limit appointment attendance [22,23].

This study provides a retrospective program evaluation of one FQHC's provision of a low-intensity (3 hours), evidence-informed, manualized psychoeducational pain group (The Pain Academy) to individuals prescribed narcotic pain medication at the health center. Previously, an Acceptance & Commitment Therapy pain group was offered for the FQHC's persistent pain population, however there was limited attendance by those prescribed narcotic pain prescriptions, and those with opioid prescriptions demonstrated lower levels of pain-related functional improvement relative to those individuals not prescribed opioid medications [24]. The FQHC responded by developing The Pain Academy, a targeted psychoeducation group for individuals with persistent pain and ongoing opioid-based pain treatment. The Pain Academy sought to increase the baseline knowledge and familiarity about effective psychological tools for managing pain for this subset of FQHC patients prescribed narcotic pain medications, as well as aiming to improve pain-related functioning. The FQHC decided that all individuals with prescribed opioid pain medication would be referred to attend the program and it was added to their pain intervention plan. The Pain Academy was also unique because it was developed shortly before the announcement of the new CDC chronic pain guidelines and implemented as the FQHC's medical providers were consequently reevaluating their pain medication prescribing practices to this population [10]. This retrospective program evaluation sought to review the outcomes of the Pain Academy after its completion. Most notably, this program evaluation examined:

a) Attendance and retention in a dose-limited treatment in usual primary care;

b) Magnitude of change in pain-related functioning;

c) Degree of change in pain severity, pain self-knowledge, and self-efficacy; and

d) Impact on patient and provider satisfaction. It was hypothesized the Pain Academy would likely have minimal impact on pain severity, however improvements would be observed in pain-related functioning, self-efficacy, and pain knowledge.

Methods

Participants

Individuals who attended the Pain Academy program were drawn from one urban Federally-Qualified Health Center (FQHC). Inclusion criteria for participating in the Pain Academy was: (a) being 18 years of age or older; (b) having a persisting pain diagnosis; (c) actively being prescribed an opioid medication; and (d) sufficient comprehension and understanding of English to complete self-report questionnaires and participate in group. Attendance and completion of the Pain Academy was requested by the primary care providers of all FQHC patients receiving opioid medications, as part of their annual pain treatment plan. Those individuals that did not feel comfortable participating in group or were not sufficiently able to understand English were provided alternate non-Pain Academy options for pain education and support, and are not included in this programmatic evaluation.

Procedure

An iterative process developed the group curriculum for the Pain Academy, between the integrated behavioral health consultant and the primary care providers at the practice, yielding an intervention utilizing psychoeducation and teaching self-management pain skills. The planning for the group started with a meeting with the FQHC's primary care providers to discuss goals of the Pain Academy and educational topics the providers wanted including: (a) benefits and risks of opioids; (b) signs of opioid tolerance and dependence, and (c) potential adverse impacts of sharing and selling medication. The FQHC's medical and behavioral health providers agreed that the group would be offered in three, one-hour classes over one year (e.g., 2017) to improve accessibility. This program intensity was decided upon based on interactive staff discussion on reasonable expectations, and deriving from previous group attendance patterns at the FQHC's and conversations about group amenability, during clinical encounters, with existing patients experiencing persistent pain at the FQHC. The components of the three classes drew from the published literature on evidence-based psychoeducational and cognitive-behavioral interventions for persistent pain (Table 1). Each class of the Pain Academy utilized a psychoeducational approach of presenting information, skills training, and facilitating discussion on the topics may be applied in attendees' lives. The program was manualized, with a detailed outlined providing patient and clinical instructions on each component of each class, available upon request from the lead author: there was no patient guide, but rather several handouts were provided for each class, as listed below. Class 1 utilized a team-versus-team, quiz show format to "test" and provide knowledge about chronic pain, pain medications, and safety in medication use. This class also provided handouts on different types of pain, risks of opioid medication, and signs of opioid dependence. A brief video reviewed how persistent pain is best treated by multiple approaches, including medical, movement, pain modalities, and psychological. Class 2 provided an overview handout on therapeutic modalities for pain reduction (e.g., heat, TENS unit) and local pain-related resources covered or subsidized by the participants' insurance companies, such as fitness centers, chiropractors and therapeutic massage offerings. This class also taught and provided "do-it-yourself" practice handouts on self-massage strategies, behavioral pacing, and reviewed the problem of pain catastrophizing and associated cognitive coping strategies. Class 3 focused on progressive muscle relaxation, visualization, distraction-oriented coping techniques, and prospectively developing individualized plans to address low, moderate, and high pain symptomatic days. A review of the proposed treatment package was shared with the team's medical and behavioral health providers for feedback. Finally, a focus group was conducted with attendees of another concluding pain group to review goodness-of-fit of the Pain Academy format, handouts, and measures, and additional feedback.

