


# Qualitative Needs Assessment for the Development of Chronic Pain Group Medical Visits

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## Abstract

Group medical visits (GMVs) for patients with chronic pain are becoming more accessible and have been shown to be successful in furthering patient education on multidisciplinary, nonopioid interventions. Unfortunately, evidence suggests that many group visit models lack sustainability due to recruitment issues and retention rates. Additionally, most of the studies surrounding GMVs are located in primarily urban health centers, potentially limiting their generalizability. This study aims to identify patient interest in and barriers to GMVs for chronic pain and to explore how chronic pain impacts daily lives for GMV content optimization in a nonurban population. Nineteen participants age 18 to 65 years participated in semistructured phone interviews to generate a thematic analysis. Participants received their care from family practitioners at a suburban multiclinic academic medical group and were being prescribed at least 50 morphine milligram equivalents (MME) at the time of recruitment. Analysis generated two themes: (1) *Participants expressed specific interest in GMVs with few barriers identified*, and (2) *Pain has a negative impact on mental health and most aspects daily life, creating a foundation for discussion in GMVs*. Findings support significant patient interest in group medical visits for chronic pain, but careful planning is necessary to address patient needs, expectations, and barriers in order to ensure GMV sustainability.

## Keywords

chronic pain, group visits, primary care, patient-centered health, group medical visits, shared medical visit

## Introduction

In 2016, the National Center for Health Statistics administered a national survey that demonstrated 20.4% of U.S. adults (50 million) had chronic pain (1). Types of chronic pain reported by adults include arthritis pain, lower back pain, headaches, cancer pain, postsurgical pain, and neurogenic pain. Due to prescribing patterns over the last 20 years, a significant proportion of these patients rely on potentially dangerous doses of opioids to help manage their pain (2, 3).

Primary care physicians (PCPs) often assume the responsibility of medication management for patients with chronic pain, but often lack the time, resources, or training to adequately counsel patients on nonpharmacological alternatives to opioids when managing chronic pain (4, 5). In response, group medical visits have been used to further patient

education and allow providers more time to explore alternative treatment methods to opioids in a more favorable setting than a short patient encounter (6). GMVs offer the additional benefit of peer support. Historically, GMVs have heterogeneous structures, but typically consist of a group of patients with some form of common medical condition or goal. GMVs vary from support groups, as there is some form of medical

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evaluation, treatment or advice provided to participants by a medical provider. Dating back to 1999, GMVs for chronic pain showed promise in reducing pain level, pain impact on daily functioning, and healthcare expenditure (6). Recent evidence has suggested that GMVs for patients with chronic pain have been associated with a decrease in the median amount of daily morphine equivalents used (7), as well as improvements in patient confidence in self-management strategies (8), sleep quality, depression scores, and pain level (9).

A majority of the published literature reported GMV efficacy under the pretense that planning and implementation was successful. By its very nature, this is a field with significant risk for publication bias because results are unlikely to be reported if the group visit model is not sustainable in the first place. Several GMV studies have reported early termination rates of 30% to 75% (10, 11). This demonstrates the need for additional information regarding patient interest in GMVs to improve retention rates and tailor content.

General barriers to GMVs have been well documented and include patient comfort with group interactions, content of visits, and overall high dropout rates (12, 13). Barriers more specific to chronic pain groups are not as extensively documented, but include patient anger as a barrier to improving their pain, recruitment, and increased need for care management, pharmacy, and social work support (6, 14).

Patient experiences with chronic pain have been well documented. A recent mixed-methods study showed that chronic pain had a significant impact on sleep, social life, mental health, physical functioning, as well as lower quality of life scores compared to the general population (15). Other studies have shown similar results (16, 17), but there has not been a focus on modifiable patient experiences that may impact GMV content.

No studies, to our knowledge, have preemptively explored GMVs for chronic pain from the patient perspective, including their interest in participating and barriers to GMVs. Additionally, there is a need to develop standardized content for GMVs informed by patients' perceptions to ensure the success of GMVs. Furthermore, many of the chronic pain GMVs and pilot studies are located in urban settings (9, 18–21). For example, one study evaluated the feasibility of the GMV model among patients with chronic pain in an underserved urban clinic (9). This eight week-long program enrolled 65 patients, and participants experienced improvements in pain, depression, sleep quality, perceived stress, and systolic blood pressure, and established feasibility for implementing the GMV model in an urban inner city clinic (9). An additional study evaluated 42 participants in a chronic pain GMV program in a poor inner-city setting of Massachusetts. Visits focused on providing support, education and healthy activities, and resulted in improvements in various domains of health related quality of life (19). Therefore, this study explored these barriers and experiences relevant to a nonurban setting in order to address the lack of

information related to the implementation of GMVs for chronic pain in a nonurban setting.

