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Allopathic, complementary, and alternative medical treatment utilization for pain among methadone-maintained patients: An exploratory study¹

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Abstract

We surveyed 150 methadone maintenance treatment program (MMTP) patients about pain, pain treatment utilization, perceived efficacy of prior pain treatment, and interest in pursuing pain treatment at the MMTP. Respondents with chronic severe pain (CSP) (i.e., pain lasting at least 6 months with moderate to severe pain intensity or significant pain interference) and “some pain” (i.e., pain reported in the previous week but not CSP) endorsed similar rates of past-week and lifetime allopathic or standard medical (with the exception of lifetime medical use of non-opiate medication) and complementary and alternative medicine (CAM) utilization for pain reduction. Prior pain treatments were perceived to be less effective by CSP than SP patients but both groups had equivalent high rates of interest in pain treatment associated with the MMTP. These findings may have implications for resource and program planning in MMT programs.

Keywords

Pain; complementary therapies; opioid-related disorders

INTRODUCTION

While mental health providers in the United States may increasingly limit their interventions to evidence-based practices, patients with chronic medical conditions often avail themselves of a wide variety of conventional and non-conventional treatments (1). Findings from nationally representative phone surveys indicate that complementary and alternative medicine (CAM) use among adults in the U.S. increased from 34% in 1991 to 42% in 1997 (2,3) and continues to rise (4,5). Complementary medicine refers to non-conventional medical treatment that is used in conjunction with allopathic (i.e., standard medical treatment) interventions, whereas alternative medicine comprises treatment interventions that are used in place of standard medical care (6). Although still in its infancy, research on CAM use among patients with substance-related disorders, including those with opioid-related disorders, has increased in recent years; generally, these studies have yielded mixed findings regarding the efficacy of

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CAM interventions and have highlighted the need for increased scientific rigor in evaluating these approaches (7–13).

Individuals with chronic pain often use both allopathic and complementary medical interventions; for example, Eisenberg and co-workers (2) found that 58% of respondents with chronic pain reported using both types of medical interventions in the past 12 months. Chronic pain is particularly prevalent among patients in methadone maintenance treatment programs (MMTPs); prevalence estimates range from 37% with chronic severe pain to more than 60% with chronic pain of any intensity (14–16). Among methadone-maintained patients, chronic pain is associated with poorer treatment outcomes, including increased medical and psychiatric comorbidity (14,16), and counselor frustration (17). While the importance of specialized pain management programs in MMTPs has been emphasized, a paucity of such services exists in the U.S. (1,18).

As MMTPs consider developing pain management programs, they may benefit from an increased understanding of extant pain treatment utilization patterns among methadone maintained patients with a variety of pain experiences. Recent studies have highlighted the importance of evaluating and addressing “chronic severe pain” (i.e., pain lasting at least 6 months with moderate to severe pain intensity or significant pain interference) and “some pain” (i.e., pain reported in the previous week but not CSP) among opioid dependent patients (14,19) and suggest that providers should routinely assess conventional and non-conventional medicine use among individuals with chronic medical conditions, including those with chronic pain (20).

Whereas we previously reported on the overall rates of different pain types and their psychiatric correlates among a sample of methadone-maintained patients (14), we did not report on findings related to pain treatment among these patients. Consequently, the aim of this needs assessment study was to examine pain treatment utilization (last week and lifetime) and interest in receiving pain treatment at the MMTP among currently enrolled MMTP patients reporting either some pain or chronic severe pain. Such information might be useful for MMTP resource and program planning.

MATERIALS AND METHODS

Participants

Participants were 150 patients (85 men and 65 women) aged 19 to 61 years (mean, 41.5; SD, 10.2) who were enrolled in one of APT’s MMTPs for at least six months (mean, 46.7; SD = 54.5). Patients were predominantly Caucasian (58%), male (57%), never married (53%), and unemployed (43%) or disabled (29%). A majority had at least a high school level of education (68%). All reported at least one prior MMT episode (mean 2.1, SD 1.7).

