

Using the Socioecological Model to Understand Medical Staff and Older Adult Patients' Experience with Chronic Pain: A Qualitative Study in an Underserved Community Setting

Katherine McDermott^{1,2}, Alexander Mattia Presciutti^{1,2}, Nadine Levey¹, Julie Brewer¹, Christina L Rush^{1,2}, Natalia Giraldo-Santiago^{1,3}, Tony V Pham^{1,2}, Roger Pasinski⁴, Neda Yousif⁴, Milton Gholston⁴, Vidya Raju⁴, Jonathan Greenberg^{1,3}, Christine S Ritchie^{2,3}, Ana-Maria Vranceanu^{1,2}

¹Center for Health Outcomes and Interdisciplinary Research, Department of Psychiatry, Massachusetts General Hospital, Boston, MA, USA; ²Harvard Medical School, Boston, MA, USA; ³Center for Aging and Serious Illness, Massachusetts General Hospital, Boston, MA, USA; ⁴MGH Revere HealthCare Center, Revere, MA, USA

Correspondence: Ana-Maria Vranceanu, Center for Health Outcomes and Interdisciplinary Research, Department of Psychiatry, Massachusetts General Hospital/Harvard Medical School, One Bowdoin Square, 1st Floor, Suite 100, Boston, MA, 02114, USA, Email avranceanu@mgh.harvard.edu

Purpose: Chronic pain is highly prevalent and disabling for older adults, particularly those from underserved communities. However, there is an absence of research on how contextual (eg, community/societal) factors interact with pain for these patients. Informed by the socio-ecological model, this study aimed to elucidate the individual, interpersonal, community, and societal factors associated with chronic pain from the perceptions of older adult patients and medical staff in a community clinic.

Patients and Methods: In this qualitative study, we conducted four focus groups and two interviews with medical staff ($n=25$) and three focus groups and seven individual interviews with older adult patients with chronic pain ($n=18$). Participants were recruited using purposive sampling from an ethnically and economically diverse primary care clinic in the greater Boston community. We transcribed assessments and thematically analyzed data using a hybrid deductive-inductive approach.

Results: At the individual level, we identified three themes: (1) older adults with complex care needs, (2) impact of pain (including on physical, emotional, work, and identity functioning), and (3) coping with pain. At the interpersonal level, complex relationships with (1) social supports and (2) medical staff emerged as themes. The need for (1) resources and (2) culturally informed care was identified at the community level, and socioeconomic status impacting the availability of resources for managing chronic pain emerged for the societal domain.

Conclusion: Findings underscore the intersection of factors contributing to the experience of pain among older adults from underserved communities. Our findings highlight the need to develop and implement treatments that fully address the experience of older adults with chronic pain at the individual, interpersonal, community, and societal levels.

Keywords: community clinic, pain, health disparities

Introduction

Chronic pain affects approximately 35% of older adults and is a leading cause of disability, but rates of pain double to 60–75% for older adults in underserved communities.^{1–8} Quantitative studies have demonstrated that chronic pain interferes with work, social relationships, and activities of daily living.^{1,9} Chronic pain also markedly impacts psychological functioning, with high rates of depression and anxiety, which can in turn cyclically exacerbate pain intensity and interference.¹⁰ Healthcare staff often have difficulty fully addressing the needs of patients with chronic pain, especially in under-resourced community clinics, where many underserved and historically marginalized patients receive their care.¹¹

Considering the perspectives of medical staff and older adult patients with chronic pain is crucial for developing treatments that fully meet the needs of patients in the context of the limited resources of community clinics.

There has been a recent push to understand how contextual factors intersect to impact health conditions, such as chronic pain, especially for individuals from underserved communities whose health is often affected by communal and structural factors outside of their immediate control.¹² In particular, the socioecological model (SEM) provides a framework through which to comprehensively view the interplay of factors that impact and are impacted by pain at four levels of analysis: individual, interpersonal, community, and societal.^{13–15} Individual factors include the cognitive, affective, and behavioral experience of chronic pain, including interference of pain in work, social, and emotional functioning. Interpersonal factors represent those between two individuals or within a single family (eg, relationship satisfaction, relationships with healthcare providers), while community factors include the social (eg, culture, religion) and physical (eg, city transportation) context that the individual lives in. The structural level describes broader societal factors (eg, discrimination, healthcare policy), which dictate an individual's place in society and the resources they have access to. The SEM is thus a helpful tool for organizing our understanding of a population that moves beyond focusing solely on the individual. While our interventions are mostly centered on addressing individual factors, previous research suggests all four levels may be relevant for the experience of chronic pain. For example, at the individual level, some older adults display an acceptance of their pain experience and understanding that pain is sometimes a normal part of aging,^{16–18} while others experience increased depression and anxiety.¹⁰ These individual factors can be viewed in the context of interpersonal factors, including the dynamics of a family unit and the availability of social support.¹⁹ These in turn interact with broader cultural/community factors, such as language and ethnic cultural background, while societal factors (eg, discrimination) often exert stress on individuals that can exacerbate chronic pain.²⁰