Table 1: The pain academy program curriculum.

Class	Modules	Duration
A	-Introductions	10 minutes
	-Pain Academy Measure Completion Team Trivia/ Dynamic [36-38] Psychoeducation on Pain	25 minutes
	-Review of Handouts on Opioid Pain Medication Safety and Type of Pain	10 minutes
	-Video and Discussion "Four Tires of Pain" [39]	10 minutes
	-Review	5 minutes
B	-Introductions	10 minutes
	-Review of "Four Tires of Pain"	
	-Discussion & Handout on Non-Pharmacological Pain Strategies [40], including Locally-Available, Insurance-Covered Resources	10 minutes
	-Overview and Practice on Self-Massage [41,42] and Handout	10 minutes
	-Overview on Pacing [43] and Handout	20 minutes
	-Brief Discussion and Handout on Pain Catastrophizing and related CBT-oriented skills [44]	5 minutes
	-Review	5 minutes
C	-Introductions	5 minutes
	-Practicing Progressive Muscle Relaxation [45] and discussing handout	15 minutes
	-Coping with pain flares, via pain visualization/imagery [46,47] practice and overview on distraction techniques, and discussing handout	15 minutes
	-Discussion and Instructions on Pain Management Plan [48] worksheet	10 minutes
	-Review	5 minutes
	-Pain Academy Measure Completion	10 minutes
	-Certificates for Completers	

The medical providers decided that attending all three classes would be a component of each patient's annual controlled pain medication treatment plan. As a

result, each class was offered in a serial fashion every three months (i.e., Class 1 in January, April, etc., Class 2 in February, May, etc.), several times in each selected month at varying days and times to maximize opportunities for attendance around participants' medical appointments and other time demands. Each Pain Academy classes was offered around 20 times during the calendar year, leading to an average class size of four attendees (Class A, 23 attended classes, mean class size was 4.35, S.D.=2.79; Class B, 18 attended classes, mean class size was 3.83, S.D.=2.41; Class C, 16 attended classes, mean class size was 3.94, S.D.-2.17). Participants were requested to attend the classes in a specified order, but this was not a mandate and flexibility was provided in limited situations. It is important to note the Pain Academy was offered when the FQHC began to revise its pain prescription policies, in response to the publication of new CDC Chronic Pain Guidelines [10].

Measures

Pre-post assessment was conducted for all participants at the first and third class attended. Data collection was conducted utilizing items in a composite outcome survey drawn from diverse measures. The aim was to utilize questions that were: (a) suitable for participants with limited general literacy and health literacy; (b) brief and easy to administer; and (c) being inclusive of constructs of pain severity, pain-related functioning, pain knowledge, pain confidence, and pain self-efficacy. A review of existing public source measures was conducted by a student intern (A.F.) in conjunction with the primary investigator (T.C.) to identify appropriate items and measures that could be conducted in less than 5 minutes total time. Items from the following measures were utilized in a two-page composite survey (Table 2).

Table 2: Pain academy composite measure.