Procedures and Measures

Participants were self-selected in response to study fliers posted at the Legion, Orchard, and Park opioid agonist clinics at the APT Foundation Inc. (hereafter referred to as APT), a not-for-profit community-based organization located in New Haven, CT, with a census-at the time of study recruitment-of 1,500 patients. While APT has a primary care clinic that offers routine and specialty medical care (e.g., HIV, hepatitis), at the time of data collection, it did not provide specialty pain diagnostic or treatment services. Participants were recruited between March 2007 and March 2008. All patients who spoke with a research assistant agreed to participate and completed the survey. Fliers indicated that the study “aims to better understand patients’ experiences and treatments needs.” Research assistants administered the questionnaires (measures described below) after describing the study, including potential study risks and

benefits. Participants were compensated \$10 for study participation. The study received appropriate institutional Human Investigation Committee approval.

Respondents also provided information about demographics (age, sex, race/ethnicity, employment status, educational level, relationship status) and pain, including the duration of their current pain episode. On an 11-point scale (0 to 10), they also rated three facets of pain experienced in the past seven days (i.e., “pain at its worst,” “pain at its least” and “typical level of pain”). In addition, they completed three pain interference items (scored on a scale from 0 to 10) from the Brief Pain Inventory (BPI; (21,22)) that assessed the extent to which their pain in the last seven days had interfered with their “everyday life,” “normal work,” and “relationships with other people.” Respondents’ answers to these items were used to classify them into one of three pain groups: a) “chronic severe pain” (i.e., pain lasting at least six months with moderate to severe pain intensity or significant pain interference)—As previously done (14), respondents who had pain lasting at least six months and who scored five or higher on the item pertaining to the worst level of pain intensity in the last seven days or on any of the items relating to pain interference in the last seven days were considered to exhibit chronic severe pain; b) “some pain” (i.e., pain reported in past week but not CSP; and c) “no pain” (i.e., no pain reported in the past week and no CSP).

With respect to utilization of allopathic, complementary, and alternative pain treatments, participants were provided with a list of interventions and were asked, “Which of the following treatments *for ongoing physical pain* have you used in the last seven days [recent] and ever in your life [lifetime]?” The list included: (a) “Opiate medication as prescribed by a doctor (e.g., Demerol, Fentanyl, Morphine, Oxycontin, Percocet, Percodan, Tylenol with Codeine),” (b) “Non-opiate medication as prescribed by a doctor (e.g., Celebrex, Celexa, Clonidine, Depakote, Elavil, Fiorinal, Ketalar, Ketaset, Neurontin, Prozac, Soma, Tegretol, Topamax),” (c) “Benzodiazepine as prescribed by a doctor (e.g., Ativan, Halcion, Klonopin, Valium, Xanax),” (d) Over-the-counter pain reliever (e.g., Advil, Aleve, Aspirin, Ibuprofen, Motrin, Orudis KT, Prilosec, Tylenol), (e) Acupuncture, (f) Prayer, (g) Counseling/ Psychotherapy, (h) Meditation, (i) Self-help support group, (j) Yoga, (k) Hypnosis, (l) Herbs/ Herbal medicine, (m) Stretching, (n) Physical exercise, (o) Heat therapy, (p) Massage, (q) Physical therapy, (r) Ice therapy, (s) Chiropractic treatment, and (t) “Other.” As described elsewhere (24), this list of interventions was generated by the authors based on their experience treating MMTP patients and was revised based on the feedback of MMTP patients, intake staff, and research assistants.

For data analytic purposes, we classified CAM use according to the taxonomy employed by the National Center for Complementary and Alternative Medicine (NCCAM) at the National Institutes of Health: 1) Alternative Medical Systems, which often predate conventional medicine used in the U.S. and are based on complete systems of theory and practice, some of which were developed in Eastern cultures (e.g., ayurveda), and others in Western cultures (e.g., naturopathic medicine); 2) Mind-Body Interventions, which consist of various techniques that attempt to magnify the mind’s capacity to control bodily function and symptoms; 3) Biologically-Based Therapies, which refer to treatments using biological agents found in nature, including herbs, foods, and vitamins; and 4) Manipulative and Body-Based Methods, which include methods that systematically manipulate or alter movement in one of more body parts (23). We did not assess Energy Therapies — biofield therapies and bioelectromagnetic-based therapies— the fifth NCAAM CAM classification (e.g., Reiki, Qi Gong), because of their infrequent use among individuals in our MMTP programs (see above). Allopathic or conventional medicine operates on two key principles: safety and efficacy (20). In the current study, we adopted a conservative approach to the designation of interventions as allopathic or CAM: Interventions that have demonstrated efficacy and safety and that are generally available in MMTPs were designated as conventional; otherwise, they were classified as CAM. As more