The purpose of this study was to: (1) investigate patient interest in and barriers to GMVs for chronic pain in a nonurban setting, and (2) explore the impact that chronic pain has on patients' daily lives in order to optimize GMV content.

## Methods

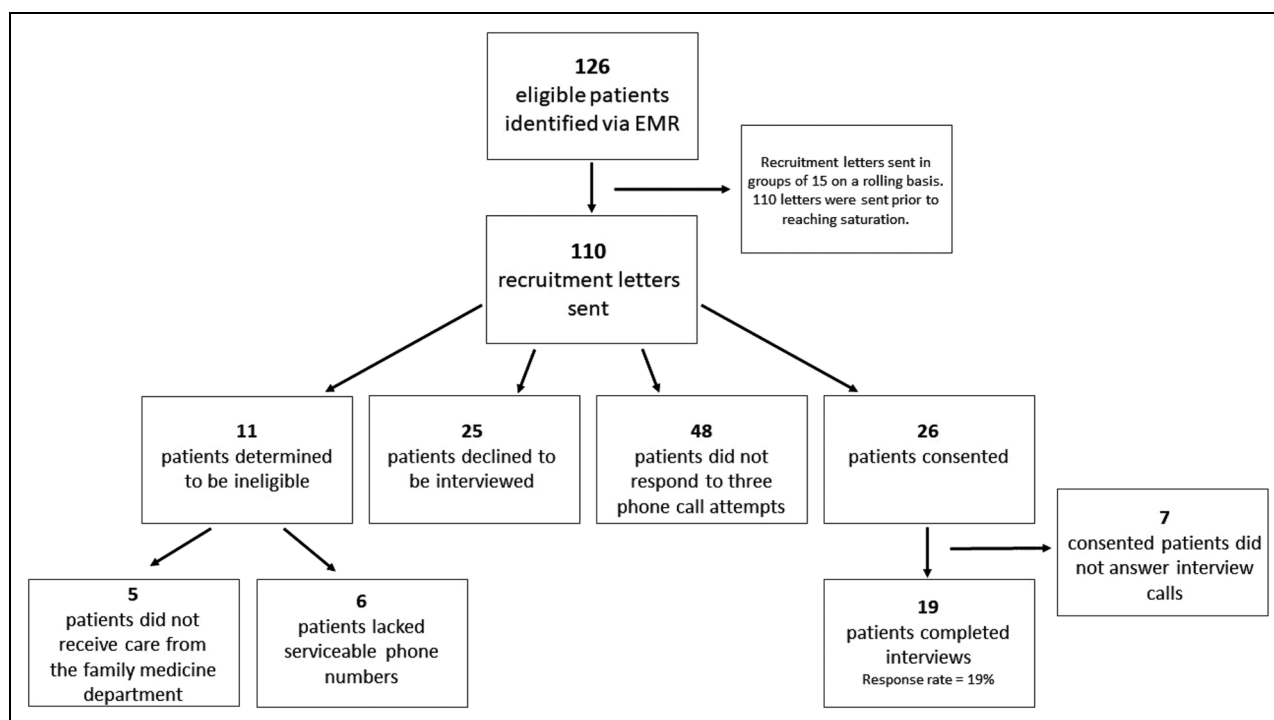
Ethical approval to report this research was obtained from the Penn State College of Medicine Institutional Review Board (STUDY#11558). Recruitment and interviews took place between May 2019 and May 2020 as staff and participants were available.