Domains (Number of Questions)	Measure Item	Baseline/ Class A	Completion/ Class C
Pain Self-Efficacy (2)	PSEQ-8, Item 1, 10	X	-
Pain Knowledge (1)	Pain Confidence Scale, Item 1	X	X
Pain Confidence (1)	Pain Confidence Scale Item 2	X	X
Pain Intensity (1)	VAS Pain Scale	X	X
Pain-Related Functioning (7)	Helpful & Unhelpful Pain Coping Questionnaire (1-9)	X	X
Participant Satisfaction (8)	Eight items about Pain Academy content	-	X

Pain Self-Efficacy Questionnaire (PSEQ-8)

Degree of perceived ability to engage in pain care was assessed utilizing question 1 and 10 from the Pain Self-Efficacy Questionnaire-8 [25]. Focus was on assessing one's perceived ability to enjoy life and engage in required activities despite pain, and the Likert-items are scaled from 0 (not at all confident) to 6 (completely confident).

Health confidence score

Given the psychoeducational aspect of this study, there was inclusion of whether participants felt knowledgeable about their pain condition and their degree of confidence in self-managing their pain. Questions 1 and 2 were utilized from the Health Confidence Score [26]. The scale is a Likert four-point scale ranging from Disagree (1) to Strongly Agree (4).

Visual Analogue Scale (VAS)

Pain intensity is frequently measured in clinical and research settings to assess severity of pain. Universally, pain is measured on a 0-10 numeric rating scale, with 0 indicating "no pain," and 10 "the worst pain" [27]. The VAS demonstrates high sensitivity for identifying pain that interrupts functioning and was utilized in this study as a marker of pain intensity [28,29].

Helpful and unhelpful pain coping questionnaire

Pain-related daily functioning was examined to review how much pain was interfering with the activities and daily needs for participants. After a review of literature and discussion with a focus group of clinic attendees, many of the available measures were found to be lacking in readability and ease of completion for this population. The entire Helpful and Unhelpful Pain Coping Questionnaire [30] was utilized for several reasons. This measure examines recent functioning in the last seven days, which was reported by the focus group and study participants to be relatively easy to recall. The measure assesses approach-oriented and avoidant pain coping, including specific strategies (i.e., stretching, thinking helpful encouraging thoughts). Given the unemployed or disability designated status of many participants, there was a desire to utilize a measure that did not emphasize functioning in the domain of gainful employment/ work, which was true of this measure. Finally, participants found this measure easy to read. Scores on the Helpful and unhelpful pain coping questionnaire are rated from 0 to 7 days in the last week. The drawback of this measure is it is not yet empirically validated.

Participant satisfaction

Patient satisfaction was assessed across the core interventions provided in each week. For ease and patient comprehension, a three-point numeric and visual scale was derived for this project (1 "Disagree" or visual thumbs down; 2 "So/So" or midway thumb, and 3. "Agree" or thumbs up) (Figure 1). The main tasks of the three group modules were included and participants were asked to rate "how helpful" each topic was.

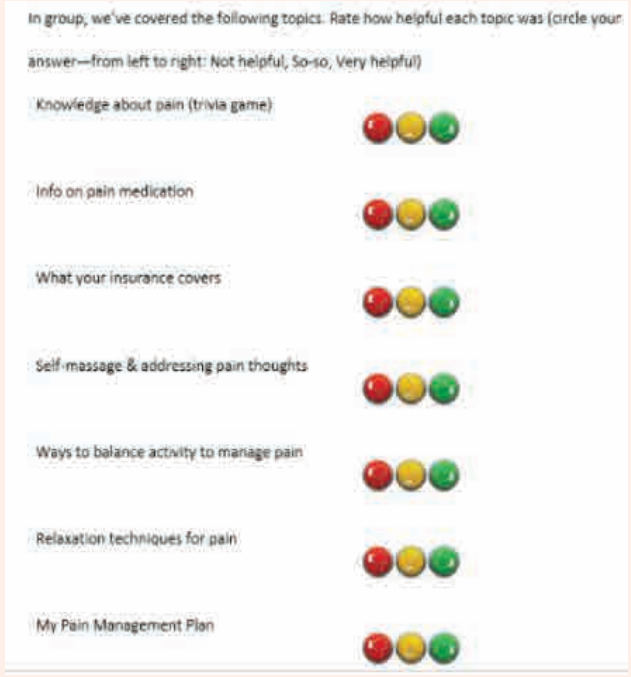

Figure 1: Participant satisfaction survey.