data regarding safety, efficacy, and availability of these interventions for opioid dependent patients with chronic pain in MMTPs become available, it is likely that some of the interventions listed as CAM in this study will be better characterized as allopathic.

Perceived efficacy of pain treatment received was assessed by an item that asked participants to rate the degree to which medical treatment received for ongoing pain was helpful (on an ordinal scale between 1 [did not help] to 5 [helped completely]). Interest in pain treatment was assessed by an item that asked participants whether they were interested in receiving pain treatment in addition to drug treatment at the MMTP (yes/no).

Data Analysis

We examined pain group differences (i.e., SP vs. CSP) on pain-related, treatment-related and demographic variables using ANOVA strategies for continuous data and Pearson chi-square tests for frequency data. We applied a Bonferroni correction for multiple comparisons based on the number of variables in each treatment domain. Since the two pain subgroups differed significantly on age, we performed an analysis of covariance (ANCOVA) to control for age on the comparison involving pain continuous data (i.e., perceived efficacy of pain treatment received). Statistical significance was set at $p < 0.05$. Statistical analyses were performed using SPSS Version 15.0 for Windows (SPSS, Inc., Chicago, IL).

RESULTS

Demographic Characteristics

As reported previously (14), among the 150 respondents, 24% were in the “no pain” group, 39% in the “some pain” group, and 37% in the “chronic severe pain” group. Whereas sex, race/ethnicity, employment status, educational level, and relationship status did not vary by pain group (i.e., no pain [NP], some pain [SP], chronic severe pain [CSP]), the three groups differed significantly on age ($F[2, 147] = 4.94, p < 0.05$). Scheffe post hoc analyses revealed that participants with chronic severe pain were significantly older (44.8) than those with some pain (mean 39.0, mean difference 5.8, 95% confidence interval [CI] = 1.1 to 10.3, $p < 0.01$, two-tailed test). Although the mean age of the CSP group, on average, was numerically higher than the NP group (40.6), this difference was not statistically significant ($p = 0.15$).

Allopathic Pain Treatment Utilization

Table 1 summarizes past-week and lifetime allopathic and CAM pain treatment utilization among SP and CSP groups. A higher proportion of the CSP group as compared to the SP group (63% vs. 39%; $\chi^2 = 6.36, df = 1, p = .012$) endorsed lifetime medical use of prescribed non-opiate medication; this group difference remained statistically significant after the application of a Bonferroni correction for multiple comparisons ($.05 \div 4 = .0125$). Irrespective of pain group status, the least frequently endorsed past-week and lifetime allopathic pain treatment was medical use of benzodiazepine medication.

CAM Pain Treatment Utilization

Among SP and CSP groups, the most frequently endorsed past-week CAM interventions were prayer and stretching (Table 1). Among the SP group, the least frequently endorsed past-week CAM interventions were acupuncture (0%), hypnosis (0%) and yoga (2%); among the CSP group the least frequently endorsed were hypnosis (0%), acupuncture (2%), and chiropractic (2%). The most frequently endorsed lifetime CAM intervention for pain relief was stretching for both SP and CSP groups (66% and 73%, respectively), while the least frequently endorsed was hypnosis (3% and 5%, respectively). Overall, among those endorsing either some pain or chronic severe pain, 9% reported that they had never tried a pain-related CAM treatment, 3%

reported that they had tried a treatment from one CAM category, 19% from two categories, 37% from three categories, 23% from four categories, and 9% from five categories.