### Eligibility and Recruitment

Potential participants (n = 126) were identified from a list of patients admitted to participating Family and Community Medicine (FCM) clinics who met eligibility criteria generated from an EMR data query. Potential participants were mailed recruitment letters on a rolling basis in groups of 15 to allow study team members to contact patients in a timely manner. They were then contacted one week later to go over the purpose of the study and confirm study eligibility. Eligibility criteria included: (1) patients who received their care from one of six Penn State Health Medical Group (suburban multiclinic academic medical group) FCM clinics selected based on proximity to each other; (2) aged 18 to 65 years; (3) prescribed at least 50 morphine milligram equivalents (MME) daily for the last three months to manage noncancer pain; (4) and fluent in written and spoken English. Eligibility was confirmed by both chart review prior to phone call and participant disclosure. Interested participants provided verbal consent and were scheduled for a phone interview at a later time of their convenience. The recruitment flowchart can be seen in Figure 1.

### Interview Guide

A semistructured interview guide was developed and included the following sections: *Pain Impact*, *Treatments*, *Attitude towards Care*, and *Group Visits* (Supplement 1). Pain impact focused on how mental health and daily lives were affected by pain. The treatments section briefly explored what types of treatments participants have tried or would like to try. Attitudes toward care focused on participant experience with the healthcare system. The group visits section explored participant understanding of and interest in GMVs. Participants were asked if they were familiar with the concept of group medical visits, and the concept was explained in general terms as follows: *In this setting, you and a small group of patients would meet with a doctor and other medical professionals to discuss how your pain affects you, learn about various medication and*



**Figure 1.** Recruitment flowchart.

*nonmedication based ways to improve your pain level, and hopefully participate in some of these proven methods of pain relief.*

### Study Procedures

One of three (KW, EZ, DB) designated study team members conducted a 30 min in-depth, semistructured, one-on-one telephone interview with each participant. The telephone interviews were recorded on a handheld recording device and later transcribed. Participants were mailed a 25-dollar gift card as compensation.

### Analysis

A qualitative descriptive design was used for this study in order to discover more about the who, what, and where of patient experiences and to better understand a poorly understood phenomenon (22). Demographic information was obtained through EMR extraction. Qualitative thematic analysis of interviews was performed following interview transcription. Thematic analysis was used due to the open ended and broad nature of data collected, and to examine patterns and meanings associated with patient perspectives of GMVs for managing chronic pain (23). Interviews were sent to a group of professional transcriptionists at REV.com, a contracted company approved by the Penn State College of Medicine Institutional Review Board for safe data handling. Transcriptions were organized and coded in Microsoft Word. Four study members (KW, EZ, DB, SR) independently reviewed the transcripts to develop

a framework of emergent codes that were aligned with the goals of the study. After coding the first two interviews independently, inter-rater reliability was calculated and the codebook was revised. This process was repeated for the first four interviews until an inter-rater reliability of 0.91 was obtained (24). The remainder of the interviews were then coded by a single team member (KW) according to the codebook (Supplement 2) and reviewed by two study team members (EZ, DB) for consistency. Code reports were generated using a Microsoft Word macros template (24) and exported to Microsoft Excel. The study team (KW, EZ, DB, SR) determined that saturation was reached at a total of 19 interviews after considering the consistency of information that interviewees were providing. The study team reviewed individual code reports and agreed that there were few novel responses from the last three interviews.

## Results

### Demographics

Nineteen interviews were completed. On average, participants were 53.9 years old, 47% female, 89% Caucasian, and had an average BMI of 32.5 kg/m<sup>2</sup> (Table 1). There were a variety of pain conditions represented (n = 6), with the most common being lower back pain. The average daily MME was 124.6 with a range of 60 to 240. Participant addresses were all classified as rural urban continuum code (RUCC) 2 or 3, indicating that they were located outside of a large metropolitan area (25).

**Table 1.** Participant Demographic Information (n = 19).

Demographic	Mean	n (%)
Gender (female)		9 (47)
Age, year	53.9	SD 7.2
36-45		3 (15)
46-55		6 (32)
56-65		10 (53)
Morphine milligram equivalent	124.6	SD 60.3
60-120		13 (68)
121-180		2 (11)
181-240		4 (21)
Ethnicity		
Hispanic or Latinx		2 (11)
Race		
Caucasian		17 (89)
Two or more races		1 (5)
Other Race		1 (5)
BMI (kg/m <sup>2</sup> )	32.5	SD 8.3
20-29.9		8 (42)
30-39.9		7 (37)
40-49.9		4 (21)
Pain category		
Lower back		11 (58)
Fibromyalgia		2 (11)
Brachial plexus injury		1 (5)
Arm		1 (5)
Mitochondrial myopathy		1 (5)
Ankle/knee		3 (16)
RUCC score		
2		15 (79)
3		4 (21)

Abbreviations: SD, standard deviation; RUCC, rural-urban continuum code.

