

PSYCHOLOGY, PSYCHIATRY, IMAGING & BRAIN NEUROSCIENCE SECTION

Perspectives on Pain, Engagement in HIV Care, and Behavioral Interventions for Chronic Pain Among Older Sexual Minority Men Living with HIV and Chronic Pain: A Qualitative Analysis

Samantha M. McKetchnie, LCSW,^{*,†} Corinne Beaugard, MA,[‡] S. Wade Taylor, PhD,^{†,‡} and Conall O’Cleirigh, PhD^{*,†,§}

^{*}Behavioral Medicine Program, Department of Psychiatry, Massachusetts General Hospital, Boston, Massachusetts; [†]The Fenway Institute, Fenway Health, Boston, Massachusetts; [‡]School of Social Work, Boston University, Boston, Massachusetts; [§]Department of Psychiatry, Harvard Medical School, Boston, Massachusetts, USA

Correspondence to: Samantha M. McKetchnie, 1 Bowdoin Square, 7th Floor, Boston, MA 02114, USA. Tel: 617-800-6952; E-mail: smarquez1@mgh.harvard.edu.

Funding sources: Data collection was supported by R21DA038197 (principal investigator: Conall O’Cleirigh).

Conflicts of interest: The authors have no conflicts of interest to disclose.

Abstract

Objective and Methods. The transition of HIV from an acute, fatal illness to a chronic health condition has shifted the treatment needs of people living with HIV (PLWH). PLWH, including sexual minority men (SMM), are living longer and are subject to health concerns often associated with aging. A major health concern of older SMM living with HIV who report problematic substance use is chronic pain. This qualitative analysis of 15 one-on-one interviews with older SMM living with HIV and chronic pain aimed to characterize this population’s experiences with pain, engagement in HIV care, and problematic substance use. This study was conducted in a community health center in Boston, MA. We also solicited suggestions for preferred intervention strategies. **Results.** Three main themes emerged from the interview transcripts: 1) the impact of chronic pain and pain treatment on engagement in HIV clinical care; 2) the impact of substance use on chronic pain; and 3) response to interventions to address chronic pain and substance use. **Conclusions.** These findings underscore the need for interventions that address the structural, physical, and psychological barriers to engagement in medical and self-care that affect older SMM living with HIV and chronic pain.

Key Words: HIV; Pain Management; Substance Abuse; Chronic Pain; Aged

Introduction

The transition of HIV from an acute, fatal illness to a chronic health condition has shifted the treatment needs among people living with HIV (PLWH). Managing symptoms effectively and improving quality-of-life outcomes is now more achievable due, in part, to successful HIV treatment, consistent engagement in care, and adherence to antiretroviral medications (ARTs) [1, 2]. However, increased life expectancy contributes to the emergence of conditions associated with aging—such as

chronic pain—that complicate the health profile and quality of life of this population [3, 4].

Chronic pain is a prevalent condition among PLWH, a group that is now living well into older age, with recent estimates revealing that approximately 50% of PLWH are 50 years or older [5, 6]. As PLWH age, they are at increased risk for chronic pain and decreased mobility, both of which are associated with decreased engagement in medical care [7, 8]. Patients’ strategies to manage their chronic pain greatly influence their quality of life, as some coping strategies, such as the use of substances, are

common among PLWH with chronic pain and can have negative health consequences and lead to dissatisfaction with the aging process [9].

Research indicates that among PLWH, dissatisfaction with the aging process is associated with an increased potential for high-risk opioid use or opioid misuse and a tendency toward social isolation [10–13]. People living with HIV who report higher pain ratings and substance use to treat this pain are more likely to miss medical appointments, thus reinforcing a challenging cycle of chronic pain and disrupted treatment [14]. Additionally, medication adherence, linked with lower mortality rates, is affected by substance use patterns, with lower adherence rates associated with higher rates of substance consumption—including the misuse of prescribed opioid medications—in this population [7, 15].

Sexual minority men (SMM) are disproportionately affected by HIV, with 70% of new infections in 2017 contributed to male-to-male sexual contact [16]. Additionally, there is evidence to suggest that among SMM, substance use and prescription pain medication misuse may have a negative effect on engagement in HIV care [17, 18].