Provider satisfaction

Qualitative interviews were conducted with three health providers at the FQHC to ascertain their reactions and impressions of the Pain Academy. The interviews were video-recorded and quoted statements were drawn directly from the recording. An embedded design was utilized with the qualitative interviewing data further informing the quantitative results [31].

Analyses

The focus of the data analysis was to compare baseline and completion data for attendees of the Pain Academy. Paired sample t-tests were conducted to review repeated measures data, and demographic descriptive means and percentages were conducted. The main analysis was change in pain-related functioning on the Helpful and Unhelpful Pain Coping Scale and pain knowledge on the Health Confidence Score.

Given the retrospective convenience sample, an a priori power analyses were not able to guide recruitment, analyses, and measures chosen.

IRB approval and data security

This was a retrospective program evaluation to review the outcomes of the Pain Academy. The Public Health Management Office of Compliance and their institutional review board provided approval of this retrospective data analysis. A database was developed during the Pain Academy for clinical monitoring and outcome tracking, and stored with a password and on a secured clinical drive (T.C.). The de-identified database, including participant demographics, pain condition, pain medications, Pain Academy attendance dates, and outcome measures was later analyzed retrospectively by the project's data analyst (M.H.), who was independent of the FQHC agency and the Pain Academy.

Results

There were 105 participants in the Pain Academy. The attendees were mostly male (N=70, 66.7%; female N=35; 23.3%), identified as African-American/Black (N=60, 57.1%; Decline to Identify N=38, 36.2%, Caucasian/White=7, 6.7%), and the mean age was 57.5 years old (s.d.=7.18). Latino/Hispanic was the reported ethnicity of 11% of participants. The Pain Academy attendees had numerous overlapping comorbid conditions. Back pain (N=70, 64.2%), neuropathy/ neuralgia (N=41, 37.6%), arthritis (N=40, 36.7%), knee/leg pain (N=17, 16.2%), and shoulder/arm pain (N=11, 10.10%) were the most common pain conditions from a chart review. An HIV^{+} diagnosis was present in 69.5% of participants, which reflects the FQHC's origin as a Ryan White infectious disease primary care clinic. Substance use disorder (41.5%), major depressive disorder (45.7%), and generalized anxiety disorder (8.6%) were the most common comorbid psychological diagnoses. Cocaine (N=24, 22.9%) alcohol (N=10, 9.5%), heroin (N=8, 7.6%), and marijuana (N=1, <1%) were the most commonly diagnosed primary substances use disorders. The following controlled medications were prescribed to participants at the start of the Pain Academy in 2017: oxycodone and acetaminophen (N=57, 54.3%), oxycodone (N=27, 25.7%), codeine and acetaminophen (N-5, 4.8%), tramadol (N=5 4.8%), methadone (N=4, 3.8%), MS Contin (N=2, 1.9%), and fentanyl patch (N=1, <1%) and several attendees recently stopped receiving opioid medication (N=4 ,3.8%).