### Thematic Analysis

Interviewees expressed a range of ideas and emotions relating to their life experiences, how chronic pain affects every aspect of their lives, interest in and barriers to attending GMVs, their fears, coping mechanisms, experiences with the medical system, and how these concepts may relate to their experience in future GMVs. Themes are displayed in Table 2, as well as representative quotes that were encompassed by each theme. Theme 1:

Participants expressed specific interests in GMVs with few barriers identified

Overall, 16 participants (84%) expressed interest in participating in GMVs for chronic pain. All interested participants shared a range of motivations for participating, but most commonly expressed an interest in sharing with and learning from others with similar experiences. Transportation and vulnerability concerns were potential barriers for participants.

Thirteen of the 16 participants that expressed interest in participating in GMVs (81%) wanted to do so to share their experiences with others. They also mentioned a desire to learn about the successes and failures of others who have been through similar life experiences.

“I would do that. Absolutely. Because I think that through experiences that each of us have, we can learn something from someone else.” (P, 14)

This was a recurring sentiment. One participant even described their interest in the group setting as a beneficial way to deal with their trauma, because “when you go through something so traumatic, it- it’s nice to have someone who has gone through, uh, that traumatic experience too.” (P, 12) Participants even recognized that though “their pain may be in a different place,” that “chronic pain is chronic pain,” (P, 18) and there are still foundational concepts and experiences to explore.

In addition to sharing general experiences with others, participants thought GMVs “would be really good because you’d be able to be exposed to all these different modalities and therapies and be able to somehow move yourself around and avoid the pitfalls.” (P, 8) Some mentioned specific treatments they would like to learn more about, “like, what kind of stretches I can do for the fibromyalgia,” (P, 19) or learning “more about medical marijuana and if it would do any good.” (P, 17) In fact, nine participants (47%) mentioned medical marijuana and learning more about the safety, potential benefits and cost of it.

Another participant expressed clear expectations, that he didn’t “want to sit in a AA group setting.” Rather, he had interest “in a setting that are professionals looking to address a clinical problem that’s occurring, whatever it may be.” (P, 9) This participant wanted to make it clear that he did not want to simply participate in a support group, but wanted clear objectives if he were to participate in GMVs.

Only three participants (16%) expressed a clear aversion to any form of GMVs for chronic pain. All three expressed specific concerns about privacy and feeling vulnerable in a group.

“Yeah. I’m scared to tell my story. I don’t want everyone feeling sorry for me or having a pity party. I really don’t.” (P, 16)

Four participants (21%) brought up transportation concerns (cost, finding a ride, or the pain elicited by transportation) as being a limiting factor.

“The main thing for me would just be the drive. I’m very low income with the drive and stuff like that. The expenses; I can’t afford any of that stuff. Right now I’m living month to month.” (P, 1)

There were similar sentiments expressed regarding insurance coverage, especially when asked about what alternative treatment options they had already tried. Six interviewees (32%) identified insurance as a barrier, not only to their interest in the GMVs, but also to their medical care in general. Theme 2:

**Table 2.** Themes and Exemplary Patient Quotations.

Theme	Categories	Examples of participant responses
1) Participants expressed specific interest in GMVs with few barriers identified (n = 19)	Interest in participation (n = 16)	"But I'm open. I'm open for options and alternatives. Whether it be somebody sticking a needle in me and seeing if acupuncture would help or whatever else. I'm not gonna allow myself to be a pick and probe kind of guy but if there's gonna be some light at the end of the tunnel and some additional pluses to that and incorporate that with my reduction of opiate use, I'm up for that. Yeah"
	Sharing with others (n = 13)	"I mean there might be something I can share with somebody that might be helpful to them. And they might have something that might be helpful to me."
	Barriers to participation (n = 7)	"It would depend if I would have the gas money, how far it is."
	Adverse to participation (n = 3)	"I don't know if I could sit in front of strangers and just discuss what I've been through without A breaking down or B getting more depressed than I already am, so I don't know How I would do with that."
2) Pain has a negative impact on mental health and most aspects of daily life, creating a foundation for discussion in GMVs (n = 19)	Impact on daily life (n = 19)	"Ah yeah it's awful. I can do maybe 45 min to an hour in a car but the pain is bad. It's hard for me to sit without the pain. If I have to drive anywhere like my drive to the doctor's office is about an hour and that's my about my limit." "Yeah it definitely affects my ability to get to sleep. For a long time I couldn't stand to have the sheet of my bed touch my hand. It was excruciating just to have a sheet brush my hand."
	Impact on mental health (n = 16)	"My family doesn't even relate to what I've got because it's not something they have. It doesn't affect them. They see what it does to me and that's a real abstract question." "Am I depressed? Yes. Am I on depression medication? Yes. Um, do I have PTSD over it? Yes. You know, I learned in these past years through therapy and talking with psychologists, I was ignoring how I was feeling for a long, long, long time. And now I am who I am."