Although the extant literature describes, with varying degrees of completeness, the impact that chronic pain, substance use, age, and sexual orientation may individually have on engagement in HIV care, there is a dearth of research on the needs of individuals living at the intersection of these identities. The aim of this qualitative study is to characterize a sample of older SMM living with HIV who report chronic pain, substance-using behaviors, and concerns about engagement in HIV care. The goal is to understand more about patients' experiences of managing chronic pain, the role of prescribed and illicit substances, the interference of chronic pain with treatment adherence, and suggestions about tailored interventions to treat these conditions.

Methods

Procedures and Participants

We conducted individual, semistructured qualitative interviews with 15 older SMM living with HIV and chronic pain. To qualify for the study, participants needed to endorse 1) being a man who has sex with men; 2) being ≥ 50 years old; 3) living with HIV; 4) having chronic pain for ≥ 3 months; and 5) using illicit substances and/or abusing prescription pain medications in the past 6 months. Data on experiences of chronic pain, substance use, and pain medication misuse were collected via self-report.

All interviews were conducted and transcribed in English. Participants were recruited from health organizations and community centers in the greater Boston area via flyers and referrals from community members and health care providers. After providing informed consent,

participants completed a brief quantitative demographic survey and then met with the study site principal investigator (PI) for a 60-minute qualitative interview. Participants received \$50 upon completion of the study visit, which lasted for 2 hours. Interviews were conducted between April and June 2015 at The Fenway Institute, Fenway Health, in Boston, MA. All study procedures were approved by the Fenway Health Institutional Review Board.

Measures

The study team designed a semistructured interview guide to explore the following concepts: experiences with HIV, engagement in HIV care, use of HIV medications and medication adherence, experiences with chronic pain, substance use, sexual behaviors, and attitudes toward an intervention to address chronic pain. Sample items from the qualitative interview guide are listed in Table 1. Each participant completed a short self-report quantitative survey on sociodemographic characteristics and experiences of chronic pain, use of illicit substances, opioid medications, medication adherence, and engagement in care.

Analysis

The interviews were audio-recorded and transcribed verbatim and then checked for errors. Using a grounded theory approach to analysis [19], the team gained firsthand descriptive insight into the experiences of older SMM living with HIV who experience chronic pain [20, 21]. The study team used a within-case and across-case approach to review all transcripts and develop a code book [22]. The analytic team, composed of the two coders and the study PI, developed a preliminary code book based on the semistructured interview guide and through the open coding of several transcripts. The two coders used the code book to independently code the first transcript, discussed their results and the application of codes to the text, and created subcodes where needed. Then, the two coders recoded the first transcript and two additional transcripts before meeting again to assess the code reliability. The codes were deemed to reach sufficient reliability when the coding of these two additional transcripts was consistent between coders. A quantitative measure of interrater reliability was not calculated, in line with the grounded theory approach to qualitative data analysis [19]. At this time, the researchers amended the code book and expanded the coding scheme to ensure that all data significant to the study aims were captured. Once the code book was finalized and sufficient reliability between coders was established, the research team divided the rest of the interviews and coded them independently. NVivo 11 (2015) software was used throughout the process.

Table 1. Sample items from the semistructured interview guide

Related to Engagement in HIV Care	
1.	Over the past 6 months, how many medical appointments have you missed?
2.	What are some of the reasons for these missed appointments?
3.	How would you describe your daily experience of taking HIV medications?
4.	How would you describe barriers to taking your HIV medication?
Related to Experiences of Pain and Pain Treatment	
1.	How would you describe your pain?
2.	Did you experience chronic pain before your HIV diagnosis?
3.	What are some of the things you do to help with your pain?
4.	How is your chronic pain preventing you from completing your day-to-day activities?
5.	Have you ever been in counseling or any type of talk therapy because of your chronic pain?
Related to Substance Use or Pain Medication Misuse	
1.	Are there times that you take your pain medication in a way other than it is prescribed?
2.	Are there other substances, either prescribed or not prescribed, that you use?
3.	Does using substances help with your pain? How does it help?
Related to Thoughts on Pain Management Interventions	
1.	What are some resources or skills that you might find helpful in managing your chronic pain?
2.	If there was an intervention to help you manage your chronic pain, would you be interested in it?
3.	Would you prefer one-on-one or group sessions? Why?