While quantitative findings have enabled a general evaluation of the contributors to and effects of pain, qualitative methods are particularly useful for elucidating the contextual factors highlighted in the socioecological model. Qualitative methods can help to expound not just individuals' quantitative ratings of pain interference but also the detailed ways in which pain interferes in their lives, as well as the contribution of interpersonal relationships to their pain, including relationships with medical staff. In explaining the specific ways in which pain interferes in their lives, older adults express particular frustration with their loss of ability to perform activities of daily living and subsequent feelings of uselessness due to pain and age.^{16,21} This disrupted sense of self is paired with a sense of disconnect from others, and older adults report large impacts of pain on their relationships,²² including those with medical staff.^{17,23,24} Meanwhile, medical staff report understanding the difficulty of living with chronic pain²⁵ while experiencing frustration with patients' lack of willingness to acknowledge psychosocial contributors to pain.²⁶ All told, patients often experience chronic pain as a disabling condition that takes away their sense of who they once were, while medical staff feel the burden of educating and connecting with patients whose needs they cannot always meet. However, much of this existing research was conducted with higher-SES populations, and there is an absence of qualitative information regarding the communal and societal contributors to pain from the patient and staff perspective.

These existing qualitative analyses of chronic pain in older adults provide a foundation of information about the individual perspectives of medical staff and patients with chronic pain. An unmet need remains using qualitative methods to synthesize these perspectives in the context of the larger communal, cultural, and societal influences on chronic pain.^{27,28} Further, given that most behavioral pain treatments were developed with higher SES populations in ethnically homogeneous trials,²⁹ it is especially important to consider these broader levels of analysis when seeking to understand the factors that interact with chronic pain for older adult patients in underserved settings. In these populations, aging is accelerated by a range of life factors, including increased financial stress,³⁰ and pain outcomes can be worse due to stressors, including class and ethnicity-based discrimination.^{31,32} While the socioecological model has been used to examine the experience of a range of health conditions and behaviors,^{33–35} it has yet to be used as a framework for the qualitative assessment of chronic pain for older adults in underserved communities. Such an analysis is essential for understanding the factors that impact and are impacted by chronic pain, including points of intervention across all socioecological levels of analysis. By understanding the comprehensive factors affecting the pain experience, we can better implement evidence-based pain management interventions in the community.

The present study aimed to elucidate individual, interpersonal, community, and societal factors associated with chronic pain from the perception of older adult patients and medical staff from a community health clinic, using qualitative analyses grounded in the socioecological model. Our primary research question centered on understanding the multi-layered factors influencing the pain experience in this clinic to inform future treatment development and implementation. We used thematic analysis to create a descriptive narrative of the experience of this patient population. This analysis will help to bridge the gap between patients and medical staff by identifying the commonalities and discrepancies between patient and staff perceptions of the factors that impact and are impacted by chronic pain for older adults in a community primary care setting. We also aim to broaden our understanding of the contextual circumstances that are often ignored in biomedically focused treatment planning.

Materials and Methods

Study Overview

We conducted 4 focus groups and 2 individual interviews with medical staff ($n=25$) and 3 focus groups and 7 individual interviews ($n=18$) with older adult patients (age 55+) with chronic pain at a primary care clinic in an economically and ethnically diverse community. Approximately half of patients in the clinic identify as Latino, Asian, Black, multiracial, and/or were born outside the United States. The purpose of these qualitative interviews was to understand the unique needs of diverse older adults with chronic pain in this clinic to inform the adaptation of a mind-body activity intervention, which was initially developed in a predominantly White, affluent sample. We followed the Criteria for Reporting Qualitative Research (COREQ)³⁶ in acquiring, analyzing, and reporting on qualitative data for this study.

Participants

Clinic Staff

For the staff groups and interviews, we purposively sampled and conducted groups based on clinic role (eg, primary care physicians, nurse practitioners, administrative staff) to gather a range of staff perspectives. The medical director, administrative staff, and clinic “champions” assisted with recruitment following a similar sampling procedure in a prior treatment development study in rural and low-income settings.³⁷ Participants did not have a prior relationship with the interviewers; however, they were made aware of the research purpose prior to participation.

Patients

We recruited older adults (55+) with chronic pain from a community health clinic using purposive sampling. Clinic champions and other clinic staff referred patients to the study. Staff who participated in the focus groups were encouraged to refer. Staff were encouraged to refer any patients with chronic pain who were 55 or older. Other participants self-referred through flyers posted in the clinic or through a clinic-wide platform for advertising research studies. The majority of patient participants were referred from providers ($n=15$) as opposed to flyer referrals ($n=3$). There were no prior relationships between the patients and the interviewers; patients were aware of the purposes of the research prior to participating. For both staff and patients, only those participating in the study were present in the qualitative assessments. Participant demographic characteristics are presented in [Table 1](#). Patient participants were generally characteristic of those seen at the clinic, although we were unable to recruit patients from some immigrant communities due to language barriers (eg, Khmer and Arabic-speaking patients).