n = the number of unique participants that had quotes represented under each theme and category.

Pain has a negative impact on mental health and most aspects daily life, creating a foundation for discussion in GMVs

In order to identify patient needs and gaps in care, as well as to determine areas for focused discussion in GMVs, interview questions explored various aspects of participants' daily lives, mental health, and physical wellbeing. Participants clearly identified that chronic pain has a negative impact on most routine aspects of their lives. They readily discussed aspects of their mental health and were open to discussing sensitive topics in a group setting.

One of the areas of life that was prominently affected was mental health. Chronic pain had a direct impact on participants' experiences with depression, fear, and social stigmatization. One participant described how her pain took something from her. She stated that she "wants to go back to being me," and that "it makes you feel like less of a wife. Less of a mother. Less of a woman all together... you kind of feel like a prisoner." (P, 6)

Furthermore, participants recognized that both pain and depression perpetuate each other, stating that "when the pain is

out of control it causes depression, and then the depression causes pain. It's like a roller coaster." (P, 19) Participants recognized that this had a negative impact on their quality of life.

Participants relayed a significant degree of frustration that stemmed from the limitations that pain placed on their social lives:

"I have four grandchildren, and, you know, there are times that we have, you know, plans to do things with them and I just can't because I just hurt too bad that day." (P, 18)

Twelve participants (63%) discussed feeling isolated because they reported that others could not relate to them or understand how much pain they were in. Sometimes this stemmed from a lack of visual manifestations of the source of their pain.

"There are people who will look at me and they don't think there's anything wrong with me. People have to have something visual like an arm cut off or a leg. So people with chronic pain, it's hard because they don't think there's anything wrong with us." (P, 2)

Additionally, three participants (16%) felt as though they were stigmatized as "addicts." One participant wanted to make sure that everyone knew that "not all of us are addicts." He mentioned that there were many suffering through chronic pain that "wish we didn't have to take these pills at all." (P, 6)

Finally, seven participants (37%) voiced that chronic pain caused fear to permeate various aspects of their lives. Some had fear regarding their public image, some regarding the cost of their care, and others had fear about what they would do next for pain relief. One participant described the faith she had in her physician until the provider stated that they had run out of options. She stated, "I was kind of scared, because it seemed to me like he knew a lot and... what else can we do?" (P, 13) Another participant even feared that he might be robbed because of the value of his medications.

"But people are so tight-lipped and afraid because now anybody that takes OxyContin is a junkie and a thief... so if you talk about it with others you're probably gonna get robbed. I've been robbed several times." (P, 8)

Thirteen participants (68%) reported that their pain had a significant impact on either activities of daily living (ADL—basic self-care tasks like feeding, dressing, or bathing) or instrumental activities of daily living (IADL—complex independent living skills like driving, shopping, and cooking). One participant described herself as an active individual who travelled throughout the east coast for her sales job. Now she notes that she can barely keep up at home:

"I can't play golf anymore. I can't do any of the physical activities that I used to love to do. As far as household chores, vacuuming is a nightmare." (P, 14)

Chronic pain was detrimental to sleep initiation and /or maintenance for ten of the participants (53%). Many of these participants discussed trying to augment sleep with medications, but no participants volunteered any nonpharmacologic strategies to aid in sleep. One participant described her sleep as "just awful" and that she would "fall asleep during the day and then not sleep through the night." In order to remedy this, she would take Vicodin (a narcotic analgesic), and "might have to eat one or two of them" (P, 1) before sleeping an hour or two before awakening in pain. Another participant described being awakened every two to three hours due to the pain:

"If I move the wrong way while I'm sleeping it tends to wake me up. The pain wakes me up. I have to readjust myself and try to get back to sleep. There's some nights I can't go back to sleep because I'm in so much pain." (P, 7)

While participants shared common concerns with mental health, recreation, travel, and sleep, the most debilitating aspect for many was the unpredictable nature of their pain.