The FQHC's medical providers referred and encouraged all patients receiving controlled pain medication to attend the Pain Academy, assigning it as part of the patients pain intervention plan: 82% (105) of those actively being prescribed controlled pain medications at the FQHC (128) attended at least one class of the Pain Academy. Attendance varied: 50.4% attended all three classes, 23.9% attended two classes, and 25.7% attended only one class. The mean attendance was 2.28 classes (s.d.=0.81). Pre- and post-assessment data was available for 52 attendees. Pain self-efficacy assessment occurred at baseline. Participants reported a "fair" amount of confidence in being able to enjoy activities despite pain (mean=3.55, scale is 0 [none/poor] to 6 [high]) and "fair" ability to gradually be more active despite pain (mean=3.49, same scale). Pain severity assessment was conducted at baseline and at the third session. Attendees did not report a substantial decrease in their mean ratings of intensity of pain from the beginning of group (7.6 [out of 10], s.d.=1.57) to their last session (7.2 [out of 10], s.d.=1.49): Participants also demonstrated no detectable change in their pain knowledge (beginning of groups=2.92 [out of 4], s.d.=0.93; completion of groups=3.05 [out of 4] , s.d.=0.83) and pain confidence (beginning of groups=2.88 [out of 4]; s.d.=0.85. completion of groups=3.00 [out of 4], s.d.=0.82). Improving pain-related functioning was the central focus of this intervention. The Helpful and Unhelpful Pain Coping Questionnaire assesses how many days in the last week did the respondent engage in proactive or avoidance-based activities in response to pain. Participants in the Pain Academy reported gaining nearly a half-day per week of functioning on the following question: "Days you did not allow pain to interfere with what you planned to do" (baseline mean of 4.15 [out of 7], s.d.=1.93; 4.85 [out of 7], s.d.=1.75 at last group, t=2.909, df=51, p=0.005). The total score on this measure also suggested positive improvement in daily functioning (baseline mean of 32.38, s.d.=9.43, and 33.79 at follow-up, s.d.=9.15, t=2.114, df=40, p=0.041). There was no significant change in proactive (e.g., muscle strengthening, seeking social support) or avoidance (e.g., increased rest, restricting movement) strategies.

Examination of satisfaction with the Pain Academy occurred with participants and the clinic's medical providers. A patient satisfaction survey reviewed the perceived merit of the different groups' components. Ratings across the seven items (e.g., "knowledge about pain;" "ways to balance activity to manage pain") averaged between 2.49 and 2.79 on this three-point scale, indicating favorable mean responses to the content (Table 3). Most preferred topics were: (1) the "game show" quiz to test pain knowledge; (2) being provided information on pros/cons of different classes of pain medications; and (3) relaxation techniques for pain. Qualitative narrative themes from structured interviews with the FQHC's medical providers reviewed the perceived impact of the Pain Academy and the observed challenges from persistent pain in their practice (Table 4).

Table 3: Perceived satisfaction with pain academy components.

"How helpful were the following Pain Academy topics" Key: 1="Disagree", 2="So/So", 3="Agree"	Mean	Standard Deviation
"Knowledge about pain" quiz game	2.79	0.41
Info on pain medications	2.75	0.43
What your insurance covers	2.49	0.63
Self-massage, addressing pain thoughts	2.68	0.47
Ways to balance activity to manage pain	2.62	0.56
Relaxation techniques for pain	2.73	0.55
My Pain Management Plan	2.58	0.62

Table 4: Medical provider perspectives on pain and pain.

Themes	Comments from Primary Care Providers at Care Clinic
Challenges of Addressing Pain in a FQHC	1. "Limited time to discuss pain education." "Limits ability to integrate different strategies and discuss substitutes for opioid medication."
	2. Significant comorbidities experienced by patients that influence pain, such as trauma, depression, anxiety, housing instability, other chronic medical conditions.
	3. "The more mental health and housing is under control, the more stability and control is seen in patients pain coping." A provider recounted 40% drop in one patient's pain level after moving from a homeless shelter to their own apartment.
	4. Ease and accessibility of narcotic pain medications in the community "on the street," means most patients already have experience with opioid medication for pain before the discussion has even happened with their provider about possible initiation pain management medication.
	5. "Our patients are high emergency room utilizers, and may often be prescribed short-term opioids in the hospital. This leads to difficult conversations about short vs long-term pain, and skipping earlier treatments for pain" (e.g. NSAIDS, physical therapy).
	6. Narcotic medications may "seem to help pain" but they may just be lowering stress and not necessarily targeting pain.
Benefits of Pain Academy	1) "My patients that have attended the group have been better able to explain their pain and have a better vocabulary to describe what is happening with their pain."
	2) Providers regularly noted patients are now enacting the pain coping strategies that were taught in the Pain Academy.
	3) "I've seen people reacting differently to their pain"
	4) "(Patients) are setting more realistic goals for themselves (in negotiating daily life around pain) since group"
	5) Since the groups, a provider noted being able to focus and discuss more in the medical visit on "pain coping" instead of an over-focus by patients to be "pain free."

Pain medication was tracked one year later after the Pain Academy started.