Ethics Statement

The study was approved by the Massachusetts General Hospital Institutional Review Board (IRB), who determined that this qualitative study was exempt from written informed consent (protocol number: 2022P001691). The study complies with the Declaration of Helsinki guidelines for conducting research with human subjects. In accordance with IRB policies, participants reviewed a fact sheet, which included a statement that the deidentified results of the focus groups (for example, participant quotes) will be shared and published in relevant scholarly journals, and provided verbal consent to participate prior to data collection.

Table I Demographics for the Staff and Patient Qualitative Assessments, Mean (SD) and N (%)

		Staff (n=25)	Patients (n=18)
Age		48.56 (11.66)	65.72 (7.46)
Gender (% Women)		21 (84.0%)	12 (66.7%)
Ethnicity			
	Hispanic or Latino	3 (12.0%)	1 (5.6%)
	Non-Hispanic or Latino	22 (88.0%)	16 (88.9%)
	Unknown/not reported	0	1 (5.6%)
Race ^a			
	American Indian or Alaskan native	0	0
	Asian	5 (20.0%)	0
	Black or African American	3 (12.0%)	3 (16.7%)
	Native Hawaiian or Pacific Islander	0	0
	White	15 (60.0%)	15 (83.3%)
	Unknown/not reported/prefer not to answer	2 (8.0%)	0
Household Income			
	Less than \$10,000	0	0
	\$10,000–\$24,999	0	6 (33.3%)
	\$25,000–\$34,999	2 (8.0%)	1 (5.6%)
	\$35,000–\$49,999	4 (16.0%)	3 (16.7%)
	\$50,000–\$74,999	7 (28.0%)	1 (5.6%)
	\$75,000–\$99,999	3 (12.0%)	0
	\$100,000–\$149,999	1 (4.0%)	0
	\$150,000–\$199,999	2 (8.0%)	1 (5.6%)
	\$200,000 or more	1 (4.0%)	0
	Prefer not to Answer	5 (20.0%)	6 (33.3%)
Language(s) Spoken ^a			
	English	25 (100.0%)	18 (100%)
	Spanish	5 (20.0%)	0
	Arabic	1 (4.0%)	1 (5.6%)
	Other	6 (24%)	3 (16.7%)

(Continued)

Table 1 (Continued).

		Staff (n=25)	Patients (n=18)
Education		NA (not assessed)	
	Less than high school		0
	Some secondary school or high school		2 (11.1%)
	High School or Secondary School Complete		8 (4.4%)
	Associates or Technical Degree Complete		1 (5.6%)
	College or Baccalaureate Degree Complete		7 (38.9%)
	Doctoral or Post Graduate Education		0
	Prefer not to Answer		0
Employment Status		NA (not assessed)	
	Full-time employment		3 (16.6%)
	Not employed		2 (11.1%)
	Part-time employment		13 (72.2%)
Country of birth		NA (not assessed)	
	United States		15 (83.2%)
	Other (ie, Egypt, Russia, Costa Rica, Honduras, Guatemala, Puerto Rico, Malta, Sudan)		3 (16.8%)
Mother's origin country		NA (not assessed)	
	United States		13 (72.2%)
	Other (ie, Egypt, Russia, Costa Rica, Guatemala, Puerto Rico, Honduras, Malta, Sudan, Ireland, Italy, Canada)		5 (27.8%)
Father's origin country		NA (not assessed)	
	United States		13 (72.2%)
	Other (ie, Jordan, Belarus, Costa Rica, Guatemala, Puerto Rico, Honduras, Malta, Sudan, Italy, Philippines, Ireland)		5 (27.8%)

Note: ^aParticipants may select multiple options, so percentages might exceed 100%.

Procedure

We developed two semi-structured interview guides, one for staff and one for patients, using the socioecological model^{13–15} and prior chronic pain literature.^{38,39} The scripts began with general questions (eg, for patients: aspects of their personal background impact their pain), followed by questions probing at the environmental (eg, socioeconomic, employment, finances, caregiver roles), sociocultural (eg, culture, social support), behavioral (eg, behavioral changes due to pain), and medical factors (eg, managing pain and comorbidities) that impact and are impacted by pain. For the full interview guide, please see the [supplemental material](#).

Two PhD-level clinical psychologists (female: KM, male: JG) and one master's level research assistant trained by the clinical psychologists (one female: ME) conducted the focus groups and individual interviews either in person, using HIPAA-approved Zoom video calls, or through telephone audio calls. The PhD-level facilitators had backgrounds in chronic pain. All facilitators

were cognizant of potential bias resulting from the discrepancy between their main work in an academic medical center to this community setting; probes were built into the interview guide to encourage facilitator openness to differences between the settings. One master's level or bachelor's level female trained research assistant (RA; ME, NL) took field notes during the interview that were then used in rapid data analysis (RDA).⁴⁰ We used RDA to evaluate thematic saturation (ie, was consistent information obtained throughout assessments) in a timely manner to inform the additional qualitative assessments. RDA involved deductively mapping field notes and observations from the qualitative assessment onto a template summarizing the interview guide. RDA was conducted with the RA and the interviewer in the 24 hours after the qualitative assessment. RDA notes were consolidated into a matrix, which was consulted during the larger coding process, following established procedures.⁴⁰ The matrix was created using a hybrid inductive-deductive manner by using the domains from the RDA template alongside pertinent information from the assessments. One row summarized the information reported in the present manuscript regarding the clinic population, while the other rows consisted of information related to pain treatment experiences and feedback on a proposed mind-body intervention.