Results

Demographic information is listed in [Table 2](#). The mean age of participants was 55.9 (standard deviation [SD] = 5.6). Nine (60%) participants identified as White, whereas five (33.3%) identified as Black or African American and one (6.7%) identified as multiracial. Two (13.3%) participants identified as Hispanic or Latinx. On a 11-point scale, with 0 indicating “no pain” and 10 indicating “pain as bad as you can imagine,” participants’ mean chronic pain was 5.9 (SD = 2.2). Regarding etiology of chronic pain, 66.7% participants endorsed experiencing musculoskeletal pain, 13.3% endorsed pain related to an illness such as shingles, and 20% reported that the cause of their pain was unknown or not formerly diagnosed by their physician. The majority of participants received prescribed pain treatment from their provider: 73.3% reported being prescribed narcotics (Vicodin, Percocet); 33.3% were prescribed anti-inflammatory medications (Celebrex, Toradol); 33.3% were prescribed prescription Tylenol or aspirin; 13.3% were prescribed a topical patch; and 6.7% were prescribed a topical cream. In regards to medication misuse, 26.7% of the sample endorsed obtaining prescription pain medication through friends or associates, and 33.3% noted that they occasionally take a larger dose of pain medication than is prescribed by their provider. All participants were prescribed antiretroviral medications.

Table 2. Demographic characteristics

Age, mean (SD)	55.9 (5.6)
Race, n (%)	
Black or African American	5 (33.3%)
White	9 (60.0%)
Multiracial	1 (6.7%)
Ethnicity, n (%)	
Hispanic or Latinx	2 (13.3%)
Not Hispanic or Latinx	13 (86.7%)
Sexual Orientation, n (%)	
Homosexual or gay	11 (73.3%)
Bisexual	4 (26.7%)
Education, n (%)	
High school or GED	5 (33.3%)
Some college	3 (20.0%)
College degree	3 (20.0%)
Some graduate school	1 (6.7%)
Graduate or professional degree	3 (20.0%)
Employment Status, n (%)	
Full time	1 (6.7%)
Part time	2 (13.3%)
Disabled	11 (73.3%)
Retired	4 (26.7%)
Average pain in the past week, mean (SD) (range, 0–10)	5.9 (2.2)
Length of Time Experiencing Chronic Pain, n (%)	
7–12 months	1 (6.7%)
>1 year–3 years	4 (26.7%)
>3 years–5 years	4 (26.7%)
>5 years–10 years	2 (13.3%)
>10 years	4 (26.7%)
Causes of Pain, n (%)	
Musculoskeletal (arthritis, slipped disk, and so on)	10 (66.7%)
Acute illness (shingles, migraine)	2 (13.3%)
Cause unknown	3 (20.0%)
Number of missed appointments due to chronic pain, mean (SD)	1.0 (2.4)
Types of Prescribed Pain Medication, n (%)	
Narcotics	11 (73.3%)
Anti-inflammatories	5 (33.3%)
Topical patch	2 (13.3%)
Topical cream	1 (6.7%)
Prescription acetaminophen or aspirin	2 (3.3%)
Pain Medication Misuse, n (%)	
Received nonprescribed pain medication	4 (26.7%)
Used more pain medication than prescribed	5 (33.3%)

SD = standard deviation; GED = General Educational Development.
N = 15.

Participants reported missing an average of 1.0 (SD = 2.4) medical appointments in the past year due to chronic pain or substance use. Three emerging descriptive themes were identified: 1) the impact of pain on engagement in HIV care; 2) the impact of substance use on chronic pain and engagement in HIV care; and 3) thoughts on interventions to address chronic pain and substance use among older adults living with HIV. Supporting significant statements from the qualitative interviews are included in [Table 3](#).

Theme 1: The Impact of Chronic Pain and Pain Treatment on Participation in HIV Clinical Care

Participants discussed how they believe chronic pain affects their engagement in HIV care, and these comments can be grouped into three subthemes:

1. **Pain-related impairment:** For some, mobility limitations related to pain interfere with their ability to get to their medical appointments (quote 1 in Table 3). In addition to feeling slowed down by pain, many participants described how the combination of weather conditions and pain generates barriers to appointment adherence (quote 2).
2. **Negative provider attitudes toward chronic pain patients.** Other pain-related barriers to engagement in HIV care included negative or dismissive attitudes of medical providers and stigma associated with the use of opioids for pain management (quotes 3 and 4).
3. **Substance use-based impediments to adherence to HIV care regime.** Participants also discussed how increased use of prescription pain medication and/or use of nonprescribed substances have a negative effect on HIV medication adherence due to increased forgetfulness when intoxicated (quotes 5 and 6).