Opioid pain medication decreased from 101 individuals prior to the Pain Academy to 64 individuals the following year. The medications that Pain Academy attendees were prescribed, in 2018, a year later were: non-opioid pain medications (N=31, 29.5%), oxycodone with acetaminophen (N=26, 24.8%), oxycodone (N=22, 20.1%), no recorded pain medication (N=10, 9.5%), tramadol (N=7, 6.7%), methadone (N=4, 3.8%), codeine and acetaminophen (N=3, 2.9%), MS Contin (N=1, <1%), and fentanyl patch (N=1, <1%). The FQHC medical providers cited the new CDC guidelines and patients providing more than one negative urine screening for opioid medication as primary reasons for cessation of controlled pain medication. Pain Academy attendance, by itself, did not determine continuation or cessation of opioid pain medication for a given patient, but was reported by medical providers to be considered, in context, with other patient factors.

Discussion

The Pain Academy was a three-session psychoeducational intervention focused on enhancing the daily functioning of patients at a FQHC prescribed controlled narcotic medications for persisting pain. The primary target of the Pain Academy was to provide patients with a common knowledge base on chronic pain, discuss available treatment options, and to introduce a series of evidence-supported psychological pain self-management strategies. A retrospective program evaluation sought to was to examine whether the limited duration group intervention would yield attendance retention and provide a meaningful benefit in satisfaction, improved knowledge, and pain-related functioning. The practice was successfully able to develop iteratively, in partnership with the team's integrated staff psychologist, a student intern, medical providers, and patient stakeholders, a three-session pain treatment approach that provided an overview of pain information and psychological techniques. A high percentage (82%) of the FQHC's clinical panel prescribed opioid pain medication attended at least one Pain Academy class. Among the program's attendees, mean satisfaction was positive for all Pain Academy modules. The first class' modules, a developed trivia game approach to test pain knowledge and an educational discussion on pain medications, was rated as the most satisfactory and anecdotal reports by participants indicated this class "was fun," "way better than expected," and "makes me look forward to the next class." This levity and fun atmosphere was purposeful to create an easy entry point in the Pain Academy and potentially maximize learning. Data was collected from participants at baseline and the third class, and evaluated retrospectively, to assess impact on pain-related functioning. A significant positive change over time was observed in pain-related functioning, with an additional half-day per week improvement reported for both the ability to not let pain interfere with required tasks, and on overall weekly functioning. This increase in activities of daily functioning by an additional half-day a week, based on 2-3 hours of invested time in the Pain Academy per participant is rather notable. This change in functioning and increased use of psychological tools to cope with pain were in line with changes observed among participants in the qualitative interviewing with the FQHC's medical practitioners.

Participants did not evidence significant changes in regards to pain intensity, increased use of approach-oriented strategies, reduced used of avoidance-oriented strategies, or overall pain-related knowledge over the period of time they attended groups. Therefore, within the limitations of this evaluation design and the observed findings, it is not exactly clear what participant factors are attributional to the enhanced self-reported pain functioning. It is possible that the social support and additional knowledge provided reaffirmed, or bolstered, existing resiliency and coping strategies to better engage in daily tasks, despite persistent pain. Alternatively, the group contributed to meaningful instrumental changes that were not captured in measurements at follow-ups, such as improved pain self-efficacy, changes in pain catastrophizing, or utilization of a revised personal pain strategy, partially derived from tools provided. Attribution of change would be speculative within the context of this evaluation. Existing research demonstrates that psychological interventions tend not to lower pain severity, but do tend to improve functioning in relation to pain, as also observed in this brief intervention [32,33]. Additionally, many of the Pain Academy participants had been living with persistent pain for over ten years, so they may have accumulated considerable pain-related knowledge during their extensive experience with pain and their engagement with the medical system: this may have limited additional accrual of pain-related knowledge from several hours of education.