The focus groups and interviews lasted between 30 and 60 minutes. Individual interviews were conducted with staff when there was a sole individual in a particular role (eg, clinic director, pain psychologist). Initially, we planned to conduct only focus groups for patient qualitative assessments but found this to be impractical due to scheduling conflicts (eg, numerous medical appointments) and other responsibilities (eg, caregiving) that made scheduling groups difficult for this patient population. We audio recorded, de-identified, and transcribed verbatim all interviews and focus groups. De-identified data was stored on a secure qualitative platform (Dedoose version 9.0.90), where it was coded. Neither data (ie, transcripts) nor results were returned to participants. There were no repeat interviews.

Data Analysis

We conducted a hybrid inductive-deductive thematic analysis of our transcripts, following the Framework Method.⁴¹ Step 1 was completed with the verbatim transcription of the interviews. Step 2 (familiarization with the qualitative data) was completed by the lead author (KM) and research assistant (NL), who conducted, reviewed transcripts, or were present for most interviews. In steps 3 (coding) and 4 (developing a working analytical framework), we (KM and JG) first developed two separate codebooks using a hybrid deductive-inductive approach. We pre-specified potential domains such as "individual factors" deductively based on the socioecological model. We used a deductive-inductive approach to specify potential parent and child codes such as "psychological factors (depression, anxiety, emotional distress)", "resiliency factors", or "health literacy" based on prior research in chronic pain and the socioecological model as well as information gathered from conducting the interviews and rapid data analysis.⁴⁰ We allowed for themes to overlap. JG and KM met to review and integrate preliminary codes into a single codebook. Next, the larger team (AP - PhD-level male clinical psychologist, CR - PhD-level female clinical psychologist, JG, KM, and NL) each reviewed a transcript and the RDA matrix summarizing the RDA findings to inform edits to the codebook. Using this iteration of the codebook, ME and NL independently coded 20% of the transcripts. During this "first pass" of coding they continued to inductively revise parent and child codes as novel information emerged from the data (eg, merging the codes for immigration status and citizenship, addition of physical function into a code for other individual factors).

After the two RAs coded 20% of the transcripts, they then met with CR and AP to discuss novel codes that emerged during the initial coding process and to examine the concordance between the coders' coded transcripts. To ensure strong consistency in the application of codes, the team resolved coding discrepancies via discussion informed by the codebook. The team then updated the codebook to include the new, inductively derived codes. In step 5 (applying the analytical framework), the RAs used the refined, hybrid deductive-inductive codebook to recode the 20% of transcripts they initially coded and to code the remaining 80%. CR met with the RAs regularly during the coding process to provide guidance and problem solve as needed.

In step 6 (charting data into the framework matrix), we first extracted the coded excerpts from Dedoose and compiled into an Excel document. In step 7 (interpreting the data), AP and KM then independently and systematically reviewed the excerpts by creating summary codes, which were compiled into suggested themes and subthemes. AP and KM then met to discuss the emergent patterns from the excerpts, and to finalize themes and subthemes.

Results

A summary of the findings and illustrative quotes is presented in [Table 2](#).

Table 2 Socioecological Model Domains, Themes, and Illustrative Quotes

Domains	Themes	Illustrative quotes
Domain 1: Individual	1) Older adults with complex care needs	
	1a) Multimorbidity	<p>- There's degenerative joint disease, osteoarthritis with the elevated BMI hypertension, diabetes, coronary artery disease, strokes occasionally, diabetic amputations, quite complicated. (Staff)</p> <p>- I've been a diabetic [...] 29 years now, and I'm thinking I'm going to lose my leg. They're going to take my leg and what I'm going to do...if they take both my legs and I'm going to be in a wheelchair and then I'm not going to be able to live on my own...I'm getting all depressed (Patient)</p>
	1b) Multiple life stressors	<p>I deal with stress. My wife just passed away and my daughter just passed away. And it makes more pain on me but I don't go nowhere or do anything. I just stay here. I don't want it to be put on anybody else either. So the stress is really – it gets so emotional and it's like you cried every day and you still have pain and you don't take your medicine for the pain or nothing. (Patient)</p>
	1c) Low health literacy	<p>I think their health literacy is hard to get a sense of where they're at with that. I think this group struggles more than others as far as just even kind of managing their general healthcare. (Staff)</p>
	2) Impact of pain	
	2a) Physical functioning	<p>- I've been having this injury over 4 years, and I got to tell you, it changed my life completely because I used to be an active man. I've 4 kids... We play soccer. We play basketball, football. Name it. They love sport. So it was so hard for me missing all that. (Patient)</p> <p>- I have a hard time walking, I can't get around to meet people. I just can't do it. (Patient)</p>
	2b) Emotional functioning	<p>- Again, it ties in with the psychiatric comorbidity. So a lot of times the pain will drive anxiety and depression, anxiety about, "When's my pain going to be better?" depression that "it isn't getting better". (Staff)</p> <p>- When you have pain, you're in such misery, you don't want to do anything. (Patient)</p>
	2c) Work participation	<p>- On top of the financial difficulty. And right now it's a little bit – I got help from my kids because they graduated from college but it's still...I never ask anyone for help, even my family. They help me. Still that stress me out...I want to go back to work but it's so hard for me. This injury has really destroyed me. (Patient)</p> <p>- I'm not working. I'm unemployed. I'm disabled, so scratch that off. Most of the thing this pain costs me is [my] ability to walk, sometimes even function. (Patient)</p>
	2d) Identity	<p>Honestly, it took my life away. That's how I feel. I'm not able to work. I'm no longer the person that I used to be. The activities that I used to do, I'm unable to do or very limited in what I'm able to do. Socially, it does, the pain eventually isolates you from the rest of the world because you don't have the energy. You're in constant pain. You don't have the concentration to keep up a conversation with someone and be out... I say that it took that previous life away. This is a new life now because I'm no longer that person. (Patient)</p>