Theme 2: The Impact of Substance Use on Chronic Pain

Participants described using prescribed and nonprescribed pain medications, as well as illicit substances, to treat their chronic pain. These descriptions can be separated into three subthemes:

1. **Substance use in response to engagement in physical activity:** Participants disclosed that when their pain levels are high, particularly after engaging in physical activity, they will take more than their prescribed dose of opioid medications or use other substances, such as crystal meth (quotes 7 and 8 in Table 3).
2. **Substance use for the purpose of immediate pain management:** Similarly, participants discussed using illicit substances, such as cocaine and marijuana, to lessen their pain quickly (quote 9).
3. **Substance use for the purpose of mood management:** Finally, some participants shared that these substance-using behaviors might serve more as a tool for mood management or distraction rather than as a method for relieving pain (quote 10).

Theme 3: Proposed Interventions to Address Chronic Pain and Substance Use

Participants were asked to describe potential interventions to address their chronic pain and substance use in relation to improved engagement in HIV care and medication adherence. Responses were varied but included recurrent subthemes:

1. **Negative impression of therapy:** Generally, participants believe that psychological talk therapy would be less effective than economic and financial support. For example, several participants noted that they did not believe that talking about chronic pain would change their pain experiences, whereas others noted that an action-oriented approach would be most acceptable (quotes 11 and 12 in Table 3).
2. **Use of and need for instrumental support:** Providing tangible resources related to housing, pain treatment, and financial

assistance were cited as being potentially helpful (quotes 13 and 14). Participants noted that the success of an intervention would be determined by its convenience and flexibility, with ease of travel to the intervention site highlighted as the most important factor (quote 15).

3. **Use of and need for group or social support:** In addition, the value of interventions based in social support was also discussed. Some participants stated that participation in a support group would be preferred to individual therapy (quotes 16 and 17).

Discussion

Although there are published data on the relationships among chronic pain and HIV [3], chronic pain and substance use [9, 23], and substance use and HIV [17], this study appears to be the first to investigate, qualitatively, the experiences of pain and attitudes toward pain treatment in a population of older SMM, a group that in the United States is substantially affected by the HIV epidemic. The results of this analysis provide initial evidence on the interactions among chronic pain, HIV, substance use, and structural barriers to engagement in care. Additionally, participants in this sample provide insight into the feasibility and acceptability of potential interventions to address chronic pain.

The extant literature demonstrates the associations between chronic pain, decreased quality of life, and engagement with HIV care, which encompasses appointment attendance and antiretroviral adherence [2, 14, 24]. Consistent with these findings and research on pain and engagement in general medical care [25], participants in our sample described how pain contributed to challenges with treatment adherence, specifically the relationship between decreased mobility and its impact on getting to medical appointments. Most notably, several individuals in our sample stressed that the need to navigate public transportation while experiencing high levels of pain makes attending medical appointments extremely difficult and, in unideal weather conditions, poses potentially insurmountable barriers to engagement in care. Research supports these observations, noting that a lack of feasible transportation options poses a major barrier to engagement in care among individuals who experience chronic pain, especially those who have limited access to financial resources and social support [26].

To combat the lifestyle limitations associated with chronic pain, PLWH employ a diverse range of pain management strategies, some of which could be considered maladaptive. These strategies, including the use of prescribed and nonprescribed substances, appear to assist individuals with accomplishing the tasks of daily living [23] but may further complicate the relationship between pain and engagement in HIV care. Specifically, the stigma associated with being an individual who uses substances can disrupt patient-provider communication. Participants in this sample were selected for