Perceived Efficacy of Prior Pain Treatment

After controlling for age, the SP group (mean = 3.2, SD = 1.0) endorsed higher perceived efficacy of pain treatment received than the CSP group (mean = 2.4, SD = 1.1), $F(1, 91) = 19.18, p < .001$.

Interest in Pain Treatment

Whereas a numerically greater proportion of the CSP group compared to the SP group endorsed interest in receiving pain treatment in addition to drug treatment at the MMTP, this difference did not reach statistical significance (93% vs. 87%, $\chi^2 = 1.04, df = 1, p = .24$).

DISCUSSION

This study is among the first to examine the utilization of allopathic and complementary and alternative medicine (CAM) treatments for pain relief among MMTP patients with either “some pain” (SP) or “chronic severe pain” (CSP). Overall, similar patterns of past-week allopathic and CAM utilization patterns were reported by both pain groups (i.e., SP and CSP); while there appeared to be more variability in lifetime as opposed to past-week allopathic and CAM utilization among SP and CSP groups (medical use of prescribed non-opiate medication, prayer, counseling, yoga, and physical therapy), these differences—with the exception of medical use of prescribed non-opiate medication—did not remain statistically significant after the application of a Bonferroni correction for multiple comparisons.

The most frequently endorsed past-week and lifetime allopathic pain intervention for SP and CSP groups was OTC pain medication. Whereas a previous study on opioid dependent patients found that among those with a lifetime history of chronic pain, past-week medical use of prescribed opioid and benzodiazepine medications was endorsed by 28% and 20%, respectively (24), numerically smaller proportions of SP and CSP patients in the current study endorsed past-week medical use of prescription opioids (9% and 20%, respectively) and benzodiazepines (7% and 5%, respectively). While the previous study recruited opioid dependent patients seeking MMTP entry, the current study recruited opioid dependent patients who had been enrolled in their MMTP for at least 6 months. The relatively small proportions of SP and CSP groups endorsing past-week medical use of prescription opiates contrasts with some providers’ characterizations of these patients as “medication seeking” (14,17,25,26) and may be consistent with prior reports that some methadone-maintained patients with pain receive inadequate opioid treatment for pain (27,28). Given the concerns associated with drug-drug interactions among MMTP patients (29), further investigation of the pattern in medical use of prescribed opioids and benzodiazepines at different phases of MMTP participation is warranted (e.g., pre-MMTP and quarterly follow-ups).

In contrast to the relatively small proportion of American adults endorsing lifetime use of acupuncture (4.1%) in the 2002 National Health Interview Survey (30,31), 20% of study participants with some pain and 34% of those with chronic severe pain endorsed lifetime utilization of acupuncture, a branch of traditional Chinese medicine. Given the mixed findings concerning acupuncture’s efficacy in managing chronic pain (32–34) and substance-related disorders (9,35,36) and its potential efficacy in alleviating symptoms during detoxification treatment (37,38), an examination of its potential role in managing pain in MMTPs is warranted.

The most frequently endorsed lifetime mind-body interventions were prayer (51%) and meditation (31%) among the SP group and prayer (71%) and counseling (43%) among the CSP group. While certain types of counseling such as cognitive-behavioral therapy have demonstrated efficacy in treating substance use disorders (39,40) and chronic pain (41,42), the role of prayer/spiritual healing and meditation in managing pain and promoting abstinence from illicit drugs has received less rigorous research attention and is thus unclear (11,43). One notable exception has been the examination of mindfulness-based meditation; research to date indicates that it is a promising approach for pain relief and for promoting reductions in alcohol and illicit drug use (44–49). In the present study, the content, duration, and frequency of participants' use of prayer is unclear and merits further research investigation. The least frequently endorsed lifetime mind-body intervention utilization among SP and CSP groups was hypnosis (3% and 5%, respectively). Numerically larger proportions of SP and CSP groups reported lifetime utilization of yoga (7% and 21%, respectively). Hypnosis is more generally accepted than yoga in behavioral medicine since the former—unlike the latter—has been well-studied and has shown efficacy in clinical practice (50). While yoga does not appear to enhance the efficacy of standard methadone treatment (12), one study involving a randomized controlled trial of chronic low-back pain patients found that yoga was more effective than a self-care book for increasing pain functioning and reducing pain and that these benefits continued for several months (51). Consequently, further research on prayer, hypnosis, meditation (especially mindfulness meditation) and yoga as pain management strategies in MMTPs is warranted.