(Continued)

Table 2 (Continued).

Domains	Themes	Illustrative quotes
	3) Coping with pain	
	3a) Adaptive coping	<p>- I think that for me, I have pain a lot all the time within my neck and my back and my shoulders and so forth. But I think that at this point I'm just so used to it. I just live with it and I'm not going to let it stop me from trying to continue doing what I do. (Patient)</p> <p>- It's not the same activity that we could do, it's refocusing what we can do and just – if [someone would] walk three and five miles a day, whatever, you might only be able to walk whatever steps...our lives have changed, and sometimes it's not easy but I'm [Patient's name] 2.0. (Patient)</p>
	3b) Maladaptive coping	<p>- You have to be fighter to get past that, you have to have the ability to say, "I'm going to go on". "Cause if you're a quitter, you're gonna just dissolve with the pain. You can't do that. (Patient)</p> <p>- I don't overstep myself where I push myself to make my pain any worse than what it is. (Patient)</p>
Domain 2: Interpersonal	1) Complex relationships with social supports	<p>- Some patients have wonderful family support. So if you're a geriatric patient, what you need most often instead of me is a daughter. So if you have a daughter or a granddaughter or a daughter-in-law and you're geriatric patient with chronic pain or osteoarthritis, you're going to do a lot better than the patient that has a daughter in California or might have a son locally who's less caring or less attentive. (Staff)</p> <p>- I have to say I no longer go out socially as much as I do. And if I do, it's just with my daughter. I have not seen friends. It makes it very difficult to travel. I was supposed to go to a wedding. Just the ride alone would have killed me, never mind being at a wedding for hours. (Patient)</p> <p>- No one can see it on the outside. And that's, I find, very difficult...if someone looks at you, they don't see it. And I think if you have a broken leg, you get sympathy. I'm not saying I want sympathy, I'm just saying if you have a broken leg or a broken arm or a prosthetic or something, people see it, but they don't see our pain. (Patient)</p> <p>-Yeah, everybody knows the circumstances, everybody knows how many surgeries I had, everybody knows that if I'm in pain I can't go and do anything. They already know. They know I have limited mobility, so some things they don't ask me to do because they know that I can't. (Patient)</p>
	2) Complex relationships with medical staff	<p>- I have a physical therapist for that and she tried to push me and I had told her, "You know what, you don't tell me – you don't have my body, you don't know the pain." I will try to work through it as much – but you're going to force me to do something that I can't. (Patient)</p> <p>- Folks have been told by somebody that they have to learn to live with their pain, and that's a really big issue. They tend to think that that means that their providers are just giving up on them, that they've decided there's nothing – that they aren't trying hard enough. There's nothing else that we can do. It makes them feel very hopeless. (Staff)</p> <p>- Our interpreters, a lot of them know the patients personally. They live in the community, and so sometimes, patients say things to the interpreters that they don't admit to us. (Staff)</p>

(Continued)

Table 2 (Continued).