One participant described it as "like, riding a roller coaster. You don't know from one minute to the next." (P, 19) This unpredictable nature of pain was sometimes day to day, and for some it was hour to hour:

"I could be ok and then maybe 15 min an hour, I just have no control over it. It just does what it wants to do and I just have to listen to my body." (P, 2)

Regardless, there was often "no rhyme or reason as to what causes it to be worse," (P, 18) which further perpetuated the mental health concerns discussed above.

## Discussion

The aim of this study was to assess patient interest in, and barriers to, participating in GMVs for chronic pain in a non-urban setting. We also sought to evaluate how chronic pain impacts daily activities for GMV content planning. Results showed a clear interest in GMVs largely with the goal of collaborating with others who were experiencing similar emotions and daily struggles relating to their pain. Pain had a negative effect on the ability of most participants to perform ADLs or IADLs, and led to depression, fear, and stigmatization. Potential barriers to GMV participation fell into the categories of transportation, cost, and vulnerability in the group setting. These results demonstrate that there is interest in GMVs in this nonurban population. Additionally, there is a need for careful content planning focused on mental health and functional goals.

Our results were consistent with previous studies in several ways. First, participants expressed a desire to learn in a group consistent with the "group inclusion effect" (26). In this model, groups are driven by patient interests to share common experiences and combat loneliness. Similar principles were identified in a review of 71 articles, exploring how and why various types of GMVs are successful (27). This supports the idea that a GMV model in this population can build on previously reported concepts that have proven to be beneficial.

Recruitment, vulnerability/privacy concerns, lack of personal attention, scheduling, and transportation have all been listed as barriers to GMVs in general (12). Our study showed consistent recruitment concerns, as only 19% of potential participants completed a phone interview. Three (16%) of our study participants were concerned about vulnerability or sharing sensitive information in the group setting, but overall our data show the likely benefit of these shared experiences. Interestingly, participants in our study did not mention concerns for lack of personal attention at visits or for scheduling conflicts with work. This study is unique in that participants were not only concerned with the cost and availability of transportation, but also by the limitation that their pain physically imposes on transportation and the unpredictable nature of this pain.

**Table 3.** Group Medical Visit Planning Recommendations.

Study finding	GMV recommendation	Rationale
Participants expressed a strong interest in discussing shared experiences in GMVs (T1).	Facilitate a time to share common experiences and struggles/triumphs. Include ample time for participant driven discussion and collaboration.	Discussing shared experiences was the most common reason participants expressed interest in group visits, and is supported by previous studies (26, 27).
Longer commute times and the reliability of transportation was a concern for participants (T1).	Involve social workers in planning to help with transportation needs. Include transportation cost in any grant applications. Provide an option for a remote video platform to improve recruitment.	Transportation was a commonly reported barrier in this nonurban population. Video platforms have recently transformed care delivery (29) and may help eliminate barriers to participation.
Participants had concerns about the cost of GMVs as well as the cost of related treatments (T1).	Include clear messaging about potential costs for the GMVs. Provide education about insurance coverage/costs of potential treatment modalities that are discussed in GMVs. Have social workers available for some sessions to answer questions.	The cost of nonpharmacological chronic pain treatments is a previously reported barrier (30). Including education about cost and insurance coverage may make participants more likely to try various modalities.
Some participants expressed the need for clarity in GMV goals and structure prior to participation (T1).	Include expectations for the frequency of one-on-one visits with the physician. Clearly state the role of the GMV provider in prescription management and referrals.	Retention is likely to be improved if patient expectations are met (11).
Pain levels fluctuate in an unpredictable nature and may limit participation (T1, T2).	Provide an option for virtual participation to improve retention. Offer in person therapies such as massage, meditation, and music therapy to help combat pain flares.	Retention rates in GMVs have been limiting factors (12,13). Some participants may have difficulty committing to regular in-person attendance due to the unpredictable nature of pain flares.
Participants readily discussed the connectivity between chronic pain and mental health (T2).	Encourage open dialogue regarding mental health in each visit. Carefully plan a behavioral health curriculum that will help normalize the mental health aspects of chronic pain and provide realistic coping strategies for participants such as mindfulness interventions.	Chronic pain, depression, anxiety, and PTSD are well established comorbid conditions. Mindfulness interventions are beneficial in group settings for chronic pain sufferers (31).
Participants expressed a wide range of functionality in their daily activities due to the various ways they experience chronic pain (T2).	Utilize occupational therapists in some sessions to help improve daily functioning. Allow for a flexible system design and curriculum to support varied interests and promote sustainability.	Many different pain etiologies and functional abilities were represented in this study population. This highlights the importance of a flexible system design and curriculum, as both have been cited as valuable factors to GMV success (26, 32).
The overall response rate in this needs assessment was 19%.	Consider a broad eligibility criteria to promote appropriate recruitment. This may include nonopioid treated participants.	Increasing the diversity of participant functionality and experience, rather than trying to homogenize GMV participants, has been shown to benefit GMV models (26).