Lifetime utilization of herbs/herbal medicine among SP and CSP groups (>15%) was numerically higher than that reported in a previous study on CAM use among individuals with intravenous drug use (5.3%) (52). Past-week utilization of herbs/herbal medicine among SP and CSP groups were 5% and 9%, respectively. While several authors have queried the efficacy of CAM treatments, concerns about CAM safety have centered on herbal agents and dietary supplements, including the lack of regulation or quality control surrounding their use (53,54), possible interactions with prescribed medications (55), and side effects (56). Our finding concerning the relatively high past-week and lifetime utilization of herbs/herbal medicine among both pain groups suggests that MMTP providers should assess their use among patients with pain and should provide psychoeducation about potential safety risks.

Lifetime utilization rates of manipulative and body-based methods were generally high among SP and CSP respondents. For example, more than half of each group reported lifetime utilization of passive (e.g., stretching) and active therapeutic exercise (e.g., physical exercise) and passive modalities (e.g., heat) employed by physical and occupational therapists in the promotion of tissue recovery and rehabilitation (57). Comparably high proportions of SP and CSP groups endorsed past-week utilization of stretching (over one-third) and physical exercise (over one-quarter). Clinical trials that have examined the long-term efficacy of manipulative and body-based methods in pain management have demonstrated mixed treatment outcomes (e.g., (58–61))—in part due to variability in diagnostic and treatment methods (62). Thus, the examination of manipulative and body-based methods in pain management for MMT with pain merits further research investigation.

In comparison to the CSP group, those with SP rated their prior pain treatment as more helpful. While the former pain subgroup, on average, rated their prior pain treatment between “helped moderately” and “helped a lot,” the latter, on average, rated their prior pain treatment between “helped a little” and “helped moderately.” In contrast, a similarly high proportion of both pain subgroups endorsed interest in pain treatment. Thus, while on average the CSP group did not rate their prior treatment as particularly helpful, the majority of the CSP (and SP) group was still interested in pursuing pain treatment at the MMTP.

Although evidence-based pain management interventions for MMTP patients are lacking, research on non-addicted patients has found that multidisciplinary treatment is more effective than standard medical treatment or no treatment in treating chronic pain (63). Multidisciplinary treatment incorporates at least three of the following categories: psychotherapy, physiotherapy, relaxation techniques, medical treatment or patient education, and vocational therapy (63). While the CSP, SP, and NP groups did not differ statistically on full-time employment status, the proportion of the CSP group that was employed full-time (4%) was noticeably lower than both the SP and CSP groups (10% and 11%, respectively). These findings suggest the importance of vocational assessment and training for all MMTP patients, irrespective of their pain status. Respondents' pattern of allopathic and CAM utilization for pain relief, accompanied by a reported strong interest in pursuing pain treatment, suggest that if multidisciplinary pain interventions in MMTP were to be offered, pain patients would avail of such services and that further examination of multidisciplinary MMTP pain treatments is warranted.

Several potential limitations are worth noting. Participants self-selected for study participation based on a flyer indicating that APT wanted to better understand patients' experiences and treatment needs; thus, it is unclear if patients who enrolled in the study were different from those who did not. Participants were enrolled in treatment at three opioid agonist treatment clinics run by the same organization in a particular geographic location; thus, our findings may or may not generalize to other MMTPs in different geographic regions. Although the data were collected anonymously and participants were informed that their answers would not affect their treatment at APT, the questionnaire was completed at the treatment facility and this may have affected the responses of participants concerned about how staff might react to their responses. In the current study, we did not examine thoughts (e.g., attributed meaning of the pain), feelings (e.g., hopelessness), and desires (e.g., immediate relief from all pain), some of which may be specific to opioid addiction (1) further research on pain experiences among opioid dependent patients in MMTPs might benefit from an examination of these factors.