Domains	Themes	Illustrative quotes
Domain 3: Community	1) Need for community resources	<p>- <i>This time of year, it's hard to find dry level ground to walk on, and gyms cost a few bucks. (Staff)</i></p> <p>- <i>I mean in the good weather the beach is fabulous because...it's a very flat, safe walking path – but there aren't a lot of indoor rec centers that the senior group might have access to. (Staff)</i></p> <p>- <i>[City name] does not have a lot of those sort of resources, unfortunately, so finding a safe space to walk will be a little bit of a challenge I think. (Staff)</i></p>
	2) Need for culturally-informed care	<p>- <i>The generational differences, cultural differences, to have them try to contextualize things and realizing this is where we are today isn't always necessarily going to be like this and always. We may not get to be pain-free, right, but we can probably improve your function... It's a hard sell. (Staff)</i></p> <p>- <i>Trying to do any sort of pain measurement, I think, is really tough, it's still a large barrier. (Staff)</i></p> <p>- <i>So in some cultures, there is this level of extra respect for their seniors in a way that they'd want to do everything for them instead of helping them to improve their function. (Staff)</i></p> <p>- <i>And some of the folks that we see, like to understand their past experiences, some of them are very traumatic before they come to this country. And I don't think that I'm well equipped or have a full understanding of how their past also continues to play a role in their current state. (Staff)</i></p>
Domain 4: Societal	Socioeconomic and immigration status impact availability of resources for managing chronic pain	<p>- <i>...One of my upper middle-class patients has access to a wonderful swimming pool, has chronic pain, swims every day, has access to yoga classes, does yoga three days a week...the patient that is unemployed, is living in difficult housing in the inner city of [town names], has no access, of course, to a swimming pool, has limited financial ability to eat a healthy diet, is most likely overweight or even further elevated BMI, obese. (Staff)</i></p> <p>- <i>I'm telling you, you work your whole life, and you get nothing. It's not right, I'll be 72 in March. No, I mean it's... I think it's wrong... but the government should do something for the elderly more than what they're doing. I think I'm going to start a petition. (Patient)</i></p> <p>- <i>We call it a squished generation. Because usually, if they are old enough not to work, they are taking care of little kids. So they are working, but not being paid... And so sometimes we have to call the kids to see when they can bring them in. It's more work. (Staff)</i></p> <p>- <i>A lot of the patients have been physical workers, construction workers and have taken a heavy toll on their body and so have had work-related injuries that have turned chronic or just plain old severe DJD, osteoarthritis from hard physical work. (Staff)</i></p>

Note: Italicized language indicates a direct participant quote.

Individual Domain

At the individual level, we identified three themes: 1) Older adults with complex care needs. (Subthemes: 1a) Multimorbidity, 1b) Multiple life stressors, and 1c) Low health literacy); 2) Impact of pain (Subthemes: 2a) Physical functioning, 2b) Emotional functioning, 2c) Work participation and financial insecurity, 2d) Identity); and 3) Coping with pain (Subthemes 3a) Adaptive coping and 3b) Maladaptive coping).

Older Adults with Complex Care Needs

Multimorbidity

Medical staff described their older adult patients with chronic pain as often presenting with complex medical and mental health comorbidities. Older adults with chronic pain presented with a wide range of pain conditions, including arthritis,

back pain, neck pain, irritable bowel syndrome, herniated discs, and neuropathy. Comorbidities included diabetes, sickle cell anemia, obesity, depression, anxiety, and bipolar disorder. Many patients reported previous falls and fear of falling again. There were also interactions between comorbidities, including an interplay between physical and mental health conditions.

Multiple Life Stressors

Staff and patients highlighted multiple stressors patients face that exacerbate pain, including financial concerns, grief, and trauma. Patients described multiple stressors co-existing and compounding each other to the extent that it was difficult to engage in stress management.

Low Health Literacy

Staff highlighted that many patients within the clinic have difficulty understanding medical concepts and had little knowledge of the medical system. They noted that some patients do not know the difference between the roles of different medical staff, and others do not have a primary care physician to help them navigate the healthcare system. Staff expressed that patients often lacked understanding of pain education and that providers struggle to have the resources in both time and training needed to address these deficits.

Impact of Pain

Patients and staff reported negative effects of pain on multiple types of functioning with interactions between physical functioning, emotional functioning, work participation and financial insecurity, and identity. Pain was noted to worsen patients' mobility, which often led to difficulty with work, increased depression and anxiety, and feeling like they could not be the selves they once were.

Physical Functioning

Staff and patients described the patient population as one with many mobility difficulties resulting both from pain itself and fear of pain. They noted bidirectional relationships between the physical and emotional experience of pain. Some patients expressed the fear that physical movement would lead to an increase in pain, which led to greater sedentariness. Other patients described stopping activities that they used to enjoy because of the perception that the cost of completing them was too much.

Emotional Functioning

Both staff and patients discussed the negative impact of pain on emotional functioning. Patients particularly described fear of pain and increased emotional reactivity to pain, including irritability, anxiety, depression, and helplessness. For example, one patient noted the interaction between pain's impacts on physical and emotional functioning by stating, "When you have pain, you are in such misery, you do not want to do anything."

Work Participation and Financial Insecurity

Many patients reported that they had lost the ability to participate in work at their prior ability level due to pain; others reported being unable to work altogether and needing to rely on disability. This in turn led to feelings of financial insecurity, which interacted with impacts of pain on physical and emotional functioning.

Identity

Some patients expressed strong beliefs about the immense impact of pain on their lives across multiple domains, leading them to feel unlike the person they were before pain. Many expressed that they could not do the activities that used to be core to their sense of self and felt that they will always be limited in these ways because of their pain.