Table 3. Referenced quotes

Emerging Theme	Subthemes and Significant Statements	Age (Race)
1. The impact of pain and pain treatment on engagement in HIV clinical care	Pain-Related Impairment	
	1. "Medical appointments, it [chronic pain] slowed me down. Because . . . if the subway's just coming and I'm half a block away, I can't really run to take it. So that type of thing. Where a normal person would just rush a little bit, take the— <i>the car.</i> "	55 y (White)
	2. "The pain, the weather. I mean, it was hard weather . . . tromping through the snow and everything, you know, with my back, I mean, it's just—it's just—it hurts."	52 y (White)
	Negative Provider Attitudes Toward Chronic Pain Patients	
	3. "I mean, and the thing is that pissed me off about them was I went in, you know and [the medical provider] came in, introduced herself, and I says, 'Is there exercises?' You came to the wrong doctor if you're pill seeking.' And I said, 'I said exercise. And I'm not looking for pills!' I says, 'I'm already prescribed pills from my primary care doctor. I want to—you know . . . do some therapy here.' You know what I mean? Everybody's just judging you like, oh, you got pain? You're looking—you're looking for pills."	52 y (White)
	4. "Actually, my first appointment to see her, I met with the nurse first, she did my vitals, I sat in her—the doctor's office, and when she walked in the door I went to stand up to introduce myself to this new doctor that I was meeting with, and the first words out of her mouth was, 'I have a major problem with these medications you're on.' Like, not 'Hi, how are you?' . . . I was like, 'Excuse me?' Like, I was just horrified in a sense because, give me a break."	51 y (Multiracial)
	Substance Use–Based Impediments to Engagement in HIV Care Regime	
	5. [In regards to missing doses of HIV medication] "Sometimes I forget, you know? . . . If you're getting high, you forget to take them."	55 y (Black)
	6. [In regards to missing doses of HIV medication] "When I'm high or intoxicated . . . cocaine or drinking. Or if I hang out at somebody else's house."	51 y (Black)
	Substance Use in Response to Engagement in Physical Activity	
	7. "After I exercise, I go home and I am really seriously in pain. Then, I will take another whole Vicodin."	57 y (White)
	8. "I would certainly have to go and do crystal [meth] inside to shovel that 12-foot snowbank knowing that I would certainly feel it the next day."	56 y (White)
	Substance Use for the Purposes of Immediate Pain Management	
	9. "[Cocaine] helps—it'll usually last longer than marijuana, but it's just too expensive. . . . It takes longer for the—the pain to go away with the marijuana than cocaine. Cocaine usually [makes the pain go] away instantly."	55 y (Black)
	Substance Use for the Purposes of Mood Management	
	10. "[Marijuana] relaxes me. Puts me in a good mood. Gives me an appetite. Dulls this ache. Like I said, I'm not sure it's fixing it, but it makes it easier. I'm more relaxed, so I can walk a little better. Because . . . you've got all the pot up here, so you're not thinking about your ankles or your knees."	53 y (White)
	3. Proposed interventions to address chronic pain and substance use	Negative Impressions of Therapy
11. "No. I don't think [talk therapy] would work for me. . . . Because it's just like—talking to somebody else is not going to take away the pain."		51 y (Multiracial)
12. "I tend to find—I'm a doer. I want to [make active changes] myself. . . . I would talk after the fact, not beforehand or during."		50 y (White)
Use of and Need for Instrumental Supports		
13. "Yeah, if they could facilitate those unstable people with housing. Because I know so many people that are homeless. You know, that are on—that are HIV positive and need to take meds. They're not taking meds."		55 y (Black)
14. "Make sure that I have a means of being able to afford another bed, the proper chair to sit in, cushions, you know? Make sure I'm—like, I've got the latest update of the ice pack, because I use the ice pack, you know? And simple intervention stuff like that."		57 y (White)
15. "Then I'd have to get there. [In regards to transportation alternatives, other than walking] I would be embarrassed. I'm used to—I'm independent. I'm used to getting around."		53 y (White)
Use of and Need for Social or Group Support		
16. "Well there might be a support group. . . . Right, [Alcoholics Anonymous] is a 12-step program based on spiritual principles. So, if they had a program like that for people that were HIV positive, over 51 years old, they could go there, and they could have other people that are dealing with those same issues, talk about it, like 'Hey, what's up? How are you doing? You've been on pain medication longer than I have; I'm just starting out, what should I do?'"		51 y (Multiracial)
17. "A group would be—I've done a group recently on other things. I had issues and in the group, I found that other people had the same issues. . . . So it maybe would help—it'd be helpful to another person to see that they're going through the same thing."		66 y (Black)

participation, in part, because they endorsed using non-prescribed substances or misusing prescribed substances to ameliorate the negative effects of chronic pain. A subset of the sample described being labeled as a substance user and shamed by providers for using prescription pain medications. Maintaining open communication between patients and providers is a salient concern because of the health vulnerabilities that many within this population face. Providers can discuss harm reduction practices with patients to support medication and appointment adherence even when substance use continues. In instances where patients choose to disclose to providers how substance use interferes with their involvement in medical and self-care, providers should consider interventions, such as Life Steps [27], to aid patients in developing strategies for increasing engagement in care.