The timing of the Pain Academy intervention spuriously coincided with the unexpected new medical guidelines issued by the Centers for Disease Control (CDC), urging medical practitioners to deemphasize opioid-based medications for chronic pain, excluding cancer and end-of-life care [10]. Based upon the CDC guidelines and subsequent changes in health insurance company policies, narcotic pain medications are being reduced nationwide and non-opioid pain management strategies are being encouraged. At last analysis, this FQHC has reduced the number of patients receiving opioid medication, by seven-fold, from 376 in 2016 to 51 in 2019, independent of Pain Academy attendance. The benefit of this timing did allow the FQHC to provide education on alternative pain treatment, coping, and self-management strategies, as their medical providers were changing their pain medication prescribing practices.

Limitations

There are notable limitations to this study. As a retrospective clinical program, there was no comparison, wait-list control, or control group, randomization was not utilized, and no subsequent follow-up assessment after Pain Academy participation was conducted. The study is also hampered by the use of a composite outcome survey drawn from diverse pain-related measures, instead of utilizing an empirically validated, established measure, due to the participants' known limited degree of literacy and minimal time reserved for assessment in the intervention. The patient satisfaction measure, having only three choices, limits the degree of variance of participant ratings and therefore the measure of overall satisfaction. The Pain Academy was partially designed and delivered by a single clinician, making it difficult to parse out clinical change due to therapist versus intervention effects [34]. Favorable satisfaction bias may have been involved given the prior clinical connection for many of the attendees with the Pain Academy facilitator (T.C.). The observed pre-post findings may be influenced by selection bias, due to the observed attrition rate. Statistical power was not established, which limits the ability to sufficiently interpret the observed results. It is possible, with the high attrition rate and the compressed group session content, that elements of the program may have been overwhelming, lacking appeal, and/ or many participants had a precontemplation/contemplative stage of change, limiting attendance and outcomes [35]. The breadth of psychoeducation, covered in a limited number of sessions, also may have limited the depth of training and subsequent behavior change. Many of the Pain Academy participants attended based on the repeated urging of their medical provider, yielding a cohort with potentially lower buy-in and readiness to engage in changing pain behaviors. Treatment retention may have been adversely impacted by changes in the FQHC's pain prescribing practices due to the new CDC guidelines. As it became known among the patient community that others prescribed opioid medications were experiencing dose-reductions or cessation, it may have diminished the perceived importance for patients to complete the Pain Academy, secondary to feelings of frustration, disappointment, or apathy. Therefore, given these various limitations, results of this evaluation should be cautiously interpreted. It is also possible, that a limited dose of three, one-hour classes is an insufficient dose of pain education for sufficient clinical change in a FQHC patient panel with complex health situations.

Conclusion

The results from the Pain Academy evaluation suggest that brief psychoeducational and skills training may have potential for improved pain-related functioning with those who attend a three-class intervention. The Pain Academy was created in response to low utilization and less beneficial outcomes of those with opioid pain medications, relative to those managing pain without opioids, during an Acceptance & Commitment Therapy open-access pain group previously conducted at the FQHC. The Pain Academy sought to provide a concise, robust, primary care-oriented group treatment package aimed at maximizing attendance retention. Most existing evidence-based pain self-management curriculum, range from 10 to 20 group sessions each, and all of this FQHC stakeholders' in this process felt these treatment packages were an extremely infeasible expectation for the clinic's patients and consistent attendance would be unattainable. However, despite frequent class offerings at different times of the day and strong provider urging to complete the Pain Academy classes as part of the patient's pain intervention plan, only approximately half of the participants completed all three classes. This program was not grant funded, so it did not include financial incentives for participation, and therefore was realistic to the challenges cased in engaging participants in an ongoing basis in community health care. There were significant limitations in the methodology of this real-practice evaluation, but further replication of the benefit of ultra-brief psychoeducation interventions for persistent pain is warranted in primary and specialty care. Due to changing policies, existing and emerging evidence, and CDC guidelines suggesting the benefit of including psychosocial interventions in pain care, many community practices must began to answer a fundamental question: How can practices offer robust psychological pain intervention for their persistent pain patients while minimizing burden on already taxed patients? Additionally, what is an ideal session duration to maximize both clinical outcomes and real-life attendance, and how do practices maximize patient attendance in potentially beneficial programming, without overextending existing patient educators and/or integrated behavioral health provider time?

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