Coping with Pain

Adaptive Coping

Some patients described maintaining a resilient outlook characterized by acceptance of pain and willingness to engage in

physical activity despite pain. Others reported finding creative ways to cope with pain and embracing identity changes in positive ways through the learning of new coping skills.

Maladaptive Coping

Some patients exhibited stoicism and expressed that they had been taught to push through pain, while others exhibited avoidance of activity due to fear of exacerbating pain. Additionally, staff expressed that some older adults in the clinic exhibited a maladaptive acceptance of pain, such that they did not seek treatment that could improve functioning.

Interpersonal Domain

At the interpersonal level, we identified the following themes: 1) Complex relationships with social supports and 2) Complex relationships with medical staff.

Complex Relationship with Social Supports

Both patients and staff shared that quality of social support was critical for coping with pain. Many patients perceived that social support and connection enable them to stay active despite pain, to cope emotionally with the effects of pain, and to reduce the intensity of pain. Still, others discussed their willingness to prioritize social connection despite pain. Both patients and staff also highlighted the important role that instrumental social support plays in coping with pain.

On the other hand, many discussed complexities and barriers to connecting with social supports. Many patients expressed that the pain experience is isolating, and often leads to losing social experiences and entire relationships due to mobility concerns. In addition to physical limitations, some patients described the negative impact of emotional reactivity, including irritability, shame, and guilt, on social relationships. Others noted that the experience of pain can strain their relationships, such as feeling invalidated. Both patients and staff discussed patients' concerns about becoming a burden on their family, leading to withdrawal, so as to not ask too much of social supports.

Patients and staff also discussed that interpersonal responsibilities could lead to barriers to instrumental support, including assistance with transportation to medical appointments. Some patients, especially those from lower-income backgrounds, relied on their working children for transportation and had caregiving responsibilities that sometimes necessitated prioritizing others' well-being over their own.

Patients and staff discussed how family dynamics can help patients cope with pain but also contribute to sedentariness over time. For example, social supports can remove the burden of physical activity away from older adult patients, but this can also decrease function long term.

Complex Relationships with Medical Staff

Patients and staff described the patient–staff relationship as being important but sometimes contentious. They described a disconnect between expectations of pain treatment from staff and patients, with patients being more solution-focused with greater expectations for pain management. Patients expressed concerns about invalidation and at times feeling misunderstood or abandoned by medical staff. Staff reported that the strongest relationships exist between patients and medical interpreters and that due to these trusting relationships, patients share more with interpreters than they do other staff.

Community Domain

At the community level, we identified two themes: 1) need for community resources and 2) need for culturally informed care.

Need for Community Resources

Nearly all patients and staff discussed a considerable need for community resources to facilitate or encourage older adults with chronic pain to walk. In particular, participants discussed the need for safe outdoor amenities and affordable indoor facilities to adapt to the local colder climate. They noted that while there were safe places to walk in the warmer months, the community lacked resources for encouraging physical activity in the colder months, especially with surfaces that were suitable for older adults with chronic pain.

Need for Culturally Informed Care

Staff discussed the need for tailored care at the clinic, including a need for chronic pain programming to be delivered in groups of older adults with similar culture and language to aid in establishing cohesion. Many shared how the large ethnolinguistic diversity of the clinic population can create challenges to providing equitable and culturally adapted pain treatment, especially given that there is no single majority ethnic population that the clinic serves.

Staff described difficulty bridging the cultural, linguistic, and generational divide between staff and patients, especially those who speak languages other than English. Staff and patients also discussed the importance of religious institutions and cultural values to some patients. They noted ways in which cultural factors impact pain treatment, including that there may be practices of families providing support at the expense of patient mobility and independence. They also discussed that a subset of the community clinic population encountered many traumas prior to emigrating to the United States, which thus requires trauma-informed care.

Societal Domain

At the societal level, we identified one theme: *Socioeconomic and immigration status impacts the availability of resources for managing chronic pain.*

Patients and staff reported a discrepancy between individuals with access to resources and those who depended on insufficient or unavailable government services, including foreign-born patients who lacked access to programming. Staff also noted that some patients were limited in the types of jobs they could work and were more likely to have labor jobs that increased their pain and necessitated greater demand for time-limited pain treatments. Socioeconomic status interacted with issues at other socioecological levels, including increasing stress and frustration and worsening multi-morbidity, including through lack of access to healthy food.

Discussion

We conducted a qualitative analysis informed by the socioecological model of the individual, interpersonal, community, and societal factors associated with the experience of living with chronic pain as perceived by older adult patients and medical staff from an underserved community clinic. We aimed to understand the contextual factors influencing the pain experience in this population in order to inform treatment implementation. Patients and staff noted a high burden of pain on older adult patients combined with complexity in their relationships with their personal social support systems and their relationships with medical staff. Further, community resources were noted to be limited in comparison to the need for resource-intensive, culturally informed care. Societal factors, especially socioeconomic status, interacted with these factors to increase the negative impact of pain. Variability was noted as well, with some patients experiencing more resilience, support, and resources than others. There were interactions between the domains at all four levels of the socioecological model, suggesting that the standard approach for pain management to intervene only at the individual level is likely to be inadequate for patients in the community.