T1: Finding supported in theme 1  
T2: Finding supported in theme 2

Pain's impact on mental health and quality of life was consistent with a recent mixed methods study (15), which found chronic pain to interfere with physical functioning, professional life, social life, sleep, and mood. Michaelis et al. also found that chronic pain led to isolation (28), which was also consistent with our study. Our study found unique aspects of fear (lack of treatment options, cost of treatments, being robbed) that patients with chronic pain experienced. The novelty of our quality of life related findings was that they were in the context of what participants desired to discuss in a GMV setting.

We used the findings of this study to create several key recommendations to aid in future development of successful

GMVs for chronic pain. Table 3 summarizes these recommendations along with the study findings and existing literature that support them. Most notably, study participants described a desire to share their triumphs and pitfalls in GMVs, and readily recognized mental health comorbidities of chronic pain. To address these findings, we suggest facilitating a patient-driven time of discussion in each GMV.

Some groups may benefit more from focused prompts relating to topics such as their experience discussing pain with family members, or how they cope with the social stigma/loneliness that they experience. We also suggest involving behavioral health specialists to help patients

understand the interaction of pain and mental health, as well as to provide strategies to combat negative feedback mechanisms between the two. In order to address the largest barrier to participation (longer commute times/lack of reliable transportation), we suggest considering a hybrid model where patients may have the option to participate from home if transportation is unavailable or a pain flare limits their ability to travel. We expect that this information and the additional recommendations from Table 3 can be used to aid in funding, advertising, recruitment, and curriculum development for GMVs for patients with chronic pain.

Practical next steps now include implementing GMVs based on our recommendations and performing a mixed-methods analysis to evaluate both the perceived and objective impact of GMVs on a similar patient population. Research should also focus on understanding specific factors that contribute to GMV successes/challenges in this nonurban population.

## Limitations

This study had a high risk of selection bias. Participants who were willing to take part in the phone interview are more likely to be willing to participate in GMVs. Additionally, a single participant had their pain managed by a chronic pain specialist but received primary care from a family medicine physician. This was not explicitly listed in eligibility criteria, but does add some heterogeneity to the results. Data from this participant was included in analysis, and content did not differ significantly from other participants. There was a large heterogeneity in functional status, age, and MME range in this study. This wide range certainly raises the risk of disparate answers that prevents identification of common themes, however it was important to try to capture as wide of a voice as possible. Finally, the small sample size of the study provided limitations for a more robust thematic analysis.

## Conclusions

This is the first study to qualitatively assess interest in GMVs for chronic pain in a nonurban population. The overwhelming interest in GMVs and self-expressed negative impact of chronic pain on mental health and quality of life supports the need for GMVs despite reported transportation barriers and privacy concerns. Utilizing patient preferences and life experiences will help facilitate the success of GMVs in order to provide an alternative to opioid medical treatment.

## Authors' Note

Ethical approval to report this research was obtained from the Penn State College of Medicine Institutional Review Board (STUDY#11558). Verbal informed consent was obtained from the patient(s) for their anonymized information to be published in this article.


## Declaration of Conflicting Interests


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## Supplemental Material

Supplemental material for this article is available online.

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