Although substance use may ameliorate some burdens of living with chronic pain, participants described that substance use interfered with their ability to maintain optimal medication adherence. Some participants suggested that late-night substance use, both in social settings and in isolation, increased the likelihood of missing medical appointments or failing to take an evening or morning dose of HIV medications. These observations are further supported by recent literature, which notes that among PLWH who have chronic pain, substance use is implicated in decreased medical appointment adherence [28, 29].

Participants in our sample described a unique relationship between substance use and pain management, indicating its utility in task accomplishment, its role as a “last resort” coping mechanism, and its use in mitigation of psychological distress. For some, illicit substances or ancillary doses of prescription pain medication may be used in response to pain associated with physical activity. This physical activity is often tied to functions of daily living, such as walking to public transportation or shoveling snow. Additionally, participants endorsed that illicit substances, such as marijuana and cocaine, may be used for pain management if immediate relief is desired. Even when participants did not experience a decrease in their physical pain, they reported that psychological distraction from chronic pain was important to their quality of life. This behavior may act as a form of avoidant coping, where individuals work to distance themselves from a stressor [30]. Although avoidant coping does not provide long-lasting relief from stress among those experiencing chronic pain, it may allow for short-term mitigation of symptoms [31]. For our participants, it is clear that there are multiple pathways to substance use, including pain management, mood management, or response to the effects of physical exertion. Due to these health complexities of PLWH and chronic pain, adequate assessment and treatment of chronic pain should be prioritized to protect against maladaptive pain coping strategies, including substance misuse. An important context for treatment development is the recognition of the

overlapping epidemics of chronic pain, substance use, and a tendency toward avoidant coping. Effective treatments may well incorporate common procedures capable of addressing each of these vulnerabilities, which may include problem-solving or approach-oriented coping strategies and behavioral activation, in concert with effective cognitive behavioral procedures for pain management. As these overlapping vulnerabilities interfere with full engagement in HIV care, it is plausible that they may also interfere with other behavioral treatments. As such, a flexible treatment platform—which may include health navigation, accommodating scheduling practices, integrated care models, and telehealth—is important to supporting enduring behavior change.

When discussing potential intervention modalities, many participants expressed a distrust in talk therapy and a preference for more “active” treatment. Additionally, participants noted that structural factors may affect utilization of pain treatment—more immediate needs, such as securing stable housing, take precedence over pain treatment or adhering to HIV medications. The interplay between poverty and health outcomes is well documented, with HIV disproportionately affecting individuals living in poverty through inadequate access to health care and situational vulnerability for HIV acquisition [16]. Additionally, some research suggests that indications of poverty are associated with unsuppressed HIV viral loads, underscoring the public health importance of addressing structural barriers to engagement in care [32]. Findings from these study teams, along with data from the current sample, suggest that competing survival needs affect engagement in care and that these needs may be an important treatment target for chronic pain interventions aimed at improving outcomes for this population.

Participants were divided on their preferred intervention format. Some found individual sessions more palatable, noting that they did not see the benefit of discussing their pain experiences with others and expressing disinterest in listening to others’ descriptions of pain. Conversely, others found group-based approaches appealing. One participant compared a group-based chronic pain intervention to a 12-step program, noting that both programs increase social connection and decrease isolation [33]. He ascribed the value of 12-step fellowships to the program’s peer support model and indicated that older SMM living with HIV and chronic pain might benefit from a comparable peer support group designed for this set of co-occurring health conditions. As there are differing opinions on the best way to implement intervention content, a hybrid individual-group approach may be more generally accepted.