Regarding individual factors, staff and patients highlighted that older adults at the clinic had complex care needs, with many comorbidities and stressors. Some themes were similar to what has been reported in existing qualitative analyses of older adults with chronic pain, including the large impact of pain on functioning and sense of identity^{16,21} and the bidirectional relationships between physical and emotional functioning,^{10,28} which can create a spiral of increased disability and sedentariness over time. At the same time, staff noted greater complexity in this patient population compared to more affluent populations and a tendency for individual factors to compound each other in ways they may not for patients with greater access to resources and support. For example, staff noted that although older adult patients with chronic pain often present to the clinic with more psychiatric and medical comorbidities, they also often exhibit low health literacy that made it difficult for them to navigate the medical system to gain access to care for these conditions. Patients were also more likely to have financial stressors, including those resulting from the impact of pain on occupational functioning, which can then contribute to elevated emotional distress and worse pain.

In addition to interactions within factors at the individual level of the socioecological model, there were also interactions between individual, interpersonal, community, and societal factors. Patients and staff emphasized the importance of social support and connection to facilitate physical activity and emotional coping. Many patients noted

that their support systems were crucial to living well despite pain. In contrast, many patients also endorsed feelings of isolation in association with their pain condition, including fewer social interactions and lost relationships. An individual's emotional reactivity to pain could have strong effects on interpersonal functioning, including increased irritability, shame, and guilt, which could then worsen relationships in a bidirectional cycle. At the societal level, patients of lower SES endorsed more complex family dynamics and greater caregiving responsibilities that necessitated prioritizing others' well-being over their own.

Across domains, an absence of resources commensurate with the needs of the population was noted. In keeping with prior qualitative research,^{17,23,24} staff noted being unable to meet the needs of patients' treatment expectations with the resources at their disposal, and patients endorsed feeling at times invalidated and disconnected from their medical staff. At the community level, patients and staff noted a need for more community resources both physically and culturally, including resources to facilitate older adults' engagement in safe physical activity. Of specific concern was a lack of indoor community spaces for exercise during the winter when the weather is unfavorable and hazardous for older adults. Further, given the ethnolinguistic diversity of the community, staff also identified a need for more programming to be delivered in patients' languages and with staff from the same culture than was available based on existing clinic resources. At the societal level, the intersectionality between societal factors (eg, SES, immigration status) and individual factors was noted because lower SES patients can endorse greater pain severity (eg, from working labor-intensive jobs without access to options for alternative employment), more stressors and worse overall health (eg, more comorbidities, less access to healthy diet) and reduced access to resources for managing chronic pain. Foreign-born and older adult immigrant patients were found to be disadvantaged in their access to resources (eg, adult daycares) that could increase health and socialization, a key factor at the interpersonal level.

Existing pain management therapies typically intervene only at the individual level.²⁹ Our findings suggest that the individual experience does not exist in a vacuum but rather is greatly intertwined with interpersonal, community, and societal factors. Thus, to implement evidence-based pain interventions for older adults in the community, we need to tailor them to consider all levels of the socioecological model. For example, to address the considerable multimorbidity that can result from a lifetime of higher stress and lower health literacy/access to care, it is important to include a medical check-in within the context of a pain intervention. Medical check-ins can be incorporated into shared medical visits,⁴² which also facilitate group cohesion to address the isolation at the interpersonal level and can reduce the need for as many trained staff that the community does not have in resource-strapped clinics.¹¹

The present study has several limitations worth noting. In this initial qualitative analysis, we only interviewed English-speaking patients. Qualitative research targeting the needs and treatment experiences of linguistic minorities with chronic pain is needed. Additionally, while we were very successful with recruitment for the staff focus groups and interviews, recruiting patients was more difficult because of competing demands on patients' resource-strapped time. Thus, it is likely we missed patient perspectives of those for whom life's demands interfered, including many of the patients the staff discussed as having the most difficulty coping with chronic pain.

Conclusion

The present study provides important perspectives on the intersection between individual, interpersonal, community, and societal factors on the chronic pain experience for older adults in an underserved community clinic. Older adult patients and staff described considerable complexity among this patient population, with various stressors, comorbidities, interpersonal difficulties, and communal and societal factors impacting pain. Patients with more financial strain, less social support, more responsibilities, and cultural complexity tended to need more resources than they had available at the clinic. Older adults in underserved community clinics may be more likely to have broader community and societal factors that impact their already complex individual and interpersonal experience of their health, yet many interventions are developed to address factors at the individual level only. Our findings highlight the crucial need to develop pain management interventions to address the intersecting individual, interpersonal, community, and societal needs of older adults with chronic pain in the community.

Data Sharing Statement

Our qualitative study was not pre-registered. The analysis plan of this manuscript was not formally pre-registered. De-identified data from this study are available in the Vivli data repository. There is no analytic code associated with this qualitative study. The interview is available in the supplementary material for this manuscript.

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Disclosure

The authors report no conflicts of interest in this work.

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