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Brief Report: Use of non-pharmacological strategies for pain relief in addiction treatment patients with chronic pain

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Background and Objectives: We examined use of non-pharmacological treatments for pain in addiction treatment patients.
Methods: Patients in addiction treatment with chronic pain ($N = 501$) were classified based on use of non-pharmacological pain treatments. Demographic and clinical correlates were compared.
Results: A total of 49% ($N = 243$) of patients used a non-pharmacological treatment in the past year versus 72% ($N = 361$) who used opioids. Non-pharmacological treatment users were more likely to use opioids and other pain medications.
Conclusions: Non-pharmacological treatments are less commonly used than opioids by addiction treatment patients.
Scientific Significance: Findings highlight the need to better understand pain treatment decision-making among addiction treatment patients. (Am J Addict 2017;26:564–567)

INTRODUCTION

Among those with chronic pain and substance use disorders (SUDs), the use of prescription opioids in particular pose increased risk for opioid use disorders, and overdose.[1,2] However, chronic pain remains prevalent so it is important to determine if non-medication treatments are feasible and appealing especially for people with chronic pain and comorbid addiction. Current best practice guidelines, including the recent CDC. Guidelines for Prescribing Opioids for Chronic Pain, recommend incorporating non-pharmacological strategies for treating chronic pain.[3] However, few studies have examined utilization of these treatments in SUD patients. These studies have focused on patients receiving treatment for opioid use disorders and only some with current chronic pain.[4,5] Although that is an important subgroup, it may not generalize to patients with ongoing chronic pain across a spectrum of SUDs.

The aim of the current study was to characterize use of non-pharmacological treatments for pain and examine correlates of non-pharmacological treatment use in a large sample of patients with chronic pain in residential addictions treatment. We used screening and baseline data from patients recruited for a randomized trial of cognitive behavioral therapy (CBT) for pain and addiction. The term non-pharmacological treatments was specifically used to refer to use of non-medication and non-surgical interventions for pain treatment. Use of physical therapy, meditation/yoga, acupuncture, psychotherapy, and herbal supplements were specifically assessed in this study.

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METHODS

Participants and Procedures

Data come from a sample of adults recruited at a large residential addiction treatment program in southeastern Michigan from October 2011 to July 2014. Clients ages >18 receiving services at the treatment site were eligible to participate in the screening portion of the study.

Participants who met criteria for moderate to severe chronic pain on the self-report screening survey, defined by an average rating of the participant's usual and worst pain over the prior 3 months of four or greater on the Numeric Rating Scale of Pain Intensity (NRS-I)[6] were eligible to participate in a randomized controlled trial assessing impact of CBT on treatment of comorbid pain and SUD.[7] Patients who endorsed acute suicidality or psychoses, or those unable to provide

written consent were excluded from participation. Data from participants' baseline and screening surveys were used in these cross-sectional analyses. Study procedures were approved by the University of Michigan Medical School Institutional Review Board.

Measures

Pain

Pain intensity over the past 3 months was assessed using an 11-point numeric rating scale ranging from 0 (*no pain at all*) to 10 (*worst pain imaginable*). This measure has external validity and can detect clinically meaningful changes in subjective measure of pain intensity.[6] Participants were asked to provide ratings on their usual pain over the past 3 months and overall duration of their pain. Participants were asked about use of "other prescription pain medications in the past year" and use of "over the counter pain medications in the past year." The Chronic Pain Acceptance Questionnaire assessed pain acceptance, a psychological construct that is an important correlate of functioning in patients with chronic pain.[8]

Use of Non-Pharmacological Treatments

Participants were asked "in the past year, have you received any of the following treatments for your pain" and response options included: physical therapy, meditation/yoga, acupuncture, psychotherapy, and herbal supplements.

Substance Use

Severity of substance use was assessed using the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST), a self-report measure of substance use and related problems.[9] Specific substances examined were opioids (including both prescription opioids and heroin), alcohol, cocaine, and marijuana. Based on previous literature,[9] patients who met criteria for moderate (score 4–26) or high (score $\geq$27) severity of use for each of the four substances above were categorized as likely having a SUD for that substance.

Depression

Depression was assessed using the Patient Health Questionnaire (PHQ-9), a self-administered measure of depressive symptoms. Participants were asked to rate on a four-point scale from 0 (*not at all*) to 3 (*nearly every day*) how often each of the symptoms bothered them during the past 2 weeks.

Data Analyses

Patients were divided into those who reported utilizing any non-pharmacological treatment versus no use of non-pharmacological treatments in the past year. Bivariate comparisons of demographic and clinical characteristics were assessed across these categories using chi-square tests for categorical variables and the *t*-test for continuous variables. Supplementary analyses adjusted for demographic characteristics (age, gender, race, and ethnicity).

Results

Sample Characteristics

In total, 501 adults in residential addiction treatment were included. Table 1 shows 49% ($N=243$) of this sampled reported any past year use of non-pharmacological treatments for pain. The average pain level was 6.7 (SD 1.7) on a scale of 0–10; 89% of this sample endorsed pain lasting for more than 1 year.

Non-Pharmacological Treatment

There were no significant differences when comparing past year non-pharmacological treatment users and non-users on gender, marital status, or employment status. Non-pharmacological treatment users were significantly more likely to be White (78%, $N=190$) and more likely to have some college education (22%, $N=54$) compared to people who did not utilize these treatments, although the absolute difference was modest (74% White, $N=192$ and 14%, $N=36$ with some college education). There were no differences between groups on average pain intensity or duration of pain.