The survey was cross-sectional and thus limits statements regarding causation between study variables. No independent assessments of participants' self-reported responses—including pain status and use of allopathic and CAM interventions—were conducted. Given the absence of validated pain treatment utilization measures for MMTP patients, we used a recently developed instrument for assessing pain treatment utilization among patients seeking MMTP entry (24), which although face-valid, has not been formally validated. In particular, the list of examples of prescription medication classes that was provided to participants was not exhaustive. In particular, the list of examples of prescription medication classes that was provided to participants was not exhaustive. For example, hydrocodone preparations, such as Vicodin and Lorcet, and tramadol preparations, such as Ultram and Ultracet, were not included. Future research on this topic might benefit from a more comprehensive listing of these types of medications. While this is one of the first studies, to our knowledge, to examine allopathic and CAM pain treatment utilization among SP and CSP groups, future research investigations might benefit from a more systematic examination of pain types (e.g., a larger variety of pain groups based on chronicity) and a more detailed assessment of pain-related allopathic (e.g., surgery) and CAM (e.g., aquatic therapy) interventions.

Despite these limitations, this exploratory study represents an important investigation of pain-related treatment utilization among MMTP patients. The findings highlight the importance of assessing some pain in conjunction with chronic severe pain among MMTP patients. Among both SP and CSP groups, lifetime allopathic and CAM utilization for pain management was common and (after controlling for multiple comparisons), generally, did not vary as a function of pain group status. Finally, these findings may have implications for resource and program planning in MMTPs. Specifically, MMTPs might consider assessing and addressing (1) some

pain in addition to chronic severe pain and (2) allopathic and CAM pain treatment utilization, especially given the reluctance of some patients to spontaneously disclose CAM use to their providers (2,3,64).

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Table 1
 Comparison of SP and CSP Groups on Allopathic, Complementary, and Alternative Medical Treatment Utilization in the Past 7 Days and Lifetime.

	Past 7 Days				Lifetime			
	SP (n = 59) %	CSP (n = 56) %	χ^2	p	SP (n = 59) %	CSP (n = 56) %	χ^2	p
Allopathic Medicine								
OTC Pain Medication	49.2	55.4	0.44	NS	76.3	91.1	4.56	.033
Opiate Medication	8.5	19.6	2.99	NS	67.8	82.1	3.14	NS
Non-Opiate Medication	16.9	21.4	0.37	NS	39.0	62.5	6.36	.012
Benzodiazepine Medication	6.8	5.4	0.10	NS	28.8	35.7	0.63	NS
Complementary and Alternative Medicine								
Alternative Medical Systems								
Acupuncture	0.0	1.8	1.06	NS	20.3	33.9	2.70	NS
Mind-Body Interventions								
Prayer	37.3	58.9	5.39	.020	50.8	71.4	5.11	.024
Counseling/Psychotherapy	5.1	8.9	0.66	NS	22.0	42.9	5.71	.017
Meditation	18.6	26.8	1.09	NS	30.5	37.5	0.63	NS
Self-Help Support Group	6.8	8.9	0.18	NS	11.9	23.2	2.58	NS
Yoga	1.7	7.1	2.05	NS	6.8	21.4	5.15	.023
Hypnosis	0.0	0.0	--	--	3.4	5.4	0.27	NS
Biologically Based Therapies								
Herbs/Herbal Medicine	5.1	8.9	0.66	NS	15.3	19.6	0.39	NS
Manipulative and Body-Based Methods								
Stretching	49.2	42.9	0.46	NS	66.1	73.2	0.69	NS
Physical Exercise	28.8	30.4	0.03	NS	52.5	67.9	2.81	NS
Heat Therapy	15.3	25.0	1.71	NS	50.8	62.5	1.59	NS
Massage	11.9	26.8	4.14	.042	39.0	57.1	3.80	NS
Physical Therapy	3.4	10.7	2.38	NS	52.5	73.2	5.24	.022
Ice Therapy	11.9	10.7	0.04	NS	35.6	50.0	2.44	NS
Chiropractic treatment	3.4	1.8	0.29	NS	35.6	42.9	0.64	NS

Note: SP = Some pain the past week but not CSP, CSP = Current chronic severe pain, NS = Non-significant.