Recent interventions to treat pain among individuals with chronic illnesses have leveraged a peer-led group format to disseminate useful information and provide a platform for the delivery of other psychological treatments, such as cognitive behavioral therapy, that have

been shown to be effective for this population [34]. As discussed previously, of the participants who preferred a group format for intervention implementation, most endorsed the appeal of spaces where shared experiences could be discussed and social support networks could be strengthened. One recent intervention that employs the peer-led format, Skills to Manage Pain (STOMP), fulfills many of the requirements outlined by the participants in our sample, such as the need for education, especially regarding the appropriate use of prescription opioid medications; an orientation to tangible outcomes; and the creation of a support network. The STOMP intervention, delivered both individually and in groups, uses peer facilitators (deemed “pain pals”) to provide pain and pain treatment education, teach pain self-management skills, and set up networks of support among PLWH. The results of a pilot randomized controlled trial showed that intervention content and structure were both feasible and acceptable [35]. Although this intervention model provides a promising framework, the specific needs of older SMM living with HIV and chronic pain are likely to differ from those living with HIV and chronic pain more generally—including the potential stigma associated with identifying as a sexual minority individual—and these differences would need to be adequately addressed for an intervention to be effective.

In sum, chronic pain poses a major health concern among older SMM living with HIV. Responses from participants in this sample indicate that although treating chronic pain is challenging, interventions that address substance use and misuse, barriers to engagement in pain management and self-care behaviors, and social support needs may be acceptable. Our findings suggest that further study and adaptation of interventions aimed at addressing chronic pain among older SMM living with HIV are warranted.

Acknowledgments

We would like to acknowledge our wonderful research participants.

References

- Deeks SG, Lewin SR, Havlir DV. The end of AIDS: HIV infection as a chronic disease. *Lancet* 2013;382(9903):1525–33.
- Surratt HL, Kurtz SP, Levi-Minzi MA, Cicero TJ, Tsuyuki K, O’Grady, CL. Pain treatment and antiretroviral medication adherence among vulnerable HIV-positive patients. *AIDS Patient Care STDS* 2015;29(4):186–92.
- Balderson BH, Grothaus L, Harrison RG, McCoy K, Mahoney C, Catz S. Chronic illness burden and quality of life in an aging HIV population. *AIDS Care* 2013;25(4):451–8.
- Miller TR, Halkitis PN, Durvasula R. A biopsychosocial approach to managing HIV-related pain and associated substance abuse in older adults: A review. *Ageing Int* 2019;44:74–116.
- Marcus JL, Chao CR, Leyden WA. Narrowing the gap in life expectancy between HIV-infected and HIV-uninfected individuals with access to care. *J Acquir Immune Defic Syndr* 2016;73(1):39–46.
- Centers for Disease Control and Prevention. HIV and older Americans. 2020. Available at: <https://www.cdc.gov/hiv/group/age/olderamericans/index.html> (accessed August 2020).
- Broekmans S, Dobbels F, Milisen K, Morlion B, Vanderschueren S. Medication adherence in patients with chronic non-malignant pain: Is there a problem? *Eur J Pain* 2009;13(2):115–23.
- Krashin DL, Merrill JO, Trescot AM. Opioids in the management of HIV-related pain. *Pain Physician* 2012;15(suppl 3):ES157–168.
- Miaskowski C, Penko JM, Guzman D, Mattson JE, Bangsberg DR, Kushel MB. Occurrence and characteristics of chronic pain in a community-based cohort of indigent adults living with HIV infection. *J Pain* 2011;12(9):1004–16.
- Greene M, Justice AC, Lampiris HW, Valcour V. Management of human immunodeficiency virus infection in advanced age. *JAMA* 2013;309(13):1397–405.
- Fumaz CR, Ayestaran A, Perez-Alvarez N, et al. Resilience, ageing, and quality of life in long-term diagnosed HIV-infected patients. *AIDS Care* 2015;27(11):1396–403.
- Canan CE, Chander G, Monroe AK, et al. High-risk prescription opioid use among people living with HIV. *J Acquir Immune Defic Syndr* 2018;78(3):283–90.
- Crockett KB, Turan B. Moment-to-moment changes in perceived social support and pain for men living with HIV: An experience sampling study. *Pain* 2018;159(12):2503–11.
- Merlin JS, Westfall AO, Chamot E, et al. Pain is independently associated with impaired physical function in HIV-infected patients. *Pain Med* 2013;14(12):1985–93.
- Parsons JT, Starks TJ, Millar BM, Boonrai K, Marcotte D. Patterns of substance use among HIV-positive adults over 50: Implications for treatment and medication adherence. *Drug Alcohol Depend* 2014;139:33–40.
- Centers for Disease Control and Prevention. HIV and gay and bisexual men. 2020. Available at: <https://www.cdc.gov/hiv/group/msm/> (accessed May 2020).
- Arntsen JH, Demas PA, Grant RW, et al. Impact of active drug use on antiretroviral therapy adherence and viral suppression in HIV-infected drug users. *J Gen Intern Med* 2002;17(5):377–81.
- Centers for Disease Control and Prevention. HIV and substance use in the United States. 2020. Available at: <https://www.cdc.gov/hiv/risk/substanceuse.html> (accessed August 2020).
- Corbin J, Strauss A. Grounded theory research: Procedures, canons and evaluative criteria. *Z Für Soziol* 1990;19(6):418–27.
- Neergaard MA, Olesen F, Andersen RS, Sondergaard J. Qualitative description—The poor cousin of health research? *BMC Med Res Methodol* 2009;9(1):52.
- Bradshaw C, Atkinson S, Doody O. Employing a qualitative description approach in health care research. *Glob Qual Nurs Res* 2017;4:233339361774228.
- Ayres L, Kavanaugh K, Knafel KA. Within-case and across-case approaches to qualitative data analysis. *Qual Health Res* 2003;13(6):871–83.
- Merlin JS, Walcott M, Kerns R, Bair MJ, Burgio KL, Turan JM. Pain self-management in HIV-infected individuals with chronic pain: A qualitative study. *Pain Med* 2015;16(4):706–14.
- Merlin JS, Westfall AO, Raper JL, et al. Pain, mood, and substance abuse in HIV: Implications for clinic visit utilization, antiretroviral therapy adherence, and virologic failure. *J Acquir Immune Defic Syndr* 2012;61(2):164–70.
- Musich S, Wang SS, Ruiz J, Hawkins K, Wicker E. The impact of mobility limitations on health outcomes among older adults. *Geriatr Nurs* 2018;39(2):162–9.