In terms of specific treatments, 22% of the sample ($N=110$) used physical therapy, 19% ($N=97$) used meditation or yoga, 16% ($N=82$) used psychotherapy, 15% ($N=76$) used herbal remedies, and 6% ($N=31$) used acupuncture in the past year to help alleviate pain.

Use of Pain Medications

In this sample, 53% ($N=266$) of participants reported using prescribed opioid pain medications and 56% ($N=279$) reported using opioid pain medications without a prescription in the past year (see Table 1). People who used non-pharmacological treatments for pain also had higher levels of prescribed opioid medication use (65%, $N=159$), any opioid use prescribed or not (81%, $N=198$), and other non-opioid prescription pain medications (79%, $N=193$) compared to people who did not use non-pharmacological treatments (41%, $N=107$ for prescribed opioids, 63%, $N=163$ for opioids prescribed or not, 61%, $N=158$ for other prescription pain medications).

Substance Use Disorders

Participants who used non-pharmacological treatments were more likely to meet possible criteria for an opioid use disorder or cannabis use disorder, but not stimulant use disorder or alcohol use disorder.

Supplementary analyses adjusted for demographic characteristics. Results were generally consistent, except that depression and opioid use disorder were no longer significant between the two groups.

DISCUSSION

This study is one of the first to examine prevalence of using non-pharmacological strategies for pain relief among patients in

TABLE 1. Demographic and clinical characteristics of addiction treatment patients with chronic pain byutilization of non-pharmacological treatments for pain ($N = 501$)

	No use of non- pharmacological treatment ($N = 258.51\%$)	Used non- pharmacological treatment ($N = 243.49\%$)	p-value	Total ($N = 501$)
Age (mean. SD)	35.8 (10.0)	33.8 (10.6)	0.04	34.8 (10.3)
Male gender	142 (55 %)	118 (49%)	0.15	260 (52 %)
Race			0.02	
White	192 (74 %)	190 (78%)		382 (76 %)
African–American	54 (21 %)	32 (13%)		86 (17%)
All others	12 (5 %)	21 (9 %)		33 (7%)
Hispanic ethnicity	14 (5 %)	13 (5%)	0.97	27 (5%)
Married/partnered	54 (21 %)	46 (19%)	0.56	100 (20%)
Education			0.02	
Less than high school 'GED	63 (24 %)	43 (18%)		106 (21 %)
High school or GED	158 (61 %)	146 (60%)		304 (61 %)
Some college or college grad	36 (14%)	54 (22%)		90 (18%)
Employment status			0.14	
Regular full part time, or retired	40 (16 %)	40 (17%)		80 (16%)
Unemployed	179 (70 %)	149 (63%)		328 (66%)
Disabled	38 (15 %)	49 (21%)		87 (18%)
Depression level (Mean. SD)	11.1 (6.2)	12.4 (6.1)	0.03	11.7 (6.2)
Substance use disorders				
Opioid use disorder	172 (67%)	188 (77%)	0.01	360 (72%)
Stmiulant/cocaine use disorder	167 (65%)	167 (69%)	0.34	334 (67%)
Cannabis use disorder	141 (55%)	156 (64%)	0.03	297 (59%)
Alcohol use disorder	189 (73%)	175 (72%)	0.76	364 (73%)
Average pain in past 3 months (Mean. SD)	6.5 (1.7)	6.8 (1.8)	0.16	6.7 (1.7)
Duration of pain			0.40	
1 to 12 months	30 (12%)	22 (9%)		52 (10%)
>1 to 10 yrs.	181 (70%)	167 (69%)		348 (69%)
>10 yrs.	47 (18%)	54 (22%)		101 (20 %)
Pain acceptance (mean. SD)	58.1 (18.1)	58.3 (18.5)	0.94	58.2 (18.3)

addiction treatment with chronic pain. Almost half of participants endorsed past year use of non-pharmacological treatments for pain relief but almost three quarters of these patients used opioid pain medications (prescribed or non-prescribed) in the past year.

Patients who used non-pharmacological treatments for pain were also more likely to use prescribed opioids and prescribed non-opioid pain medications in the past year, though their average pain level was not significantly different from those who did not use non-pharmacological treatments. It is possible that patients who use non-pharmacological treatments are more likely to use opioids to relieve a higher perceived burden from pain. Alternatively, those who reported use of non-pharmacological treatments may represent a more treatment resistant sample who have tried numerous treatments without clear benefit. Further research could focus on perceived effectiveness of non-pharmacological treatments for pain relief among patients with SUDs and longitudinal studies may clarify if non-pharmacological treatments helps reduce use/misuse of opioids over time.

Overall, only a small minority of patients utilized specific non-medication strategies in the past year despite having ongoing pain symptoms. As one example, although physical therapy was the most commonly used non-pharmacological treatment in our sample, use was still less than that found in a population based survey of people with chronic pain.[10] Given the high level of pain symptoms and active SUD, current level of use is lower than expected. In addition, limited insurance coverage for non-pharmacological non-surgical interventions and limited availability may limit patient access to these treatments.

There are a number of important limitations to this study. Assessment of non-pharmacological treatment modalities was

not exhaustive. However, we focused on treatments that have been commonly used in prior addiction samples,[4] and shown to be helpful for pain. The study did not specifically assess whether the pain was withdrawal-related but the 3-month window used to identify chronic pain makes it unlikely that withdrawal fully accounted for pain. These analyses were cross-sectional and based only on self-report so self-report bias is possible. We cannot infer causality among variables studied in this analysis. Furthermore, data were collected at a single treatment site and analyses were limited to participants enrolled in a study of CBT for pain and addiction and may not generalize to other samples.

CONCLUSIONS

Patients in addiction treatment with chronic pain commonly use non-medication treatments for pain relief, but they use opioid pain medications more frequently.

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Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this paper.

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