26. Michaëlis C, Kristiansen M, Norredam M. Quality of life and coping strategies among immigrant women living with pain in Denmark: A qualitative study. *BMJ Open* 2015;5(7):e008075.
27. Safren SA, Otto MW, Worth JL. Life-steps: Applying cognitive behavioral therapy to HIV medication adherence. *Cogn Behav Pract* 1999;6(4):332–41.
28. Safo SA, Blank AE, Cunningham CO, Quinlivan EB, Lincoln T, Blackstock OJ. Pain is associated with missed clinic visits among HIV-positive women. *AIDS Behav* 2017;21(6):1782–90.
29. Taylor SW, Batchelder A, Marquez SM, Safren SA, O’Cleirigh C. Chronic pain and substance use disorders among older HIV-infected sexual minority men: Implications for engagement in care. Presented at the: Annual Convention of the Association of Behavioral and Cognitive Therapies. Washington, DC; 2018.
30. Mullen B, Suls J. The effectiveness of attention and rejection as coping styles: A meta-analysis of temporal differences. *J Psychosom Res* 1982;26(1):43–9.
31. Rotman M, Andela CD, Majoor BCJ, et al. Passive coping strategies are associated with more impairment in quality of life in patients with fibrous dysplasia. *Calcif Tissue Int* 2018;103(5):469–75.
32. Kalichman SC, Hernandez D, Kegler C, Cherry C, Kalichman MO, Grebler T. Dimensions of poverty and health outcomes among people living with HIV infection: Limited resources and competing needs. *J Community Health* 2015;40(4):702–8.
33. Donovan DM, Ingalsbe MH, Benbow J, Daley DC. 12-step interventions and mutual support programs for substance use disorders: An overview. *Soc Work Public Health* 2013;28(3–4):313–32.
34. Cucciare MA, Sorrell JT, Trafton JA. Predicting response to cognitive-behavioral therapy in a sample of HIV-positive patients with chronic pain. *J Behav Med* 2009;32(4):340–8.
35. Merlin JS, Westfall AO, Long D, et al. A randomized pilot trial of a novel behavioral intervention for chronic pain tailored to individuals with HIV. *AIDS Behav* 2018;22(8):2733–42.